Remedial Investigation Report

Report Version: V.1

Site Name: Site Address:	Adams Street Building 6707-6709 S Adams Street				
	Tacoma, Washington 98409				
Alternate Location Info:	NA				
Ecology Facility S	ite ID No.:	7177			
Voluntary Cleanup	Program Project No.:	SW1530			
Order No.:		NA			
Consent Decree No.: NA					

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Date:10/31/18





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ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirements
AEG	Associated Environmental Group, LLC
BGS	below ground surface
COC	Contaminant/Chemical of Concern
COPC	Contaminant/Chemical of Potential Concern
CSID	Cleanup Site Identification number
CSM	Conceptual Site Model
CUL	clean-up levels
Ecology	Washington State Department of Ecology
EPA	Environmental Protection Agency
FOC	Fraction of Organic Carbon
FSID	Facility Site identification number
HVOC	Halogenated Volatile Organic Compound
IDW	Investigation-Derived Waste
MTCA	Model Toxics Control Act
PCE	tetrachloroethylene
PID	Photoionization detector
PSD	particle size distribution
QAPP	Quality Assurance Project Plan
RCW	Revised Code of Washington
SAP	Sampling and Analysis Plan
SEC	Succeed Environmental Consulting LLC
TCE	trichloroethylene
TEE	Terrestrial Ecological Evaluation
ТРН	total petroleum hydrocarbon
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
WAC	Washington State Administrative Code



EXECUTIVE SUMMARY

This Remedial Investigation Report has been prepared for the Adams Street Building site located at 6707-6709 S Adams Street in Tacoma, Washington. A formal wear business historically occupied the site (circa 1999-2015). During that time, two closed-loop drycleaning machines and associated small-quantity materials were historically located on the project site.

In 2016 Ecology opened cleanup file no. 7177 for the project site following the detection of residual PCE in soil, groundwater, and vapor samples collected proximate to the former dry-cleaning machines. SEC has no knowledge of reported hazardous materials leaks or spills at the project site.

Between 2016 and 2018, the magnitude and extent of PCE impact was studied, and a CSM was developed in accordance with MTCA. Based on the findings of this RI, it is our professional opinion that sufficient data has been obtained to demonstrate the following:

- Groundwater conditions at the project site meets corresponding cleanup standards and are considered protective of human health and the environment.
- The residual presence of PCE in soil meets corresponding site-specific cleanup standards and is considered protective of human health and the environment.
- Indoor or ambient at the project site meets corresponding cleanup standards and is considered protective of human health and the environment.

SEC previously evaluated project site conditions with respect to Ecology's requirement for a terrestrial ecological evaluation (TEE) pursuant to MTCA (WAC 173-340) to evaluate whether PCE identified at the project site presents an adverse risk to ecological receptors in the project site vicinity. Based on our findings (SEC 2018), since none of the compounds identified at the project site are listed as priority contaminants of ecological concern (listed in WAC-173-340-900; Table 749-2), no further terrestrial ecological evaluation is warranted.

No field evidence of chemical impact was observed by SEC during exploration activities conducted at the project site. Regardless, all investigation-derived waste (IDW) generated during investigation activities was placed in 55-gallon drums on-site pending disposal. SEC intends to subcontract a licensed waste disposal service to dispose of all IDW generated at the project site. All associated disposal documentation will be provided to Ecology.

After Ecology has completed its review of this report, we respectively request an opinion on the completed actions. In our professional opinion, the data presented in this report may warrant an opinion of "No Further Action" for the project site.

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1. INTRODUCTION

The objective of the Remedial Investigation (RI) is to characterize the nature and extent of residual PCE on the property located at 6707-6709 S Adams Street site in Tacoma, Washington (project site). The project site is shown relative to surrounding physical features on Figure 1 and is described in the following sections.

Site Name	Adams Street Building
	6707-6709 S Adams Street,
Site Address	Tacoma, WA 98409
Facility/Site I.D.	7177
Cleanup Site I.D.	13051
VCP Site I.D.	SW1530
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	(253) 279-1686
Lat/Long (decimal degrees)	47.196 / -122.486

1.1.GENERAL SITE INFORMATION

The 1.29-acre project site includes Pierce County tax parcels 0220251164 and 0220251163, which are located in Section 25, Township 20 North, Range 2 East of the Willamette Meridian. The project site is situated in an industrial area of Tacoma, and the site structure consists of a single-level industrial warehouse with an attached two-level office area.

One sanitary sewer line is located beneath the northeastern portion of the project site and was connected the project site restrooms and a former commercial washing machine drain (that discharged only water and biodegradable soap) to a sewer conveyance line located north of the project site structure. The commercial washing machine connection has since been removed. Surface water that accumulates at the project site structure and across paved surfaces towards catch basins located to the west of the project site structure.

1.2. SITE HISTORY

The project site historically consisted of vacant land until approximately 1974, when the existing ~15,000-square-foot structure was built with a concrete slab-on-grade foundation, metal framework, and connected to municipal utilities. Since the building was constructed, the project site was used for road sign assembly (1978–1994), athletic apparel assembly (1994–1999), formal

wear storage, repair, and cleaning (1999-2015), materials storage for a roofing installation company (2015 – 2018), and a warehouse for decorative concrete landscape products (present day).

Dry cleaning activities were conducted at the project site between approximately 1999 and 2015 using two closed-loop "dry-to-dry" (Union Flexmatic 353) dry cleaning machines, which utilized tetrachloroethylene (PCE)-based solvents. According to information provided by Mr. Ed Honeycutt, PCE was delivered and disposed of in "keg style" containers that created a closed loop piping system, and spent filters were placed in 15-gallon-containers and periodically disposed of off-site by Safety-Kleen (estimated once every four months), when the dry-cleaning machines were in operation. Both machines were located within secondary containment trays mounted on a concrete floor slab inside the building.

In addition to the above-noted dry-cleaning activities, spot removers were used at the project site. These materials were typically stored in small (1-gallon or less) containers prior to use. SEC has no knowledge of reported hazardous materials leaks or spills at the project site. Between 2015 and 2016, PCE was identified in soil, groundwater, and vapor at the project site, which is discussed in Section 2.1 of this report. The approximately project site building layout and location of former dry-cleaning machines are shown on Figure 2.

1.3. SITE USE

The project site structure is currently used as a commercial/industrial warehouse for decorative concrete landscape materials. Exterior areas are used for parking and storage of concrete products. SEC has no knowledge of environmental-related permits or violations associated with current or past uses of the project site.

FIELD INVESTIGATIONS, INTERIM MEASURES, AND SITE CHARACTERIZATION PREVIOUS ENVIRONMENTAL INVESTIGATION

Between 2015 and 2016, Associated Environmental Group, LLC (AEG) of Olympia, Washington conducted a subsurface investigation at the project site. The investigation included the installation of four groundwater monitoring wells (MW-1 through MW-4), a subsequent well monitoring event, and the collection of numerous soil, vapor, and grab groundwater samples from ten subsurface explorations (B-1 through B-10). During this time, PCE was detected in soil, groundwater, and vapor at the project site. Specifically, PCE was detected in eight soil samples and three groundwater samples at concentrations that slightly exceeded corresponding Model Toxics Control Act (MTCA) Method A cleanup levels. It should be noted that the building's sewer line connection is located near monitoring well MW-1, where no elevated concentrations of PCE have been detected in groundwater. AEG's chemical analytical results are included in Tables 2 through 4 of this report. A copy of AEG's report (AEG 2016) is currently on file with Ecology. A copy of AEG's exploration logs are provided in Appendix A and all associated chemical analytical data is provided in Appendix B.

It should also be noted that the AEG report (AEG 2016) reported the presence of a "former steam cleaning pad" at the project site. The AEG site plans also presented a series of dashed lines that were not specifically identified in the report. SEC corresponded with a representative of Mr. Formal, Inc. and conducted a reconnaissance of the project site. Based on our review and research, there was no steam cleaning pad at the project site. The feature that was mislabeled as a steam cleaning pad was the concrete foundation for a former commercial washing machine that discharged only water and biodegradable soap to the sanitary sewer. Based on our observations, the previously-

unidentified dashed lines that were presented in the AEG report were intended to represent the approximate locations of interior walls at the site.

2.2. INTERIM REMEDIAL MEASURES

Between November 2017 and February 2018, SEC drilled two 4-inch-diameter holes through the concrete floor slab (near the former dry-cleaning machines) and placed 4-inch-diameter PVC vent pipes equipped with an in-line fans in each hole. The base of the vent pipe was grouted in-place, the vent pipe was extended through the roof of the project site structure, and the in-line fans (Fan-1 and Fan-2) were activated. It should be noted that the fans were turned off at least one week prior to collecting any sub-slab vapor or indoor air samples. The approximate fan locations are shown on Figures 2 and 3.

2.3. SITE CHARACTERIZATION

2.3.1. CONTAMINANTS OF POTENTIAL CONCERN

Based on the results of AEG's investigation (Section 2.1) and the brief historical use of the project site as a dry-cleaning facility, COPCs evaluated by SEC included HVOCs (PCE, TCE, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, 1,1-dichloroethene, and vinyl chloride). Based on the information presented herein, it is our professional opinion that there is sufficient data to demonstrate that PCE is the only COPC at the project site.

Chloroform was also detected in one or more groundwater samples at concentrations greater than laboratory reporting limits. However, it is our professional opinion that the data presented herein is sufficient to demonstrate that chloroform should not be considered a COPC at the project site.

2.3.2. SAMPLING AND MONITORING

Investigation activities were conducted by SEC between November 2017 and September 2018. The purpose of our exploration was to evaluate the aerial and vertical magnitude and extent of COPC impact at the project site.

Prior to conducting ground-disturbing activities at the project site, SEC contacted the Washington One-Call Utility Notification Center to mark the location of public utilities beneath the project site and subcontracted a private utility locator to clear proposed boring locations.

The sampling equipment used for the collection of samples was decontaminated prior to use, when appropriate. Decontamination was performed on all sample re-usable processing equipment that came into contact with sampling media. Decontamination was performed prior to sampling each location using the following procedures:

- 1. Rinsed with tap water and scrubbed with a scrub brush until free of large particles
- 2. Washed with phosphate-free (Alconox[™]) detergent solution
- 3. Rinsed with tap water

All investigation-derived waste (IDW) generated during investigation activities was placed in 55gallon drums on-site pending disposal. SEC intends to subcontract a licensed waste disposal service to dispose of all IDW generated at the project site. All associated disposal documentation will be provided to Ecology.

2.3.2.1. SOIL SCREENING AND SAMPLING

Soil exploration activities were conducted by SEC between February 2018 and May 2018 and included the advancement of nine direct-push borings (DP-1 through DP-9) and one hand-auger boring (HA-1) at the project site. In February 2018, SEC subcontracted Pacific Soil and Water of Tualatin, Oregon, to advance direct-push explorations DP-1 through DP-9 at the project site. SEC observed the explorations and obtained soil samples for analysis. The soil encountered in the explorations was visually classified in general accordance with ASTM D 2488. In May 2018, SEC additionally advanced hand-auger exploration HA-1 near the former dry-cleaning machines. The approximate exploration locations are shown on Figures 2 and 3.

Continuous soil samples were collected from the explorations. Soil samples obtained from directpush explorations DP-1 through DP-9 were collected from approximately 2-inch-diameter, 60-inchlong samplers lined with acrylic sleeves. Soil sampled from the hand-auger boring HA-1 was collected from the boring by hand. Soil conditions observed by SEC generally consisted of gravel fill material to a maximum depth of approximately 10 to 12 BGS, with underlying native of sand and gravel observed to depths of up to 22 to 26 feet BGS. Gravel was encountered below the sand to the maximum depths explored. Wet soil conditions were generally observed at depths ranging between approximately 6.0 and 13.0 feet BGS. Typical cross sections of subsurface conditions at the project site are presented on Figure 4. Boring logs noting the subsurface conditions observed by SEC are presented in Appendix A.

SEC performed field screening tests on selected soil samples collected from the explorations. Field screening results aided in the selection of soil samples for chemical analysis. Screening methods included visual examination, water sheen screening, and headspace vapor screening as described below:

- Visual screening consisted of inspecting the soil for discoloration indicative of the presence of petroleum material in the sample.
- Water sheen screening involved placing soil in water and observing the water surface for signs of sheen. Sheen classifications are as follows:
 - **No Sheen:** No visible sheen on the water surface.
 - **Slight Sheen:** Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce slight sheen.
 - Moderate Sheen: Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
 - **Heavy Sheen:** Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.
- Headspace vapor screening is performed by placing a soil sample in a plastic bag. Air is captured in the bag, and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a MiniRAE PID is inserted into the bag, and the MiniRAE PID measures VOC vapor concentrations in units of ppm. The MiniRAE PID is calibrated to isobutylene. The MiniRAE PID is designed to quantify VOC vapor concentrations, but it should be noted that field screening results are site and exploration specific. The results may vary with temperature, soil moisture content, soil type, and type of contaminant.



No field evidence of chemical impact was observed by SEC during exploration activities conducted at the project site. This is generally consistent with AEG's observations. Soil samples selected for analysis were collected at approximately 5- to 10-foot intervals and submitted for chemical analysis.

The samples selected for analysis were collected in laboratory-supplied containers and immediately placed in an ice chest and kept cool until delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory. The results of chemical analysis are discussed further herein.

2.3.2.2. GROUNDWATER WELL INSTALLATION AND MONITORING

Between November 2017 and September 2018, SEC monitored groundwater at the project site. The purpose of the groundwater monitoring effort was to collect groundwater elevation data and samples for chemical analysis. Groundwater monitoring and well installation activities conducted by SEC are chronologically discussed below:

- In November 2017, SEC accessed and sampled monitoring wells MW-1, MW-2, MW-3, and MW-4 during the fourth quarter 2017 groundwater monitoring event.
- In February 2018, Pacific Soil and Water installed one additional groundwater monitoring well (MW-3D) adjacent to MW-3. MW-3D was constructed with a cemented flush (surface-grade) monument, ³/₄-inch PVC piping, and a 2.5-foot-long "pre-packed" well screen, which was placed at depths of approximately 27.5 to 30.0 feet BGS. Prior to leaving the site, approximately two gallons of water were purged from the well using a peristaltic pump. The purge water was observed during well development activities. Although initially turbid, the groundwater that was discharged from each well appeared clear upon completion of purging activities. Prior to leaving the site, SEC used a self-leveling 360-degree line laser and a transit with an electronic receiver to measure the elevation of the new well relative to the previously-surveyed monitoring well MW-3, which adjoins MW-3D.
- In February 2018 (following construction of MW-3D), SEC accessed and sampled monitoring wells MW-1, MW-2, MW-3, MW-3D, and MW-4 during the first quarter 2018 groundwater monitoring event.
- In May 2018, SEC accessed and sampled monitoring wells MW-1, MW-2, MW-3, MW-3D, and MW-4 during the second quarter 2018 groundwater monitoring event.
- In September 2018, SEC accessed and sampled monitoring well MW-3 (the only well that historically revealed PCE at a concentration greater than the MTCA Method A Cleanup Level) during the third quarter 2018 groundwater monitoring event.

SEC's specific groundwater sampling protocol is described as follows:

- Opened each monitoring well and allowed groundwater levels to equilibrate for at least 30 minutes prior to measuring the depth to groundwater.
- Measured the depths to groundwater to the nearest 0.01 foot using a decontaminated water level indicator.
- Placed disposable polyethylene tubing approximately one foot above the bottom of each well.
- Purged water from each well using a peristaltic pump. During extraction, the tubing was connected to a flow-through cell and groundwater stabilization parameters were measured in general accordance with EPA-recommended low stress (low flow) sampling procedures¹.
- Disconnected the flow-through cell and collected a groundwater sample from each well into laboratory-prepared sample containers for chemical analysis.
- Immediately placed the groundwater samples into a cooler with ice.
- Containerized all decontamination and purge water for future disposal.

¹ Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, prepared by EPA, dated September 19, 2017.

• Transported the groundwater samples following chain-of-custody protocol to Apex Laboratories of Tigard, Oregon and Pace Analytical of Mount Juliet, Tennessee for analysis of selected VOCs by EPA Method 8260C.

The groundwater monitoring well elevation data obtained by SEC is presented on Table 1. The groundwater elevations and inferred groundwater flow directions related to sampling events conducted between April 2016 to September 2018 are illustrated on Figure 5. It should be noted that a March 2016 event was not included in this figure, as it is our professional opinion that the MW-1 elevation data collected by AEG in March 2016 appears erroneous.

2.3.2.3. SOIL GAS/VAPOR SAMPLING

Between November 2017 and August 2018, SEC collected vapor (sub-slab soil gas) samples at the project site. The purpose of this sampling effort was to characterize vapor conditions at the project site. Vapor sampling activities conducted by SEC are chronologically discussed below:

- In November 2017, SEC advanced nine borings (SV-1 through SV-9) through the concrete floor slab beneath the project site to collect sub-slab vapor samples. The borings were advanced to a depth of approximately 0.5 feet below concrete surface using equipment that is owned and operated by SEC. SEC collected one sub-slab vapor sample from each of the nine borings from sampling systems consisting of laboratory provided 1-liter Summa™ canisters with in-line filters (0.7 micron) and flow controllers (less than 200 milliliters per minute), which were connected to decontaminated stainless-steel soil-gas sampling probes via Teflon™ tubing. SEC sealed the annular space between the soil vapor sampling probe and the boring sidewall with bentonite and cement grout (as appropriate) to minimize ambient air migration into the vapor sampling zone. Stainless steel Swagelok™ fittings were used to create a reasonably closed system. For each sample, the sampling train was slowly purged using a photoionization detector and a leak-check system was installed at each location. Specifically, isopropyl alcohol (2-propanol) was applied to the exteriors of the sample train fittings to verify that the sampling train was reasonably airtight. 2-propanol was not detected in any of the samples at concentrations greater than one percent, indicating that leakage of ambient air did not occur during sample collection. After purging each sample train and waiting at least 30 minutes (equilibration time), each sample was collected.
- In February 2018, SEC advanced one boring (SV-10) through the concrete floor slab beneath the project site to collect a sub-slab vapor sample. The sample was collected following the above-described November 2017 protocol. It should be noted that sub-slab ventilation fans (Fan-1 and Fan-2) were deactivated one week before collecting this sample. Similar to November 2017, the tracer gas (2-propanol) was not detected in the sample, indicating that leakage of ambient air did not occur during sample collection.
- In August 2018, SEC advanced one boring (SV-10) proximate to the February 2018 sample location following the above-described November 2017 protocol. It should be noted that sub-slab ventilation fans (Fan-1 and Fan-2) were deactivated one week before collecting this sample. Similar to November 2017 and February 2018, the tracer gas (2-propanol) was not detected in the sample, indicating that leakage of ambient air did not occur during sample collection.

The approximate sample locations are presented on Figures 2 and 3. The samples were shipped to ESC Lab Sciences of Mt. Juliet, Tennessee (ESC), under general chain-of-custody protocols for analysis of HVOCs and 2-propanol by U.S. Environmental Protection Agency (EPA) Method TO-15.

2.3.2.4. AMBIENT AND BACKGROUND AIR SAMPLING

Between February and August 2018, SEC collected indoor and outdoor (background) air samples at the project site. The purpose of this sampling effort was to characterize ambient air conditions at the project site. Vapor sampling activities conducted by SEC are chronologically discussed below:

- In February 2018, SEC collected three indoor air samples (IA-1 through IA-3) and two ambient (outdoor) air samples BG-1 and BG-2.
- In May 2018, SEC collected one indoor air sample (IA-1) and one ambient (outdoor) air sample BG-1.
- In August 2018, SEC collected one indoor air sample (IA-2) and one ambient (outdoor) air sample BG-2.

The approximate sample locations are shown on Figures 2 and 3. All air samples were collected from the breathing zone (approximately four to five feet above the ground surface) using laboratory-provided 6-liter summa sample containers and 8-hour flow controllers. Following sample collection, these samples were shipped to ESC Lab Sciences of Mt. Juliet, Tennessee under general chain-of-custody protocols for analysis of HVOCs by EPA Method TO-15.

2.3.3. SITE GEOLOGY

The project site is located within the Puget Sound Lowland, an elongated basin extending from the Fraser River valley in British Columbia to just north of Chehalis, Washington. This structural basin is bounded by the Cascade Range to the east and the Olympic Mountains to the west. Bedrock exposures in the lowland are scarce except along the margins due to repeated Pleistocene glaciation. The most recent glaciation was the Vashon Stade of the Fraser Glaciation, which occurred approximately 15,000 to 12,000 years ago (Booth, 1994). A variety of deposits were formed during advance and retreat of the ice sheet during this glaciation.

Geologic maps indicate that the project site is underlain by glacial drift of the Vashon Stade, primarily consisting of stratified outwash sand and gravel with some glacial till (Walsh, 1987). The outwash sand and gravel were deposited as the glaciers receded out of the Puget Sound area and appear to be hundreds of feet thick in the project site vicinity, based on our review of nearby groundwater monitoring well logs (SEC 2018).

The soil encountered in the explorations conducted by SEC (Section 2.2.2.1) was visually classified in general accordance with ASTM D 2488. Soil conditions observed by SEC generally consisted of varying gravel fill material with underlying native of sand and gravel observed to depths of up to 30 feet BGS. Based on our observations, cross sections illustrating subsurface conditions beneath the project site are presented on Figure 4.

2.3.4. SITE HYDROGEOLOGY

Groundwater was measured in project site monitoring wells by SEC at depths ranging between approximately 6.0 and 13.0 feet BGS. The groundwater level measurements taken by AEG (AEG 2016) from monitoring wells MW-2, MW-3, and MW-4 are consistent with the measurements taken by SEC.

Based on our review of the November 2017, February 2018, and May 2018 groundwater elevation data obtained by SEC, groundwater beneath the subject site appears to be flowing in a south-

southwesterly direction with a vertical gradient ranging between approximately 0.01 (February 2018) to 0.0004 (November 2017). The groundwater elevation data obtained by SEC is presented on Table 1 and Figure 5.

There are no surface water bodies at the project site. Based on the layout of the project site, stormwater would only be expected to infiltrate the ground surface in exterior unpaved eastern portion of the project site, where COPCs have not been identified.

2.4. SAMPLING/ANALYTICAL RESULTS

2.4.1. QUALITY ANALYSES

SEC strives to ensure that the quality of our data meets the necessary data quality objectives. The following sections summarize the field and laboratory QA/QC procedures that were conducted during this project.

2.4.1.1. FIELD QUALITY ASSURANCE

SEC's field quality assurance program consisted of the following:

- Chain-Of-Custody procedures
- Collection and analysis of field duplicate samples
- Maintenance of chain-of-custody documentation

Chain-of-custody procedures were followed during handling and transport of samples to the analytical laboratory.

Field duplicates consist of two samples collected sequentially from one sample location to assess data variability. Field duplicate groundwater samples were collected at frequency of 13 percent of the total number of samples submitted for each analysis.

All samples were collected via clean single-use disposal materials. Accordingly, there was no need to evaluate the adequacy of the equipment decontamination procedures or the possibility of cross-contamination caused by decontamination of sampling equipment. Further, the consistence of chemical analytical results (discussed below) indicates that no cross-contamination occurred. Regardless, two equipment blank samples were collected from clean tubing and analyzed, and one trip blank was analyzed during this investigation.

2.4.1.2. LABORATORY QUALITY ASSURANCE

Apex Laboratories, LLC of Tigard, Oregon and ESC Lab Sciences (currently Pace Analytical), of Mt. Juliet, Tennessee maintain an internal QA program that is documented in each laboratory report. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries, and blank spike duplicate recoveries to evaluate the chemical analytical results. Acceptability or control limits for analysis are statistically derived by the laboratory in accordance with EPA guidelines.

SEC reviewed the attached analytical data reports for data quality exceptions and deviations from acceptable method performance criteria. Based on SEC's review of the laboratory chemical analytical data (Appendix B), SEC did not identify hold time, internal QA, or laboratory naming

discrepancies and the reporting limits provided by the lab were sufficient to make comparisons to corresponding cleanup and cleanup and screening levels for the COPCs identified. Based on our review of the analytical reports, the analytical data appear acceptable for their intended use.

2.4.2. RESULTS

The chemical analytical results obtained by SEC and AEG are presented in Tables 2 through 5. The chemical analytical laboratory reports and chain-of-custody documentation associated with SEC's investigation are provided in Appendix B.

2.4.2.1. GROUNDWATER CHEMICAL ANALTYICAL RESULTS

Groundwater samples² collected from the project site were analyzed for the selected VOCs by EPA Method 8260C. With the exception of AEG's March 2016 sampling event (when elevated PCE was detected proximate to MW-3), VOCs were either not detected at concentrations greater than laboratory reported detection limits (RDLs), or were detected at concentrations less than corresponding MTCA Method A Cleanup Levels. Based on the results of groundwater monitoring at the project site, the low-level impacts identified by others (AEG 2016) do not appear to have adversely affected groundwater beneath the project site. The groundwater chemical analytical results are shown on Table 2.

2.4.2.2. SOIL CHEMICAL ANALTYICAL RESULTS

Soil samples³ collected throughout the project site were analyzed for the selected VOCs by EPA Method 8260C. VOCs were either not detected at concentrations greater than laboratory reported detection limits (RDLs) or were detected at concentrations less than the site-specific cleanup level discussed in Section 4.3. These results indicate that the area of impact identified by others (AEG 2016) has been delineated vertically and horizontally and low-level soil impacts appear to be limited to a small shallow area of the site located near the former dry-cleaning machines. The soil chemical analytical results are presented on Table 3.

2.4.2.3. SOIL GAS/VAPOR CHEMICAL ANALTYICAL RESULTS

Sub slab vapor samples SV-1 through SV-10 were analyzed for HVOCs and 2-propanol by EPA Method TO-15. VOCs were not detected in the sub-slab vapor samples collected at the project site at concentrations greater than the corresponding site-specific cleanup level discussed in Section 4.5. Although PCE was detected in samples collected near the former dry-cleaning machine, this low-level area of impact appears limited to this area and indoor air samples collected in this area (Section 2.3.2.4) indicate no risk to site occupants. The corresponding chemical analytical results are presented in Table 4.

² MW-1, MW-2, MW-3, MW-3D, and MW-4

³ HA-1(2.0-3.0), DP-2 (6.0-8.0), DP-2 (11.0-13.0), DP-2(15.0-17.0), DP-3 (5.0-7,0), DP-3 (12.0-14.0), DP-3 (23.0-25.0), DP-4 (1.0-3.0), DP-4 (12.0-14.0), DP-4 (23.0-25.0), DP-5 (17.0-19.0), DP-5 (23.0-25.0), DP-6 (17.0-19.0), DP-6 (23.0-25.0), DP-7 (11.0-13.0), DP-7 (22.0-24.0), DP-8 (14.0-15.0), DP-8 (18.0-20.0), and DP-9 (24.0-26.0)

2.4.2.4. AMBIENT AIR CHEMICAL ANALTYICAL RESULTS

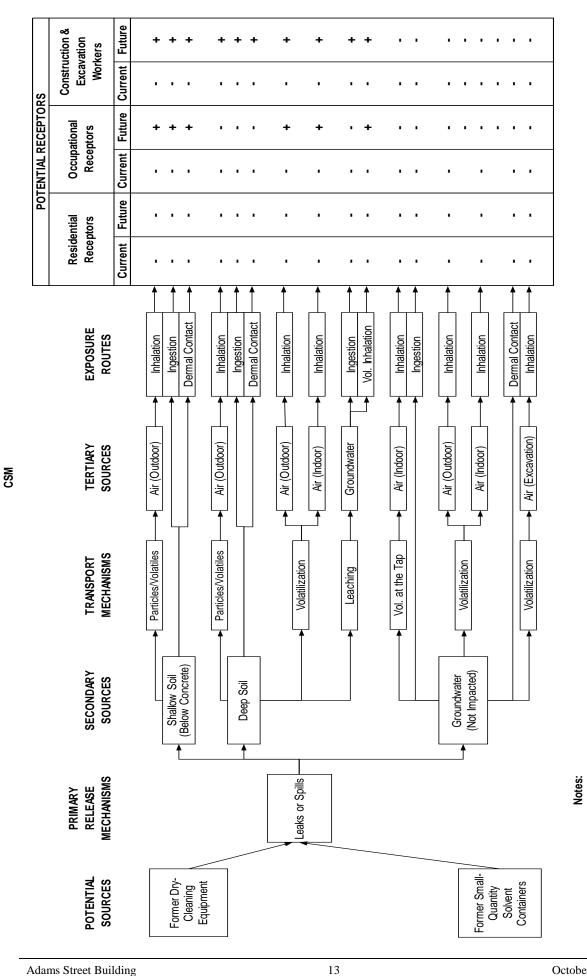
Ambient air samples IA-1, IA-2, IA-3, BG-1 and BG-2 were analyzed for HVOCs by EPA Method TO-15. VOCs were either not detected at concentrations greater than laboratory reported detection limits (RDLs) or were detected at concentrations less than corresponding MTCA Method C (Industrial Air) Cleanup Levels. Based on the low concentrations of PCE detected in the indoor air samples, the chemical analytical results indicate a low risk of an adverse vapor intrusion condition at the project site. The chemical analytical results are presented on Table 5.

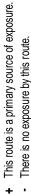
3. CONCEPTUAL SITE MODEL

The purpose of a CSM is to describe (1) sources of contamination, (2) pathways for contaminant transport, and (3) potential receptors of contamination at the project site. The parameters that were considered by SEC during development of this CSM are summarized as follows:

- 1. **Potential source of contamination:** Between 2015 and 2016, PCE was identified in soil and groundwater at concentrations slightly exceeding MTCA Method A cleanup levels. The results of subsequent groundwater monitoring indicate that groundwater at the project site is no longer impacted by PCE at concentrations greater than the MTCA Method A cleanup level. Although, there is not documentation of leaks or spills, potential releases from the former dry-cleaning machines or small-quantity PCE containers are the likely source of PCE in soil.
- 2. **Fate and transport:** A small pocket of residual PCE-impacted soil is situated beneath a concrete floor slab near the former dry-cleaning machines at the project site. Based on our knowledge of subsurface conditions at the project site, the primary pathways for contaminant transport would be the migration of vapors, direct contact of impacted soil with human receptors, and leaching to groundwater.
- 3. **Receptors:** Based on our understanding that (1) the project site and all surrounding properties are developed for industrial uses, (2) the low-level impacted soil at the project site is (and will be) covered by the concrete floor slab underlying the project site structure, and (3) groundwater is not currently impacted by PCE at a concentration greater than the MTCA Method A cleanup level, the only human health receptors would be exposed to soil at the project site would be site workers.

SEC evaluated project site conditions with respect to Ecology's requirement for a terrestrial ecological evaluation (TEE) pursuant to MTCA (WAC 173-340) to evaluate whether PCE identified at the project site presents an adverse risk to ecological receptors in the project site vicinity. Based on our findings (SEC 2018), since none of the compounds identified at the project site are listed as priority contaminants of ecological concern (listed in WAC-173-340-900; Table 749-2), no further terrestrial ecological evaluation is warranted. The results of our conceptual site model are tabulated as follows:





Remedial Investigation

4. PROPOSED CLEANUP STANDARDS

Cleanup standards were established in accordance with WAC 173-340-700. The cleanup standards proposed for the project site are determined based on potential risks to human health and the environment.

4.1. CONTAMINANT-SPECIFIC STANDARDS

PCE and chloroform were detected at the project site in soil, vapor, and/or groundwater at concentrations greater than laboratory reporting limits. Although chloroform was detected in one groundwater well sample collected from monitoring well MW-1 at a concentration greater than the corresponding Method B (cancer) cleanup level, it should be noted that chloroform was not detected in subsequent groundwater well samples collected from MW-1 (or any other well) at concentrations exceeding any established MTCA cleanup levels.

Pursuant to WAC 173-340-703, we believe that the data presented herein is sufficient to demonstrate that chloroform, which does not appear to contribute to the overall threat to human health and the environment, can be eliminated from consideration as a COC. Based on the foregoing, PCE has been selected as the indicator hazardous substance at the project site.

4.2. GROUNDWATER CLEANUP STANDARDS

The project site is located in an area that is utilized for potable groundwater. Based on its location, it is our professional opinion that MTCA Method A cleanup levels for groundwater can be used for comparison of the chemical analytical results, as they are consistent with current drinking water standards. PCE was not detected in groundwater during monitoring activities conducted in 2017 or 2018 at concentrations greater than the applicable cleanup standard of **5 mg/L**. Based on the foregoing, it is our professional opinion that groundwater at the project site is protective of human health and the environment.

4.3. SOIL CLEANUP STANDARDS

Based on the industrial use of the project site and the findings of the site-specific CSM, the only reasonable exposure pathways that are considered for the project site are (1) inhalation or ingestion by future site workers and (2) the leaching to groundwater pathway. The maximum detected concentration of PCE in soil [0.74 mg/kg] is significantly less than the corresponding Method B and Method C cleanup levels related to the soil ingestion pathway [476 mg/kg and 21,000 mg/kg, respectively (Ecology 2012)].

The MTCA Method A industrial cleanup level for PCE was established to be theoretically protective of groundwater via the leaching pathway (Ecology 2012). Although the maximum concentration of PCE historically detected in soil at the project site [0.74 mg/kg (AEG 2016)] is greater than the MTCA Method A cleanup level for PCE (0.05 mg/kg), it can be empirically demonstrated that the measured soil concentrations do not, and will not likely, cause an exceedance of the groundwater cleanup level. Pursuant to WAC 173-340-747, SEC has empirically derived soil concentrations for groundwater protection, based on the following:

• PCE concentrations detected at the project site during 2017 and 2018 groundwater monitoring activities are less than the corresponding MTCA Method A cleanup level.



- The former dry-cleaning machines and all associated products (the presumed source of the historical release) were removed from the project site in 2015. Based on the relatively small area of soil that was impacted by PCE and the apparent age of the release, it is our professional opinion that sufficient time that has elapsed since the release occurred to conclude that the concentrations of PCE historically detected in soil will not cause an exceedance of the MTCA Method A groundwater cleanup level at any time in the future.
- Current characteristics of the site [shallow depth to groundwater, presence of permeable (sands and gravel, and the relatively small mass of PCE (based on the low concentrations detected)] are representative of worst-case future site conditions.
- Changes to land use at the project site are not anticipated in the foreseeable future.

Based on (1) the results of historical research, (2) the high-quality groundwater monitoring data obtained, which shows that PCE is not present at concentrations greater than the MTCA Method A cleanup level, (3) our understanding that sufficient time has elapsed for contamination to have migrated from soil to groundwater, (4) the use of reasonable conservative assumptions presented herein, and (5) our understanding that groundwater concentrations will not likely exceed the cleanup levels in the future, SEC has selected the highest measured soil concentration as the site-specific cleanup level for PCE.

It is our professional opinion that the burden of proof has been met to utilize a value of **0.74 mg/kg** (the highest detected concentration of PCE in soil at the project site) as the site-specific cleanup level for PCE as protective of the soil leaching to groundwater pathway. Based on the foregoing, it is our professional opinion that the residual presence of PCE in soil is protective of human health and the environment.

4.4. CLEANUP STANDARDS FOR INDOOR AND AMBIENT AIR

WAC 173-340-750 provides Method C industrial air cleanup levels. Industrial air cleanup levels are applicable for facilities that are located on industrial land (per WAC 173-340-200 and 173-340-745), when potential receptors are industrial workers. The project site and surrounding properties are used for industrial purposes. Based on the foregoing, it is our professional opinion that MTCA Method C cleanup levels for indoor and ambient air [MTCA Method C (cancer and non cancer)] should be used for comparison of the chemical analytical results, as they have been established as protective of human health.

No VOCs were detected in indoor or ambient air at concentrations greater than the applicable cleanup standards during this investigation. Based on the results of sampling activities performed by SEC, it is our professional opinion that indoor or ambient at the project site is protective of human health and the environment.

4.5. CLEANUP STANDARDS FOR SOIL GAS

With the exception of PCE, no VOCs were detected in soil gas at concentrations greater than draft MTCA Method B screening levels at the project site. Although MTCA regulations do not contain specific requirements for calculating or achieving soil vapor cleanup standards, SEC understands that industrial cleanup standards for VOCs in soil gas can be established on a site-specific basis using the Johnson and Ettinger Vapor Intrusion Model (JEM).

SEC calculated a site-specific soil gas screening level for PCE. Specifically, SEC utilized JEM to calculate a *soil gas to indoor air attenuation coefficient* of **0.0030** for PCE based on site-specific building dimensions, the highest-detected concentration of PCE, and otherwise generic values provided by EPA in the JEM model. The most stringent industrial indoor air cleanup level [MTCA Method C Screening Level (cancer) of **40 µg/m**³] was then divided by the JEM-derived attenuation coefficient to obtain a site-specific industrial soil gas cleanup standard of **13,333 µg/m**³ for PCE. A copy of the worksheet used by SEC is provided in Appendix C

Based on the results of sampling activities performed by SEC and others, it is our professional opinion that the detected concentrations of VOCs in soil gas at the project site are protective of human health and the environment.

5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1. SUMMARY AND CONCLUSIONS

This Remedial Investigation Report has been prepared for the Adams Street Building site located at 6707-6709 S Adams Street in Tacoma, Washington. A formal wear business with two closed-loop dry-cleaning machines and associated small-quantity materials were historically located on the project site between 1999 and 2015.

In 2016 Ecology opened the current cleanup file for the project site following the identification of residual PCE in soil, groundwater, and vapor samples collected proximate to the former dry-cleaning machines.

Between 2016 and 2018, the magnitude and extent of PCE impact was evaluated and a CSM was developed in accordance with MTCA. Based on the findings of this RI, it is our professional opinion that sufficient data has been obtained to demonstrate the following:

- Groundwater conditions at the project site meets corresponding cleanup standards and are considered protective of human health and the environment.
- The residual presence of PCE in soil meets corresponding cleanup standards and is considered protective of human health and the environment.
- Indoor or ambient at the project site meets corresponding cleanup standards and is considered protective of human health and the environment.

5.2. RECOMMENDATIONS

After Ecology has completed its review of this report, we respectively request an opinion on the completed actions. In our professional opinion, the data presented in this report may warrant an opinion of "No Further Action" for the project site.

6. REFERENCES

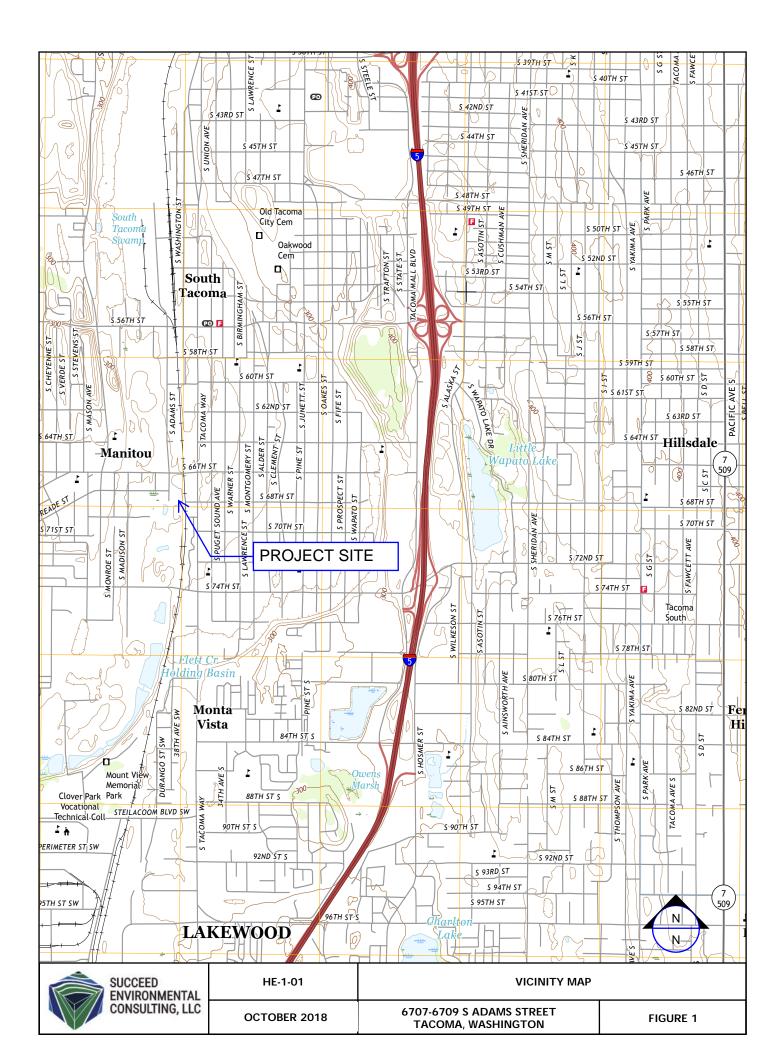
 Walsh, Timothy J., compiler, 1987, Geologic Map of the South Half of the Tacoma Quadrangle, Washington. Washington Division of Geology and Earth Resources, Open File Report 87-3, text 12 p., 1 plate, scale 1:100,000.

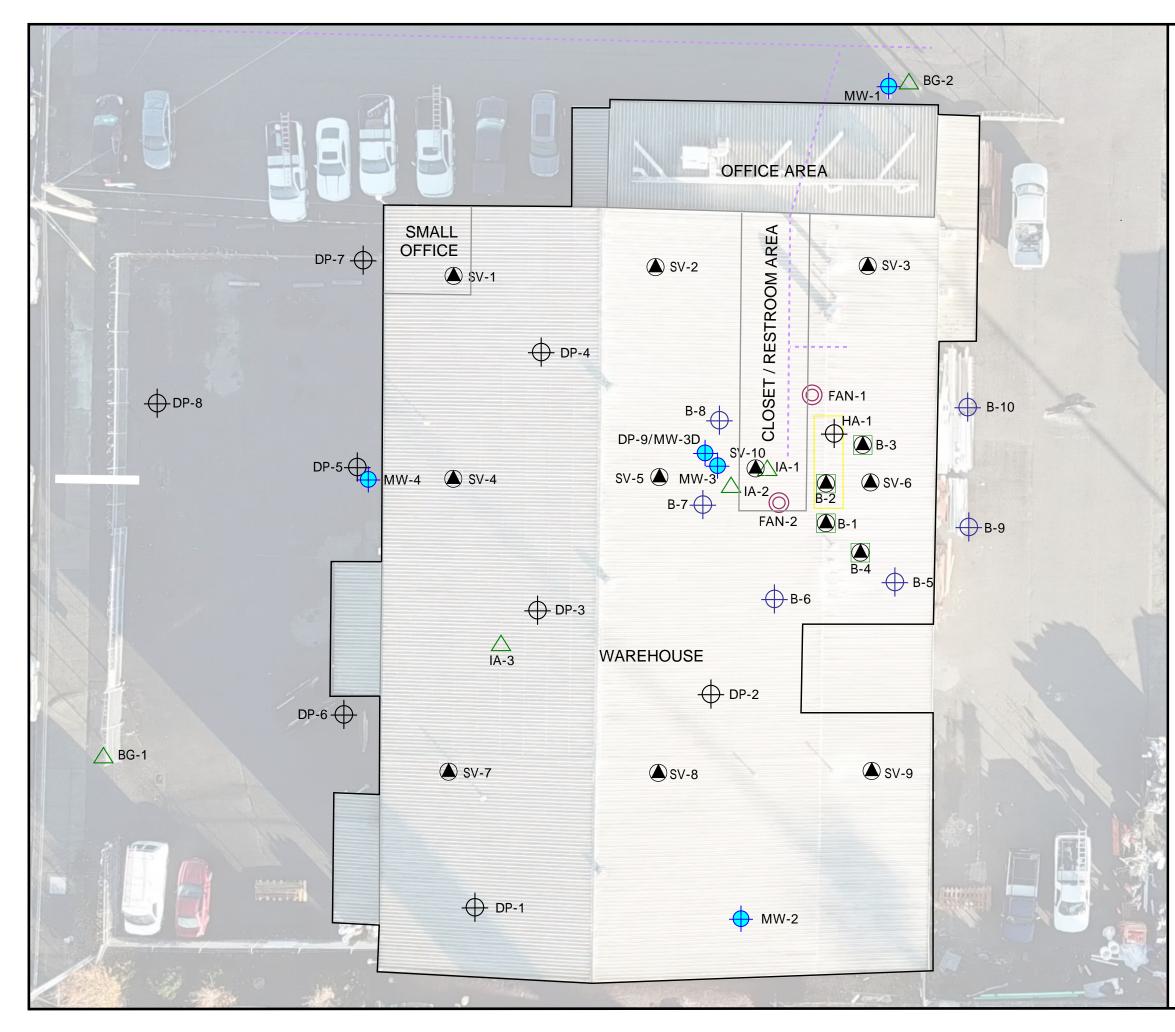


- Booth, Derek B., 1994, Glaciofluvial infilling and scour of the Puget Lowland, Washington, during ice-sheet glaciation. Geology, v. 22, n. 8, pp. 695-698.
- Lombard, S. and C. Kirchmer, 2004. *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*. Washington State Department of Ecology, Olympia, Washington. 48 pages + appendices. Publication No. 04-03-030. http://www.ecy.wa.gov/biblio/0403030.html
- Ecology 2011 (rev). Guidance for Remediation of Petroleum Contaminated Sites.
 Washington State Department of Ecology, Olympia, Washington. 197 pages. Publication No. 10-09-057.
- Ecology, 2012. *Trichloroethylene Toxicity Information and MTCA Cleanup Levels*. <u>https://fortress.wa.gov/ecy/clarc/FocusSheets/CLARC%20guidance%20TCE%20PCE.pdf</u>
- Ecology 2013 (rev). *Model Toxics Control Act Regulation and Statute*. Washington State Department of Ecology, Olympia, Washington. 324 pages. Publication No. 94-06. http://www.ecy.wa.gov/biblio/9406.html
- AEG 2016. *Subsurface Investigation Report; Conducted on: Adams Street Building; 6707 S Adams Street; Tacoma, Washington 98409*, dated April 28, 2016.
- Ecology, 2016a. Frequently Asked Questions (FAQ's) Regarding Empirical Demonstrations and Related Issues (DRAFT Implementation Memorandum No. 15). Washington State Department of Ecology, Olympia, WA. 42 pages. Publication No. 16-09-047. https://fortress.wa.gov/ecy/publications/SummaryPages/1609047.html
- Ecology 2016b. Letter Re: Further Action at the following Site:; Site Name: Adams Street Building; Site Address:; 6707 S Adams Street, Tacoma, Washington 98409 Pierce Co.; Facility/Site No.: SW 1530, dated December 14, 2016
- U.S. EPA Region I, 2017. Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater samples from Monitoring Wells, EQASOP-GW 001, Revised September 2017.
- SEC 2018. Supplemental Data Report and Investigative Work Plan; 6707-6709 S Adams Street; Tacoma, Washington; Cleanup Site I.D. 13051, dated January 11, 2018
- Ecology, 2018 (rev). DRAFT Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, dated October 2009, revised February 2016 and April 2018.

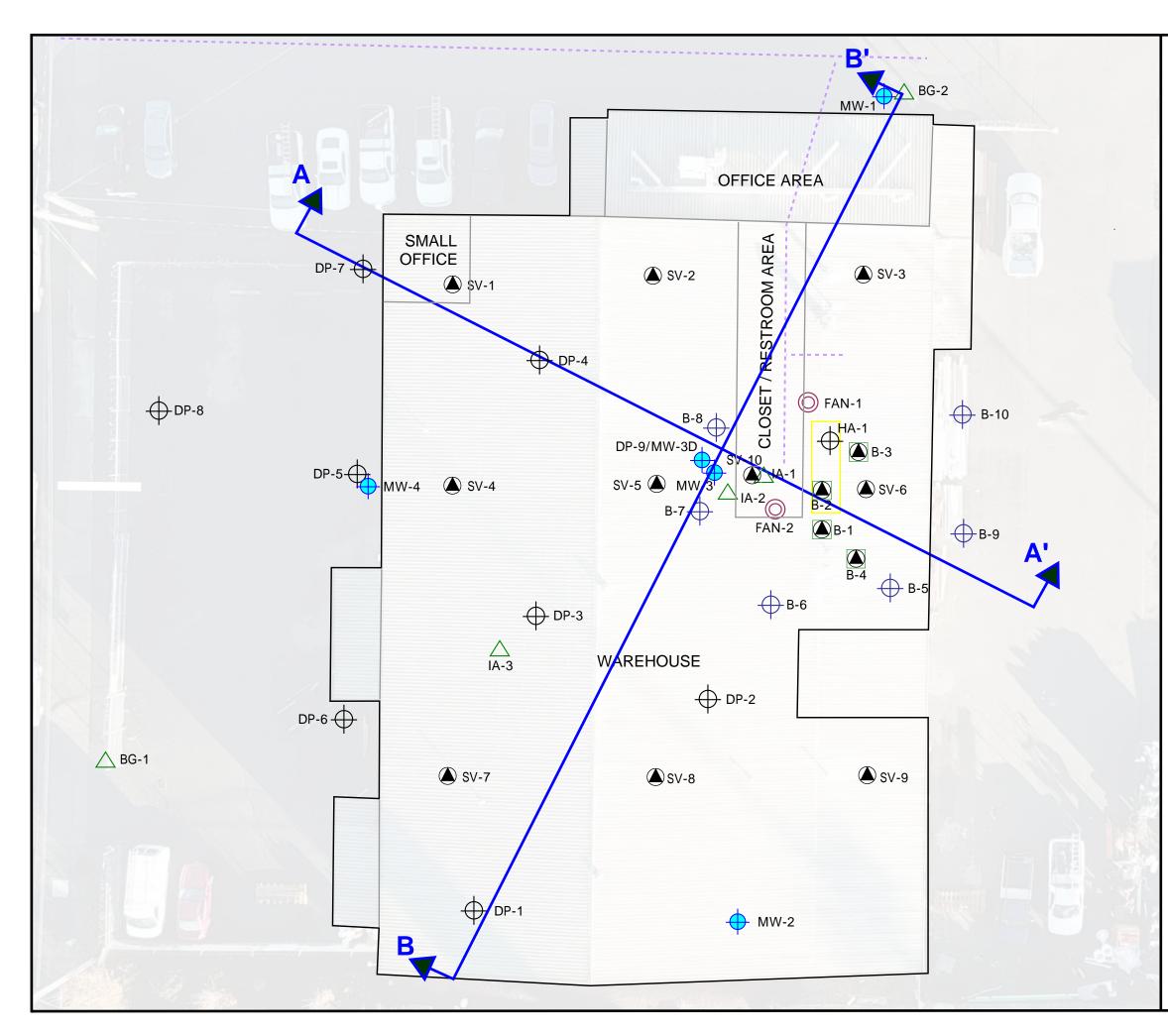


FIGURES

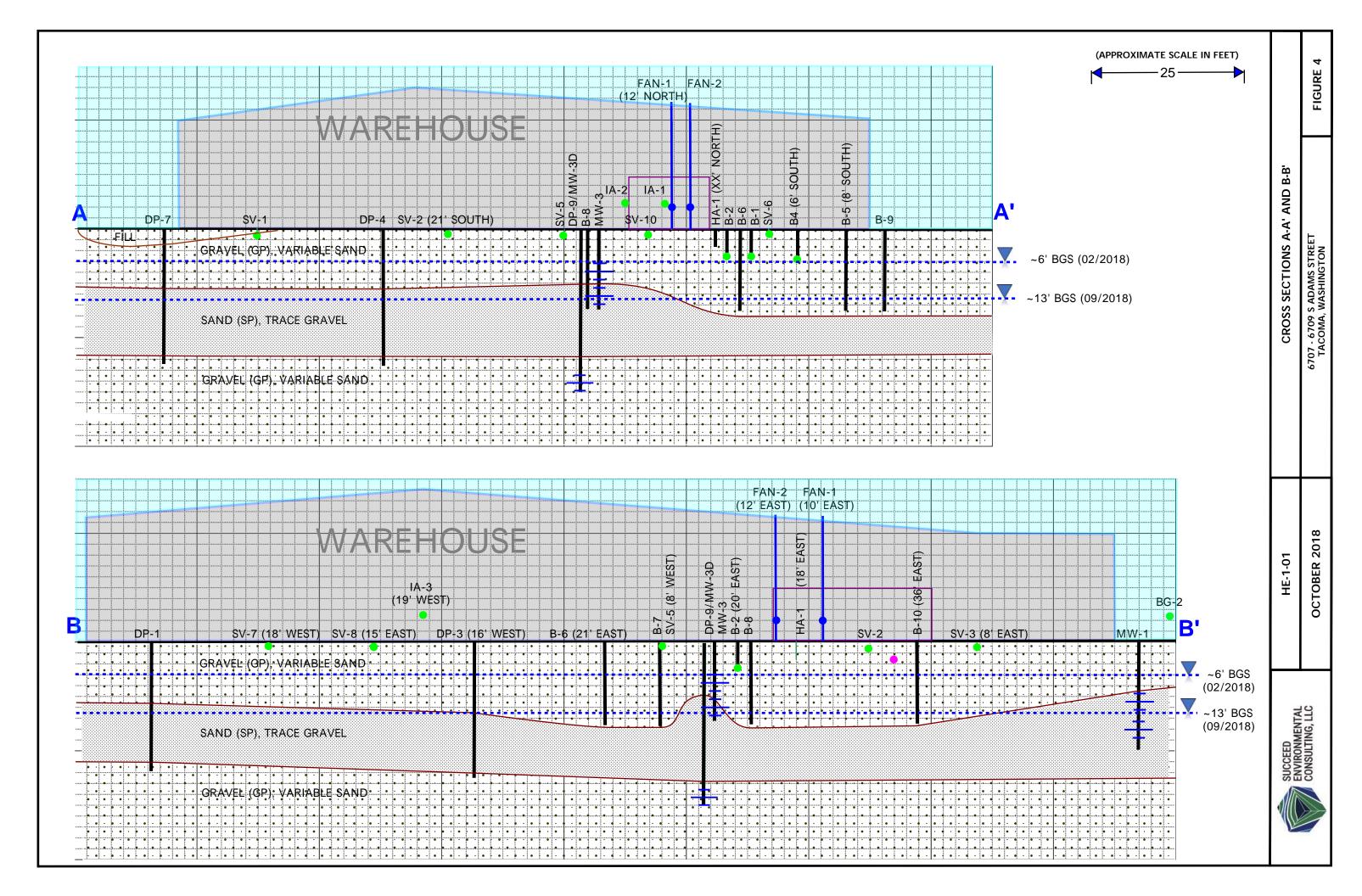


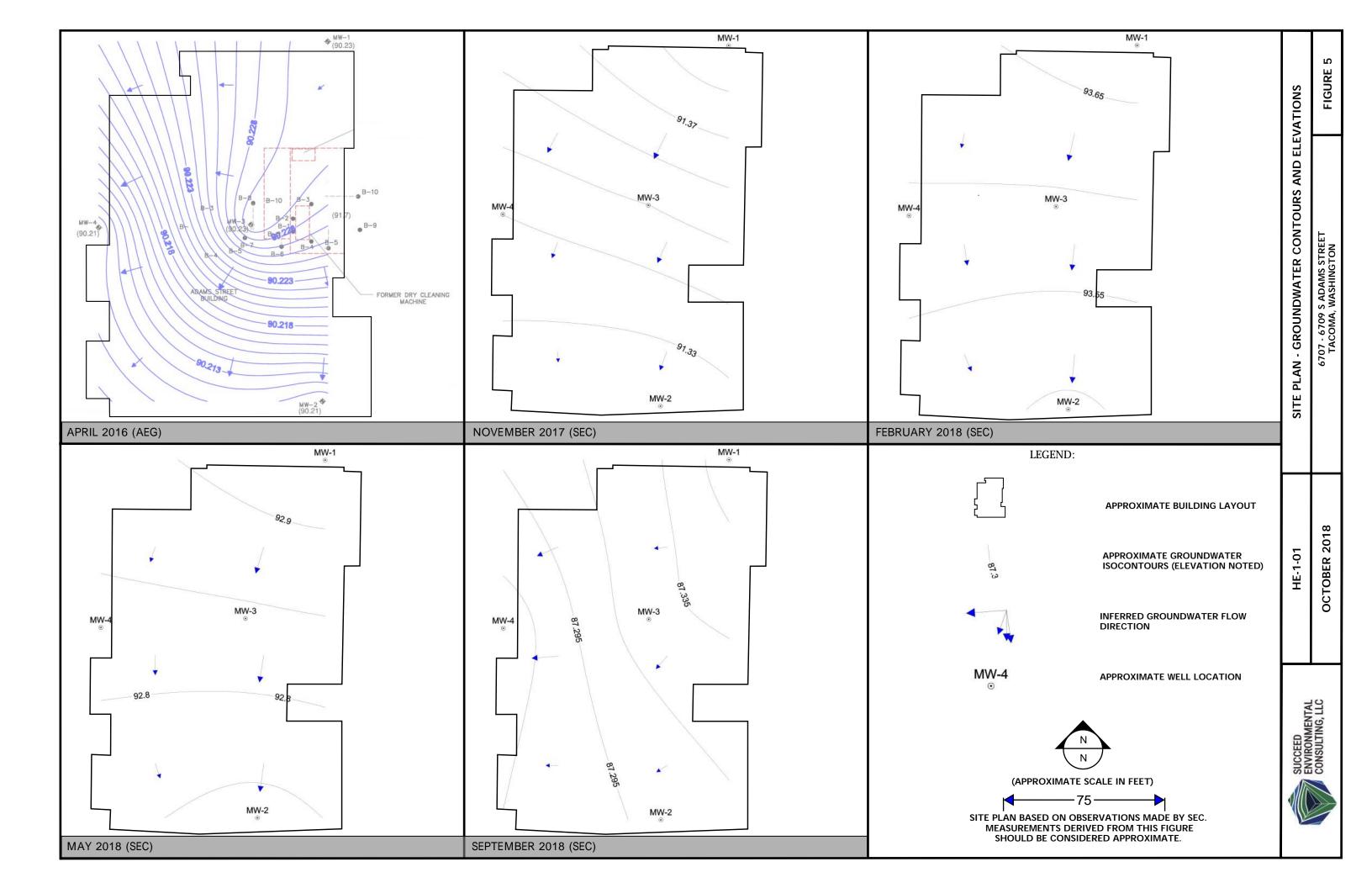


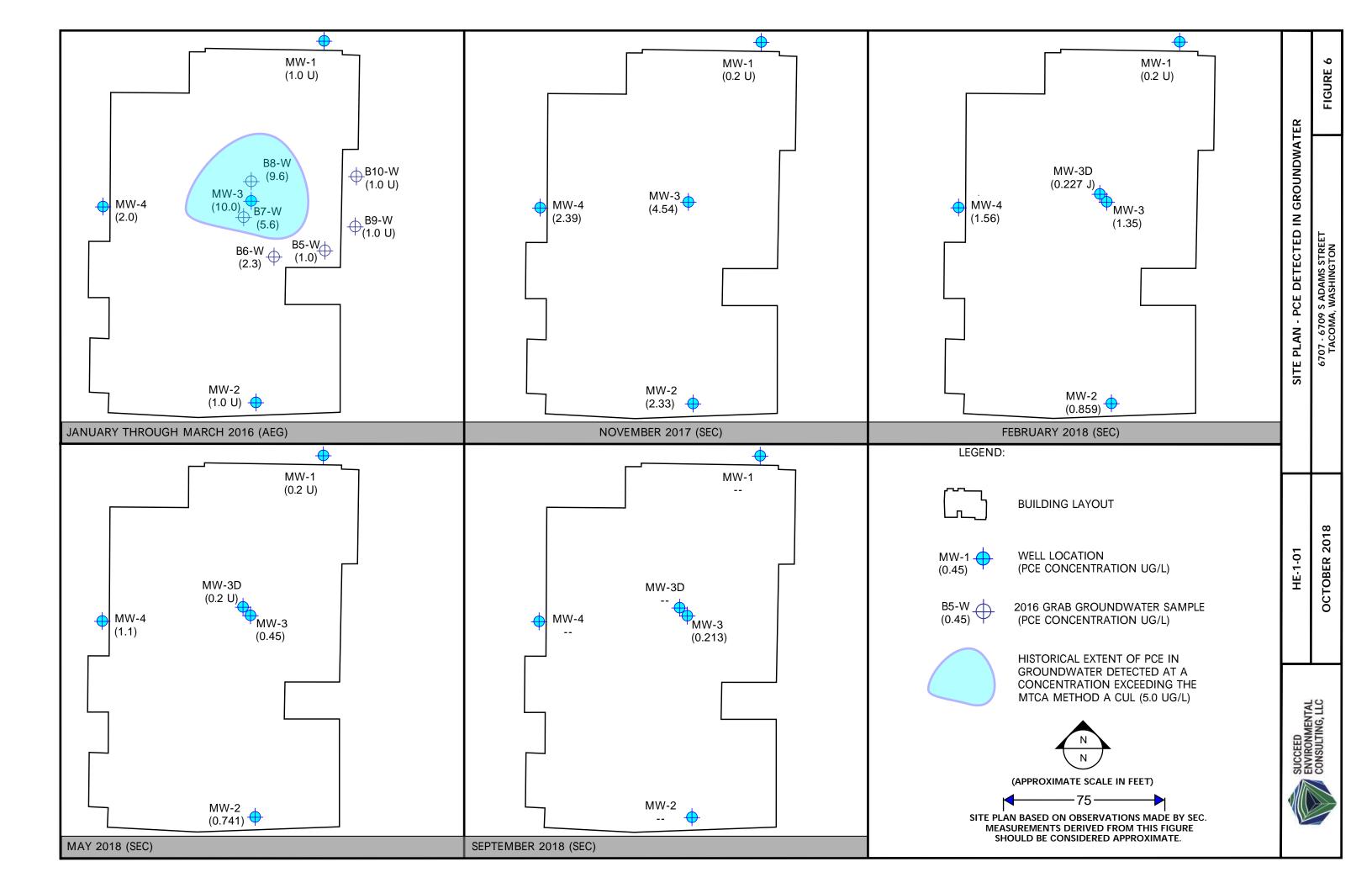
LEGEND	<u>:</u>		2
	BUILDING LAYOUT		FIGURE 2
MW-1 🔶	WELL LOCATION		
B-5 ↔	BORING LOCATION (AEG 2016)	SITE PLAN - OVERALL LAYOUI	
DP-1 🔶	BORING LOCATION (SEC 2018)	I - OVER/	MS STREET
B-1	SOIL GAS SAMPLE LOCATION (AEG 2016)	SITE PLAN	6707 - 6709 S ADAMS STREET TACOMA, WASHINGTON
SV-1 🌢	SOIL GAS SAMPLE LOCATION (SEC 2017-2018)	0,	6707 - TAC
IA-1 BG-1 △	AIR SAMPLE LOCATION (SEC 2018)		
FAN-1 🔘	IRAM FAN LOCATION (SEC 2017-2018)		
	LOCATION OF FORMER DRY- CLEANING OPERATION		018
	SANITARY SEWER LOCATION	HE-1-01	OCTOBER 2018
(APF SITE PLAN BA MEASUREI SHOULE	SUCCEED ENVIRONMENTAL	CONSULTING, LLC	

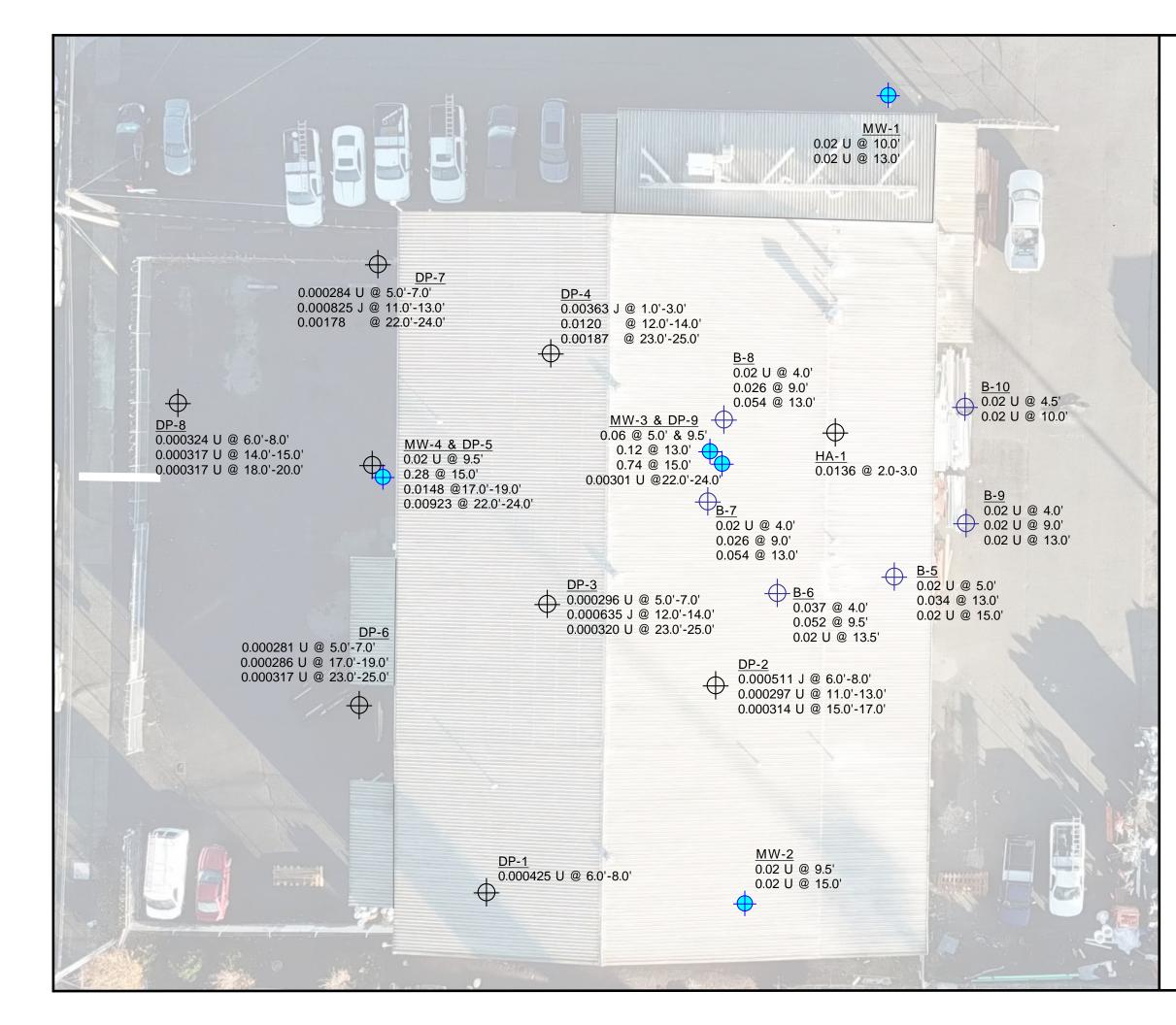


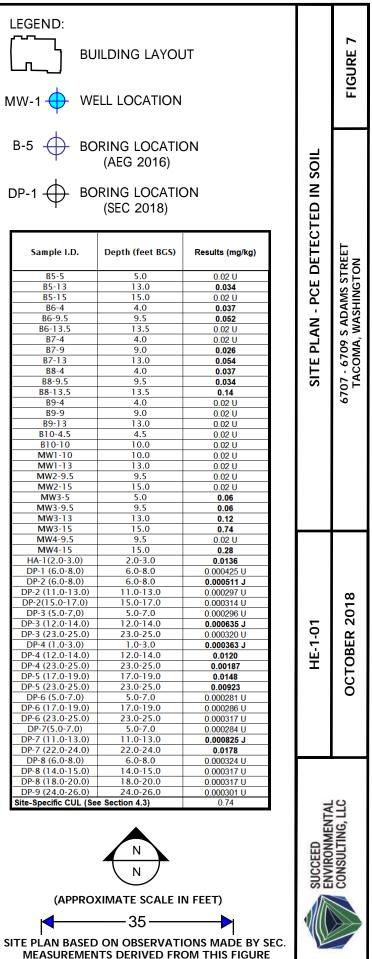
LEGEND			3
	BUILDING LAYOUT		FIGURE 3
MW-1 🔶	WELL LOCATION	Ŀ	
B-5 🔶	BORING LOCATION (AEG 2016)	SITE PLAN - OVERALL LAYOU	L
DP-1 🔶	BORING LOCATION (SEC 2018)	N - OVER/	AMS STREET HINGTON
B-1 🎑	SOIL GAS SAMPLE LOCATION (AEG 2016)	SITE PLAN	6707 - 6709 S ADAMS STREE TACOMA, WASHINGTON
SV-1 🌢	SOIL GAS SAMPLE LOCATION (SEC 2017-2018)	0,	6707 - TAC
IA-1 BG-1 △	AIR SAMPLE LOCATION (SEC 2018)		
FAN-1 🔘	IRAM FAN LOCATION (SEC 2017-2018)		
	LOCATION OF FORMER DRY- CLEANING OPERATION		018
	SANITARY SEWER LOCATION	HE-1-01	OCTOBER 2018
A'	CROSS SECTION LINE (SEE FIGURE XXX.XXX)		0
(APF SITE PLAN BA MEASURE SHOULD	SUCCEED ENVIRONMENTAL	CONSULTING, LLC	



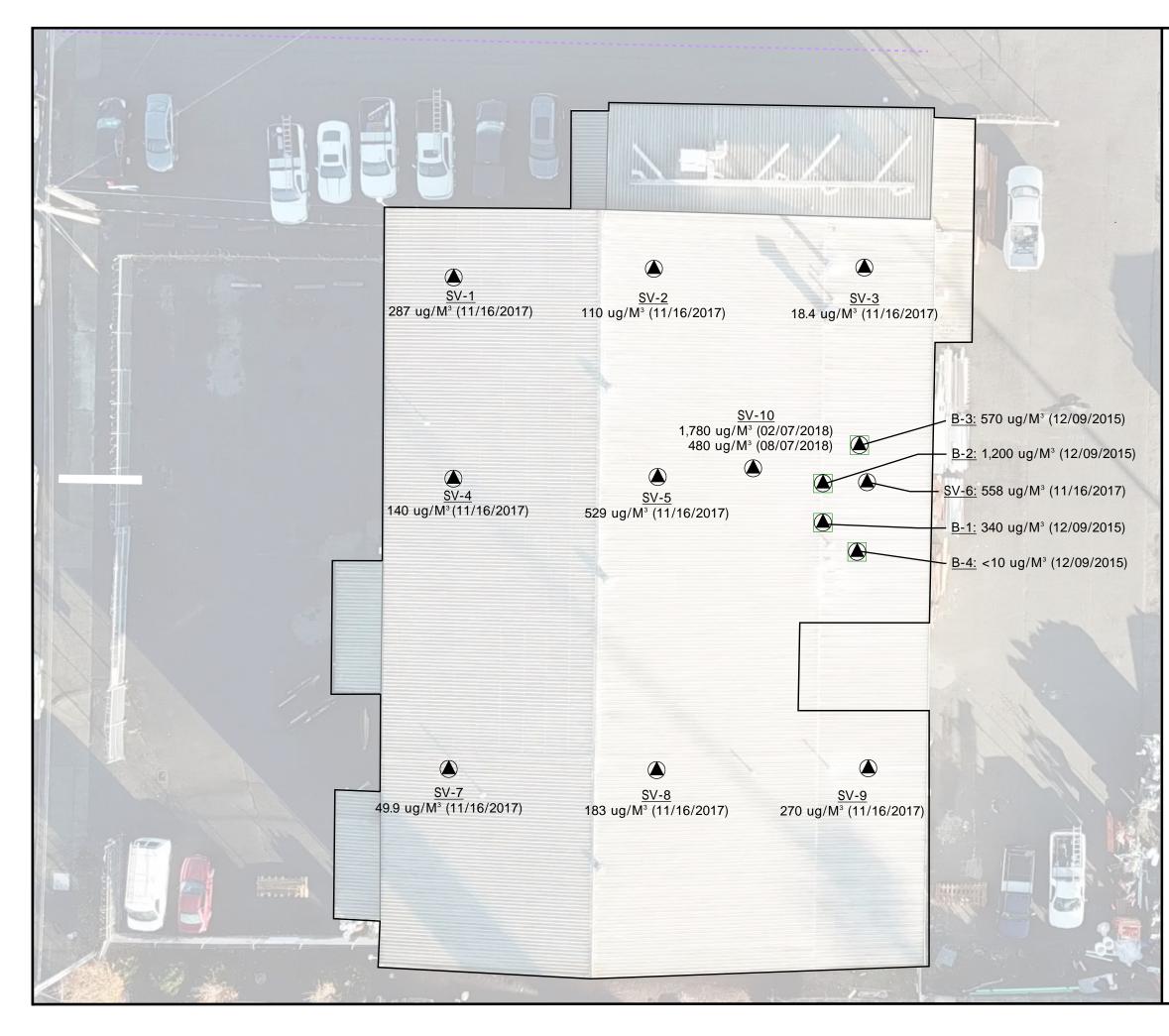








SHOULD BE CONSIDERED APPROXIMATE.



	ND:				
	Soil Gas Sample (Aeg 2016 Soil Gas Sample (Sec 2017-20	SITE PLAN - PCE DETECTED IN SOIL GAS	6707 - 6709 S ADAMS STREET TACOMA, WASHINGTON		
Sample I.D. B-1 B-2 B-3 B-4 SV-1 SV-2 SV-3 SV-4 SV-5 SV-6 SV-7 SV-8 SV-9 SV-10 Site-Specific C	Sample Date 12/09/15 12/09/15 12/09/15 12/09/15 11/16/17 11/16/17 11/16/17 11/16/17 11/16/17 11/16/17 11/16/17 11/16/17 11/16/17 02/07/18 08/07/18 UL (Section 4.5)	HE-1-01 SITE	OCTOBER 2018 6707 - 570		
(APPRO SITE PLAN BASED MEASUREMEN SHOULD BE	SUCCEED ENVIRONMENTAL	CONSULTING, LLC			



LEGEND:



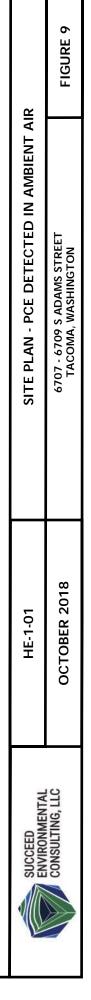
BUILDING LAYOUT

IA-1 \triangle BG-1

AIR SAMPLE LOCATION (SEC 2018)

Sample I.D.	Sample Date	Results (µg/m³)
IA-1	02/07/18	1.52
14-1	05/16/18	5.07
IA-2	02/07/18	0.477
14-2	08/07/18	0.359
IA-3	02/07/18	0.136 U
BG-1	02/07/18	0.136 U
DU-1	05/16/18	3.09
BG-2	02/07/18	0.136 U
00-2	08/07/18	0.238
MTCA Method	40	
MTCA Method	96.2	

(APPROXIMATE SCALE IN FEET) 35-





TABLES

TABLE 1 Summary of Groundwater Elevations and Purge Stabilization Parameters 6707 S Adams Street Tacoma, Washington								
				Depth to Water (Feet)	Groundwater Elevation	Hd	ORP (mV)	DO (mg/L)
Sample I.D.	Screened Interval (feet BGS)	Date	Time			Results		
			12:57	8.06	91.39			
		[17:10	8.06	91.39			
		11/10/10	17:15			6.50	13.2	6.0
		11/16/17	17:20			6.50	10.3	6.0
			17:25 17:30			6.50 6.50	11.6 12.0	6.0 6.0
			17:30			6.50	12.0	6.0
			9:55	5.77	93.68			
MW-1	9.0 - 19.0		10:24			6.70	12.8	6.0
10100-1	9.0 - 19.0	02/01/18	10:33			6.70	11.9	6.0
		02/01/18	10:40			6.60	11.8	6.0
			10:46			6.60	11.6	6.0
			10:51			6.60	11.7	6.0
		05/16/18	9:55	6.51	92.94			
			14:00 14:20			7.00 7.00		
			14:20			7.10		
		09/10/18	9:57	12.10	87.35			
			12:53	8.63	91.32			
			13:01	8.63	91.32			
			15:15			6.50	16.5	6.0
			15:25			6.50	18.8	6.0
		11/16/17	15:30			6.50	22.5	6.0
			15:35			6.50 6.50	27.2 34.0	6.0
			15:45			6.50 6.50	34.0 37.2	6.0 6.0
			15:55 16:05			6.50	28.0	6.0
			10:05	6.46	93.49			
MW-2	6.0 - 16.0		12:56			6.40	30.9	10.7
			13:03			6.30	30.7	9.9
		02/01/18	13:12			6.20	30.7	9.9
			13:21			6.30	30.6	9.9
			13:37			6.20	30.7	9.8
			13:50			6.20	30.7	9.7
			9:51	7.22	92.73	6.80		
		05/16/18	13:00 13:20			6.90		
			13:40			6.90		
		09/10/18	8:54	12.65	87.30			
			12:50	8.65	91.35			
			14:45	8.65	91.35			
MW-3	7.0 - 16.0	11/16/17	13:15			6.50	32.5	6.1
		,,	13:35			6.50	32.8	6.1
			13:45			6.50	33.7	6.1
			13:55			6.50	33.6	6.1

		Summary of	6	TABLE 1 Elevations and F 707 S Adams St acoma, Washin		on Parameters		
				Depth to Water (Feet)	Groundwater Elevation	H	ORP (mV)	DO (mg/L)
Sample I.D.	Screened Interval (feet BGS)	Date	Time			Results		
		11/16/17	14:05 14:15			6.50 6.50	42.2 30.3	6.1 6.0
		11/10/17	14:25			6.50	37.7	6.0
			14:35			6.50	32.3	6.0
			10:07	6.41	93.59			
			14:05			6.80	21.8	11.2
			14:17			6.60	25.5	9.8
		02/01/18	14:28			6.60 6.60	26.5 25.6	9.6 9.6
			14:49 14:55			6.50	25.6	9.8
MW-3	7.0 - 16.0		15:30			6.60	26.3	9.3
	1.0 10.0		16:15			6.50	26.3	9.4
		02/13/18		6.54	93.46			
			9:49	7.16	92.84			
			12:20			7.10		
		05/16/18	12:40			7.10		
			13:00			7.00		
			9:04	12.67	87.33			
		09/10/18	9:05			6.80		
		09/10/18	9:12			6.90		
			9:20			6.80		
		02/13/18		6.49	93.55			
			9:50	7.07	92.97			
MW-3D	27.5 - 30.0	05/16/18	11:20			6.70		
			11:40			6.70		
		00/10/10	12:00			6.80		
	┨	09/10/18	9:02	12.86	87.18			
			12:55	8.32 8.32	91.34 91.34			
			13:05	8.32	91.34			
		11/16/17	16:15 16:25			6.40	37.1	6.0
			16:25			6.50	44.5	6.0
			16:45			6.50	44.9	6.0
			9:30	6.07	93.59			
			11:23			6.50	39.30	9.00
F 4147 - 4	120.170		11:36			6.40	39.30	9.20
MW-4	12.0 - 17.0	02/01/18	11:41			6.40	39.2	9.2
			11:49			6.50	39.2	9.4
			11:55			6.50	39.40	9.30
			12:05			6.40	39.30	9.20
			9:45	6.83	92.83			
		05/16/18	10:00			7.10		
		03/10/10	10:20			7.10		
			10:40			7.00		
l l		09/10/18	0:00	12.40	87.26			

TABLE 2 Summary of Groundwater Sample Chemical Analytical Results VOCs Detected by EPA Method 8260C and Potential Breakdown Products 6707 S Adams Street Tacoma, Washington										
				Chloroform	Tetrachloroethylene (PCE)	Trichloroethlyene (TCE)	cis-1,2- Dichloroethylene	trans-1,2- Dichloroethylene	Vinyl Chloride	
Sample I.D.	Screened Interval (feet BGS)	Sample Date	Collected By	Results (ug/L)						
EB		09/10/18	SEC	0.0860 U	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
EB ¹		09/10/18	SEC	0.500 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
Trip Blank		NA	SEC	0.500 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
B5-W		01/15/16	AEG		1.0	1.0 U	1.0 U	1.0 U	0.2 U	
B6-W	NA	01/15/16	AEG		2.3	1.0 U	1.0 U	1.0 U	0.2 U	
B7-W		01/15/16	AEG		5.6	1.0 U	1.0 U	1.0 U	0.2 U	
B8-W		01/15/16	AEG		9.6	1.0 U		1.0 U	0.2 U	
B9-W		01/15/16	AEG		1.0 U	1.0 U	1.0 U	1.0 U	0.2 U	
B10-W		01/15/16	AEG		1.0 U	1.0 U	1.0 U	1.0 U	0.2 U	
MW-1		03/17/16	AEG		1.0 U	1.0 U	1.0 U	1.0 U	0.2 U	
MW-1		11/16/17	SEC	4.32	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
MW-1	9.0 - 19.0	02/01/18		1.33	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
MW-1 (DUP)		02/01/18		1.32	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
MW-1		05/16/18		0.605	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
MW-2		03/17/16	AEG		1.0 U	1.0 U	1.0 U	1.0 U	0.2 U	
MW-2	6.0 - 16.0	11/16/17	SEC	0.500 U	2.33	0.200 U	0.500 U	0.500 U	0.200 U	
MW-2		02/01/18		0.500 U	0.859	0.200 U	0.200 U	0.200 U	0.200 U	
MW-2		05/16/18	456	0.500 U	0.741	0.200 U	0.200 U	0.200 U	0.200 U	
MW-3		03/17/16	AEG		10	1.0 U	1.0 U	1.0 U	0.2 U	
MW-3		11/16/17	SEC	0.500 U	4.54	0.200 U	0.500 U	0.500 U	0.200 U	
MW-3		02/01/18		0.500 U 0.500 U	1.35	0.200 U	0.200 U	0.200 U	0.200 U	
MW-3	7.0 - 16.0	05/16/18			0.450	0.200 U	0.200 U	0.200 U	0.200 U	
MW-3		09/10/18		0.203 J	0.199 U	0.153 U	0.0933 U	0.152 U	0.118 U	
$MW-3^1$		09/10/18		0.500 U	0.200 U	0.200 U	0.200 U	0.200 U 0.152 U	0.200 U	
MW-3 (DUP)		09/10/18 09/10/18		0.284 J 0.500 U	0.199 U 0.213	0.153 U 0.200 U	0.0933 U 0.200 U	0.152 U 0.200 U	0.118 U 0.200 U	
<u>MW-3 (DUP)¹</u> MW-3D	27.5 - 30.0	02/13/18	SEC	0.300 U 0.324 J	0.213 0.227 J	0.200 U 0.153 U	0.200 U 0.0933 U	0.200 U 0.152 U	0.200 U 0.118 U	
MW-3D		05/16/18		0.500 U	0.227 J	0.133 U 0.200 U	0.0933 U 0.200 U	0.132 U 0.200 U	0.118 U 0.200 U	
MW-3D MW-4	12.0 - 17.0	03/17/16	AEG	0.300 O	2.0	1.0 U	1.0 U	1.0 U	0.200 U	
MW-4		11/16/17	SEC	0.500 U	2.39	0.200 U	0.200 U	0.200 U	0.200 U	
MW-4		02/01/18		0.500 U	1.56	0.200 U	0.200 U	0.200 U	0.200 U	
MW-4		05/16/18		0.500 U	1.10	0.200 U	0.200 U	0.200 U	0.200 U	
MW-4 (DUP)		05/16/18	1	0.500 U	1.01	0.200 U	0.200 U	0.200 U	0.200 U	
MTCA Method A Cleanup Levels (Unrestricted Use) NE 5.0 5.0 NE NE 0.2										
MTCA Method	B Cleanup Le	evels (Cancer)		1.41	5.0	5.0	70	100	2.0	

Notes:

1: Duplicate Sample

SEC: Succeed Environmental Consulting LLC

AEG: Associated Environmental Group, LLC

U: not detected at concentrations greater than the analytical laboratory RDL (reported)

--: not analyzed

Bolding indicates analyte was quantitatively detected at the reported concentration.

NE: not established

J: Analyte detected at a concentration greater than the laboratory MDL, but less than the MRL and is considered an estimate.

TABLE 3 Summary of Soil Sample Chemical Analytical Results VOCs Detected by EPA Method 8260C and Potential Breakdown Products 6707 S Adams Street Tacoma, Washington										
				Chloroform	1,1-Dichloroethene	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Sample I.D.	Depth (feet BGS)	Sample Date	Collected By	Results (mg/kg)						
B5-5	5.0	01/15/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
B5-13	13.0	01/15/16	AEG			0.02 0	0.02 U	0.05 U	0.05 U	0.02 U
B5-15	15.0	01/15/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
B6-4	4.0	01/15/16	AEG			0.037	0.02 U	0.05 U	0.05 U	0.02 U
B6-9.5	9.5	01/15/16	AEG			0.052	0.02 U	0.05 U	0.05 U	0.02 U
B6-13.5 B7-4	13.5	01/15/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
B7-4 B7-9	4.0 9.0	01/15/16 01/15/16	AEG AEG			0.02 U 0.026	0.02 U 0.02 U	0.05 U 0.05 U	0.05 U 0.05 U	0.02 U 0.02 U
B7-13	13.0	01/15/16	AEG			0.020	0.02 U	0.05 U	0.05 U	0.02 U
B8-4	4.0	01/15/16	AEG			0.037	0.02 U	0.05 U	0.05 U	0.02 U
B8-9.5	9.5	01/15/16	AEG			0.034	0.02 U	0.05 U	0.05 U	0.02 U
B8-13.5	13.5	01/15/16	AEG			0.14	0.02 U	0.05 U	0.05 U	0.02 U
B9-4	4.0	01/15/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
B9-9	9.0	01/15/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
B9-13	13.0	01/15/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
B10-4.5 B10-10	4.5	01/15/16	AEG AEG			0.02 U 0.02 U	0.02 U 0.02 U	0.05 U 0.05 U	0.05 U 0.05 U	0.02 U 0.02 U
MW1-10	10.0	01/15/16 02/23/16	AEG			0.02 U 0.02 U	0.02 U 0.02 U	0.05 U 0.05 U	0.05 U 0.05 U	0.02 U 0.02 U
MW1-10	13.0	02/23/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
MW2-9.5	9.5	02/23/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
MW2-15	15.0	02/23/16	AEG			0.02 U	0.02 U	0.05 U	0.05 U	0.02 U
MW3-5	5.0	02/23/16	AEG			0.06	0.02 U	0.05 U	0.05 U	0.02 U
MW3-9.5	9.5	02/23/16	AEG			0.06	0.02 U	0.05 U	0.05 U	0.02 U
MW3-13	13.0	02/23/16	AEG			0.12	0.02 U	0.05 U	0.05 U	0.02 U
MW3-15	15.0	02/23/16	AEG			0.74	0.03 U	0.06 U	0.06 U	0.02 U
MW4-9.5 MW4-15	9.5 15.0	02/23/16 02/23/16	AEG AEG			0.02 U 0.28	0.02 U 0.02 U	0.05 U 0.05 U	0.05 U 0.05 U	0.02 U 0.02 U
HA-1(2.0-3.0)	2.0-3.0	05/16/18	SEC		0.000580	0.0136	0.002 0	0.000801	0.00166 U	0.02 0
DP-1 (6.0-8.0)	6.0-8.0	02/07/18	SEC	0.000352	0.000466	0.000425	0.000429	0.000362	0.000406	0.000448
DP-2 (6.0-8.0)	6.0-8.0	02/07/18	SEC	0.000234		0.000511 J	0.000285	0.000240	0.000270	0.000298
DP-2 (11.0-13.0)	11.0-13.0	02/07/18	SEC	0.000246	0.000326	0.000297	0.000300	0.000253	0.000284	0.000313
DP-2(15.0-17.0)	15.0-17.0	02/07/18	SEC	0.000261	0.000345	0.000314	0.000318	0.000268	0.000301	0.000331
DP-3 (5.0-7,0)	5.0-7.0	02/07/18	SEC	0.000245	0.000325	0.000296	0.000299	0.000252	0.000283	0.000312
DP-3 (12.0-14.0)	12.0-14.0	02/07/18	SEC	0.000247		0.000635 J	0.000301	0.000253	0.000285	0.000314
DP-3 (23.0-25.0) DP-4 (1.0-3.0)	23.0-25.0 1.0-3.0	02/07/18 02/07/18	SEC SEC	0.000266	0.000352	0.000320 0.000363 J	0.000324	0.000273	0.000306	0.000338
DP-4 (12.0-14.0)	12.0-14.0	02/07/18	SEC	0.000231	0.000308	0.000363 J	0.000282	0.000238	0.000287	0.000294
DP-4 (23.0-25.0)	23.0-25.0	02/07/18	SEC	0.000239	0.000317	0.00120	0.000292	0.000246	0.000276	0.000304
DP-5 (17.0-19.0)	17.0-19.0	02/07/18	SEC	0.000254	0.000336	0.0148	0.000310	0.000261	0.000293	0.000323
DP-5 (23.0-25.0)	23.0-25.0	02/07/18	SEC	0.000267	0.000353	0.00923	0.000325	0.000274	0.000308	0.000339
DP-6 (5.0-7.0)	5.0-7.0	02/07/18	SEC	0.000233	0.000308	0.000281	0.000284	0.000239	0.000269	0.000296
DP-6 (17.0-19.0)	17.0-19.0	02/07/18	SEC	0.000237	0.000314	0.000286	0.000289	0.000243	0.000273	0.000301
DP-6 (23.0-25.0)	23.0-25.0 5.0-7.0	02/07/18	SEC	0.000263	0.000348	0.000317	0.000320	0.000270	0.000303	0.000334
DP-7(5.0-7.0) DP-7 (11.0-13.0)	<u> </u>	02/09/18 02/09/18	SEC SEC	0.000236		0.000284 0.000825 J	0.000287	0.000242	0.000272 0.000310	0.000299 0.000342
DP-7 (11.0-13.0) DP-7 (22.0-24.0)	22.0-24.0	02/09/18	SEC	0.000209	0.000338	0.000825 J	0.000328	0.000276	0.000310	0.000342
DP-8 (6.0-8.0)	6.0-8.0	02/09/18	SEC	0.000240	0.000325	0.000324	0.000327	0.000235	0.000230	0.000341
· · /		02/09/18	SEC	0.000263		0.000317				
DP-8 (18.0-20.0)	18.0-20.0	02/09/18	SEC	0.000263	0.000348	0.000317	0.000320	0.000270	0.000303	0.000334
DP-9 (24.0-26.0)	24.0-26.0	02/13/18	SEC	0.000250	0.000331	0.000301	0.000304	0.000256	0.000288	0.000317
MTCA Method A C			Jse)	NE	NE	See Below	0.03	NE	NE	NE
MTCA Method B Cleanup Levels (Cancer)				32.3 NE	NE	See Below	12 NE	NE	NE	NE
Site-Specific Cleanup Level (See Section 4.3 of RI)					NE	0.74	NE	NE	NE	NE

Notes:

AEG: Associated Environmental Group, LLC

SEC: Succeed Environmental Consulting LLC

U: not detected at concentrations greater than the analytical laboratory RDL (reported)

--: not analyzed

Bolding indicates analyte was quantitatively detected at the reported concentration.

NE: not established

J: Analyte detected at a concentration greater

than the laboratory MDL, but less than the MRL.



TABLE 4 Summary of Vapor Sample Chemical Analytical Results VOCs by EPA Method TO-15 6707 S Adams Street Tacoma, Washington													
				1,1-Dichloroethene	cis-1,2- Dichloroethylene	trans-1,2- Dichloroethylene	2-Propanol	Tetrachloroethylene (PCE)	Trichloroethlyene (TCE)	Vinyl Chloride			
Sample I.D. Sample Type Sample Date Collected By Results (µg/m³)													
B-1 Sub-Slab 12/09/15 AEG 10U 10U 340 10U 10U													
B-2	Sub-Slab	12/09/15	AEG		10 U	10 U		1,200	10 U	10 U			
B-3	Sub-Slab	12/09/15	AEG		10 U	10 U		570	10 U	10 U			
B-4	Sub-Slab	12/09/15	AEG		10 U	10 U		10 U	10 U	10 U			
SV-1	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	13.2	287	2.14 U	1.02 U			
SV-2	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	6.15 U	110	2.14 U	1.02 U			
SV-3	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	6.15 U	18.4	2.14 U	1.02 U			
SV-4	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	6.15 U	140	2.14 U	1.02 U			
SV-5	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	6.15 U	529	2.14 U	1.02 U			
SV-6	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	9,200	558	2.22	1.02 U			
SV-7	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	27.5	49.9	2.14 U	1.02 U			
SV-8	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	15.0	183	2.14 U	1.02 U			
SV-9	Sub-Slab	11/16/17	SEC	1.59 U	1.59 U	1.59 U	13.5	270	3.70	1.02 U			
SV-10	Sub-Slab	02/07/18	SEC	1.59 U	1.59 U	1.59 U	6.15 U	1,780	2.14 U	1.02 U			
	08/07/18 SEC 1.590 1.590 6.150 480 2.140 1.020												
MTCA Method				NE	NE	NE	NE	NE	NE	NE			
		.evels -C- (draft		NE	NE	NE	NE	See Below	12.3	9.33			
Site-Specific C	leanup Level (See Section 4.5	5 of RI)	NE	NE	NE	NE	13,333	NE	NE			

Notes:

NE: not established

AEG: Associated Environmental Group, LLC SEC: Succeed Environmental Consulting LLC U: not detected at concentrations greater than the analytical laboratory RDL (reported) Bolding indicates analyte was quantitatively detected at the reported concentration.



		Sum	mary of Ambie VO	TABLI nt Air Sample Cs by EPA M 6707 S Adaı Tacoma, Wa	e Chemical Aı ethod TO-15 ms Street	nalytical Resu	ilts							
	1,1-Dichloroethene 1,1-Dichloroethylene cis-1,2-Dichloroethylene trans-1,2-Dichloroethylene Trichloroethylene (PCE) Trichloroethylene (PCE) Vinyl Chloride													
Sample I.D.	Sample Type	Sample Date	Collected By		•	Results	(µg/m³)	•						
IA-1	Indoor Air	02/07/18	SEC	0.0793 U	0.0793 U	0.0793 U	1.52	0.576	0.0511 U					
IA-1	IIIUUUI AII	05/16/18	SEC	0.0793 U	0.0793 U	0.0793 U	5.07	0.107 U	0.0511 U					
IA-2	Indoor Air	02/07/18	SEC	0.0793 U	0.0793 U	0.0793 U	0.477	0.405	0.0511 U					
177 2		08/07/18	SEC	0.0793 U	0.0793 U	0.0793 U	0.359	0.107 U	0.0511 U					
IA-3	Indoor Air	02/07/18	SEC	0.0793 U	0.0793 U	0.0793 U	0.136 U	0.161	0.0511 U					
BG-1	Background	02/07/18	SEC	0.0793 U	0.0793 U	0.0793 U	0.136 U	0.107 U	0.0511 U					
DU-1	BG-T Background 05/16/18 SEC 0.0793 U 0.0793 U 0.0793 U 3.09 0.107 U 0.0511 U													
BC-2	BG-2 Background 02/07/18 SEC 0.0793 U 0.0793 U 0.0793 U 0.136 U 0.107 U 0.0511 U													
	<u> </u>													
	MTCA Method C Screening Levels -NC- (revised 2015) 200 NE NE 40 2.00 100													
MTCA Method	C Screening L	evels -C- (revis	sed 2015)	NE	NE	NE	96.2	6.3	NE					

Notes:

SEC: Succeed Environmental Consulting LLC

U: not detected at concentrations greater than the analytical laboratory RDL (reported)

Bolding indicates analyte was quantitatively detected at the reported concentration.

Shading indicates analyte was quantitatively detected at a concentration greater than one or more corresponding screening levels.

NE: not established





APPENDIX A

SEC observed subsurface explorations and obtained soil, groundwater, and vapor/air samples during this assessment. The soil encountered in the explorations was visually classified in general accordance with ASTM D 2488.

SOIL SAMPLING

Continuous soil samples were collected from the explorations. Soil samples obtained from the explorations were collected from a hand auger or from a 2-inch-diameter, 60-inch-long samplers lined with acrylic sleeves. Soil samples were placed in laboratory-supplied containers and immediately placed in an ice chest and kept cool until delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

SOIL SAMPLING

Continuous soil samples were collected from the explorations. Soil samples obtained from the explorations were collected from a hand auger or from a 2-inch-diameter, 60-inch-long samplers lined with acrylic sleeves. Soil samples were placed in laboratory-supplied containers and immediately placed in an ice chest and kept cool until delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

GROUNDWATER SAMPLING

Groundwater samples were collected from project site wells, as described in the RI. The groundwater samples were placed in laboratory-supplied containers and immediately placed in an ice chest and kept cool until delivery to the laboratory. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

VAPOR/AMBIENT AIR SAMPLING

Vapor and air samples were collected during this investigation, as described in the RI. All vapor samples were placed in laboratory-supplied containers. Standard chain-of-custody procedures were observed during transport of the samples to the laboratory.

DECONTAMINATION

All sampling equipment used in the collection of samples was decontaminated prior to use. Decontamination was performed on all sample re-usable processing equipment that came into contact with sampling media, including tools, stainless steel implements, trowels, etc. Decontamination was performed prior to sampling each location using the following procedures:

- Rinsed with tap water and scrubbed with a scrub brush until free of large particles 1. (e.g., sediment or soil) Washed with phosphate-free (Alconox[™]) detergent solution
- 2. 3.
- Rinsed with tap water Rinsed with distilled water
- 4.

IDW

IDW has been stored on-site in 55-gallon drums. Disposal is pending. All associated disposal documentation will be provided to Ecology.

PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	ŧ B-5		PAGE 1 OF 1
Locat	ion: 6707 South Adams Street, Tacoma, WA			Approx	ximate Ele	vation:				
Subco	ontractor / Driller: ESN/ Don			Equipr	ment / Dril	ling Meth	od: Direc	t Push		
Date	: January 15, 2016			Logge	d By:	B. Dilba	-			
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	1 foot of concrete underlain by;					10:33	N/A			
	Gray, dry, dense, <u>SANDY GRAVEL</u> ; fine to coarse gravel, medium to coarse sand	GP	3					0		
5			6		B5-5	10:35		0		
10	at 9.0 feet; moist		10 10			10:39		0		
	Gray, wet, medium dense, <u>SANDY GRAVEL</u> ; fine to medium gravel, fine to coarse sand	<u> </u>	12		B5-13 B5-15	10:48		0	No	
	TD = 15 Feet									
	Explanation Image: Sample Advance / Recovery Image: No Recovery Image: Organization of the same structure Image: Organi									,

PROJ	IECT: Adams Street Bulding			J	IOB #	15-171		BORING #	ŧ B-6		PAGE 1 OF 1
Locat				A	Approx	kimate Ele	vation:				
	ontractor / Driller: ESN/ Don							od: Direc	t Push		
Date	: January 15, 2016		-	L	ogge	d By:	B. Dilba	1			1
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample	Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	1 foot of concrete underlain by;			1			11:28	N/A			
	Gray, dry, dense, <u>SANDY GRAVEL</u> ; fine to coarse gravel, medium to coarse sand at 9.0 feet; moist	GP		2 3 4 5 6 7 8 9		B6-4 B6-9	11:30		0		
10	Brown, wet, medium stiff, <u>SILT</u>	 		_10 11 12 13 14		B6-13	11:34		0	No	
	Gray, wet, medium dense, <u>SANDY GRAVEL</u> , fine to medium gravel, fine to coarse sand	GP		14			11:42		0		
	TD = 15 Feet										
	Explanation Image: Sample Advance / Recovery Image: No Recovery Image: One contact located approximately Image: One contact locate located approximately Image: One contact locate locat		1				1	1		1	1

PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	B-7		PAGE 1 OF 1
Locat	ion: 6707 South Adams Street, Tacoma, WA			Approx	kimate Ele	vation:				
Subco	ontractor / Driller: ESN/ Don			Equipr	nent / Drill	ing Meth	od: Direct	Push		
Date	January 15, 2016			Logge	d By:	B. Dilba				-
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	1 foot of concrete underlain by;					12:19	N/A			
	Gray, dry, dense, <u>SANDY GRAVEL</u> ; fine to coarse gravel, medium to coarse sand	GP	2 3 4 5 6		B7-4	12:20		0		
10	at 9.0 feet; moist		9		B7-9	12:26		0		
	Brown, wet, medium dense, <u>SANDY GRAVEL</u> ; fine to medium gravel, fine to coarse sand	GP	12		B7-13	12:32		0	No	
	TD = 15 Feet									
	Explanation									
	Image: Sample Advance / Recovery Image: Sample Advance / Recovery Image: No Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Contapproximately Image: Contact loc									

PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	B-8		PAGE 1 OF 1
Locat				Appro	ximate Ele	vation:				
	ontractor / Driller: ESN/ Don				ment / Drill			t Push		
Date	: January 15, 2016	-	1	Logge	d By:	B. Dilba	1		1	1
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	1 foot of concrete underlain by;					13:01	N/A			
	Gray, dry, dense, <u>SANDY GRAVEL;</u> fine to coarse gravel, medium to coarse sand	GP			B8-4	13:03		0		
10	at 9.5 feet; moist				B8-9.5	13:06		0		
	Gray, wet, medium dense, <u>SANDY GRAVEL</u> ; fine to medium gravel, fine to coarse sand	 GP	1:		B8-13.5	13:11		0	No	
	TD = 15 Feet									
	Explanation	1	1	<u>.</u>	I	1	I	1	1	1
	Image: Sample Advance / Recovery Image: Sample Advance / Recovery Image: No Recovery Image: Contact located approximately Image: Contact located approximately									

PROJ	JECT: Adams Street Bulding			JOB	# 15-171		BORING #	# B-9		PAGE 1 OF 1
Locat		oma, WA			oximate Ele					
	contractor / Driller: ESN/ Don				oment / Dril			t Push		
Date	e: January 15, 2016		-	Logg	ed By:	B. Dilba			1	1
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample	Sample Recoverv	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	6 inches of asphalt underlain by;			4		13:47	N/A			
	Gray, dry, dense, <u>SANDY GRAVEL</u> ; fine to coarse coarse sand	gravel, medium to GP			 	13:48		0		
10	at 9.0 feet; moist			7 8 9 10 11	 B9-9	13:52		0		
	Gray, wet, medium dense, <u>SANDY GRAVEL</u> ; fine fine to coarse sand	to medium gravel,		12 13 14 15	 B9-13 	13:56		0	No	
	TD = 15 Feet									
	Explanation									
	Image: Sample Advance / Recovery Image: Sample Advance / Recovery Image: No Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Sample Advance / Recovery Image: Contact located approximately Image: Contact located approximately Image: Contact locate of the	lling								

PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	B-10		PAGE 1 OF 1
Locat	ion: 6707 South Adams Street, Tacoma, WA			Appro	ximate Ele	vation:				
Subco	ontractor / Driller: ESN/ Don			Equip	ment / Drill	ling Meth	od: Direct	Push		
Date	January 15, 2016		-	Logge	ed By:	B. Dilba				-
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	6 inches of asphalt underlain by;			4		14:18	N/A			
				3	-					
	Gray, dry, dense, <u>SANDY GRAVEL</u> ; fine to coarse gravel, medium to coarse sand	GP		6	B10-4.5	14:20		0		
	at 9.0 feet; moist			9		14:23		0		
10					B10-10	14:23		0		
	Gray, wet, medium dense, <u>SANDY GRAVEL</u> ; fine to medium gravel, fine to coarse sand	GP	1	4		14:28		0	No	
15			1	5		11.20		Ŭ		
	TD = 15 Feet									
	Explanation									
	Image: Sample Advance / Recovery Image: Sample Advance / Recovery Image: No Recovery Image: Contact located approximately Image: Contact located approximately									



PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	MW-1		PAGE 1 OF 1
Locat	ion: 6707 South Adams Street, Tacoma, WA			Approx	cimate Elev	vation:				
Subc	ontractor / Driller: ESN/ Don			Equipr	nent / Drilli	ing Method	I: Direct Pus	h		
Date	: February 23, 2016			Logge	d By:	B. Dilba				
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Monitoring Well Construction
	6 inches of asphalt underlain by;					9:33	N/A	N/A		
5	Brown, moist, medium dense, <u>SANDY GRAVEL</u> ; fine to medium gravel, coarse sand	GP			MW1-5	9:35			No	
10	Brown, wet, medium dense, <u>SAND W/ GRAVEL</u> ; fine to coarse grain sand, fine gravel	SP	7 7 8 9		MW1-10	9:40				
15	Gray, wet, medium dense, SAND; medium to coarse sand	SP	11 12 13	2 2 3 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	MM/1_13	0:46				
			15 16 17 17 18 19		MW1-13 MW1-18	9:46				
20	TD = 20		20			9:55				
				·						
	Explanation	Monito	oring W	ell Con	struction			I	Ecology	[,] Tag #
	(X) No Recovery	88	3/4-inc	Concrete h bentor sand 19'	ite chips 7'	to 2'				
	Contact located approximately	_				casing fro	m 9' to 0'			
	Groundwater level at time of drilling						een 9' to 19'			



PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	MW-2		PAGE 1 OF 1
Locat	ion: 6707 South Adams Street, Tacoma, WA			Appro	ximate Elev	vation:				
Subc	ontractor / Driller: ESN/ Don			Equip	ment / Drilli	ing Method	I: Direct Pus	sh		
Date	: February 23, 2016			Logge	d By:	B. Dilba				
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Monitoring Well Construction
	12" inches of concrete underlain by;					11:33	N/A	N/A		
	Brown, dry, medium dense, <u>SANDY GRAVEL</u> ; fine to medium gravel, coarse sand	GP	1 2 3 4 5 6 7 7 8		MW2-5	11:35	N/A	N/A		
10	at 9.5 feet: wet		9 10 11 12 13		MW2-9.5	11:39			No	
15	Gray, wet, medium dense, <u>SAND</u> ; medium to coarse sand	SP	14 15 16 17 18		MW2-15	11:44				
			19		MW2-19					
20			20			11:57				
	TD = 20		21							
25			22 23 24 25							
	Explanation	Monito	ring W	ell Con	struction				Ecology	/ Tag #
	Image: Sample Advance / Recovery Image: No Recovery Contact located approximately		Grout/C 3/4-incl Silica s 2-inch d	Concrete h bentor and 16 diamete	e 2' to 1' nite chips 4 to 4' r blank PVC	casing fro	m 6' to 2' een 16' to 6'			
	Groundwater level at time of drilling or date of measurement					501160 501				



PROJ	ECT: Adams Street Bulding			JOB #	15-171		BORING #	MW-3		PAGE 1 OF 1
Locat	ion: 6707 South Adams Street, Tacoma, WA			Approx	kimate Elev	vation:				
Subc	ontractor / Driller: ESN/ Don			Equipr	nent / Drilli	ing Method	I: Direct Pus	h		
Date	February 23, 2016			Logge	d By:	B. Dilba				
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Monitoring Well Construction
	12" inches of concrete underlain by;									
	Brown, dry, dense, <u>SANDY GRAVEL</u> ; fine to coarse gravel, medium to coarse sand	GP								
5			5 6 7							
40		\bigtriangledown	9							
10	Browm, wet, medium dense, <u>SAND</u> with Gravel; fine to coarse	SP	10							
	Brown, wet medium dense, <u>SAND</u> ; fine to medium sand	SP	11							
15			13 14 15							
	TD = 15 Feet									
	<u>Explanation</u>	Monito	ring We	ell Con	struction			I	Ecology	Tag #
	Sample Advance / Recovery	-	Grout/C	concrete	e 2' to 1'					
	No Recovery		3/4-incł Silica s		nite chips 5' to 5'	to 2'				
	Contact located approximately	_				C casing from	m 7' to 0'			
	Groundwater level at time of drilling	_					een 16' to 7'			



PRO.	ECT: Adams Street Bulding			JOB #	15-171		BORING #	MW-4		PAGE 1 OF 1
Loca	ion: 6707 South Adams Street, Tacoma, WA			Approx	kimate Elev	vation:				
Subc	ontractor / Driller: ESN/ Don			Equipr	nent / Drill	ing Method	: Direct Pus	h		
Date	: February 23, 2016			Logge	d By:	B. Dilba				
Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Monitoring Well Construction
	6" inches of asphalt underlain by;	_						ш.		
	Brown, dry, medium dense, <u>SANDY GRAVEL</u> ; fine to coarse gravel, medium to coarse sand	GP	1 2 3 4 5 6 6 7 7 8							
10	at 9.5 feet; wet		9 10 11 12 	x x x x						
15	Brown, wet, medium dense, <u>SAND</u> ; fine to coarse sand	SP	14 15 16 17	x						
	Explanation	Monito	ring W	ell Con	struction			E	Ecology	/ Tag #
	Image: Sample Advance / Recovery Image: No Recovery Image: Sample Advance / Recovery Image: Sample Advan		Grout/C 3/4-incl Silica s 2-inch c	Concrete n bentor and 17' diamete	e 2' to 1' hite chips 10 to 10' r blank PVC	C casing fro	m 12' to 0' een 17' to 12'			

Logg	ed By:	A	.В.		Started:		Drillin	g Contractor:		Drill	Rig Type:
Drill	Crew:	C.	W.	Date	Completed:	7-Feb-18		c Soil & Water ard, Oregon		Dire	ect Push
Loca	te Num	nbe	r:		Backfilled:			Bit Type: acro-Core			ameter: -Diamater
18	802978	9			Groundwater Not Measu		E	t Measured	То	tal Dep	oth of Boring: .0 Feet
		1			NUL IVIEASU	lieu	INU	livieasured	Ê		
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		PID Result (ppm)	Sheen Test Result	Additional Comments
_		5	3		· · ·	with Silt and	d Sand a	Brown to gray nd Brick; Moist; F e Silt and Sand;	ill 47.0	NS	
-		5	5		Wet Soil Condi	tions Obser	ved at 9.	0'	SOIL SAMPLE "DP-1(6.0-8.0)"		
		5	3		Brown SAND (\$	SP) Trace S	Silt and G	Gravel; Moist to Wet 23.0 N			
_		5	3						18.7	NS	
20 —		5	5		Gray sandy GR	AVEL (GP)	; Wet		0.0	NS	
	-										
		EN		ROI	D NMENTAL TING, LLC	HE-1	-01		BORIN	G DP-	1
6028 NE 49th Avenue Portland OP 97218			OCTOBE	R 2018	6707-6709 S	eet Building Adams Street APPENDIX A shington 98409					

Logge	ed By:	A.	В.		Started:		Drillin	g Contractor:		Drill I	Rig Type:
Drill	Crew:	C.	W.	Date	Completed:	7-Feb-18		c Soil & Water ard, Oregon		Dire	ect Push
Loca	te Num	hbe	r:		Backfilled:			Bit Type: lacro-Core			meter: Diamater
18	302978	9			Groundwater		E	Elevation:	То	tal Dep	oth of Boring:
					Not Measu	ired	No	t Measured			.0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		PID Result (ppm)	Sheen Test Result	Additional Comments
		5	3		Concrete (~5 Ir Brown to gray (Moist		SP), Trace	e Silt and Sand;	33.3	NS	
		5	3		Wet Soil Condi	tions Obsei	rved at 7.	5'	65.0	NS	SOIL SAMPLE "DP-2(6.0-8.0)"
10		5	3		Brown SAND (\$	SP) Trace S	Silt and G	ravel; Moist to We	et 55.9	NS	SOIL SAMPLE "DP-2(11.0-13.0)"
_		5	2		Becomes With	out Gravel			19.5	NS	SOIL SAMPLE "DP-2(15.0-17.0)"
20 —		5	5		Becomes With Gray Sandy GF		-		18.0	NS	
	SUCCEED ENVIRONMENTAL CONSULTING, LLC			HE-1	-01	BORING DP-2					
	6028 NE 49th Avenue, Portland, OR 97218 www.succeed-env.com 971.371.0404			OCTOBE	CR 2018	6707-6709 S	Adams Street Building6707-6709 S Adams StreetAPPENDIX AFacoma, Washington 98409Facoma Adams				

Logge	ed By:	Α.	В.		Started:		Drillin	g Contractor:		Drill	Rig Type:
Drill	Crew:	C.	W.	Date	Completed:	7-Feb-18		c Soil & Water ard, Oregon		Dire	ect Push
Loca	te Num	hbe	r:		Backfilled:			Bit Type: lacro-Core			ameter: n-Diamater
18	302978	9			Groundwater		E	levation:	То	tal Dep	oth of Boring:
		1			Not Measu	irea	INO	t Measured	Ē		.0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		PID Result (ppm)	Sheen Test Result	Additional Comments
		5	2		Concrete (~5 Ir Brown to gray (Moist		SP), Trace	e Silt and Sand;	23.2	NS	
		5	3		Wet Soil Condi	tions Obser	rved at 7.	0'	21.8	NS	SOIL SAMPLE "DP-3(5.0-7.0)"
10		5	4		Brown SAND (S	AND (SP) Trace Silt and Gravel; Moist to Wet				NS	SOIL SAMPLE "DP-3(12.0-14.0)"
		5	0		Becomes With	out Gravel					
20 —		Becomes With Trace Gravel 5 5 Gray Sandy GRAVEL (GP); Wet				22.5	NS	SOIL SAMPLE "DP-3(23.0-25.0)"			
		EN	VIF	EEI Ron) IMENTAL FING, LLC	HE-1	-01		BORIN	IG DP-	3
					nd, OR 97218 71.371.0404	OCTOBE	CR 2018	6707-6709 S	treet Building S Adams Street APPENDIX A ashington 98409		

Logge	ed By:	A.	В.		Started:		Drillin	g Contractor:			Drill F	Rig Type:
Drill (Crew:	C.	W.	Date	Completed:	7-Feb-18		c Soil & Water ard, Oregon			Dire	ct Push
	te Num				Backfilled:			Bit Type: lacro-Core				meter: -Diamater
18	302978	9			Groundwater		E	levation:		Tot	al Dep	th of Boring:
		1			Not Measu	irea	INO	t Measured		(r		0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description			PID Result (ppm)	Sheen Test Result	Additional Comments
		5	3		Concrete (~5 Ir Brown to gray (Moist		SP), Trace	e Silt and Sand;			NS	SOIL SAMPLE "DP-4(1.0-3.0)"
10 -		5	2		Wet Soil Condi	t Soil Conditions Observed at 7.0'					NS	
-		5	4		Brown SAND (SP) Trace Silt and Gravel; Moist to Wet						NS	SOIL SAMPLE "DP-4(12.0-14.0)"
_		5	0		Becomes With	out Gravel						
20 —		5	4 Gray Sandy GRAVEL (GP); Wet						NS	SOIL SAMPLE "DP-4(23.0-25.0)"		
		SU EN CO	VIR	ION) IMENTAL FING, LLC	HE-1	-01		BO	RIN	G DP-4	
					nd, OR 97218 71.371.0404	OCTOBE	CR 2018	6707-6709 S	reet Building Adams Street APPENDIX A shington 98409			

Logge	ed By:	A	.В.		Started:		Drillin	g Contractor:			Drill F	Rig Type:
Drill	Crew:	C.	W.	Date	Completed:	7-Feb-18		c Soil & Water ard, Oregon			Dire	ct Push
Loca	te Num	nbe	r:		Backfilled:			Bit Type: acro-Core				meter: -Diamater
18	302978	9			Groundwater		E	levation:		Tot	al Dep	th of Boring:
		T	1		Not Measu	ired	NO	t Measured		•		0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		munt) Hinson Dig	ги кеѕип (ррти)	Sheen Test Result	Additional Comments
		5	2		Asphalt (~4 Inc Brown to gray (Moist		SP), Trace	e Silt and Sand;	-		NS	
10 -		5	4				s Observed at 7.0' Trace Silt and Gravel; Moist to Wet				NS	
		5	3								NS	
_		5	0		Becomes Witho	out Gravel			-		NS	SOIL SAMPLE "DP-5(17.0-19.0)"
20	20 - Becomes With Trace Gravel 5 5 Gray Sandy GRAVEL (GP); Wet					-		NS	SOIL SAMPLE "DP-5(23.0-25.0)"			
		EN	VIF	EEC RON) IMENTAL FING, LLC	HE-1	-01		BOF	RIN	G DP-5	
					nd, OR 97218 71.371.0404	OCTOBE	CR 2018	6707-6709 S	reet Building Adams Street APPENDIX A shington 98409			

Logge	ed By:	Α.	В.		Started:		Drillin	g Contractor:			Drill F	Rig Type:
Drill	Crew:	C.	W.	Date	Completed:	7-Feb-18		c Soil & Water ard, Oregon			Dire	ct Push
	te Num				Backfilled:			Bit Type: lacro-Core				meter: -Diamater
18	302978	9			Groundwater		E	levation:		Tot	al Dep	th of Boring:
		1			Not Measu	ired	No	t Measured		2		0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description			PID Result (ppm)	Sheen Test Result	Additional Comments
		5	2		Asphalt (~4 Inc Brown to gray (Moist		SP), Trace	e Silt and Sand;		-	NS	
10 -		5	3			il Conditions Observed at 7.0' SAND (SP) Trace Silt and Gravel; Moist to Wet					NS	SOIL SAMPLE "DP-6(5.0-7.0)"
_		5	3								NS	
_		5	0		Becomes Witho	out Gravel					NS	SOIL SAMPLE "DP-6(17.0-19.0)"
20		5	4			ecomes With Trace Gravel ay Sandy GRAVEL (GP); Wet					NS	SOIL SAMPLE "DP-6(23.0-25.0)"
	SUCCEED ENVIRONMENTAL CONSULTING, LLC			HE-1	-01		ВС	ORIN	g dp-6	i		
6028 NE 49th Avenue, Portland, OR 97218 www.succeed-env.com 971.371.0404			OCTOBE	CR 2018	6707-6709 S	treet Building S Adams Street APPENDIX A ashington 98409						

Logge	ed By:	A	.В.		Started:		Drillin	g Contractor:		Dı	rill F	Rig Type:
Drill	Crew:	C.	W.	Date	Completed:	9-Feb-18		c Soil & Water ard, Oregon			Dire	ct Push
Loca	te Nun	ıbe	r:		Backfilled:			Bit Type: acro-Core				meter: -Diamater
18	302978	9			Groundwater		E	levation:	Т		Dep	th of Boring:
					Not Measu	ired	No	t Measured				0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		PID Result (ppm)	E E E E	Sheen Test Result	Additional Comments
		5	3		Asphalt (~4 Inc Gray GRAVEL Brown to gray (Moist	(GM) with S		and; Moist; Fill e Silt and Sand;	0.0)	NS	
		5	2		Wet Soil Condi	tions Obser	rved at 7.	0'	0.0) N	٩S	SOIL SAMPLE "DP-7(5.0-7.0)"
10		5	3		Brown SAND (SP) Trace S	Silt and G	ravel; Moist to W	et 0.0)	٩S	SOIL SAMPLE "DP-7(11.0-13.0)"
_		5	4		Becomes With	out Gravel			0.0)	٩S	
20 —		5	4		Becomes With Gray Sandy GF)	١S	SOIL SAMPLE "DP-7(220-24.0)"
		EN	CC VIF NS	ION) IMENTAL FING, LLC	HE-1	-01		BOR		DP-7	,
					nd, OR 97218 71.371.0404	OCTOBE	CR 2018	6707-6709 S	reet Building S Adams Street APPENDIX A Ishington 98409			

Logge	ed By:	A	Α.В.		Started:		Drillin	g Contractor:			Drill F	Rig Type:
Drill (Crew:	С	.W.	Date	Completed:	9-Feb-18		c Soil & Water ard, Oregon			Dire	ct Push
Loca	ate Nui	nb	er:		Backfilled:			Bit Type:				meter: -Diamater
					Groundwater	Depth:		acro-Core				-Diamater th of Boring:
1	180297	89			Not Measu			t Measured				20
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		DID Postilit (nom)		Sheen Test Result	Additional Comments
		5	2.5		Asphalt (~4 Inc Gray GRAVEL Brown to gray (Moist	(GM) with S		and; Moist; Fill e Silt and Sand;	0.	.0	NS	
		5	3		Wet Soil Condi	tions Obser	ved at 7.	0'	0.	.0	NS	SOIL SAMPLE "DP-8(6.0-8.0)"
10 —		5	1		Brown SAND (SP) Trace S	Silt and G	ravel; Moist to Wo		.0	NS	Liner Jammed 14.0 - 15.0 foot BGS interval recovered SOIL SAMPLE
- 20 -		5	5		Becomes With	out Gravel			0.	.0	NS	"DP-8(14.0-15.0)" SOIL SAMPLE "DP-8(18.0-20.0)"
		EN	ccee Viro Nsui	NM	IENTAL NG, LLC	HE-1	-01				G DP-8	3
	6028 NE 49th Avenue, Portland, OR 97218 www.succeed-env.com 971.371.0404Adams Street BL 6707-6709 S Adam Tacoma, Washington			Adams	Stre	et	APPENDIX A					

Logge	ed By:	А	λ.В.		Started:		Drillir	ng Contractor:			Drill F	Rig Type:
Drill (Crew:	С	.W.	Date	Completed:	13-Feb-18		c Soil & Water ard, Oregon				ect Push
Loca	ate Nui	nbe	er:		Backfilled:			Bit Type: lacro-Core				meter: -Diamater
1	180297	39			Groundwater		E	levation:		Tot	al Dep	oth of Boring:
					Not Measu	irea	INC	t Measured		(ılt	30
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description			PID Kesult (ppm)	Sheen Test Result	Additional Comments
-		5	2.5		Concrete (~6 Ir Gray GRAVEL Brown to gray (Moist	(GM) with S		and; Moist; Fill e Silt and Sand;	O).0	NS	
		5	3		Wet Soil Conditions Observed at 7.0'				C).0	NS	
10 —		5	1		Brown SAND (SP) Trace S	ilt and G	ravel; Moist to We).0	NS	
20 —		5	5						O).0	NS	Monitoring Well "MW-3D" Installed 0.0-3.0 Foot Seal 3/4" Pre-Pack Screened Interval From 27.5' to 30.0'
_	5 5						C).0	NS	BGS.		
30		5	5		Gray Sandy GF	RAVEL (GP)); Wet		C	0.0	NS	SOIL SAMPLE "DP-9(24.0-26.0)"
	SUCCEED ENVIRONMENTAL CONSULTING, LLC		IENTAL NG, LLC	HE-1	1-01 BORING DP-9 /			-9 /MONITORING WELL MW-3D				
	6028 NE 49th Avenue, Portland, OR 97218 www.succeed-env.com 971.371.0404					OCTOBE	R 2018	Adams Str 6707-6709 S Tacoma, Was	Adams	Stre	et	APPENDIX A

Logge	ed By:	A	Α.В.		Started:		Drillin	g Contractor:		Drill F	Rig Type:
Drill (Crew:		NA	Date	Completed:	########		SEC			NA
Loca	ate Nui	mbo	er:		Backfilled:			Bit Type: and Auger			m eter: 5 Inch
1	80297	89			Groundwater	Depth:	E	levation:	То	tal Dep	oth of Boring:
	00201				Not Measu	ured	No	t Measured			0 Feet
Depth (feet)	Graphic Log	Drilled Depth	Recovered				Description		PID Result (ppm)	Sheen Test Result	Additional Comments
					Concrete (~6 Ir	nches)				1	
			NA		Brown to gray (GRAVEL (G	iP) tr. silt	and sand, moist	0.0	NS	SOIL SAMPLE "HA-1(2.0-3.0)"
R	A	SU	VIRO	D NM		HE-1-	-01		BORIN	G HA-1	I
	ENVIRONMENTAL CONSULTING, LLC 0028 NE 49th Avenue, Portland, OR 97218 www.succeed-env.com 971.371.0404			OCTOBE	R 2018		eet Building Adams Street APPENDIX A hington 98409				

APPENDIX B

CHEMICAL ANALYTICAL PROGRAM

Chain-of-custody procedures were followed during handling and transport of the samples to the analytical laboratory. The laboratory holds the samples in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference, and laboratory QC records are presented in this appendix. The analytical results also are summarized in the tables of this report.

REVIEW OF ANALYTICAL DATA

The analytical laboratories used for this project maintain an internal quality assurance programs consisting of a combination of the following:

Blanks: Blanks are laboratory-prepared water samples that are free of contaminants. The blanks are carried through the analysis procedure along with the field samples to document that contaminants were not introduced to the samples during sample handling and analysis.

Surrogate Recoveries: Surrogates are organic compounds that are similar in nature to the analytes of concern but are not normally found in nature. The surrogates are added to QC and field samples prior to analysis. The percent recovery of the surrogate is calculated to demonstrate acceptable method performance.

Duplicates: Duplicates are obtained by splitting a sample into two parts. The two separate parts are carried through the analyses. The analytical results are then compared by calculating the RPD between the samples.

MS/MSD Recoveries: An MS sample is a sample that has been split into a second portion. The MSD is obtained by further splitting the MS sample. A known concentration of the analyte of interest is added to the MS and MSD samples. The analytical results for both samples are then compared for RPD and percent recovery to demonstrate acceptable method performance.

BS/BSD Recoveries: BS and BSD samples are obtained and analyzed in the same procedure as the MS/MSD samples; however, the laboratory blank sample is used to obtain the BS/BSD samples. The percent recovery and RPD of the known concentration of analyte of interest added to the BS/BSD sample is calculated after chemical analyses to demonstrate acceptable method performance.

SUMMARY OF ANALYTICAL DATA REVIEW

SEC reviewed the attached analytical data reports for data quality exceptions and deviations from acceptable method performance criteria. Based on our review of the analytical reports, the analytical data appear acceptable for their intended use.



ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L968786 02/08/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SAMPLE SUMMARY

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DP2(6.0-8.0) L968786-01 Solid			Collected by Andrew Blake	Collected date/time 02/07/18 12:35	Received date/time 02/08/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072037	1	02/12/18 12:45	02/12/18 13:02	KDW
/olatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 12:35	02/09/18 15:25	JAH
			Collected by Andrew Blake	Collected date/time 02/07/18 12:40	Received date/time 02/08/18 08:45
DP2(11.0-13.0) L968786-02 Solid			Andrew blake	02/07/18 12:40	02/08/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072037	1	02/12/18 12:45	02/12/18 13:02	KDW
/olatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 12:40	02/09/18 15:47	JAH
			Collected by	Collected date/time	Received date/time
DP2(15.0-17.0) L968786-03 Solid			Andrew Blake	02/07/18 12:45	02/08/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072037	1	02/12/18 12:45	02/12/18 13:02	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 12:45	02/09/18 16:08	JAH
			Collected by	Collected date/time	Received date/tim
DP3(5.0-7.0) L968786-04 Solid			Andrew Blake	02/07/18 14:25	02/08/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072037	1	02/12/18 12:45	02/12/18 13:02	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 14:25	02/09/18 16:30	JAH
			Collected by Andrew Blake	Collected date/time 02/07/18 14:30	Received date/time 02/08/18 08:45
DP3(12.0-14.0) L968786-05 Solid			Andrew blake	02/07/18 14:30	02/08/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072037	1	02/12/18 12:45	02/12/18 13:02	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 14:30	02/09/18 16:51	JAH
			Collected by Andrew Blake	Collected date/time 02/07/18 14:35	Received date/time 02/08/18 08:45
DP3(23.0-25.0) L968786-06 Solid					
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072038	1	02/12/18 12:28	02/12/18 12:44	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 14:35	02/09/18 17:12	JAH
			Collected by Andrew Blake	Collected date/time 02/07/18 15:25	Received date/tim 02/08/18 08:45
DP4(1.0-3.0) L968786-07 Solid				02/07/10 13.23	52,00,10 00.43
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072038	1	02/12/18 12:28	02/12/18 12:44	KDW

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SAMPLE SUMMARY

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DP4(12.0-14.0) L968786-08 Solid			Collected by Andrew Blake	Collected date/time 02/07/18 15:35	Received date/time 02/08/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1072038	1	02/12/18 12:28	02/12/18 12:44	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 15:35	02/09/18 17:55	JAH
			Collected by	Collected date/time	Received date/time
DP4(23.0-25.0) L968786-09 Solid			Andrew Blake	02/07/18 15:40	02/08/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1072038	1	02/12/18 12:28	02/12/18 12:44	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071817	1	02/07/18 15:40	02/12/18 14:43	BMB

SDG: L968786

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



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DP2(6.0-8.0) Collected date/time: 02/07/18 12:35

SAMPLE RESULTS - 01 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	97.8		1	02/12/2018 13:02	WG1072037	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloroform	U		0.000234	0.00511	1	02/09/2018 15:25	WG1071817
1,1-Dichloroethene	U		0.000310	0.00102	1	02/09/2018 15:25	WG1071817
cis-1,2-Dichloroethene	U		0.000240	0.00102	1	02/09/2018 15:25	WG1071817
trans-1,2-Dichloroethene	U		0.000270	0.00102	1	02/09/2018 15:25	WG1071817
Tetrachloroethene	0.000511	J	0.000282	0.00102	1	02/09/2018 15:25	WG1071817
Trichloroethene	U		0.000285	0.00102	1	02/09/2018 15:25	WG1071817
Vinyl chloride	U		0.000298	0.00102	1	02/09/2018 15:25	WG1071817
(S) Toluene-d8	92.7			80.0-120		02/09/2018 15:25	WG1071817
(S) Dibromofluoromethane	115			74.0-131		02/09/2018 15:25	WG1071817
(S) 4-Bromofluorobenzene	106			64.0-132		02/09/2018 15:25	WG1071817

DP2(11.0-13.0)

SAMPLE RESULTS - 02 L968786

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Collected date/time: 02/07/18 12:40 Total Solids by Method 2540 G-2011

						1 Cn
	Result	Qualifier	Dilution	Analysis	Batch	Cp
Analyte	%			date / time		2
Total Solids	93.0		1	02/12/2018 13:02	WG1072037	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000246	0.00537	1	02/09/2018 15:47	WG1071817	
1,1-Dichloroethene	U		0.000326	0.00107	1	02/09/2018 15:47	WG1071817	
cis-1,2-Dichloroethene	U		0.000253	0.00107	1	02/09/2018 15:47	WG1071817	
trans-1,2-Dichloroethene	U		0.000284	0.00107	1	02/09/2018 15:47	WG1071817	
Tetrachloroethene	U		0.000297	0.00107	1	02/09/2018 15:47	WG1071817	
Trichloroethene	U		0.000300	0.00107	1	02/09/2018 15:47	WG1071817	
Vinyl chloride	U		0.000313	0.00107	1	02/09/2018 15:47	WG1071817	
(S) Toluene-d8	93.7			80.0-120		02/09/2018 15:47	WG1071817	
(S) Dibromofluoromethane	111			74.0-131		02/09/2018 15:47	WG1071817	
(S) 4-Bromofluorobenzene	104			64.0-132		02/09/2018 15:47	WG1071817	

DP2(15.0-17.0) Collected date/time: 02/07/18 12:45

SAMPLE RESULTS - 03 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	87.8		1	02/12/2018 13:02	WG1072037	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000261	0.00570	1	02/09/2018 16:08	WG1071817	
1,1-Dichloroethene	U		0.000345	0.00114	1	02/09/2018 16:08	WG1071817	
cis-1,2-Dichloroethene	U		0.000268	0.00114	1	02/09/2018 16:08	WG1071817	
trans-1,2-Dichloroethene	U		0.000301	0.00114	1	02/09/2018 16:08	WG1071817	
Tetrachloroethene	U		0.000314	0.00114	1	02/09/2018 16:08	WG1071817	
Trichloroethene	U		0.000318	0.00114	1	02/09/2018 16:08	WG1071817	
Vinyl chloride	U		0.000331	0.00114	1	02/09/2018 16:08	WG1071817	
(S) Toluene-d8	93.4			80.0-120		02/09/2018 16:08	WG1071817	
(S) Dibromofluoromethane	111			74.0-131		02/09/2018 16:08	WG1071817	
(S) 4-Bromofluorobenzene	104			64.0-132		02/09/2018 16:08	WG1071817	

DP3(5.0-7.0) Collected date/time: 02/07/18 14:25

SAMPLE RESULTS - 04 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	 Ср
Analyte	%			date / time		2
Total Solids	93.4		1	02/12/2018 13:02	WG1072037	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000245	0.00536	1	02/09/2018 16:30	WG1071817	
1,1-Dichloroethene	U		0.000325	0.00107	1	02/09/2018 16:30	WG1071817	
cis-1,2-Dichloroethene	U		0.000252	0.00107	1	02/09/2018 16:30	WG1071817	
trans-1,2-Dichloroethene	U		0.000283	0.00107	1	02/09/2018 16:30	WG1071817	
Tetrachloroethene	U		0.000296	0.00107	1	02/09/2018 16:30	WG1071817	
Trichloroethene	U		0.000299	0.00107	1	02/09/2018 16:30	WG1071817	
/inyl chloride	U		0.000312	0.00107	1	02/09/2018 16:30	WG1071817	
(S) Toluene-d8	93.6			80.0-120		02/09/2018 16:30	WG1071817	
(S) Dibromofluoromethane	116			74.0-131		02/09/2018 16:30	WG1071817	
(S) 4-Bromofluorobenzene	105			64.0-132		02/09/2018 16:30	WG1071817	

DP3(12.0-14.0) Collected date/time: 02/07/18 14:30

SAMPLE RESULTS - 05 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	 Ср
Analyte	%	Quanner	Diation	date / time	bach	2
Total Solids	92.7		1	02/12/2018 13:02	WG1072037	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000247	0.00539	1	02/09/2018 16:51	WG1071817	
1,1-Dichloroethene	U		0.000327	0.00108	1	02/09/2018 16:51	WG1071817	
cis-1,2-Dichloroethene	U		0.000253	0.00108	1	02/09/2018 16:51	WG1071817	
trans-1,2-Dichloroethene	U		0.000285	0.00108	1	02/09/2018 16:51	WG1071817	
Tetrachloroethene	0.000635	J	0.000298	0.00108	1	02/09/2018 16:51	WG1071817	
Trichloroethene	U		0.000301	0.00108	1	02/09/2018 16:51	WG1071817	
Vinyl chloride	U		0.000314	0.00108	1	02/09/2018 16:51	WG1071817	
(S) Toluene-d8	93.7			80.0-120		02/09/2018 16:51	WG1071817	
(S) Dibromofluoromethane	112			74.0-131		02/09/2018 16:51	WG1071817	
(S) 4-Bromofluorobenzene	105			64.0-132		02/09/2018 16:51	WG1071817	

DP3(23.0-25.0) Collected date/time: 02/07/18 14:35

SAMPLE RESULTS - 06 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	 Ср
Analyte	%			date / time		2
Total Solids	86.2		1	02/12/2018 12:44	WG1072038	Tc

Analyte	Result (dry)	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch	
	mg/kg							
Chloroform	U		0.000266	0.00580	1	02/09/2018 17:12	WG1071817	
1,1-Dichloroethene	U		0.000352	0.00116	1	02/09/2018 17:12	WG1071817	
cis-1,2-Dichloroethene	U		0.000273	0.00116	1	02/09/2018 17:12	WG1071817	
trans-1,2-Dichloroethene	U		0.000306	0.00116	1	02/09/2018 17:12	WG1071817	
Tetrachloroethene	U		0.000320	0.00116	1	02/09/2018 17:12	WG1071817	
Trichloroethene	U		0.000324	0.00116	1	02/09/2018 17:12	WG1071817	
Vinyl chloride	U		0.000338	0.00116	1	02/09/2018 17:12	WG1071817	
(S) Toluene-d8	94.2			80.0-120		02/09/2018 17:12	WG1071817	
(S) Dibromofluoromethane	113			74.0-131		02/09/2018 17:12	WG1071817	
(S) 4-Bromofluorobenzene	105			64.0-132		02/09/2018 17:12	WG1071817	

DP4(1.0-3.0) Collected date/time: 02/07/18 15:25

SAMPLE RESULTS - 07 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	 Ср
Analyte	%			date / time		2
Total Solids	98.9		1	02/12/2018 12:44	WG1072038	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000231	0.00505	1	02/09/2018 17:33	WG1071817	
1,1-Dichloroethene	U		0.000306	0.00101	1	02/09/2018 17:33	WG1071817	
cis-1,2-Dichloroethene	U		0.000238	0.00101	1	02/09/2018 17:33	WG1071817	
trans-1,2-Dichloroethene	U		0.000267	0.00101	1	02/09/2018 17:33	WG1071817	
Tetrachloroethene	0.000363	J	0.000279	0.00101	1	02/09/2018 17:33	WG1071817	
Trichloroethene	U		0.000282	0.00101	1	02/09/2018 17:33	WG1071817	
Vinyl chloride	U		0.000294	0.00101	1	02/09/2018 17:33	WG1071817	
(S) Toluene-d8	94.2			80.0-120		02/09/2018 17:33	WG1071817	
(S) Dibromofluoromethane	115			74.0-131		02/09/2018 17:33	WG1071817	
(S) 4-Bromofluorobenzene	107			64.0-132		02/09/2018 17:33	WG1071817	

DP4(12.0-14.0) Collected date/time: 02/07/18 15:35

SAMPLE RESULTS - 08 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	83.6		1	02/12/2018 12:44	WG1072038	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000274	0.00598	1	02/09/2018 17:55	WG1071817	
1,1-Dichloroethene	U		0.000363	0.00120	1	02/09/2018 17:55	WG1071817	
cis-1,2-Dichloroethene	U		0.000281	0.00120	1	02/09/2018 17:55	WG1071817	
trans-1,2-Dichloroethene	U		0.000316	0.00120	1	02/09/2018 17:55	WG1071817	
Tetrachloroethene	0.0120		0.000330	0.00120	1	02/09/2018 17:55	WG1071817	
Trichloroethene	U		0.000334	0.00120	1	02/09/2018 17:55	WG1071817	
Vinyl chloride	U		0.000348	0.00120	1	02/09/2018 17:55	WG1071817	
(S) Toluene-d8	94.4			80.0-120		02/09/2018 17:55	WG1071817	
(S) Dibromofluoromethane	108			74.0-131		02/09/2018 17:55	WG1071817	
(S) 4-Bromofluorobenzene	106			64.0-132		02/09/2018 17:55	WG1071817	

DP4(23.0-25.0) Collected date/time: 02/07/18 15:40

SAMPLE RESULTS - 09 L968786

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	 Ср
Analyte	%			date / time		2
Total Solids	95.7		1	02/12/2018 12:44	WG1072038	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000239	0.00523	1	02/12/2018 14:43	WG1071817	
1,1-Dichloroethene	U		0.000317	0.00105	1	02/12/2018 14:43	WG1071817	
cis-1,2-Dichloroethene	U		0.000246	0.00105	1	02/12/2018 14:43	WG1071817	
trans-1,2-Dichloroethene	U		0.000276	0.00105	1	02/12/2018 14:43	WG1071817	
Tetrachloroethene	0.00187		0.000288	0.00105	1	02/12/2018 14:43	WG1071817	
Trichloroethene	U		0.000292	0.00105	1	02/12/2018 14:43	WG1071817	
Vinyl chloride	U		0.000304	0.00105	1	02/12/2018 14:43	WG1071817	
(S) Toluene-d8	97.4			80.0-120		02/12/2018 14:43	WG1071817	
(S) Dibromofluoromethane	97.6			74.0-131		02/12/2018 14:43	WG1071817	
(S) 4-Bromofluorobenzene	96.8			64.0-132		02/12/2018 14:43	WG1071817	

WG1072037

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

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Method Blank (MB)

Method Blauk	(IVIB)							
(MB) R3285822-1 02/12/18 13:02								
	MB Result	MB Qualifier	MB MDL	MB RDL		2		
Analyte	%		%	%		T		
Total Solids	0.002							
						³ S		

L968786-05 Original Sample (OS) • Duplicate (DUP)

(OS) L968786-05 02/12	/18 13:02 • (DUP)	R3285822-3	02/12/18 1	3:02		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	92.7	93.6	1	1		5

Laboratory Control Sample (LCS)

(LCS) R3285822-2 02	CS) R3285822-2 02/12/18 13:02										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier						
Analyte	%	%	%	%							
Total Solids	50.0	50.0	100	85-115							

SDG: L968786 DATE/TIME: 02/13/18 11:22

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WG1072038

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3285820-1 02/	(MB) R3285820-1 02/12/18 12:44								
	MB Result	MB Qualifier	MB MDL	MB RDL					
Analyte	%		%	%					
Total Solids	0.001								

L968072-01 Original Sample (OS) • Duplicate (DUP)

(OS) L968072-01 02/12	2/18 12:44 • (DUP)	R3285820-3	02/12/18 12	2:44		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	80.7	81.2	1	1		5

Laboratory Control Sample (LCS)

(LCS) R3285820-2 0	CS) R3285820-2 02/12/18 12:44										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier						
Analyte	%	%	%	%							
Total Solids	50.0	50.0	100	85-115							

SDG: L968786 DATE/TIME: 02/13/18 11:22 PAGE: 16 of 23 Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

8 12:01			
MB Result	MB Qualifier	MB MDL	MB RDL
mg/kg		mg/kg	mg/kg
U		0.000229	0.00500
U		0.000303	0.00100
U		0.000235	0.00100
U		0.000264	0.00100
U		0.000276	0.00100
U		0.000279	0.00100
U		0.000291	0.00100
101			80.0-120
			74.0-131
106			74.0-131
	MB Result mg/kg U <	MB ResultMB Qualifiermg/kg	MB Result MB Qualifier MB MDL mg/kg mg/kg U 0.000229 U 0.000303 U 0.000235 U 0.000235 U 0.000236 U 0.000264 U 0.000276 U 0.000279 U 0.000291 U 0.000291

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3285622-1 02/09/	(LCS) R3285622-1 02/09/18 10:57 • (LCSD) R3285622-2 02/09/18 11:18												
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%			
Chloroform	0.0250	0.0266	0.0265	106	106	73.0-123			0.438	20			
1,1-Dichloroethene	0.0250	0.0261	0.0257	104	103	63.0-131			1.52	20			
cis-1,2-Dichloroethene	0.0250	0.0258	0.0247	103	98.9	74.0-123			4.38	20			
trans-1,2-Dichloroethene	0.0250	0.0250	0.0246	99.9	98.5	72.0-122			1.48	20			
Tetrachloroethene	0.0250	0.0227	0.0237	90.7	94.6	70.0-127			4.26	20			
Trichloroethene	0.0250	0.0234	0.0238	93.6	95.4	79.0-120			1.87	20			
Vinyl chloride	0.0250	0.0224	0.0220	89.7	87.8	63.0-134			2.11	20			
(S) Toluene-d8				100	102	80.0-120							
(S) Dibromofluoromethane				105	103	74.0-131							
(S) 4-Bromofluorobenzene				104	102	64.0-132							
(S) 4-Bromofluorobenzene				104	102	64.0-132							

L968492-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
Chloroform	0.0250	ND	0.0205	0.0199	82.2	79.4	1	18.0-148			3.41	28	
1,1-Dichloroethene	0.0250	ND	0.0209	0.0193	83.6	77.3	1	10.0-150			7.79	31	
cis-1,2-Dichloroethene	0.0250	ND	0.0198	0.0188	79.3	75.2	1	16.0-145			5.36	28	
trans-1,2-Dichloroethene	0.0250	ND	0.0187	0.0179	74.8	71.8	1	11.0-142			4.18	29	
Tetrachloroethene	0.0250	0.00755	0.0177	0.0146	40.6	28.1	1	10.0-144			19.3	32	
Trichloroethene	0.0250	ND	0.0173	0.0157	67.2	61.0	1	11.0-148			9.36	29	
Vinyl chloride	0.0250	ND	0.0192	0.0180	76.7	71.9	1	10.0-150			6.46	29	
	ACCOUNT:			PRC	JECT:			SDG:		DATE/	TIME:		PAGE:
Succeed Er	vironmental Consu	lting		F	IE-1		LS	968786		02/13/1	3 11:22		17 of 23

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Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

L968492-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L968492-02 02/09/	18 12:55 • (MS) F	R3285622-4 0	2/09/18 20:02	2 • (MSD) R328	5622-5 02/09	/18 20:23						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
(S) Toluene-d8					93.8	91.6		80.0-120				
(S) Dibromofluoromethane					109	113		74.0-131				
(S) 4-Bromofluorobenzene					103	102		64.0-132				

³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al

⁹ Sc

3

Ср

Тс

DATE/TIME: 02/13/18 11:22

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GLOSSARY OF TERMS

*

Τс

Ss

Cn

Sr

*Q*c

GI

AI

Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(a) a)	
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section fo each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

J

The identification of the analyte is acceptable; the reported value is an estimate.

SDG: L968786 DATE/TIME: 02/13/18 11:22

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
lowa	364
Kansas	E-10277
Kentucky ¹	90010
Kentucky ²	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05

Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T 104704245-07-TX
Texas ⁵	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

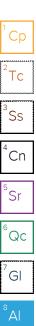
Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



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Sc

			Billing Info	rmation:				2	A	nalysis / C	ontainer /	Preservativ			Chain of Cu	istody	Page of
Succeed Environment 6028 NE 49th Avenue Portland, OR 97218	al Consu	lting		Blake 49th Ave. I, OR 97218		Pres Chk								7		E	
Report to: Andrew Blake			Email To: a	blake@succeed	-env.com	-	¥ HO								12065 Leban Mount Juliet Phone: 615-7	TN 37122	
Project Description:	1913			City/State	teona, UX		/r/Me	es			14				Phone: 800-1 Fax: 615-758	767-5859 I-5859	
Phone: 971-371-0404	Client Project HE-1	Ħ		Lab Project # SUCENVPO	R-HE1		40ml/NaH504/Syr/MeOH	Ir-NoPr							L# Table	C1	67876
Collected by (print):	Site/Facility ID		1	P.O. #	2.64		nl/Na	1 2 ozC							Acctnum:		
Collected by (signature):	Rush? (L Same Da Next Day Two Day Three Du	5 Day 10 Da	Jay	Quote # Date Re	- Ycs. sults Needed	No. of	vocs	wt,voc screen 2ozClr-NoPres								P6364	sa mo
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	V8260C	dry w							Shipped V Remar		X Ground ample # (lab only)
(DP-1 (1.0-2.0)	-	SS	-	2/1/18	1/130	5	x	X	Ab	d				A	hard and		
OP-1 (60-80)		SS	1		11.35	5	X	X		ord				1		1	
DP-1 (110-13.0)	-	SS	-	1 1	11.38	5	x	×	tho	d	1			1.20	1		
OP-1 (150-17.0)		SS	1	IV/	11:40	5	x	×	Ho	1l	101			1	100	11	
DP-1 (22.0.24)	-	SS	-	N	11:45	5	X	×	46	d							
DP-Z (10-3.0)	-	SS	-	12	12:30	5	X	X	Ho	Vel					it.		
DR-2 (K.0-8.0)	-	SS		1.1.0.02	12:35	5	х	X	0						1.1	-	01
DP.2 (11:0-17.0)) -	SS		æ.,	12:40	5	X	X	OK					1000	1.00	1 -1	02
DP-2 (15,0-17.0)	-	SS	-		12:45	5	Х	X	OF	1					1 3.7	-	03
DP-2 (23.0-25.0)	7	SS	4		12:50	5	×_	×	Ho	Pl					16		/
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other	Samples rotur	Analyza ned via: dEx _ Cou		2000	PRE, THE -R Tracking # 419	E, .	Dee Jorn	s, Va form	547	pH Flow_		emp		COC Seal COC Signe Bottles a Correct 1 Sufficien	mple Recei Present/In d/Accurate irrive inta ottles use it volume s If App)	tact: ct: d: lent: Licable	
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Relinquished by : (Signature)		Date;		Time:	Received by: (Signa	ture)	n	1	-	Temp: 5.52	J°C	Bottles Recei	red:	If preserval	tion required	by Login:	Date/Time
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Contraction of the second s			Billing Info	rmation:					Ana	alysis / Cont	ainer / Preservative		Chain of Custod	ly Page Zof 4
ucceed Environment	al Consul	lting	1 10 10 10 10 10 10 10 10	Blake 49th Ave. I, OR 97218		Pres Chk								
port to: ndrew Blake			Email To: a	ablake@succeed-	env.com	2	ноа						12065 Lebanon R Mount Juliet, TN Phone: 615-758-5	
roject	1			City/State Collected: Te	Econor, W	4	vr/Me	es					Phone: 800-767-5 Fax: 615-758-585	
hone: 971-371-0404	Client Project		1	Lab Project # SUCENVPOR	China de		40ml/NaHS04/Syr/MeOH	2ozClr-NoPres					L# 96	8786
Blected by (print):	Site/Facility ID	#		P.O. #	-	1	nl/Nai	1 2ozC					Contraction of the local division of the loc	ICENVPOR
ilected by (signature):		ab MUST Be ay Five		Quote #				creer					Template:T1 Prelogin: P6	122101010
	Next Day Two Day Three D	y 5 Da	iy (Rad Only) bay (Rad Only)	Date Re:	sults Needed	No. of	OC VOCS	dry wt,voc screen					A DECEMBER OF A	5-18 mb
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	V8260C	dry w					Shipped Via: Remarka	Sample # (lab only)
)P-3 (0.0-2.0)	-	SS	-	2/1/18	14:20	5	×-	×	Hor	R			Carl Marian	- Bannar
P-S (5.0-7.0)	1	SS		1	14:25	5	X	X	OF	5		19	1218	-04
08-3 (12.0-14.0)	20	SS		11	14:30	15	X	X	OK	-			-	-55
P-3 (23.0-25.0)	V	SS	V		14:35	5	X	X	OX	-		1	and the second	-de
Temp Blank		SS				5	X	X	0	-				1007
SP-4 (10-30)	PER LA	SS			15:25	5	X	X	OR	20		1236		-50-07
P.4 (50-70)	2	SS			15:30	5	X	X	Ho	1d		1	1 2 2	
P-4 (12.0-14.0)		SS	-		15:35	5	X	X	OK	1		-	Ke	80-19-
P.4 (23.0.25.0)	1	SS		D. ALE	15:40	5	X	X	OA					P0-01-
Contract of the second		SS	1000	A LEVE DE		5	X	X					Carries .	
Matrix: - Soil AIR - Air F - Filter W - Groundwater B - Bioassay	Remarks: 🖌	Sec	P.1		i de					pH	Temp	Bottle	Sample Receipt oal Present/Inta igned/Accurate: es arrive intact	: Z _ N
VW - WasteWater IW - Drinking Water IT - Other	Samples vitu	rned via: ędEx Co	ourier		Tracking # 410	163	26	85	547-	8536	P ()	Suffic VCA Z	ct bottles used: clent volume sen <u>If Applic</u> sro Headspace:	able Y N
telinquished by : (Signature)		Date:	18	Time: FEPEX	Received by: (Sign	nature)				Trip Blank Re	eceived Yet / No HCL / Me TBR	and the second se	rvation Correct/	Checked: Y_N
Relinquished by : (Signature)	<	Dates		and the second se	Received by: (Sign	nature)		1		Temp: 52	P Bottles Receive	d: If prese	ervation required by	Login: Date/Time
Relinquished by : (Signature)		Date:	1	Time:	Received for lab	A Abigna	iture}	24		Date: 8	18 THERE	Hold:	199744	Condition: NCF / OK

Katie Ingram

ESC Lab Sciences Non-Conformance Form

1965786

Login #:L986786 Client:SUCENVPOR Date:02/08/18 Evaluated by: Myra "Katie" Ingram

Non-Conformance (check applicable items)

[T				×	-	T	Т		-	T		-	T	T	
		Cuthing and	Sufficient sample remains	Broken container:	Broken container	n .	Vials received with headenee	Insufficient sample volume,		preservation	type	Improper container	temperature	time	Parameter(s) nast holding	Cample Interaction
			Quantum of Farmer	Chain of Custody is missing	Client did not "X" analysis.	1 rip Blank not received.	COC	Sample ide on contribute data to the second		Please specify TCLP requested.	Please specify Metals requested.	anality of charters is intentional	Chain of custody is incomplete	Login Clarification Needed	Chain of Custody Clarification	
T	Carrier:	Temp/Cont. Rec./pH:	Date/Time:	De land	Received her	If no Chain of Custody:	Container lid not intact	sampie was frozen	Improper handling by carrier (FedEx / UPS / Courie		Insufficient packing material inside	Insufficient packing material around container	H DI WALL CONTAILLET:	If Broken Containon		

Login Comments:

Tracking#

One stirbar for ID: DP-4(1.0-3.0) received broken

			8	Client Conta	R Initials:bjf
1	Date:	VOICE MIDII	TERVER		
		Voice Mail	Email	Call	Hent informed by:
			the second se	Contraction of the second	

Proceed with remaining sample volume

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ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L969428 02/10/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Sr

Qc

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

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DP-7(11.0-13.0) L969428-01 Solid			Collected by Andrew Blake	Collected date/time 02/09/18 09:35	Received date/time 02/10/18 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1073290	1	02/14/18 13:56	02/14/18 14:08	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072444	1	02/09/18 09:35	02/11/18 14:48	JAH
			Collected by	Collected date/time	Received date/time
DP-7(22.0-24.0) L969428-02 Solid			Andrew Blake	02/09/18 09:45	02/10/18 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Fotal Solids by Method 2540 G-2011	WG1073290	1	02/14/18 13:56	02/14/18 14:08	KDW
/olatile Organic Compounds (GC/MS) by Method 8260C	WG1072444	1	02/09/18 09:45	02/11/18 15:09	JAH
			Collected by	Collected date/time	Received date/time
DP-8(14.0-15.0) L969428-03 Solid			Andrew Blake	02/09/18 12:05	02/10/18 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1073290	1	02/14/18 13:56	02/14/18 14:08	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072444	1	02/09/18 12:05	02/11/18 15:30	JAH
			Collected by	Collected date/time	Received date/time
DP-8(18.0-20.0) L969428-04 Solid			Andrew Blake	02/09/18 12:10	02/10/18 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1073290	1	02/14/18 13:56	02/14/18 14:08	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072444	1	02/09/18 12:10	02/11/18 15:51	JAH

SDG: L969428 DATE/TIME: 02/15/18 10:55

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L969428 DA1 02/15 PAGE: 4 of 13

DP-7(11.0-13.0)

SAMPLE RESULTS - 01 L969428

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Collected date/time: 02/09/18 09:35

Total Solids by N	/lethod 2540 G-2	2011				1
	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	85.2		1	02/14/2018 14:08	WG1073290	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000269	0.00587	1	02/11/2018 14:48	WG1072444	
1,1-Dichloroethene	U		0.000356	0.00117	1	02/11/2018 14:48	WG1072444	
cis-1,2-Dichloroethene	U		0.000276	0.00117	1	02/11/2018 14:48	WG1072444	
trans-1,2-Dichloroethene	U		0.000310	0.00117	1	02/11/2018 14:48	WG1072444	
Tetrachloroethene	0.000825	J	0.000324	0.00117	1	02/11/2018 14:48	WG1072444	
Trichloroethene	U		0.000328	0.00117	1	02/11/2018 14:48	WG1072444	
/inyl chloride	U		0.000342	0.00117	1	02/11/2018 14:48	WG1072444	
(S) Toluene-d8	98.7			80.0-120		02/11/2018 14:48	WG1072444	
(S) Dibromofluoromethane	96.6			74.0-131		02/11/2018 14:48	WG1072444	
(S) 4-Bromofluorobenzene	96.4			64.0-132		02/11/2018 14:48	WG1072444	

DP-7(22.0-24.0) Collected date/time: 02/09/18 09:45

SAMPLE RESULTS - 02 L969428

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Cp
Analyte	%			date / time		2
Total Solids	92.3		1	02/14/2018 14:08	WG1073290	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000248	0.00542	1	02/11/2018 15:09	WG1072444	
1,1-Dichloroethene	U		0.000328	0.00108	1	02/11/2018 15:09	WG1072444	
cis-1,2-Dichloroethene	U		0.000255	0.00108	1	02/11/2018 15:09	WG1072444	
trans-1,2-Dichloroethene	U		0.000286	0.00108	1	02/11/2018 15:09	WG1072444	
Tetrachloroethene	0.0178		0.000299	0.00108	1	02/11/2018 15:09	WG1072444	
Trichloroethene	U		0.000302	0.00108	1	02/11/2018 15:09	WG1072444	
Vinyl chloride	U		0.000315	0.00108	1	02/11/2018 15:09	WG1072444	
(S) Toluene-d8	96.3			80.0-120		02/11/2018 15:09	WG1072444	
(S) Dibromofluoromethane	96.6			74.0-131		02/11/2018 15:09	WG1072444	
(S) 4-Bromofluorobenzene	97.3			64.0-132		02/11/2018 15:09	WG1072444	

DP-8(14.0-15.0) Collected date/time: 02/09/18 12:05

SAMPLE RESULTS - 03 L969428

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	87.0		1	02/14/2018 14:08	WG1073290	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000263	0.00575	1	02/11/2018 15:30	WG1072444	
1,1-Dichloroethene	U		0.000348	0.00115	1	02/11/2018 15:30	WG1072444	
cis-1,2-Dichloroethene	U		0.000270	0.00115	1	02/11/2018 15:30	WG1072444	
trans-1,2-Dichloroethene	U		0.000304	0.00115	1	02/11/2018 15:30	WG1072444	
Tetrachloroethene	U		0.000317	0.00115	1	02/11/2018 15:30	WG1072444	
Trichloroethene	U		0.000321	0.00115	1	02/11/2018 15:30	WG1072444	
Vinyl chloride	U		0.000335	0.00115	1	02/11/2018 15:30	WG1072444	
(S) Toluene-d8	99.1			80.0-120		02/11/2018 15:30	WG1072444	
(S) Dibromofluoromethane	96.3			74.0-131		02/11/2018 15:30	WG1072444	
(S) 4-Bromofluorobenzene	96.1			64.0-132		02/11/2018 15:30	WG1072444	

DP-8(18.0-20.0) Collected date/time: 02/09/18 12:10

SAMPLE RESULTS - 04 L969428

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Cp
Analyte	%			date / time		2
Total Solids	87.1		1	02/14/2018 14:08	WG1073290	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000263	0.00574	1	02/11/2018 15:51	WG1072444	
1,1-Dichloroethene	U		0.000348	0.00115	1	02/11/2018 15:51	WG1072444	
cis-1,2-Dichloroethene	U		0.000270	0.00115	1	02/11/2018 15:51	WG1072444	
trans-1,2-Dichloroethene	U		0.000303	0.00115	1	02/11/2018 15:51	WG1072444	
Tetrachloroethene	U		0.000317	0.00115	1	02/11/2018 15:51	WG1072444	
Trichloroethene	U		0.000320	0.00115	1	02/11/2018 15:51	WG1072444	
Vinyl chloride	U		0.000334	0.00115	1	02/11/2018 15:51	WG1072444	
(S) Toluene-d8	99.4			80.0-120		02/11/2018 15:51	WG1072444	
(S) Dibromofluoromethane	96.2			74.0-131		02/11/2018 15:51	WG1072444	
(S) 4-Bromofluorobenzene	96.0			64.0-132		02/11/2018 15:51	WG1072444	

WG1073290

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

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Method Blank (MB)

Method Dialik					1 Cn	
(MB) R3286516-1 0	2/14/18 14:08				СР	
	MB Result	MB Qualifier	MB MDL	MB RDL	2	
Analyte	%		%	%	Tc	
Total Solids	0				L	

L968931-04 Original Sample (OS) • Duplicate (DUP)

(OS) L968931-04 02/14/18	8 14:08 • (DUP) F	R3286516-3 (02/14/18 14	:08		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	86.1	86.7	1	1		5

Laboratory Control Sample (LCS)

(LCS) R3286516-2 02/14	4/18 14:08				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

SDG: L969428 DATE/TIME: 02/15/18 10:55

PAGE: 9 of 13 Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3285600-3 02/11/18	12:29			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloroform	U		0.000229	0.00500
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
Tetrachloroethene	U		0.000276	0.00100
Trichloroethene	U		0.000279	0.00100
Vinyl chloride	U		0.000291	0.00100
(S) Toluene-d8	106			80.0-120
(S) Dibromofluoromethane	87.1			74.0-131
(S) 4-Bromofluorobenzene				64.0-132

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3285600-1 02/11/1	CS) R3285600-1 02/11/18 11:04 • (LCSD) R3285600-2 02/11/18 11:25										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Chloroform	0.0250	0.0239	0.0232	95.6	92.8	73.0-123			2.95	20	
1,1-Dichloroethene	0.0250	0.0242	0.0231	96.8	92.6	63.0-131			4.44	20	
cis-1,2-Dichloroethene	0.0250	0.0239	0.0230	95.7	91.8	74.0-123			4.19	20	
trans-1,2-Dichloroethene	0.0250	0.0237	0.0228	94.7	91.1	72.0-122			3.78	20	
Tetrachloroethene	0.0250	0.0263	0.0251	105	100	70.0-127			4.84	20	
Trichloroethene	0.0250	0.0248	0.0243	99.4	97.3	79.0-120			2.08	20	
Vinyl chloride	0.0250	0.0210	0.0204	84.2	81.5	63.0-134			3.24	20	
(S) Toluene-d8				102	103	80.0-120					
(S) Dibromofluoromethane				92.0	92.3	74.0-131					
(S) 4-Bromofluorobenzene				94.7	96.2	64.0-132					

SDG: L969428 DATE/TIME: 02/15/18 10:55 PAGE: 10 of 13

GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

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The identification of the analyte is acceptable; the reported value is an estimate.

SDG: L969428 DATE/TIME: 02/15/18 10:55

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
lowa	364
Kansas	E-10277
Kentucky ¹	90010
Kentucky ²	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05

Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee 1 4	2006
Texas	T 104704245-07-TX
Texas ⁵	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.





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Succeed Environmen	ntal Consi	ulting		Billing Information:			F	-	Analysis / Container / Pre	servative	Chain of Custody Page 1 of		
6028 NE 49th Avenue Portland, OR 97218		1		v Blake E 49th Ave. Id, OR 97218		Pres Chk	-	-				*	ESC
leport to: Andrew Blake	2.0	0	Email To: a	ablake@succe	ed-env.com	11	н					12065 Lobanon Rd	
roject rescription:	al de		Er zi	City/State Collected:			r/Met	S				Mount Juliet, TN 33 Phone: 615-758-58 Phone: 800-767-58 Fax: 615-758-5859	7122 58 59
hone: 971-371-0404 ax:	Client Project	#	122	Lab Project I SUCENVP		11	40ml/NaHS04/Syr/MeOH	2ozClr-NoPres				1#9694	128
And Bours	Site/Facility ID	#	2	P.O. #	-		HeN/I	2ozClr.				H001	
ollected by (signature):	Same Day Next Day Two Day	Lab MUST Be I lay Five D lay 5 Day lo Day	Day	Quote #	Yes - HE - 1 Results Needed	F	VOCs 40m	SCr				Template: T13 Prelogin: P63 TSR: 110 - Briar	2035 6453
sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260C V	dry wt,voc					Irmo
)P-7 (1.0-3.0)	İ	SS		2/0/18	1 9:25	5	*	X	10			Remarks	Sample # (lab only)
18-7 (5.0-7.0)		SS	1000		9:30	5	X	X	4002		-	1	
P-7 (11.0-13.0)		<			9:35	5	×	X	Hard		-	-	
10-7 (170-19.0)		V		123.24	9:40	5	\square	P	Hord		1		-01
P-7 (220-24.0)					9:45	-	×	X	Mart				
8-8(1.0-2.5)				12.5	1/1155	5		-	Hold			2.1	-02
P-8(6.0-8.0)	and the			9.55	12:00	5		\square	Hora			1	
XP-8(14.0-15-0)			-		12:25		×	X	ANT		-		
P-8(18.0-20.0)	feed as	and the			12:0	5	X	X					-03-
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 Orinking Water Other 	Samples returne UPSFedE	ned via: dEx Courie	er		Tracking # 735	24	42	201	Flow Other	Cor Cor Sur	ttles arr rrect bot fficient s	ive intact; tles used: volume sent; If Applicable	
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ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L969558 02/09/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SAMPLE SUMMARY

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			Collected by	Collected date/time	Received date/time
DP-5(17.0-19.0) L969558-01 Solid			Andrew Blake	02/07/18 17:00	02/09/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1072608	1	02/12/18 16:40	02/12/18 16:49	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072978	1	02/07/18 17:00	02/13/18 12:45	DWR
			Collected by	Collected date/time	Received date/time
DP-5(23.0-25.0) L969558-02 Solid			Andrew Blake	02/07/18 17:10	02/09/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1072608	1	02/12/18 16:40	02/12/18 16:49	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072978	1	02/07/18 17:10	02/13/18 13:05	DWR
			Collected by	Collected date/time	Received date/time
DP-6(17.0-19.0) L969558-06 Solid			Andrew Blake	02/07/18 18:20	02/09/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1072608	1	02/12/18 16:40	02/12/18 16:49	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072978	1	02/07/18 18:20	02/13/18 13:25	DWR
			Collected by	Collected date/time	Received date/time
DP-6(23.0-25.0) L969558-07 Solid			Andrew Blake	02/07/18 18:25	02/09/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1072938	1	02/13/18 10:03	02/13/18 10:12	JD
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1072978	1	02/07/18 18:25	02/13/18 13:45	DWR

SDG: L969558

DATE/TIME: 02/13/18 17:47 PAGE: 3 of 15

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L969558

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DP-5(17.0-19.0) Collected date/time: 02/07/18 17:00

SAMPLE RESULTS - 01 L969558

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Total Solids by Method 2540 G-2011

						 l'Cn
	Result	Qualifier	Dilution	Analysis	Batch	Cp
Analyte	%			date / time		2
Total Solids	90.1		1	02/12/2018 16:49	WG1072608	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloroform	U		0.000254	0.00555	1	02/13/2018 12:45	WG1072978
1,1-Dichloroethene	U		0.000336	0.00111	1	02/13/2018 12:45	WG1072978
cis-1,2-Dichloroethene	U		0.000261	0.00111	1	02/13/2018 12:45	WG1072978
trans-1,2-Dichloroethene	U		0.000293	0.00111	1	02/13/2018 12:45	WG1072978
Tetrachloroethene	0.0148		0.000306	0.00111	1	02/13/2018 12:45	WG1072978
Trichloroethene	U		0.000310	0.00111	1	02/13/2018 12:45	WG1072978
Vinyl chloride	U		0.000323	0.00111	1	02/13/2018 12:45	WG1072978
(S) Toluene-d8	94.0			80.0-120		02/13/2018 12:45	WG1072978
(S) Dibromofluoromethane	108			74.0-131		02/13/2018 12:45	WG1072978
(S) 4-Bromofluorobenzene	102			64.0-132		02/13/2018 12:45	WG1072978

DP-5(23.0-25.0) Collected date/time: 02/07/18 17:10

SAMPLE RESULTS - 02 L969558

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	85.8		1	02/12/2018 16:49	WG1072608	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000267	0.00583	1	02/13/2018 13:05	WG1072978	
1,1-Dichloroethene	U		0.000353	0.00117	1	02/13/2018 13:05	WG1072978	
cis-1,2-Dichloroethene	U		0.000274	0.00117	1	02/13/2018 13:05	WG1072978	
trans-1,2-Dichloroethene	U		0.000308	0.00117	1	02/13/2018 13:05	WG1072978	
Tetrachloroethene	0.00923		0.000322	0.00117	1	02/13/2018 13:05	WG1072978	
Trichloroethene	U		0.000325	0.00117	1	02/13/2018 13:05	WG1072978	
Vinyl chloride	U		0.000339	0.00117	1	02/13/2018 13:05	WG1072978	
(S) Toluene-d8	95.8			80.0-120		02/13/2018 13:05	WG1072978	
(S) Dibromofluoromethane	108			74.0-131		02/13/2018 13:05	WG1072978	
(S) 4-Bromofluorobenzene	100			64.0-132		02/13/2018 13:05	WG1072978	

DP-6(17.0-19.0)

SAMPLE RESULTS - 06 L969558

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Collected date/time: 02/07/18 18:20

Total Solids by Method 2540 G-2011 Result Qualifier Dilution Analysis Batch Analyte % date / time Τс Total Solids 96.6 1 02/12/2018 16:49 WG1072608

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloroform	U		0.000237	0.00517	1	02/13/2018 13:25	WG1072978
1,1-Dichloroethene	U		0.000314	0.00103	1	02/13/2018 13:25	WG1072978
cis-1,2-Dichloroethene	U		0.000243	0.00103	1	02/13/2018 13:25	WG1072978
trans-1,2-Dichloroethene	U		0.000273	0.00103	1	02/13/2018 13:25	WG1072978
Tetrachloroethene	U		0.000286	0.00103	1	02/13/2018 13:25	WG1072978
Trichloroethene	U		0.000289	0.00103	1	02/13/2018 13:25	WG1072978
Vinyl chloride	U		0.000301	0.00103	1	02/13/2018 13:25	WG1072978
(S) Toluene-d8	96.5			80.0-120		02/13/2018 13:25	WG1072978
(S) Dibromofluoromethane	109			74.0-131		02/13/2018 13:25	WG1072978
(S) 4-Bromofluorobenzene	99.9			64.0-132		02/13/2018 13:25	WG1072978

DP-6(23.0-25.0) Collected date/time: 02/07/18 18:25

SAMPLE RESULTS - 07 L969558

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	87.2		1	02/13/2018 10:12	WG1072938	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000263	0.00574	1	02/13/2018 13:45	WG1072978	
1,1-Dichloroethene	U		0.000348	0.00115	1	02/13/2018 13:45	WG1072978	
cis-1,2-Dichloroethene	U		0.000270	0.00115	1	02/13/2018 13:45	WG1072978	
trans-1,2-Dichloroethene	U		0.000303	0.00115	1	02/13/2018 13:45	WG1072978	
Tetrachloroethene	U		0.000317	0.00115	1	02/13/2018 13:45	WG1072978	
Trichloroethene	U		0.000320	0.00115	1	02/13/2018 13:45	WG1072978	
Vinyl chloride	U		0.000334	0.00115	1	02/13/2018 13:45	WG1072978	
(S) Toluene-d8	95.4			80.0-120		02/13/2018 13:45	WG1072978	
(S) Dibromofluoromethane	108			74.0-131		02/13/2018 13:45	WG1072978	
(S) 4-Bromofluorobenzene	103			64.0-132		02/13/2018 13:45	WG1072978	

WG1072608

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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Method Blank (MB)

Method Diarr					^{1}Cn
(MB) R3285836-1	02/12/18 16:49				Cp
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	%		%	%	Tc
Total Solids	0				<u>.</u>
					³ Ss

L968072-05 Original Sample (OS) • Duplicate (DUP)

(OS) L968072-05 02/12/18 16:49 • (DUP) R3285836-3 02/12/18 16:49

()	Original Result			DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	%	%		%		%	
Total Solids	87.9	86.9	1	1		5	

Laboratory Control Sample (LCS)

(LCS) R3285836-2 02/	_CS) R3285836-2 02/12/18 16:49										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier						
Analyte	%	%	%	%							
Total Solids	50.0	50.0	100	85-115							

DATE/TIME: 02/13/18 17:47

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WG1072938

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

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Method Blank (MB)

(MB) R3285993-1 02/13/18 10:12									
	MB Result	MB Qualifier	MB MDL	MB RDL					
Analyte	%		%	%					
Total Solids	0.001								

L968686-01 Original Sample (OS) • Duplicate (DUP)

(OS) L968686-01 02/13/1	S) L968686-01 02/13/18 10:12 • (DUP) R3285993-3 02/13/18 10:12									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	%	%		%		%				
Total Solids	95.8	95.6	1	0		5				

Laboratory Control Sample (LCS)

(LCS) R3285993-2 02	CS) R3285993-2 02/13/18 10:12										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier						
Analyte	%	%	%	%							
Total Solids	50.0	50.0	100	85-115							

DATE/TIME: 02/13/18 17:47 Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3285961-3 02/13/18	10:37			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloroform	U		0.000229	0.00500
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
Tetrachloroethene	U		0.000276	0.00100
Trichloroethene	U		0.000279	0.00100
Vinyl chloride	U		0.000291	0.00100
(S) Toluene-d8	105			80.0-120
(S) Dibromofluoromethane	99.5			74.0-131
(S) 4-Bromofluorobenzene	101			64.0-132

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3285961-1 02/13/18	(LCS) R3285961-1 02/13/18 09:37 • (LCSD) R3285961-2 02/13/18 09:57												
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%			
Chloroform	0.0250	0.0266	0.0257	106	103	73.0-123			3.32	20			
1,1-Dichloroethene	0.0250	0.0261	0.0244	104	97.5	63.0-131			6.87	20			
cis-1,2-Dichloroethene	0.0250	0.0281	0.0266	112	106	74.0-123			5.60	20			
trans-1,2-Dichloroethene	0.0250	0.0271	0.0258	109	103	72.0-122			5.28	20			
Tetrachloroethene	0.0250	0.0273	0.0256	109	102	70.0-127			6.36	20			
Trichloroethene	0.0250	0.0279	0.0265	111	106	79.0-120			5.13	20			
Vinyl chloride	0.0250	0.0228	0.0212	91.2	85.0	63.0-134			7.11	20			
(S) Toluene-d8				104	103	80.0-120							
(S) Dibromofluoromethane				99.6	98.7	74.0-131							
(S) 4-Bromofluorobenzene				98.5	97.7	64.0-132							

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GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

SDG: L969558

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
lowa	364
Kansas	E-10277
Kentucky 1	90010
Kentucky ²	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05

levada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee 1 4	2006
Texas	T 104704245-07-TX
Texas ⁵	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



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1 Provincements	Consulti		Billing Inform			Pres				Analy	1313 / CON	sames /					34	F	SC
ucceed Environmental 028 NE 49th Avenue ortland, OR 97218	Consult	1	Andrew B 6028 NE 4 Portland,			Chik											12065 Lehar	ion Ad	
eport to: ndrew Blake	1	Ser		blake@succeed-en	1.		non	HOH		No.		1					Mount Juliet Phone: 615- Phone: 800- Fax: 615-75	, TN 37122 758-5858 757-5859	
oject				City/State Collected: Texes	own the	1	1	Syr/N	res								L#	1969	558
	Client Project # HE-1			Lab Project # SUCENVPOR-	HE1			aHS04/	2ozClr-NoPres								Table #		
	Site/Facility ID #	-		P.O.#	-			N/ImC									Acctnum Templat	e:T1320	035
collected by (signature):	Rush? (Lal	b MUST Be Five I 5 Day	Day	1	lts Needed	1		V8260C VOCs 40ml/NaH504/Syr/MeOH	oc screen							-		g - Brian	
mmediately Packed on Ice N	Two Day Three Day	Y10 Da	iy (Rad Only)	-	Time	No. of Cntr	rs	3260C	y wt,voc :								Shipper	Via: Fe	Sample # (lab only)
Sample ID	Comp/Grab	Matrix *	Depth	Date			-	× V8	× dry				-						10_
DA-5 (17.0/19.0)	-	SS	-	2/1/18	17:00	-	-	×	X								10		-02
DP-5 (230-25+)	-	SS	-	2/7/18	18:00	-	1	1.1.1.1.1	X	Ho	d					1		9	-03
PP-6 (1.0-3.0)	-	SS	-	2	18:05	-	5	x	X		1000		and a				-	24	A
DP-6 (5.0-7.0)		55	-		1840	5	5	x	X						-			- 03	-05-
DR-6 (120-14.0)		SS	-	N	18:22	2 5	5	×	X	Hord					-	-	-	. 94	
DR-6 (17.0 - 14.0)	53	SS	-	V	18:2	S !	5	X	X				-		-		-	2-1	26
DP-6 (230-25.0)		SS				-	5	X	X		-		-		1		-		
and a subsection of		SS			-		5	X	X		-	-	1		1		1	ale.	
	1	SS	1		1		5	X	×		-	-	1			COC Seal	Ample Re	ceipt C	heoviliat
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay	Remarks:		(M	1 All	4月 唐 (1)				1		pH Flow		Tem			COC Sign Bottles	arrive 1 bottles	nate: intact: used: ne sent	
ww - WasteWater DW - Drinking Water OT - Other	Samples retu UPSF	urned via: FedExC	Courier		Tracking #	4	10	26	9	92	03	ank Rec	51-	Ves (Ng	,	VOA Ker Preserve		Applica sce: rrect/C	hecked: Y
Relinquished by : (Signature)	1. Bullet	Date:	8/18	Time: FED EX	Received by: (S	-		22	-	100				HCLYA TBR ottles Reco	Леон	If preserv	ation requ	iired by L	ogin: Date/Time
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Relinquished by : (Signature)	1	Dates	S. 19	Time:	Received for I	ab by: (5	Sherr	Lature)	. 8	34	Date:	9-1	8	80	45	2-1		14	NCF / OR

Brian Ford

From: Sent: To: Subject: Brian Ford Saturday, February 10, 2018 5:28 PM Brian Ford FW: ESC Lab Sciences HE-1 L969558

From: Andrew Blake [mailto:ablake@succeed-env.com] Sent: Saturday, February 10, 2018 9:53 AM To: Brian Ford Subject: Re: ESC Lab Sciences OL-1-01 L969142

... please analyze the following for HVOCs on a 3 day TAT:

DP-5(17.0-19.0), DP-5(23.0-25.0), DP-6(17.0-19.0), and DP-5(23.0-25.0).

Hold the rest for now. Thanks!

Andrew S. Blake, R.G., L.G. Principal Geologist

Succeed Environmental Consulting, LLC 6028 NE 49th Avenue Portland, Oregon. 97218

971-371-0404 ablake@succeed-env.com



ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L969937 02/14/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SDG: L969937 DATE/TIME: 02/16/18 14:19

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

			Collected by Andrew Blake	Collected date/time 02/13/18 13:30	Received date/time 02/14/18 08:45
DP-9(24.0-26.0) L969937-01 Solid			Andrew blake	02/13/10 13:30	02/14/10 00.45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1073918	1	02/15/18 10:59	02/15/18 11:08	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1073433	1	02/13/18 13:30	02/14/18 13:44	ACG



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Ср

SDG: L969937 DATE/TIME: 02/16/18 14:19

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L969937

PAGE: 4 of 11

DP-9(24.0-26.0) Collected date/time: 02/13/18 13:30

SAMPLE RESULTS - 01 L969937

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	91.7		1	02/15/2018 11:08	WG1073918	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000250	0.00545	1	02/14/2018 13:44	WG1073433	
1,1-Dichloroethene	U		0.000331	0.00109	1	02/14/2018 13:44	WG1073433	
cis-1,2-Dichloroethene	U		0.000256	0.00109	1	02/14/2018 13:44	WG1073433	
trans-1,2-Dichloroethene	U		0.000288	0.00109	1	02/14/2018 13:44	WG1073433	
Tetrachloroethene	U		0.000301	0.00109	1	02/14/2018 13:44	WG1073433	
Trichloroethene	U		0.000304	0.00109	1	02/14/2018 13:44	WG1073433	
Vinyl chloride	U		0.000317	0.00109	1	02/14/2018 13:44	WG1073433	
(S) Toluene-d8	100			80.0-120		02/14/2018 13:44	WG1073433	
(S) Dibromofluoromethane	107			74.0-131		02/14/2018 13:44	WG1073433	
(S) 4-Bromofluorobenzene	97.6			64.0-132		02/14/2018 13:44	WG1073433	

WG1073918

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY L969937-01

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Method Blank (MB)

Method Blauk						1 CD
(MB) R3286840-1	02/15/18 11:08					CP
	MB Result	MB Qualifier	MB MDL	MB RDL	r	2
Analyte	%		%	%		Tc
Total Solids	0					

L969950-02 Original Sample (OS) • Duplicate (DUP)

(OS) L969950-02 02/15/	18 11:08 • (DUP)	R3286840-3	02/15/18 1	:08		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	84.8	85.3	1	1		5

Laboratory Control Sample (LCS)

(LCS) R3286840-2 02	2/15/18 11:08				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85-115	

SDG: L969937

DATE/TIME: 02/16/18 14:19

PAGE: 6 of 11 Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY L969937-01

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Method Blank (MB)

(MB) R3286282-3 02/14/1	18 11:08			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloroform	U		0.000229	0.00500
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
Tetrachloroethene	U		0.000276	0.00100
Trichloroethene	U		0.000279	0.00100
Vinyl chloride	U		0.000291	0.00100
(S) Toluene-d8	103			80.0-120
(S) Dibromofluoromethane	102			74.0-131
(S) 4-Bromofluorobenzene	98.1			64.0-132

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3286282-1 02/14/1	18 09:50 • (LCS	D) R3286282-	2 02/14/18 10:0	09						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloroform	0.0250	0.0271	0.0263	108	105	73.0-123			2.99	20
1,1-Dichloroethene	0.0250	0.0269	0.0262	108	105	63.0-131			2.51	20
cis-1,2-Dichloroethene	0.0250	0.0244	0.0246	97.5	98.4	74.0-123			0.830	20
trans-1,2-Dichloroethene	0.0250	0.0248	0.0258	99.3	103	72.0-122			3.88	20
Tetrachloroethene	0.0250	0.0287	0.0292	115	117	70.0-127			1.56	20
Trichloroethene	0.0250	0.0264	0.0251	106	100	79.0-120			5.23	20
Vinyl chloride	0.0250	0.0251	0.0238	100	95.3	63.0-134			5.23	20
(S) Toluene-d8				105	106	80.0-120				
(S) Dibromofluoromethane				102	101	74.0-131				
(S) 4-Bromofluorobenzene				98.9	99.8	64.0-132				

L969937-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L969937-01 02/14/18 13:44 • (MS) R3286282-4 02/14/18 14:04 • (MSD) R3286282-5 02/14/18 14:23

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloroform	0.0273	U	0.0195	0.0194	71.6	71.2	1	18.0-148			0.568	28
1,1-Dichloroethene	0.0273	U	0.0169	0.0168	61.8	61.4	1	10.0-150			0.638	31
cis-1,2-Dichloroethene	0.0273	U	0.0175	0.0168	64.4	61.7	1	16.0-145			4.24	28
trans-1,2-Dichloroethene	0.0273	U	0.0155	0.0158	56.8	58.1	1	11.0-142			2.23	29
Tetrachloroethene	0.0273	U	0.0174	0.0174	63.9	64.0	1	10.0-144			0.0911	32
Trichloroethene	0.0273	U	0.0170	0.0169	62.4	61.9	1	11.0-148			0.890	29

ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
Succeed Environmental Consulting	HE-1	L969937	02/16/18 14:19	7 of 11

QUALITY CONTROL SUMMARY

L969937-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L969937-01 02/14/18 13:44 • (MS) R3286282-4 02/14/18 14:04 • (MSD) R3286282-5 02/14/18 14:23

	. ,		,	,								
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Vinyl chloride	0.0273	U	0.0129	0.0136	47.2	49.9	1	10.0-150			5.58	29
(S) Toluene-d8					98.6	98.4		80.0-120				
(S) Dibromofluoromethane					107	106		74.0-131				
(S) 4-Bromofluorobenzene					100	95.7		64.0-132				

 ² Tc
³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
 ⁸ Al
°Sc

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DATE/TIME: 02/16/18 14:19

PAGE: 8 of 11

GLOSSARY OF TERMS

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Ss

Cn

Sr

*Q*c

GI

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

SDG: L969937

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

40660
UST-080
AZ0612
88-0469
01157CA
TN00003
PH-0197
E87487
NELAP
923
TN00003
200008
C-TN-01
364
E-10277
90010
16
AI30792
TN0002
324
M-TN003
9958
047-999-395
TN00003
340
CERT0086
NE-OS-15-05

Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T 104704245-07-TX
Texas ⁵	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.





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Definition of the second states		Sec. 1	Billing Info	ormation:	de de Crazilia		T	14.166	Ana	alysis / Con	tainer / Preser	rvative	Chain of Custody Page d d			
Succeed Environmental Consulting 5028 NE 49th Avenue Portland, OR 97218		Cing Andrew Blake 6028 NE 49th Ave. Portland, OR 97218											-	ESC		
Report to: Andrew Blake			Email To: ablake@succeed-env.com				× HO							12065 Lebary Mount Juliet,	TN 37122	
Project Description:				City/State Collected:			rr/Me	sa						Phone: 615-7 Phone: 800-7 Fax: 615-758	758-5858 440 53-54 767-5859 400 51-5	
Phone: 971-371-0404 Fax:	Client Project	"		Lab Project # SUCENVPC			40ml/NaHS04/Syr/MeOH	-NoPr							A142	
Collected by (print): Andrew Blerks	Site/Facility ID) II 		P.O. #	-		HeN/In	2ozClr						Table Arts		
Collected by (signature): Immediately Packed on Ice N_Y	1000 C 1147	v 10 Da	Test and the second second	Date R	YCS Results Needed	Na, cř	vocs	oc scr						Prelogin:	T132035 P636453 Brian Ford	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	V8260C	dry wi							a: FedEX Ground	
DP-9(24-0-26.0)	-	SS	-	2/13/19	8 13:30	5	X							19 10 20	01	
		SS		-		5	X	A	1200							
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		SS				18	X		1	1		-				
		SS	0000979			5	X	X		100	1	12		1		
		SS	1.153	1.2.2.2.1	12000000	5	X	X						114-20	1 10 10 10 10 10	
E COMPANY FUX DU	NE OVAL	SS	1.55	1.1.1.1	11-2-2-3	5	X	X								
		SS	1	21.2	O LIGHTNE	5	X	X				0				
and the		SS		S. C. S. S.	2 12 19	5	X	X								
		SS				5	X	X								
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks:	RE,	TCE,	DCES	, V.c., i	1-66	Jon	FAR		рН	Temp	-	and the second se	an <u>ple Receip</u> l Present/Int hed/Accurate: arrive intac	t:	
DW - Drinking Water OT - Other		dExCour			Tracking# 73	305	- 8	954	-	Flow	Other		Correct Sufficie	bottles used ont volume ser If Appli	i N nti Y N	
Relinquished by : [Signature]		Date:	18		Received by: (Signa	Long Street Street Street					ceived: Yes /(HCL TBR	7 MeoH	VOA Zero Preserva	Headspace: tion Correct.	Y N	
Relinquished by : (Signature)		Date:	Ţ	Time:	Received by: (Signa	ture)		1	Ter	mp:	C Bottles B	emived:)	If preserva	ition required by	/ Login: Date/Time	
Relinquished by : (Signature)		Date:	T	Time;	Received for lab by	15 gnat	and the second	2	Dat	114/1	8 84	5	Hold:		Condition: NCF / DB	



ANALYTICAL REPORT



Succeed Environmental ConsultingSample Delivery Group:L994831Samples Received:05/17/2018Project Number:HE-1Description:Report To:Andrew Blake

Entire Report Reviewed By:

Brian Ford

6028 NE 49th Avenue Portland, OR 97218

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

12065 Lebanon Rd Mount Juliet. TN 37122 615-758-5858 800-767-5859 www.esclabsciences.com

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GI: Glossary of Terms	8
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Sc: Sample Chain of Custody	10

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SDG: L994831 DATE/TIME: 05/23/18 17:15

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

			Collected by	Collected date/time	Received date/time
HA-1(2.0-3.0) L994831-01 Solid			Andrew Blake	05/16/18 13:00	05/17/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1114476	1	05/22/18 15:12	05/22/18 15:21	KS
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1113450	1.13	05/16/18 13:00	05/19/18 02:13	JAH

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SDG: L994831 DATE/TIME: 05/23/18 17:15 PAGE:

3 of 10

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L994831 DATE/TIME:

PAGE: 4 of 10

HA-1(2.0-3.0) Collected date/time: 05/16/18 13:00

SAMPLE RESULTS - 01 L994831

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	 Ср
Analyte	%			date / time		2
Total Solids	97.4		1	05/22/2018 15:21	WG1114476	Tc

Analyte	%		date /	time				r
Total Solids	97.4	1	I 05/22	/2018 15:21	<u>WG11144</u>	<u>76</u>		
Volatile Organic Com	ipounds (GC/M	1S) by Met	hod 8260	С				
	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	L
Analyte	mg/kg		mg/kg	mg/kg		date / time		
1,1-Dichloroethene	U		0.000580	0.00290	1.13	05/19/2018 02:13	WG1113450	
cis-1,2-Dichloroethene	U		0.000801	0.00290	1.13	05/19/2018 02:13	WG1113450	1
trans-1,2-Dichloroethene	U		0.00166	0.00580	1.13	05/19/2018 02:13	WG1113450	
Tetrachloroethene	0.0136		0.000812	0.00290	1.13	05/19/2018 02:13	WG1113450	
Trichloroethene	U		0.000464	0.00116	1.13	05/19/2018 02:13	WG1113450	e
Vinyl chloride	U		0.000792	0.00290	1.13	05/19/2018 02:13	WG1113450	
(S) Toluene-d8	118			80.0-120		05/19/2018 02:13	WG1113450	6
(S) Dibromofluoromethane	91.0			74.0-131		05/19/2018 02:13	WG1113450	
(S) 4-Bromofluorobenzene	102			64.0-132		05/19/2018 02:13	WG1113450	L
								5

WG1114476

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY

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Method Blank (MB)

	,			
(MB) R3312290-1 05/2	22/18 15:21			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

L994835-01 Original Sample (OS) • Duplicate (DUP)

(OS) L994835-01 05/22/1	18 15:21 • (DUP) I	R3312290-3 (05/22/18 19	5:21		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	80.4	79.9	1	0.629		5

Laboratory Control Sample (LCS)

(LCS) R3312290-2 05	5/22/18 15:21				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

SDG: L994831 DATE/TIME: 05/23/18 17:15 PAGE: 6 of 10

WG1113450

Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY L994831-01

(MB) R3311428-3 05/18/18 22:51					
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/kg		mg/kg	mg/kg	
1,1-Dichloroethene	U		0.000500	0.00250	
cis-1,2-Dichloroethene	U		0.000690	0.00250	
trans-1,2-Dichloroethene	U		0.00143	0.00500	
Tetrachloroethene	U		0.000700	0.00250	
Trichloroethene	U		0.000400	0.00100	
Vinyl chloride	U		0.000683	0.00250	
(S) Toluene-d8	116			80.0-120	
(S) Dibromofluoromethane	79.8			74.0-131	
(S) 4-Bromofluorobenzene	106			64.0-132	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3311428-1 05/18/18 20:38 • (LCSD) R3311428-2 05/18/18 20:59										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
1,1-Dichloroethene	0.125	0.115	0.114	92.0	90.9	60.6-133			1.15	20
cis-1,2-Dichloroethene	0.125	0.109	0.109	87.2	87.2	76.1-121			0.0716	20
trans-1,2-Dichloroethene	0.125	0.100	0.103	80.2	82.2	70.7-124			2.46	20
Tetrachloroethene	0.125	0.149	0.154	119	123	71.1-133			3.18	20
Trichloroethene	0.125	0.130	0.138	104	111	77.2-122			6.58	20
Vinyl chloride	0.125	0.101	0.106	81.0	85.0	58.4-134			4.81	20
(S) Toluene-d8				109	116	80.0-120				
(S) Dibromofluoromethane				79.7	90.7	74.0-131				
(S) 4-Bromofluorobenzene				106	104	64.0-132				

L995036-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
1,1-Dichloroethene	0.125	U	0.121	0.116	96.8	93.2	1	36.1-142			3.84	25.6	
cis-1,2-Dichloroethene	0.125	U	0.114	0.112	91.1	89.4	1	50.6-133			1.88	23	
trans-1,2-Dichloroethene	0.125	U	0.116	0.118	93.1	94.2	1	43.8-135			1.23	24.8	
Tetrachloroethene	0.125	U	0.164	0.170	131	136	1	37.7-140			3.56	29.2	
Trichloroethene	0.125	U	0.119	0.128	95.2	103	1	48.0-132			7.42	24.8	
Vinyl chloride	0.125	U	0.116	0.125	92.6	99.6	1	32.0-146			7.35	26.3	
(S) Toluene-d8					112	113		80.0-120					
(S) Dibromofluoromethane					110	92.0		74.0-131					
(S) 4-Bromofluorobenzene					107	104		64.0-132					
	ACCOUNT:			PRC	JECT:			SDG:		DATE/	TIME:		PAGE:
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GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality contro sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

SDG: L994831

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report. * Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska
Alaska	17-026	Nevada
Arizona	AZ0612	New Hampshire
Arkansas	88-0469	New Jersey–NELAP
California	2932	New Mexico ¹
Colorado	TN00003	New York
Connecticut	PH-0197	North Carolina
Florida	E87487	North Carolina ¹
Georgia	NELAP	North Carolina ³
Georgia ¹	923	North Dakota
Idaho	TN00003	Ohio-VAP
Illinois	200008	Oklahoma
Indiana	C-TN-01	Oregon
lowa	364	Pennsylvania
Kansas	E-10277	Rhode Island
Kentucky 16	90010	South Carolina
Kentucky ²	16	South Dakota
Louisiana	Al30792	Tennessee ¹⁴
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermont
Michigan	9958	Virginia
Minnesota	047-999-395	Washington
Mississippi	TN00003	West Virginia
Missouri	340	Wisconsin
Montana	CERT0086	Wyoming

lebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T 104704245-17-14
Texas⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Succeed Environmental Consulting

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



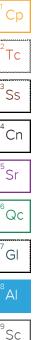
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PAGE: 9 of 10

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teport to: Andrew Blake			Email To; a	blake@succeed	l-env.com		НО	1.11						A COLOR	i ti senti Senti	12065 Lebanor Mount Juliet, 7 Phone: 615-75	N 37122 8-5858	
Project Description:		20	1	City/State Collected:			rr/Me	es								Phone: 800-76 Fax: 615-758-5	859	首次的对
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nmediately acked on Ice N Y	Two Day	100	Day (Rad Only)			No.	60C V	wt,vo	ALC: N					4		PB: 1 2		X Ground
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DW - Drinking Water OT - Other	Samples retur	rned via: edExC	ourier		Tracking # 40	al.	32	55 1	le71	8			1	VOA	Zero I	volume s If Appl leadspace: ion Correc	icable	Y!
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ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L970988 02/08/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SDG: L970988 DATE/TIME: 02/26/18 14:32 PAGE: 2 of 18

SAMPLE SUMMARY

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			Collocted by	Collected date/time	Received date/time
			Collected by Andrew Blake	02/07/18 11:35	02/08/18 08:45
DP1(6.0-8.0) L970988-01 Solid				02/07/10 11:00	
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1075435	1	02/20/18 15:38	02/20/18 15:50	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1074889	1	02/07/18 11:35	02/18/18 18:34	BMB
			Collected by	Collected date/time	Received date/time
DP6(5.0-7.0) L970988-02 Solid			Andrew Blake	02/07/18 18:05	02/09/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1075435	1	02/20/18 15:38	02/20/18 15:50	KDW
/olatile Organic Compounds (GC/MS) by Method 8260C	WG1074889	1	02/07/18 18:05	02/18/18 18:53	BMB
			Collected by	Collected date/time	Received date/time
DP7(5.0-7.0) L970988-03 Solid			Andrew Blake	02/09/18 09:30	02/10/18 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1075435	1	02/20/18 15:38	02/20/18 15:50	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1075148	1	02/09/18 09:30	02/25/18 12:29	DWR
			Collected by	Collected date/time	Received date/time
DP8(6.0-8.0) L970988-04 Solid			Andrew Blake	02/09/18 12:00	02/10/18 09:00
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Total Solids by Method 2540 G-2011	WG1075435	1	02/20/18 15:38	02/20/18 15:50	KDW
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1075148	1	02/09/18 12:00	02/19/18 15:36	BMB

SDG: L970988

DATE/TIME: 02/26/18 14:32 PAGE: 3 of 18

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L970988

PAGE: 4 of 18

DP1(6.0-8.0)

Collected date/time: 02/07/18 11:35

SAMPLE RESULTS - 01 L970988

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	65.0		1	02/20/2018 15:50	WG1075435	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	I
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000352	0.00769	1	02/18/2018 18:34	WG1074889	
1,1-Dichloroethene	U		0.000466	0.00154	1	02/18/2018 18:34	WG1074889	
cis-1,2-Dichloroethene	U		0.000362	0.00154	1	02/18/2018 18:34	WG1074889	
trans-1,2-Dichloroethene	U		0.000406	0.00154	1	02/18/2018 18:34	WG1074889	
Tetrachloroethene	U		0.000425	0.00154	1	02/18/2018 18:34	WG1074889	
Trichloroethene	U		0.000429	0.00154	1	02/18/2018 18:34	WG1074889	
/inyl chloride	U		0.000448	0.00154	1	02/18/2018 18:34	WG1074889	
(S) Toluene-d8	101			80.0-120		02/18/2018 18:34	WG1074889	
(S) Dibromofluoromethane	103			74.0-131		02/18/2018 18:34	WG1074889	
(S) 4-Bromofluorobenzene	94.2			64.0-132		02/18/2018 18:34	WG1074889	

DP6(5.0-7.0) Collected date/time: 02/07/18 18:05

SAMPLE RESULTS - 02 L970988

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	98.3		1	02/20/2018 15:50	WG1075435	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	<u>L</u>
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000233	0.00509	1	02/18/2018 18:53	WG1074889	
1,1-Dichloroethene	U		0.000308	0.00102	1	02/18/2018 18:53	WG1074889	
cis-1,2-Dichloroethene	U		0.000239	0.00102	1	02/18/2018 18:53	WG1074889	
trans-1,2-Dichloroethene	U		0.000269	0.00102	1	02/18/2018 18:53	WG1074889	
Tetrachloroethene	U		0.000281	0.00102	1	02/18/2018 18:53	WG1074889	
Trichloroethene	U		0.000284	0.00102	1	02/18/2018 18:53	WG1074889	
Vinyl chloride	U		0.000296	0.00102	1	02/18/2018 18:53	WG1074889	
(S) Toluene-d8	105			80.0-120		02/18/2018 18:53	WG1074889	
(S) Dibromofluoromethane	102			74.0-131		02/18/2018 18:53	WG1074889	
(S) 4-Bromofluorobenzene	93.5			64.0-132		02/18/2018 18:53	WG1074889	

DP7(5.0-7.0) Collected date/time: 02/09/18 09:30

SAMPLE RESULTS - 03 L970988

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	97.2		1	02/20/2018 15:50	WG1075435	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
Analyte	mg/kg		mg/kg	mg/kg		date / time	
Chloroform	U		0.000236	0.00514	1	02/25/2018 12:29	WG1075148
1,1-Dichloroethene	U		0.000312	0.00103	1	02/25/2018 12:29	WG1075148
cis-1,2-Dichloroethene	U		0.000242	0.00103	1	02/25/2018 12:29	WG1075148
trans-1,2-Dichloroethene	U		0.000272	0.00103	1	02/25/2018 12:29	WG1075148
Tetrachloroethene	U		0.000284	0.00103	1	02/25/2018 12:29	WG1075148
Trichloroethene	U		0.000287	0.00103	1	02/25/2018 12:29	WG1075148
Vinyl chloride	U		0.000299	0.00103	1	02/25/2018 12:29	WG1075148
(S) Toluene-d8	93.9			80.0-120		02/25/2018 12:29	WG1075148
(S) Dibromofluoromethane	113			74.0-131		02/25/2018 12:29	WG1075148
(S) 4-Bromofluorobenzene	103			64.0-132		02/25/2018 12:29	WG1075148

DP8(6.0-8.0) Collected date/time: 02/09/18 12:00

SAMPLE RESULTS - 04 L970988

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Total Solids by Method 2540 G-2011

	Result	Qualifier	Dilution	Analysis	Batch	Ср
Analyte	%			date / time		2
Total Solids	85.3		1	02/20/2018 15:50	WG1075435	Tc

	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch	
Analyte	mg/kg		mg/kg	mg/kg		date / time		
Chloroform	U		0.000269	0.00586	1	02/19/2018 15:36	WG1075148	
1,1-Dichloroethene	U		0.000355	0.00117	1	02/19/2018 15:36	WG1075148	
cis-1,2-Dichloroethene	U		0.000276	0.00117	1	02/19/2018 15:36	WG1075148	
trans-1,2-Dichloroethene	U		0.000310	0.00117	1	02/19/2018 15:36	WG1075148	
Tetrachloroethene	U		0.000324	0.00117	1	02/19/2018 15:36	WG1075148	
Trichloroethene	U		0.000327	0.00117	1	02/19/2018 15:36	WG1075148	
Vinyl chloride	U		0.000341	0.00117	1	02/19/2018 15:36	WG1075148	
(S) Toluene-d8	94.4			80.0-120		02/19/2018 15:36	WG1075148	
(S) Dibromofluoromethane	105			74.0-131		02/19/2018 15:36	WG1075148	
(S) 4-Bromofluorobenzene	95.4			64.0-132		02/19/2018 15:36	WG1075148	

WG1075435

Total Solids by Method 2540 G-2011

QUALITY CONTROL SUMMARY L970988-01,02,03,04

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Method Blank (MB)

Method Blank	(IVIB)				1
(MB) R3287859-1 (02/20/18 15:50				
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	%		%	%	T
Total Solids	0.00200				
					3

L970732-02 Original Sample (OS) • Duplicate (DUP)

(OS) L970732-02 02/20)/18 15:50 • (DU	P) R3287859-3	02/20/18	15:50		
	Original Resu	It DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	95.2	94.2	1	1.05		5

Laboratory Control Sample (LCS)

(LCS) R3287859-2 02	2/20/18 15:50				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	99.9	85.0-115	

SDG: L970988

DATE/TIME: 02/26/18 14:32

PAGE: 9 of 18

WG1074889

Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3288010-3 02/18/1	8 13:55			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloroform	U		0.000229	0.00500
1,1-Dichloroethene	U		0.000303	0.00100
cis-1,2-Dichloroethene	U		0.000235	0.00100
trans-1,2-Dichloroethene	U		0.000264	0.00100
Tetrachloroethene	U		0.000276	0.00100
Trichloroethene	U		0.000279	0.00100
Vinyl chloride	U		0.000291	0.00100
(S) Toluene-d8	109			80.0-120
(S) Dibromofluoromethane	97.2			74.0-131
(S) 4-Bromofluorobenzene	94.5			64.0-132

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3288010-1 02/18/18	3 11:39 • (LCSD)	R3288010-2	02/18/18 11:59							
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Chloroform	0.0250	0.0262	0.0268	105	107	73.0-123			2.06	20
1,1-Dichloroethene	0.0250	0.0253	0.0255	101	102	63.0-131			0.793	20
cis-1,2-Dichloroethene	0.0250	0.0256	0.0256	103	102	74.0-123			0.299	20
trans-1,2-Dichloroethene	0.0250	0.0252	0.0244	101	97.5	72.0-122			3.27	20
Tetrachloroethene	0.0250	0.0296	0.0284	119	114	70.0-127			4.23	20
Trichloroethene	0.0250	0.0285	0.0287	114	115	79.0-120			0.668	20
Vinyl chloride	0.0250	0.0279	0.0267	112	107	63.0-134			4.39	20
(S) Toluene-d8				106	111	80.0-120				
(S) Dibromofluoromethane				99.7	99.7	74.0-131				
(S) 4-Bromofluorobenzene				99.0	97.3	64.0-132				

L970969-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
Chloroform	0.0250	ND	28.5	32.0	114	128	1000	18.0-148			11.6	28	
1,1-Dichloroethene	0.0250	ND	21.9	24.9	87.5	99.4	1000	10.0-150			12.8	31	
cis-1,2-Dichloroethene	0.0250	ND	25.7	29.8	103	119	1000	16.0-145			14.5	28	
trans-1,2-Dichloroethene	0.0250	ND	20.8	23.4	83.0	93.8	1000	11.0-142			12.2	29	
Tetrachloroethene	0.0250	ND	25.5	31.1	102	124	1000	10.0-144			19.6	32	
Trichloroethene	0.0250	ND	26.5	30.2	106	121	1000	11.0-148			12.9	29	
Vinyl chloride	0.0250	ND	19.5	22.5	78.2	90.2	1000	10.0-150			14.3	29	
	ACCOUNT:			PRC	JECT:			SDG:		DATE/	TIME:		PAGE:
Succeed Er	ivironmental Consu	lting		F	HE-1		L	970988		02/26/1	8 14:32		10 of 18

Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

L970969-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L970969-05 02/18/18	(OS) L970969-05 02/18/18 20:31 • (MS) R3288010-4 02/18/18 20:51 • (MSD) R3288010-5 02/18/18 21:11												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%	
(S) Toluene-d8					102	105		80.0-120					
(S) Dibromofluoromethane					99.0	99.6		74.0-131					
(S) 4-Bromofluorobenzene					101	98.4		64.0-132					

³ Ss
⁴ Cn
⁵Sr
⁶ Qc
⁷ Gl
⁸ Al
⁸ Al
⁸ Al ⁹ Sc
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DATE/TIME: 02/26/18 14:32 PAGE: 11 of 18 Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY L970988-03,04

13:10			
MB Result	MB Qualifier	MB MDL	MB RDL
mg/kg		mg/kg	mg/kg
U		0.000229	0.00500
U		0.000303	0.00100
U		0.000235	0.00100
U		0.000264	0.00100
U		0.000276	0.00100
U		0.000279	0.00100
U		0.000291	0.00100
103			80.0-120
94.2			74.0-131
97.2			64.0-132
	MB Result mg/kg U U U U U U U U U U U U U U 03 94.2	MB ResultMB Qualifiermg/kg	MB Result MB Qualifier MB MDL mg/kg mg/kg U 0.000229 U 0.000303 U 0.000235 U 0.000264 U 0.000264 U 0.000276 U 0.000279 U 0.000279 U 0.000291 103 94.2

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3288748-1 02/19/18 11:21 • (LCSD) R3288748-2 02/19/18 11:43											
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%	
Chloroform	0.0250	0.0257	0.0267	103	107	73.0-123			3.86	20	
1,1-Dichloroethene	0.0250	0.0249	0.0259	99.6	104	63.0-131			3.97	20	
cis-1,2-Dichloroethene	0.0250	0.0249	0.0255	99.5	102	74.0-123			2.37	20	
trans-1,2-Dichloroethene	0.0250	0.0243	0.0258	97.4	103	72.0-122			5.98	20	
Tetrachloroethene	0.0250	0.0272	0.0282	109	113	70.0-127			3.35	20	
Trichloroethene	0.0250	0.0263	0.0273	105	109	79.0-120			3.83	20	
Vinyl chloride	0.0250	0.0235	0.0245	93.8	98.0	63.0-134			4.39	20	
(S) Toluene-d8				104	103	80.0-120					
(S) Dibromofluoromethane				95.4	94.8	74.0-131					
(S) 4-Bromofluorobenzene				95.9	95.5	64.0-132					

DATE/TIME: 02/26/18 14:32

PAGE: 12 of 18

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GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

SDG: L970988 DATE/TIME: 02/26/18 14:32

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
ldaho	TN00003
Illinois	200008
Indiana	C-TN-01
lowa	364
Kansas	E-10277
Kentucky ¹	90010
Kentucky ²	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05

Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee ^{1 4}	2006
Texas	T 104704245-07-TX
Texas⁵	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.





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Billing Information:						1.3	-	Analysis / Container / Preservative						Chain of C	Sustaidy Page 1 of	4	
Succeed Environmental Consulting 6028 NE 49th Avenue Portland, OR 97218		ilting	6028 NE	Andrew Blake 6028 NE 49th Ave. Portland, OR 97218												ESC	Yr 1
Report to: Email To: Email To:			ablake@succend-env.com											12065 Leba	non to Taking	1	
Project Description:			-	City/State	Econo just	1	/MeO						13		Mount Julie Phone: 613 Phone: 800 Fact 613-758	767-5858	Interior
Phone: 971-371-0404 Fax:	Client Project	Client Project # HE-1		Lab Project a SUCENVPC			V8260C VOCs 40ml/NaH504/Syr/MeOH	202Clr-NoPres					La		968766	5	
Collected by (print): Ander Bahr	Site/Facility ID #			P.O.#	L. Gar	10	HeN/I							the second s		C113 L970988	3
Collected by lugnature):		Day (Bad Only)	- 1/cs.				dry wt,voc screen						Templato:T1 Pretogin: P6 TSR: 119 - Bri		T132035 P636453	/	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Critra	V8260	dry wt								a fedEX Ground	-
DP-1. (horsia)	-	SS	-	24pps	11.30	5	x	X	1.L	l					1 2 2	is : Sample # (lub oxly)	4
OP-1 (60.40)	11.77	SS	-	1.5	11.55	5	x	X	H	12					1		
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DP-1 (220124)	-	SS	-	1	11:45	5	X	X	4/5	R			1		10.00	- Internet	Đ
DP-2 (10-3:0)		SS	127		12:30	5	X	x	Ho		122	-			1		F
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DP-2 (100-17.0)	-	SS	77	4	12:40	5	x	x	OA	1.3						-01-	P
DP-2 (15,0-17.0)	-	55	200	10.54	12:45	5	x	x	OA					-	1	2002	E
DP-2 (230-25.0)	-	SS	See .	5	12:50	5	x	×	11	1		A REPORT		-	1.00	-05	Ŀ
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hone: 971-371-0404	Client Project I HE-1			Lab Project # SUCENVPO	C. C. HARRIS		504/5	2o2Clr-NoPres				1		· + +9	9558	2/0
collected by (print):	Site/Facility ID	1		P.O.#			VOCs 40ml/NaH504/Syr/MeOH	202Clr						Table # 4	970988 CENVPOR	
Collected by (signature):		ab MUST Be		Quote #		S 40m	screen						Template T13 Prelogin: P63			
		5 Da		Date R	esults Needed	No.		wt,voc s					1.00	TSR: 119 - Bris PB 1/25	18 me	1
Sample ID	Comp/Grab	Matrix *	Depth	Gate	Time	Cetrs	V8260C	dry w	122		1		13	Shipped Via, F	dEX Ground	
DD-5 (17.0 190)	-	SS	-	2/1/18	17:00	5	×	X	in the	100				124	Tot	
DP-5 (230-250)	-	55	-	2/7/14	17:10	5	Х	X	J.C.	1.5	0.0	12	il		-07	100
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DR-6 (5.0 7.0)	-	SS	1-		18:05	5	X	X	1	20		100	1.	1.87	-07	-0
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DR-6 (17.0 - 140) -	55	-	NI	18:20	5	X	X	1614			1	100	- 07	-05-	
DP-6 (230-25.0)	\$\$	-	V	18:25	5	X	X					1.1		+ IF	12
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* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks:				4					pH Flow	Temp	C00 615	Seal Dr Signed/ Sies arr	im Faction C anent/Inters Accurate: 198 interti		
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leport to: Andrew Blake	- 11	-	Email To	abiake@su	cceed-env.com		НО							-	A B B C	J.
Project Description:			1	City/Stat Collecter		1.5	/MeO							124	45 Lebanae Rd en Julez, TN 37122 ne 615-258-5838 ne 605-767-5838 615-788-5848	
Phone: 971-371-0404 Fax:	404 Client Project # HE-1			Lab Proje	ect # VPOR-HE1		04/Syr	202Clr-NoPres							Contraction of the second s	
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Sample 10	Comp/Grab	Matrix *	Depth	Date	t Time	Ontrs	V8260C	and the second se		12				TSR: 1	Brian Ford	a series of
DP-7 (1.0-3.0)	DALESSIN	SS		2/0/1	\$ 925	5	* ~	× drv	10					Subbec	IVIa: FedEX (Stound
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DP-7 (11.0-13.0)	Lu Sal	<	and the	and the second	9:33	10	and the second	X	Herd					1-		
00-7 (170-110)		V		1263	9:40	5	\times	×	-				-	-		
DP-7 (220-24.0)					9:45	the second se	-		Hort		241		-	-	-01	-
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W - Drinking Water	Samples returne UPSFedE	d via: xCourie		11-11-11	Troblers 70	1			~	1.300	emp	1 AND THE R.	Telefort Contractor	E RECEIDE MOLZINIAC MOLZINIACI:	Checkler	X
Relinquished by (Signature) Date:			the second s	DEX	Tracking # 78 Received by (Signat	84 4 are)	20	16	390 Trip Bian	18 K Received	(est no	dury.	Clent x	dume sents	The second	
		and the second se	Time	2.5	Received by: (Signati	are)		24	Temp:	1	HCD/ MA	NOH		WITELL/CM		N
		late:	Time		Received to Tag Y	genatifie)	12	D	Date:	2 30	145 me:	d. If press	rvation res	wired by Log	n: Date/Time	-
A STATE OF STATE	1952	1		1 Carlo	1000	Flap	P	863	2/10/		1900	2-	063	1	Condition NCS / QK	1

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Andy Vann

From: Sent: To: Subject:

Brian Ford Friday, February 16, 2018 9:37 AM Login; Sample Storage; Brian Ford *SUCENVPOR* log off hold Please log the following off hold for V8260C and TS. Can be logged to one SDG as R5 due 02/23.

Hold #2-046 (COC L968786) DP-1 (6.0-8.0)

Hold 2-070 (COC L969558) DP-6(5.0-7.0) Hold=2-063 (COC L969428) DP-7 (5.0-7.0) DP-8 (6.0-8.0)

Thanks, * Brian Ford

Technical Service Representative ESC Lab Sciences-a subsidiary of Pace Analytical 12065 Lebanon Road | Mt. Juliet, TN 37122 615.773.9772 bford@esclaberiances.com

bford@esclabsciences.com | www.esclabsciences.com

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ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L969949 02/14/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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¹ Cp	
² Tc	
³ Ss	
⁴ Cn	
⁵ Sr	
⁶ Qc	
⁷ Gl	
⁸ Al	farmental and a second s
⁹ Sc	

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ACCOUNT: Succeed Environmental Consulting PROJECT: HE-1 SDG: L969949 DATE/TIME: 02/15/18 11:09

PAGE: 2 of 9

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

			Collected by	Collected date/time	Received date/time	
MW -3D L969949-01 GW			Andrew Blake	02/13/18 14:45	02/14/18 08:45	1
Method	Batch	Dilution	Preparation	Analysis	Analyst	L
			date/time	date/time		2
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1071887	1	02/14/18 17:37	02/14/18 17:37	BMB	L

² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

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SDG: L969949 DATE/TIME: 02/15/18 11:09

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



DATE/TIME: 02/15/18 11:09 PAGE: 4 of 9

SAMPLE RESULTS - 01

Volatile Organic Compounds (GC/MS) by Method 8260C

	Desult	0	MDI	DDI	Dilution	A	Detal	C
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		2
Chloroform	0.324	J	0.0860	0.500	1	02/14/2018 17:37	<u>WG1071887</u>	T (
1,1-Dichloroethene	U		0.188	0.500	1	02/14/2018 17:37	<u>WG1071887</u>	L
cis-1,2-Dichloroethene	U		0.0933	0.500	1	02/14/2018 17:37	WG1071887	³ S
trans-1,2-Dichloroethene	U		0.152	0.500	1	02/14/2018 17:37	<u>WG1071887</u>	0.
Tetrachloroethene	0.227	J	0.199	0.500	1	02/14/2018 17:37	WG1071887	4
Trichloroethene	U		0.153	0.500	1	02/14/2018 17:37	WG1071887	C
Vinyl chloride	U		0.118	0.500	1	02/14/2018 17:37	WG1071887	
(S) Toluene-d8	109			80.0-120		02/14/2018 17:37	<u>WG1071887</u>	⁵ Si
(S) Dibromofluoromethane	102			76.0-123		02/14/2018 17:37	WG1071887	
(S) 4-Bromofluorobenzene	116			80.0-120		02/14/2018 17:37	WG1071887	6

Sc

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DATE/TIME: 02/15/18 11:09 Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY L969949-01

Method Blank (MB)

(MB) R3286337-3 02/14/18	10:42			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloroform	U		0.0860	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.0933	0.500
trans-1,2-Dichloroethene	U		0.152	0.500
Tetrachloroethene	U		0.199	0.500
Trichloroethene	U		0.153	0.500
Vinyl chloride	U		0.118	0.500
(S) Toluene-d8	103			80.0-120
(S) Dibromofluoromethane	104			76.0-123
(S) 4-Bromofluorobenzene	110			80.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3286337-1 02/14/1	LCS) R3286337-1 02/14/18 09:26 • (LCSD) R3286337-4 02/14/18 11:02									
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Chloroform	25.0	28.3	26.2	113	105	72.0-121			7.70	20
1,1-Dichloroethene	25.0	24.4	22.0	97.6	87.9	64.0-129			10.5	20
cis-1,2-Dichloroethene	25.0	24.4	22.6	97.6	90.2	73.0-120			7.82	20
trans-1,2-Dichloroethene	25.0	25.8	22.8	103	91.2	71.0-121			12.5	20
Tetrachloroethene	25.0	25.8	23.5	103	93.9	70.0-127			9.28	20
Trichloroethene	25.0	26.4	23.6	106	94.5	78.0-120			11.1	20
Vinyl chloride	25.0	27.7	24.6	111	98.4	64.0-133			11.9	20
(S) Toluene-d8				102	99.8	80.0-120				
(S) Dibromofluoromethane				103	103	76.0-123				
(S) 4-Bromofluorobenzene				102	108	80.0-120				

SDG: L969949

DATE/TIME: 02/15/18 11:09 PAGE: 6 of 9

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GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

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SDG: L969949

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

40660
UST-080
AZ0612
88-0469
01157CA
TN00003
PH-0197
E87487
NELAP
923
TN00003
200008
C-TN-01
364
E-10277
90010
16
AI30792
TN0002
324
M-TN003
9958
047-999-395
TN00003
340
CERT0086
NE-OS-15-05

levada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Fennessee ¹⁴	2006
Texas	T 104704245-07-TX
Texas ⁵	LAB0152
Jtah	6157585858
/ermont	VT2006
/irginia	109
Vashington	C1915
West Virginia	233
Wisconsin	9980939910
Vyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.





*

		Billing Infr	Billing Information:			Analysis / Container / Preservative Chain of Custod								y Page 1 of 1		
Succeed Environmental Consulting		6028 N	Andrew Blake 6028 NE 49th Avenue Portland, OR 97218											*	ESC	
Report to: Andrew Blake			Email To: ablake@succeed-env.com				-									
Project Description:				City/State Collected:		E.	Key	S 100						100	Phone 615-758-58 Phone 800-767-58 Fax: 615-758-5859	158 159 5 4 1 1
Phone: 971-371-0404 Fax:	Client Project #			Lab Project Sucenvp	m = ME^{-1}		0								L# 969	
Collected by (print): Andrew Blake	Site/Facility ID	#		P.O. #			CPX							H043		
Collected by (signature):	Rush? (Lab MUST Be Notified) Same Day Five Day Next Day S Day (Rad Only) Two Day 10 Day (Rad Only)			Quote # Date	Quote # Yes Date Results Needed		C has							5	Acctnum: Template: Prelogin: TSR:	
Packed on Ice N Y	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Kula								P8: Shipped Via:	
MW-3D	-	60	-	2/13/1	18 14.45	3	-								Remarks	Sample # (lab only)
		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		1000												
															1 30.1	
A States																
		100														
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater	Remarks: PCE, TCE, DCES, V.C., & Civaration								pH		_ Temp		COC SI	eal Pres igned/Ac	Receipt Ch ment/Intact: courate:	OCKLUSE NP Y N Y N
DW - Drinking Water OT - Other	Samples return				Tracking # 6827 1109				Flow				Bottles arrive intact: Correct bottles used: Sufficient volume sent: If Applicable			
Relinquished by : (Signature)		Date: 4/13/1	s F	Time: BDEX	and the second					Trip Blank Received: Yes No HCL / MeoH			VOA Zero Headspace:YN Preservation Correct/Checked:YN			
Relinquished by : (Signature)	1	Date:	Ti	lime:	Received by: (Sign:	Received by: (Signature)				"C	Bottles Re		If prese	rvation re	equired by Logi	in: Date/Time
Relinquished by : (Signature)		Date:	T	îme:	Received for lab.by	C (Signatur	T	- 86	3 Date: /19	#18	Time:	845	Hold:			Condition: NCF / OK

Apex Labs

12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 Phone 503-718-0333 Fax

Tuesday, November 28, 2017

Andrew S. Blake, R.G., L.G. Succeed Environmental Consulting 6028 NE 49th Ave. Portland, OR 97218

RE: HE-1-01 / [none]

Enclosed are the results of analyses for work order <u>A7K0815</u>, which was received by the laboratory on 11/20/2017 at 9:32:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <u>pnerenberg@apex-labs.com</u>, or by phone at 503-718-2323.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 Phone 503-718-0333 Fax

Succeed Environmental Consulting	Project: HE-1-	01				
6028 NE 49th Ave.	Project Number: [none]		Reported:			
Portland, OR 97218	Project Manager: Andre	w S. Blake, R.G., L.G.	11/28/17 14:31			
ANALVIICAL DEDODT EOD CAMDLES						

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION								
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received				
MW-1	A7K0815-01	Water	11/16/17 17:45	11/20/17 09:32				
MW-2	A7K0815-02	Water	11/16/17 16:10	11/20/17 09:32				
MW-3	A7K0815-03	Water	11/16/17 15:00	11/20/17 09:32				
MW-4	A7K0815-04	Water	11/16/17 16:50	11/20/17 09:32				

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01					
6028 NE 49th Ave.	Project Number: [none]	Reported:				
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31				

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C								
	_	_	Reporting					
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes
/W-1 (A7K0815-01RE1)			Matrix: Water		Batch: 711103	35		
Bromobenzene	ND	0.250	0.500	ug/L	1	11/27/17 11:18	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	4.32	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.200	0.400	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	"	"	"	"	
1,1-Dichloroethene	ND	0.200	0.400	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	

Apex Laboratories

Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01					
6028 NE 49th Ave.	Project Number: [none]	Reported:				
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31				

ANALYTICAL SAMPLE RESULTS

		yenateu v		nic Compound		02000		
			Reporting					
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-1 (A7K0815-01RE1)			Matrix: Wat	ter B	atch: 711103	35		
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	"	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.200	0.400	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.200	0.400	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr))	Rec	overy: 109 %	Limits: 80-120 %	"	"	"	
Toluene-d8 (Surr)			98 %	Limits: 80-120 %	"	"	"	
4-Bromofluorobenzene (Su	rr)		93 %	Limits: 80-120 %	"	"	"	
MW-2 (A7K0815-02RE1)			Matrix: Wat	ter B	atch: 711103	35		
Bromobenzene	ND	0.250	0.500	ug/L	1	11/27/17 11:46	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.200	0.400	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	"	"	"	"	

Apex Laboratories

Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

ANALYTICAL SAMPLE RESULTS

	Halo	genated	Volatile Orgar	nic Compour	nds by EPA 8	3260C					
Reporting											
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes			
MW-2 (A7K0815-02RE1)			Matrix: Wate	ər	Batch: 711103	5					
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	"	EPA 8260C				
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"				
trans-1,2-Dichloroethene	ND	0.200	0.400		"	"	"				
1,2-Dichloropropane	ND	0.250	0.500		"	"	"				
1,3-Dichloropropane	ND	0.500	1.00		"	"	"				
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"				
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"				
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"				
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"				
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"				
Methylene chloride	ND	1.50	3.00	"	"	"	"				
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	"	"	"	"				
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"				
Tetrachloroethene (PCE)	2.33	0.200	0.400	"	"	"	"				
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"				
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"				
1,1,1-Trichloroethane	ND	0.200	0.400	"	"	"	"				
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"				
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"				
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"				
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"				
Vinyl chloride	ND	0.200	0.400	"	"	"	"				
Surrogate: 1,4-Difluorobenzene (Sur	r)	Re	covery: 108 %	Limits: 80-120 %	6 "	"	"				
Toluene-d8 (Surr)			98 %	Limits: 80-120 %	6 "	"	"				
4-Bromofluorobenzene (S	urr)		94 %	Limits: 80-120 %	6 "	"	"				

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01				
6028 NE 49th Ave.	Project Number: [none]	Reported:			
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31			

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C									
			Reporting						
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes	
MW-3 (A7K0815-03RE1)			Matrix: Water		Batch: 711103	35			
Bromobenzene	ND	0.250	0.500	ug/L	1	11/27/17 12:15	EPA 8260C		
Bromochloromethane	ND	0.500	1.00	"	"	"	"		
Bromodichloromethane	ND	0.500	1.00	"	"	"	"		
Bromoform	ND	0.500	1.00	"	"	"	"		
Bromomethane	ND	5.00	5.00	"	"	"	"		
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"		
Chlorobenzene	ND	0.250	0.500	"	"	"	"		
Chloroethane	ND	5.00	5.00	"	"	"	"		
Chloroform	ND	0.500	1.00	"	"	"	"		
Chloromethane	ND	2.50	5.00	"	"	"	"		
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"		
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"		
Dibromochloromethane	ND	0.500	1.00	"	"	"	"		
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"		
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"		
Dibromomethane	ND	0.500	1.00	"	"	"	"		
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"		
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"		
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"		
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"		
1,1-Dichloroethane	ND	0.200	0.400	"	"	"	"		
1,2-Dichloroethane (EDC)	ND	0.200	0.400	"	"	"	"		
1,1-Dichloroethene	ND	0.200	0.400	"	"	"	"		
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"		
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"		
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"		
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"		
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"		
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"		
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"		
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"		
Hexachlorobutadiene	ND	2.50	5.00	"		"	"		
Methylene chloride	ND	1.50	3.00	"		"	"		
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	"	"	"	"		
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"		

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Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

ANALYTICAL SAMPLE RESULTS

	Halo	genated V	/olatile Org	anic Compoun	ds by EPA	8260C		
			Reporting					
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-3 (A7K0815-03RE1)			Matrix: Wa	ater B	atch: 711103	35		
Tetrachloroethene (PCE)	4.54	0.200	0.400	ug/L	1	"	EPA 8260C	
1,2,3-Trichlorobenzene	ND	1.00	2.00		"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.200	0.400	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500		"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.200	0.400	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	covery: 109 %	Limits: 80-120 %	"	"	"	
Toluene-d8 (Surr)			97 %	Limits: 80-120 %	"	"	"	
4-Bromofluorobenzene (Surr)	1		95 %	Limits: 80-120 %	"	"	"	
/IW-4 (A7K0815-04RE1)			Matrix: Wa	ater B	atch: 711103	35		
Bromobenzene	ND	0.250	0.500	ug/L	1	11/27/17 12:43	EPA 8260C	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.200	0.400	"		"	"	

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1,2-Dichloroethane (EDC)

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ND

0.200

0.400

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

ANALYTICAL SAMPLE RESULTS

	Halo	genated	Volatile Orgar	nic Compour	nds by EPA 8	3260C				
Reporting										
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes		
MW-4 (A7K0815-04RE1)			Matrix: Wate	ər	Batch: 711103	5				
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	"	EPA 8260C			
cis-1,2-Dichloroethene	ND	0.200	0.400		"	"	"			
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"			
1,2-Dichloropropane	ND	0.250	0.500		"	"	"			
1,3-Dichloropropane	ND	0.500	1.00		"	"	"			
2,2-Dichloropropane	ND	0.500	1.00		"	"	"			
1,1-Dichloropropene	ND	0.500	1.00		"	"	"			
cis-1,3-Dichloropropene	ND	0.500	1.00		"	"	"			
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"			
Hexachlorobutadiene	ND	2.50	5.00		"	"	"			
Methylene chloride	ND	1.50	3.00		"	"	"			
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	"	"	"	"			
1,1,2,2-Tetrachloroethane	ND	0.250	0.500		"	"	"			
Tetrachloroethene (PCE)	2.39	0.200	0.400		"	"	"			
1,2,3-Trichlorobenzene	ND	1.00	2.00		"	"	"			
1,2,4-Trichlorobenzene	ND	1.00	2.00		"	"	"			
1,1,1-Trichloroethane	ND	0.200	0.400		"	"	"			
1,1,2-Trichloroethane	ND	0.250	0.500		"	"	"			
Trichloroethene (TCE)	ND	0.200	0.400		"	"	"			
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"			
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"			
Vinyl chloride	ND	0.200	0.400	"	"	"	"			
Surrogate: 1,4-Difluorobenzene (Sur	rr)	Re	covery: 108 %	Limits: 80-120 %	6 "	"	"			
Toluene-d8 (Surr)			98 %	Limits: 80-120 %	<i>6</i> "	"	"			
4-Bromofluorobenzene (S	Surr)		94 %	Limits: 80-120 %	<i>6</i> "	"	"			

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Philip Nevenberg

Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C												
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111000 - EPA 5030B							Wat	er				
Blank (7111000-BLK1)				Pre	pared: 11/	22/17 11:02	Analyzed:	11/22/17 12:	27			
EPA 8260C					-							
Bromobenzene	ND	0.250	0.500	ug/L	1							
Bromochloromethane	ND	0.500	1.00	"	"							
Bromodichloromethane	ND	0.500	1.00	"	"							
Bromoform	ND	0.500	1.00	"	"							
Bromomethane	ND	5.00	5.00	"	"							
Carbon tetrachloride	ND	0.500	1.00	"	"							
Chlorobenzene	ND	0.250	0.500	"	"							
Chloroethane	ND	5.00	5.00	"	"							
Chloroform	ND	0.500	1.00	"	"							
Chloromethane	ND	5.00	5.00	"	"							
2-Chlorotoluene	ND	0.500	1.00	"	"							
4-Chlorotoluene	ND	0.500	1.00	"	"							
Dibromochloromethane	ND	0.500	1.00	"	"							
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"							
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"							
Dibromomethane	ND	0.500	1.00	"	"							
1,2-Dichlorobenzene	ND	0.250	0.500	"	"							
1,3-Dichlorobenzene	ND	0.250	0.500	"	"							
1,4-Dichlorobenzene	ND	0.250	0.500	"	"							
Dichlorodifluoromethane	ND	0.500	1.00	"	"							
1,1-Dichloroethane	ND	0.200	0.400	"	"							
1,2-Dichloroethane (EDC)	ND	0.200	0.400	"	"							
1,1-Dichloroethene	ND	0.200	0.400	"	"							
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"							
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"							
1,2-Dichloropropane	ND	0.250	0.500	"	"							
1,3-Dichloropropane	ND	0.500	1.00	"	"							
2,2-Dichloropropane	ND	0.500	1.00	"	"							
1,1-Dichloropropene	ND	0.500	1.00	"	"							
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"							
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"							
Hexachlorobutadiene	ND	2.50	5.00	"	"							
Methylene chloride	ND	1.50	3.00	"	"							
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	"	"							

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Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Analyu	Result	WIDL	LIIIII	Units	Dil.	Amount	ixesuit	/0KEC	LIIIIIIS	M'D	Liillit	INDIES
Batch 7111000 - EPA 5030B							Wat	er				
Blank (7111000-BLK1)				Pre	pared: 11/	22/17 11:02	Analyzed:	11/22/17 12	2:27			
EPA 8260C												
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	"							
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"							
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"							
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"							
1,1,1-Trichloroethane	ND	0.200	0.400	"	"							
1,1,2-Trichloroethane	ND	0.250	0.500	"	"							
Trichloroethene (TCE)	ND	0.200	0.400	"	"							
Trichlorofluoromethane	ND	1.00	2.00	"	"							
1,2,3-Trichloropropane	ND	0.500	1.00	"	"							
Vinyl chloride	ND	0.200	0.400	"	"							
Surr: 1,4-Difluorobenzene (Surr)		Rea	overy: 110 %	Limits: 80	-120 %	Dilu	tion: 1x					
Toluene-d8 (Surr)			99 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			93 %	80	-120 %		"					
LCS (7111000-BS1)				р	,			11/00/17 1	1 20			
				Pre	pared: 11/	22/17 11:02	Analyzed:	11/22/17 1	1:30			
EPA 8260C				Pre	pared: 11/	22/17 11:02	Analyzed:	11/22/17 1	1:30			
	19.1	0.250	0.500	ug/L	1 pared: 11/	20.0	Analyzed:	95	80-120%			
EPA 8260C	19.1 20.2	0.250 0.500	0.500 1.00		1							
EPA 8260C Bromobenzene				ug/L	1	20.0		95	80-120%			
EPA 8260C Bromobenzene Bromochloromethane	20.2	0.500	1.00	ug/L "	1 "	20.0		95 101	80-120%			Q-5
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane	20.2 21.6	0.500 0.500	1.00 1.00	ug/L "	1 "	20.0		95 101 108	80-120% "			
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform	20.2 21.6 25.9	0.500 0.500 0.500	1.00 1.00 1.00	ug/L " "	1 "	20.0 " "	 	95 101 108 129	80-120% " "			Q-5
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane	20.2 21.6 25.9 24.3	0.500 0.500 0.500 5.00	1.00 1.00 1.00 5.00	ug/L " "	1""	20.0 " "	 	95 101 108 129 122	80-120% " " "		 	
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride	20.2 21.6 25.9 24.3 20.0	0.500 0.500 0.500 5.00 0.500	1.00 1.00 1.00 5.00 1.00	ug/L " "	1 " " "	20.0 " " "	 	95 101 108 129 122 100	80-120% " " " "	 	 	
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene	20.2 21.6 25.9 24.3 20.0 19.5	0.500 0.500 0.500 5.00 0.500 0.250	1.00 1.00 5.00 1.00 0.500	ug/L " " "	1 " " " " "	20.0 " " " "	 	95 101 108 129 122 100 98	80-120% " " " "	 	 	
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane	20.2 21.6 25.9 24.3 20.0 19.5 23.1	0.500 0.500 0.500 5.00 0.500 0.250 5.00	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \end{array} $	ug/L " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " "	 	95 101 108 129 122 100 98 116	80-120% " " " " "	 	 	Q-4
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4	0.500 0.500 5.00 0.500 0.500 0.250 5.00 0.500	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \\ 1.00 \\ 1.00 \\ \end{array} $	ug/L " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " "	 	95 101 108 129 122 100 98 116 102	80-120% " " " " " " "	 	 	Q-4
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chloroothane Chloroform Chloromethane	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9	0.500 0.500 5.00 0.500 0.250 5.00 0.500 5.00	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 5.00 \\ \end{array} $	ug/L " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " "	 	95 101 108 129 122 100 98 116 102 79	80-120% " " " " " " " "	 		
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chloroform Chloroform Chloromethane 2-Chlorotoluene	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9 19.3	0.500 0.500 5.00 0.500 0.250 5.00 0.500 5.00 0.500	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ \end{array} $	ug/L " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " " "	 	95 101 108 129 122 100 98 116 102 79 97	80-120% " " " " " " " " "	 		Q-5
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chlorotonm Chloromethane 2-Chlorotoluene 4-Chlorotoluene	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9 19.3 18.4	0.500 0.500 5.00 0.500 0.250 5.00 0.500 5.00 0.500 0.500	$ \begin{array}{c} 1.00\\ 1.00\\ 5.00\\ 1.00\\ 0.500\\ 5.00\\ 1.00\\ 5.00\\ 1.00\\ 1.00\\ 1.00 \end{array} $	ug/L " " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " " " "	 	 95 101 108 129 122 100 98 116 102 79 97 92 	80-120% " " " " " " " " " "	 		Q-5
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chlorotonm Chloroform Chlorotoform Chlorotoluene 4-Chlorotoluene Dibromochloromethane	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9 19.3 18.4 22.1	0.500 0.500 5.00 0.500 0.250 5.00 0.500 0.500 0.500 0.500	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ $	ug/L " " " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " " " " "	 	95 101 108 129 122 100 98 116 102 79 97 92 110	80-120% " " " " " " " " " " "			Q-4
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chlorotonethane Chloroform Chloromethane 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9 19.3 18.4 22.1 21.7	$\begin{array}{c} 0.500\\ 0.500\\ 0.500\\ 5.00\\ 0.250\\ 5.00\\ 0.500\\ 5.00\\ 0.500\\ 0.500\\ 0.500\\ 0.500\\ 2.50\\ \end{array}$	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 1.00 \\ 1.00 \\ 5.00 \\ \end{array} $	ug/L " " " " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " " " " " "	 	95 101 108 129 122 100 98 116 102 79 97 92 110 108	80-120% " " " " " " " " " " " "			Q-4
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chlorotom Chloroform Chloromethane 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane (EDB)	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9 19.3 18.4 22.1 21.7 20.4	0.500 0.500 5.00 0.500 0.250 5.00 0.500 5.00 0.500 0.500 0.500 2.50 0.250	$ \begin{array}{r} 1.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 0.500 \\ 5.00 \\ 1.00 \\ 5.00 \\ 1.00 \\ 1.00 \\ 1.00 \\ 5.00 \\ 0.500 \\ \end{array} $	ug/L " " " " " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " " " " " " "	 	95 101 108 129 122 100 98 116 102 79 97 92 110 108 102	80-120% " " " " " " " " " " " " "			Q-:
EPA 8260C Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chlorobenzene Chloroethane Chloroothane Chloroothane 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane (EDB) Dibromomethane	20.2 21.6 25.9 24.3 20.0 19.5 23.1 20.4 15.9 19.3 18.4 22.1 21.7 20.4 21.4	0.500 0.500 0.500 0.500 0.250 5.00 0.500	$ \begin{array}{c} 1.00\\ 1.00\\ 5.00\\ 1.00\\ 0.500\\ 5.00\\ 1.00\\ 5.00\\ 1.00\\ 1.00\\ 1.00\\ 5.00\\ 0.500\\ 1.$	ug/L " " " " " " " " " " " "	1 " " " " " " " " " " " " " " " " " " "	20.0 " " " " " " " " " " " "	 	95 101 108 129 122 100 98 116 102 79 97 92 110 108 102 107	80-120% " " " " " " " " " " " " " " "			Q-5

Apex Laboratories

Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

L			genated Vola	orga								
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111000 - EPA 5030B							Wat	er				
LCS (7111000-BS1)				Pre	pared: 11/2	22/17 11:02	Analyzed:	11/22/17 11	:30			
EPA 8260C												
Dichlorodifluoromethane	15.9	0.500	1.00	ug/L	"	"		80	"			
1,1-Dichloroethane	19.9	0.200	0.400	"	"	"		100	"			
1,2-Dichloroethane (EDC)	19.8	0.200	0.400	"	"	"		99	"			
1,1-Dichloroethene	19.2	0.200	0.400	"	"	"		96	"			
cis-1,2-Dichloroethene	19.0	0.200	0.400	"	"	"		95	"			
trans-1,2-Dichloroethene	19.6	0.200	0.400	"	"	"		98	"			
1,2-Dichloropropane	20.3	0.250	0.500	"	"	"		101	"			
1,3-Dichloropropane	19.9	0.500	1.00	"	"	"		100	"			
2,2-Dichloropropane	17.9	0.500	1.00	"	"	"		90	"			
1,1-Dichloropropene	18.7	0.500	1.00	"	"	"		94	"			
cis-1,3-Dichloropropene	17.2	0.500	1.00	"	"	"		86	"			
trans-1,3-Dichloropropene	19.8	0.500	1.00	"	"	"		99	"			
Hexachlorobutadiene	18.2	2.50	5.00	"	"	"		91	"			
Methylene chloride	20.9	1.50	3.00	"	"	"		104	"			
1,1,1,2-Tetrachloroethane	21.2	0.200	0.400	"	"	"		106	"			
1,1,2,2-Tetrachloroethane	22.9	0.250	0.500	"	"	"		114	"			
Tetrachloroethene (PCE)	19.0	0.200	0.400	"	"	"		95	"			
1,2,3-Trichlorobenzene	20.4	1.00	2.00	"	"	"		102	"			
1,2,4-Trichlorobenzene	19.1	1.00	2.00	"	"	"		95	"			
1,1,1-Trichloroethane	19.4	0.200	0.400	"	"	"		97	"			
1,1,2-Trichloroethane	20.3	0.250	0.500	"	"	"		102	"			
Trichloroethene (TCE)	20.2	0.200	0.400	"	"	"		101	"			
Trichlorofluoromethane	23.0	1.00	2.00	"	"	"		115	"			
1,2,3-Trichloropropane	21.2	0.500	1.00	"	"	"		106	"			
Vinyl chloride	21.7	0.200	0.400	"	"	"		109	"			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 106 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			97 %	80-	120 %		"					
4-Bromofluorobenzene (Surr)			91 %	80-	-120 %		"					
Matrix Spike (7111000-MS1)				Pre	pared: 11/2	22/17 11:52	Analyzed:	11/22/17 19	:59			
QC Source Sample: MW-4 (A7K08)	15-04)											
EPA 8260C												
Bromobenzene	205	2.50	5.00	ug/L	10	200	ND	103	80-120%			
Bromochloromethane	214	5.00	10.0	"	"	"	ND	107	78-123%			

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Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111000 - EPA 5030B							Wat	er				
Matrix Spike (7111000-MS1)				Pre	epared: 11/	22/17 11:52	Analyzed:	11/22/17 1	9:59			
QC Source Sample: MW-4 (A7K08	15-04)											
EPA 8260C												
Bromodichloromethane	236	5.00	10.0	ug/L	"	"	ND	118	79-125%			
Bromoform	258	5.00	10.0	"	"	"	ND	129	66-130%			Q-54
Bromomethane	277	50.0	50.0	"	"	"	ND	138	53-141%			Q-5
Carbon tetrachloride	230	5.00	10.0	"	"	"	ND	115	72-136%			
Chlorobenzene	209	2.50	5.00	"	"	"	ND	104	80-120%			
Chloroethane	260	50.0	50.0	"	"	"	ND	130	60-138%			
Chloroform	222	5.00	10.0	"	"	"	ND	111	79-124%			
Chloromethane	172	50.0	50.0	"	"	"	ND	86	50-139%			Q-54
2-Chlorotoluene	207	5.00	10.0	"	"	"	ND	103	79-122%			
4-Chlorotoluene	199	5.00	10.0	"	"	"	ND	99	78-122%			
Dibromochloromethane	230	5.00	10.0	"	"	"	ND	115	74-126%			
1,2-Dibromo-3-chloropropane	208	25.0	50.0	"	"	"	ND	104	62-128%			
1,2-Dibromoethane (EDB)	208	2.50	5.00	"	"	"	ND	104	77-121%			
Dibromomethane	229	5.00	10.0	"	"	"	ND	115	79-123%			
1,2-Dichlorobenzene	208	2.50	5.00	"		"	ND	104	80-120%			
1,3-Dichlorobenzene	211	2.50	5.00	"	"	"	ND	105	"			
1,4-Dichlorobenzene	207	2.50	5.00		"	"	ND	104	79-120%			
Dichlorodifluoromethane	184	5.00	10.0		"	"	ND	92	32-152%			
1,1-Dichloroethane	218	2.00	4.00		"	"	ND	109	77-125%			
1,2-Dichloroethane (EDC)	213	2.00	4.00		"	"	ND	105	73-128%			
1,1-Dichloroethene	215	2.00	4.00		"	"	ND	108	71-131%			
cis-1,2-Dichloroethene	204	2.00	4.00		"	"	ND	102	78-123%			
trans-1,2-Dichloroethene	219	2.00	4.00	"	"	"	ND	110	75-124%			
1,2-Dichloropropane	21)	2.50	5.00	"	"	"	ND	110	78-122%			
1,3-Dichloropropane	204	5.00	10.0	"	"	"	ND	102	80-120%			
2,2-Dichloropropane	147	5.00	10.0	"	"	"	ND	74	60-139%			
1,1-Dichloropropene	206	5.00	10.0			"	ND	103	79-125%			
cis-1,3-Dichloropropene	168	5.00	10.0		"	"	ND	84	75-124%			
trans-1,3-Dichloropropene	108	5.00	10.0		"	"	ND	84 98	73-12476			
Hexachlorobutadiene	190	25.0	50.0		"	"	ND	98 95	66-134%			
Methylene chloride	223	23.0 15.0	30.0		"	"	ND	93 112	74-124%			
1,1,1,2-Tetrachloroethane	223 227	2.00	4.00		"	"	ND	112	78-124%			
1,1,2,2-Tetrachloroethane	227	2.00	4.00 5.00		"	"	ND ND	114	71-121%			

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Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C												
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111000 - EPA 5030B	5						Wat	ter				
Matrix Spike (7111000-MS1)				Pr	epared: 11/	22/17 11:52	Analyzed:	11/22/17 19	:59			
QC Source Sample: MW-4 (A7K08	15-04)											
EPA 8260C												
Tetrachloroethene (PCE)	210	2.00	4.00	ug/L	"	"	2.10	104	74-129%			
1,2,3-Trichlorobenzene	212	10.0	20.0	"	"	"	ND	106	69-129%			
1,2,4-Trichlorobenzene	195	10.0	20.0	"	"	"	ND	98	69-130%			
1,1,1-Trichloroethane	217	2.00	4.00	"	"	"	ND	108	74-131%			
1,1,2-Trichloroethane	211	2.50	5.00	"	"	"	ND	106	80-120%			
Trichloroethene (TCE)	218	2.00	4.00	"	"	"	ND	109	79-123%			
Trichlorofluoromethane	272	10.0	20.0	"	"	"	ND	136	65-141%			
1,2,3-Trichloropropane	221	5.00	10.0	"	"	"	ND	111	73-122%			
Vinyl chloride	254	2.00	4.00	"	"	"	ND	127	58-137%			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 106 %	Limits: 8	0-120 %	Dilı	tion: 1x					
Toluene-d8 (Surr)			96 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			90 %	80	0-120 %		"					

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Philip Nevenberg

Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

		naioų	genated Vola									
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111035 - EPA 5030B	}						Wat	er				
Blank (7111035-BLK1)				Pre	pared: 11/2	27/17 09:26	Analyzed:	11/27/17 10	:50			
EPA 8260C												
Bromobenzene	ND	0.250	0.500	ug/L	1							
Bromochloromethane	ND	0.500	1.00	"	"							
Bromodichloromethane	ND	0.500	1.00	"	"							
Bromoform	ND	0.500	1.00	"	"							
Bromomethane	ND	5.00	5.00	"	"							
Carbon tetrachloride	ND	0.500	1.00	"	"							
Chlorobenzene	ND	0.250	0.500	"	"							
Chloroethane	ND	5.00	5.00	"	"							
Chloroform	ND	0.500	1.00	"	"							
Chloromethane	ND	2.50	5.00	"	"							
2-Chlorotoluene	ND	0.500	1.00	"	"							
4-Chlorotoluene	ND	0.500	1.00	"								
Dibromochloromethane	ND	0.500	1.00	"	"							
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"								
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"							
Dibromomethane	ND	0.500	1.00	"								
1,2-Dichlorobenzene	ND	0.250	0.500	"	"							
1,3-Dichlorobenzene	ND	0.250	0.500	"	"							
1,4-Dichlorobenzene	ND	0.250	0.500	"	"							
Dichlorodifluoromethane	ND	0.500	1.00	"	"							
1,1-Dichloroethane	ND	0.200	0.400	"	"							
1,2-Dichloroethane (EDC)	ND	0.200	0.400	"	"							
1,1-Dichloroethene	ND	0.200	0.400	"	"							
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"							
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"							
1,2-Dichloropropane	ND	0.250	0.500	"	"							
1,3-Dichloropropane	ND	0.500	1.00	"	"							
2,2-Dichloropropane	ND	0.500	1.00	"	"							
1,1-Dichloropropene	ND	0.500	1.00	"	"							
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"							
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"							
Hexachlorobutadiene	ND	2.50	5.00	"	"							
Methylene chloride	ND	1.50	3.00	"	"							
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	"								

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Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

		Halo	genated Vola	atile Orga	nic Com	pounds by	/ EPA 826	50C				
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111035 - EPA 5030E	3						Wat	er				
Blank (7111035-BLK1)				Pr	epared: 11/	27/17 09:26	Analyzed:	11/27/17 10):50			
EPA 8260C												
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	"							
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"							
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"							
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"							
1,1,1-Trichloroethane	ND	0.200	0.400	"	"							
1,1,2-Trichloroethane	ND	0.250	0.500	"	"							
Trichloroethene (TCE)	ND	0.200	0.400	"	"							
Trichlorofluoromethane	ND	1.00	2.00	"	"							
1,2,3-Trichloropropane	ND	0.500	1.00	"	"							
Vinyl chloride	ND	0.200	0.400	"	"							
Surr: 1,4-Difluorobenzene (Surr)		Red	covery: 108 %	Limits: 8	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80)-120 %		"					
4-Bromofluorobenzene (Surr)			95 %	80)-120 %		"					
L CS (7111025 DS1)				De	amaradi 11/	27/17 00.26	Analyzada	11/27/17 00).54			
LCS (7111035-BS1) EPA 8260C				F1	epareu. 11/	27/17 09:26	Allalyzeu.	11/2//17 05	7.54			
Bromobenzene	19.7	0.250	0.500	ug/L	1	20.0		99	80-120%			
Bromochloromethane	20.6	0.500	1.00	"	"	20.0		103	"			
Bromodichloromethane	20.0	0.500	1.00	"		"		109	"			
Bromoform	25.3	0.500	1.00	"		"		107	"			Q-:
Bromomethane	23.5	5.00	5.00	"		"		106	"			
Carbon tetrachloride	20.9	0.500	1.00	"		"		105	"			
Chlorobenzene	19.9	0.250	0.500	"		"		99	"			
Chloroethane	23.4	5.00	5.00	"		"		117	"			
Chloroform	20.8	0.500	1.00	"		"		104	"			
Chloromethane	19.9	2.50	5.00	"		"		99				
2-Chlorotoluene	19.9	0.500	1.00	"		"		99 99				
4-Chlorotoluene	19.8	0.500	1.00	"	"	"		99 93	"			
4-Chlorotoluene Dibromochloromethane	18.5 22.0	0.500	1.00	"	"	"		93 110	"			
			5.00	"	"	"		98	"			
1,2-Dibromo-3-chloropropane 1,2-Dibromoethane (EDB)	19.5	2.50		"		"			"			
	19.8	0.250 0.500	0.500					99 104				
, , , , , , , , , , , , , , , , , , , ,	20.0	0.500	1.00					104				
Dibromomethane	20.9							00				
Dibromomethane 1,2-Dichlorobenzene	19.6	0.250	0.500	"	"			98 00	"			
Dibromomethane					"	"		98 99 99	"			

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Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C												
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111035 - EPA 5030B							Water					
LCS (7111035-BS1)				Р	repared: 11/	27/17 09:26	Analyzed:	11/27/17 09	:54			
EPA 8260C												
Dichlorodifluoromethane	16.7	0.500	1.00	ug/L	"	"		84	"			
1,1-Dichloroethane	20.7	0.200	0.400	"	"	"		103	"			
1,2-Dichloroethane (EDC)	20.1	0.200	0.400	"	"	"		101	"			
1,1-Dichloroethene	19.7	0.200	0.400	"	"	"		98	"			
cis-1,2-Dichloroethene	19.3	0.200	0.400	"	"	"		97	"			
trans-1,2-Dichloroethene	20.1	0.200	0.400	"	"	"		100	"			
1,2-Dichloropropane	20.6	0.250	0.500	"	"	"		103	"			
1,3-Dichloropropane	19.4	0.500	1.00	"	"	"		97	"			
2,2-Dichloropropane	17.4	0.500	1.00	"	"	"		87	"			
1,1-Dichloropropene	19.0	0.500	1.00	"	"	"		95	"			
cis-1,3-Dichloropropene	16.8	0.500	1.00	"	"	"		84	"			
trans-1,3-Dichloropropene	19.3	0.500	1.00	"	"	"		97	"			
Hexachlorobutadiene	17.3	2.50	5.00	"	"	"		87	"			
Methylene chloride	21.5	1.50	3.00	"	"	"		108	"			
1,1,1,2-Tetrachloroethane	21.3	0.200	0.400	"	"	"		107	"			
1,1,2,2-Tetrachloroethane	21.5	0.250	0.500	"	"	"		107	"			
Tetrachloroethene (PCE)	19.5	0.200	0.400	"	"	"		97	"			
1,2,3-Trichlorobenzene	19.3	1.00	2.00	"	"	"		97	"			
1,2,4-Trichlorobenzene	18.1	1.00	2.00	"	"	"		91	"			
1,1,1-Trichloroethane	20.3	0.200	0.400	"	"	"		102	"			
1,1,2-Trichloroethane	19.8	0.250	0.500	"	"	"		99	"			
Trichloroethene (TCE)	20.6	0.200	0.400	"	"	"		103	"			
Trichlorofluoromethane	23.2	1.00	2.00	"	"	"		116	"			
1,2,3-Trichloropropane	20.2	0.500	1.00	"	"	"		101	"			
Vinyl chloride	21.9	0.200	0.400	"		"		109	"			
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 104 %	Limits:	80-120 %	Dil	ution: 1x					
Toluene-d8 (Surr)			96 %	ε	80-120 %		"					
4-Bromofluorobenzene (Surr)			91 %	ε	80-120 %		"					

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Succeed Environmental Consulting	Project: HE-1-01					
6028 NE 49th Ave.	Project Number: [none]	Reported:				
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31				

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260C									
Prep: EPA 5030B					Sample	Default	RL Prep		
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor		
Batch: 7111035									
A7K0815-01RE1	Water	EPA 8260C	11/16/17 17:45	11/27/17 10:41	5mL/5mL	5mL/5mL	1.00		
A7K0815-02RE1	Water	EPA 8260C	11/16/17 16:10	11/27/17 10:41	5mL/5mL	5mL/5mL	1.00		
A7K0815-03RE1	Water	EPA 8260C	11/16/17 15:00	11/27/17 10:41	5mL/5mL	5mL/5mL	1.00		
A7K0815-04RE1	Water	EPA 8260C	11/16/17 16:50	11/27/17 10:41	5mL/5mL	5mL/5mL	1.00		

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Philip Nevenberg

Philip Nerenberg, Lab Director



Succeed	Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.		Project Number: [none]	Reported:
Portland,	, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31
		Notes and Definitions	
Jualifiers	<u>S:</u>		
Q-54	Daily Continuing Calibration Verification +2%. The results are reported as Estimate	recovery for this analyte failed the +/-20% criteria listed in EPA method d Values.	d 8260C/8270D by
Q-54b	Daily Continuing Calibration Verification +9%. The results are reported as Estimate	recovery for this analyte failed the +/-20% criteria listed in EPA method d Values.	d 8260C/8270D by
Q-54c	Daily Continuing Calibration Verification The results are reported as Estimated Valu	recovery for this analyte failed the +/-20% criteria listed in EPA methodes.	d 8260C/8270D by -1%.
Q-55	Daily CCV/LCS recovery for this analyte ensure detection at the reporting level.	was below the +/-20% criteria listed in EPA 8260C, however there is ac	dequate sensitivity to
Q-56	Daily CCV/LCS recovery for this analyte	was above the +/-20% criteria listed in EPA 8260C	
Notes ar	nd Conventions:		
DET	Analyte DETECTED		
ND	Analyte NOT DETECTED at or above the	e reporting limit	
NR	Not Reported		
dry	Sample results reported on a dry weight b	asis. Results listed as 'wet' or without 'dry'designation are not dry weigh	ht corrected.
RPD	Relative Percent Difference		
MDL	If MDL is not listed, data has been evalua	ted to the Method Reporting Limit only.	
WMSC	Water Miscible Solvent Correction has be	en applied to Results and MRLs for volatiles soil samples per EPA 8000	DC.
Batch QC	analyses were performed with the approprior order to meet or exceed method and regul results are available upon request. In case	contains only results for Batch QC derived from client samples included iate Batch QC (including Sample Duplicates, Matrix Spikes and/or Ma atory requirements. Any exceptions to this will be qualified in this repo s where there is insufficient sample provided for Sample Duplicates and is analyzed to demonstrate accuracy and precision of the extraction an	trix Spike Duplicates) in rt. Complete Batch QC d/or Matrix Spikes, a
Blank Policy	chemistry and HCID analyses which are a	h bias down to a level equal to ½ the method reporting limit (MRL), ex ssessed only to the MRL. Sample results flagged with a B or B-02 qual the level found in the blank for inorganic analyses or less than five time	ifier are potentially
	-	s to the level found in the blank; water sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.	l by the dilution factor,
	Results qualified as reported below the M qualifications are not applied to J qualifie	RL may include a potential high bias if associated with a B or B-02 qua I results reported below the MRL.	lified blank. B and B-02
	QC results are not applicable. For exampl Spikes, etc.	e, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank S	Spikes and Matrix
***	Used to indicate a possible discrepancy w	ith the Sample and Sample Duplicate results when the %RPD is not ava	ailable. In this case,

either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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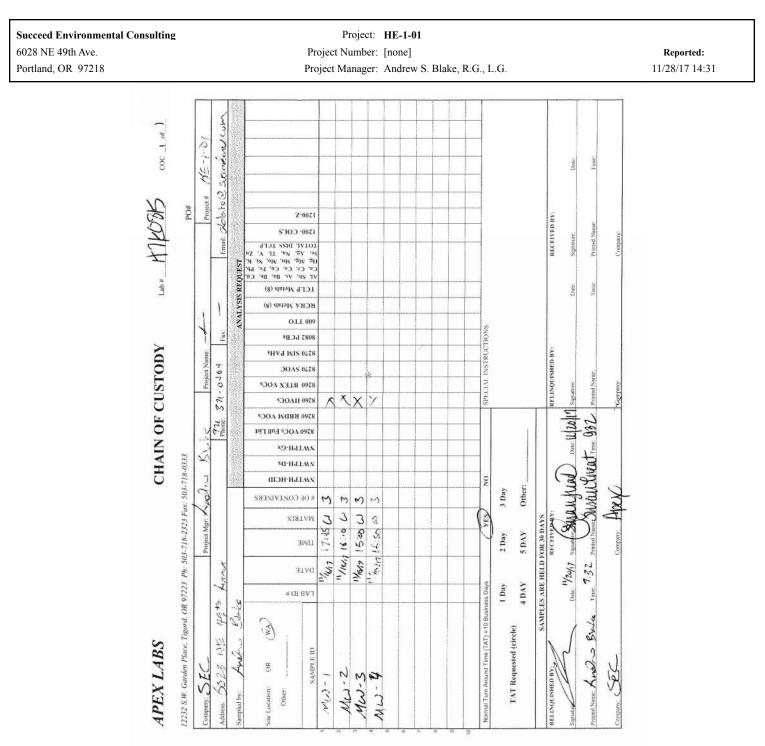
Philip Nevenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of

custody document. This analytical report must be reproduced in its entirety.





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Philip Nevenberg

Apex Labs

12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 Phone 503-718-0333 Fax

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31
	Client: SEC Element WO#: A7 KOS/5	
	Project/Project #: K HE-1-0	
	Deliverv info: Date/Time Received: 11 10 132 By:	
	Cooler Inspection Inspected by: : : ! <t< td=""><td></td></t<>	
	Cooler #1 Cooler #2 Cooler #3 Cooler #4 Cooler #5 Cooler #6 Cooler #7 Temperature (deg. C)	
	Received on Ice? (Y)N)	
	Temp. Blanks? (Y/N) 3 9 Ice Type: (Gel(Real)Other)	
	Condition:	
	If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA <u>Samples Inspection</u> : Inspected by: <u>II / VII @ IIO</u>	
	All Samples Intact? Yes X No Comments:	
	Bottle Labels/COCs agree? Yes No X Comments: Ton MW-3	
	Containers/Volumes Received Appropriate for Analysis? Yes X No Comments:	
	Do VOA Vials have Visible Headspace? Yes No X NA	
	Comments	
	Comments:	
	Additional Information:	
	Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y	

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Philip Nevenberg

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 Phone 503-718-0333 Fax

Saturday, February 10, 2018

Andrew S. Blake, R.G., L.G. Succeed Environmental Consulting 6028 NE 49th Ave. Portland, OR 97218

RE: HE-1-01 / [none]

Enclosed are the results of analyses for work order <u>A8B0073</u>, which was received by the laboratory on 2/2/2018 at 2:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <u>pnerenberg@apex-labs.com</u>, or by phone at 503-718-2323.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 Phone 503-718-0333 Fax

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	02/10/18 11:06
	ANALVTICAL REPORT FOR SAMPLES	

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION								
Laboratory ID	Matrix	Date Sampled	Date Received					
A8B0073-01	Water	02/01/18 10:55	02/02/18 14:00					
A8B0073-02	Water	02/01/18 10:55	02/02/18 14:00					
A8B0073-03	Water	02/01/18 13:50	02/02/18 14:00					
A8B0073-04	Water	02/01/18 16:15	02/02/18 14:00					
A8B0073-05	Water	02/01/18 12:25	02/02/18 14:00					
A8B0073-06	Water	02/01/18 00:00	02/02/18 14:00					
	A8B0073-01 A8B0073-02 A8B0073-03 A8B0073-04 A8B0073-05	A8B0073-01 Water A8B0073-02 Water A8B0073-03 Water A8B0073-04 Water A8B0073-05 Water	A8B0073-01 Water 02/01/18 10:55 A8B0073-02 Water 02/01/18 10:55 A8B0073-03 Water 02/01/18 13:50 A8B0073-04 Water 02/01/18 16:15 A8B0073-05 Water 02/01/18 12:25					

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Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	02/10/18 11:06
	ANALYTICAL SAMPLE RESULTS	

ANALYTICAL SAMPLE RESULTS

			Reporting					
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-1 (A8B0073-01)			Matrix: Wa		Batch: 80203	71		
Chloroform	1.33	0.500	1.00	ug/L	1	02/05/18 14:03	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Vinyl chloride	ND	0.200	0.400	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	overy: 104 %	Limits: 80-120 9	6 "	"	"	
Toluene-d8 (Surr)			101 %	Limits: 80-120 %	<i>•</i> "	"	"	
4-Bromofluorobenzene (Surr)			103 %	Limits: 80-120 9	6 "	"	"	
MW-1-DUP (A8B0073-02)			Matrix: Wa	ter	Batch: 80203	71		
Chloroform	1.32	0.500	1.00	ug/L	1	02/05/18 15:00	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Vinyl chloride	ND	0.200	0.400		"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	overy: 104 %	Limits: 80-120 9	6 "	"	"	
Toluene-d8 (Surr)			100 %	Limits: 80-120 %	<i>•</i> "	"	"	
4-Bromofluorobenzene (Surr)			103 %	Limits: 80-120 9	<i>•</i> "	"	"	
MW-2 (A8B0073-03)			Matrix: Wa	ter	Batch: 80203	71		
Chloroform	ND	0.500	1.00	ug/L	1	02/05/18 15:28	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
Tetrachloroethene (PCE)	0.859	0.200	0.400	"	"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Vinyl chloride	ND	0.200	0.400		"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	overy: 104 %	Limits: 80-120 9	6 "	"	"	
Toluene-d8 (Surr)			101 %	Limits: 80-120 9	<i>6</i> "	"	"	
4-Bromofluorobenzene (Surr)			105 %	Limits: 80-120 9	6 "	"	"	
MW-3 (A8B0073-04)			Matrix: Wa	ter	Batch: 80203	71		
Chloroform	ND	0.500	1.00	ug/L	1	02/05/18 15:56	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
Tetrachloroethene (PCE)	1.35	0.200	0.400	"	"	"	"	

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Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	02/10/18 11:06

ANALYTICAL SAMPLE RESULTS

	Halo	ogenated V	olatile Org	anic Compound	s by EPA	8260C		
			Reporting					
Analyte	Result	MDL	Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-3 (A8B0073-04)			Matrix: Wa	ater Ba	tch: 80203	71		
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	"	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	overy: 103 %	Limits: 80-120 %	"	"	"	
Toluene-d8 (Surr)			101 %	Limits: 80-120 %	"	"	"	
4-Bromofluorobenzene (Surr)			105 %	Limits: 80-120 %	"	"	"	
MW-4 (A8B0073-05)			Matrix: Wa	ater Ba	ntch: 80203	71		
Chloroform	ND	0.500	1.00	ug/L	1	02/05/18 16:24	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
Tetrachloroethene (PCE)	1.56	0.200	0.400	"	"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Vinyl chloride	ND	0.200	0.400	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	overy: 104 %	Limits: 80-120 %	"	"	"	
Toluene-d8 (Surr)			100 %	Limits: 80-120 %	"	"	"	
4-Bromofluorobenzene (Surr)			104 %	Limits: 80-120 %	"	"	"	
Trip Blank (A8B0073-06)			Matrix: Wa	ater Ba	tch: 80203	71		
Chloroform	ND	0.500	1.00	ug/L	1	02/05/18 12:38	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"	"	"	
Trichloroethene (TCE)	ND	0.200	0.400	"	"	"	"	
Vinyl chloride	ND	0.200	0.400		"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)		Rec	overy: 102 %	Limits: 80-120 %	"	"	"	
Toluene-d8 (Surr)			100 %	Limits: 80-120 %	"	"	"	
4-Bromofluorobenzene (Surr)			103 %	Limits: 80-120 %	"	"	"	

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Philip Nevenberg

Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	02/10/18 11:06

QUALITY CONTROL (QC) SAMPLE RESULTS

			Reporting			Spike	Source	a / = -	%REC		RPD	
Analyte	Result	MDL	Limit	Units	Dil.	Amount	Result	%REC	Limits	RPD	Limit	Notes
Batch 8020371 - EPA 5030E	3						Wat	er				
Blank (8020371-BLK1)					Prepared: 02/	05/18 09:49	Analyzed:	02/05/18 1	1:13			
EPA 8260C												
Chloroform	ND	0.500	1.00	ug/L	1							
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"							
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"							
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"							
Trichloroethene (TCE)	ND	0.200	0.400	"	"							
Vinyl chloride	ND	0.200	0.400	"	"							
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 103 %	Limits:	80-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			100 %		80-120 %		"					
4-Bromofluorobenzene (Surr)			103 %		80-120 %		"					
LCS (8020371-BS1)					Prepared: 02/	05/18 09:49	Analyzed:	02/05/18 1	0:17			
EPA 8260C												
Chloroform	19.9	0.500	1.00	ug/L	1	20.0		99	80-120%			
cis-1,2-Dichloroethene	21.4	0.200	0.400	"	"	"		107	"			
trans-1,2-Dichloroethene	21.3	0.200	0.400	"	"	"		106	"			
Tetrachloroethene (PCE)	20.7	0.200	0.400	"	"	"		103	"			
Trichloroethene (TCE)	20.0	0.200	0.400	"	"	"		100	"			
Vinyl chloride	17.3	0.200	0.400	"	"	"		86	"			
Surr: 1,4-Difluorobenzene (Surr)		Re	ecovery: 97 %	Limits:	80-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			97 %		80-120 %		"					
4-Bromofluorobenzene (Surr)			103 %		80-120 %		"					
Duplicate (8020371-DUP1)					Prepared: 02/	05/18 11:15	Analyzed:	02/05/18 1	4:31			
QC Source Sample: MW-1 (A8B00	73-01)											
EPA 8260C												
Chloroform	1.26	0.500	1.00	ug/L	1		1.33			5	30%	
cis-1,2-Dichloroethene	ND	0.200	0.400	"	"		ND				30%	
trans-1,2-Dichloroethene	ND	0.200	0.400	"	"		ND				30%	
Tetrachloroethene (PCE)	ND	0.200	0.400	"	"		ND				30%	
Trichloroethene (TCE)	ND	0.200	0.400	"	"		ND				30%	
Vinyl chloride	ND	0.200	0.400	"	"		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Rec	overy: 102 %	Limits:	80-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			101 %		80-120 %		"					
4-Bromofluorobenzene (Surr)			101 %		80-120 %		"					

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Philip Nevenberg

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	02/10/18 11:06

QUALITY CONTROL (QC) SAMPLE RESULTS

		Halog	genated Vola	atile Orga	nic Com	pounds by	/ EPA 826	60C				
Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020371 - EPA 5030B							Wat	ter				
Matrix Spike (8020371-MS1)				Pr	epared: 02/	05/18 11:15	Analyzed:	02/05/18 1	6:53			
QC Source Sample: MW-4 (A8B0073	3-05)											
EPA 8260C												
Chloroform	20.9	0.500	1.00	ug/L	1	20.0	ND	105	79-124%			
cis-1,2-Dichloroethene	22.1	0.200	0.400	"	"	"	ND	111	78-123%			
trans-1,2-Dichloroethene	22.5	0.200	0.400	"	"	"	ND	112	75-124%			
Tetrachloroethene (PCE)	23.0	0.200	0.400	"	"	"	1.56	107	74-129%			
Trichloroethene (TCE)	20.9	0.200	0.400	"	"	"	ND	105	79-123%			
Vinyl chloride	19.6	0.200	0.400	"		"	ND	98	58-137%			
Surr: 1,4-Difluorobenzene (Surr)		Re	ecovery: 97 %	Limits: 8	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			96 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			98 %	80	0-120 %		"					

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director

Succeed Environmental Consulting	Project: HE-1-01	
6028 NE 49th Ave.	Project Number: [none]	Reported:
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	02/10/18 11:06

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260C											
Prep: EPA 5030B					Sample	Default	RL Prep				
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor				
Batch: 8020371											
A8B0073-01	Water	EPA 8260C	02/01/18 10:55	02/05/18 11:15	5mL/5mL	5mL/5mL	1.00				
A8B0073-02	Water	EPA 8260C	02/01/18 10:55	02/05/18 11:15	5mL/5mL	5mL/5mL	1.00				
A8B0073-03	Water	EPA 8260C	02/01/18 13:50	02/05/18 11:15	5mL/5mL	5mL/5mL	1.00				
A8B0073-04	Water	EPA 8260C	02/01/18 16:15	02/05/18 11:15	5mL/5mL	5mL/5mL	1.00				
A8B0073-05	Water	EPA 8260C	02/01/18 12:25	02/05/18 11:15	5mL/5mL	5mL/5mL	1.00				
A8B0073-06	Water	EPA 8260C	02/01/18 00:00	02/05/18 11:15	5mL/5mL	5mL/5mL	1.00				

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Philip Nevenberg

Philip Nerenberg, Lab Director



6028 NE	Environmental Consulting 49th Ave. OR 97218	Project Number:	HE-1-01 [none] Andrew S. Blake, R.G., L.G.	Reported: 02/10/18 11:06
		Notes and De	finitions	
Qualifiers	<u></u>			
Notes ar	nd Conventions:			
DET	Analyte DETECTED			
ND	Analyte NOT DETECTED at or above th	ne reporting limit		
NR	Not Reported	· · · · ·		
dry	1	basis. Results listed as 'wet' or w	ithout 'dry'designation are not dry weight cor	rected.
RPD	Relative Percent Difference			
MDL	If MDL is not listed, data has been evalu	ated to the Method Reporting Lir	nit only.	
WMSC	Water Miscible Solvent Correction has b	een applied to Results and MRLs	for volatiles soil samples per EPA 8000C.	
Batch QC	analyses were performed with the approp order to meet or exceed method and regu results are available upon request. In case	priate Batch QC (including Samp latory requirements. Any excepti ses where there is insufficient sam	OC derived from client samples included in the le Duplicates, Matrix Spikes and/or Matrix Spions to this will be qualified in this report. Co uple provided for Sample Duplicates and/or M uracy and precision of the extraction and ana	pike Duplicates) in mplete Batch QC ⁄Iatrix Spikes, a
Blank Policy	chemistry and HCID analyses which are	assessed only to the MRL. Samp	⁴ the method reporting limit (MRL), except f le results flagged with a B or B-02 qualifier a inorganic analyses or less than five times the	are potentially
	For accurate comparison of volatile result and soil sample results should be divided		water sample results should be divided by the account for the sample prep factor.	ne dilution factor,
	Results qualified as reported below the M qualifications are not applied to J qualified	, i e	bias if associated with a B or B-02 qualified L.	blank. B and B-02
	QC results are not applicable. For examp Spikes, etc.	ele, % Recoveries for Blanks and	Duplicates, % RPD for Blanks, Blank Spikes	s and Matrix

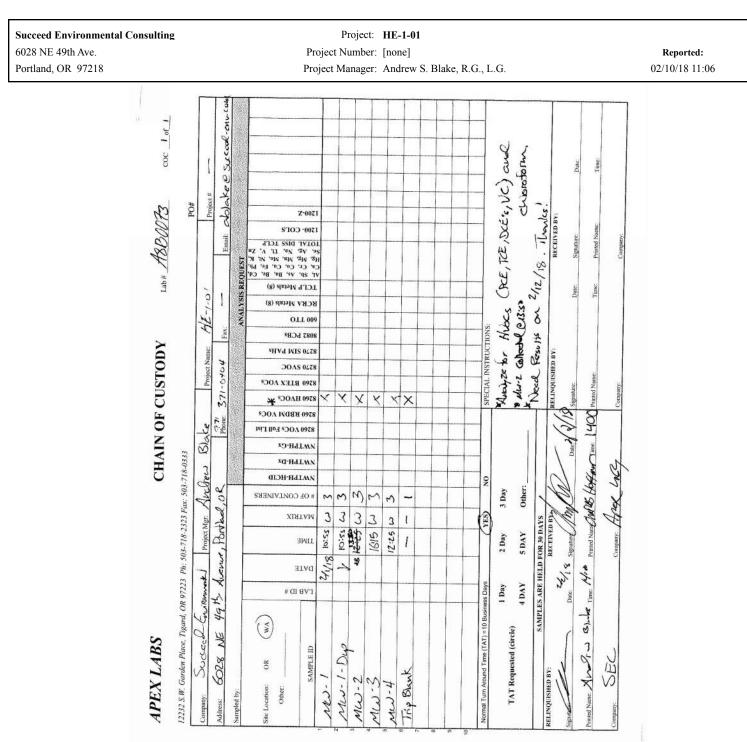
*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Philip Nevenberg

Apex Labs

12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 Phone 503-718-0333 Fax



Apex Laboratories

Philip Nevenberg

A	bex	Lat)S

Succeed Environmental Consulting	-	
6028 NE 49th Ave. Portland, OR 97218	Project Number: [none] Project Manager: Andrew S. Blake, R.G., L.G.	Reported: 02/10/18 11:06
	APEX LABS COOLER RECEIPT FORM Client: $EnVironmentr.$ Project/Project #: $HE - I - 0$ Delivervinfo: Date/Time Received: $2/2/12/200$ Bottervinfo: Date/Time Received: $2/2/12/200$ By: CFH Delivervinfo: Date/Time Received: $2/2/12/200$ By: CFH Deliverd by: Apex × Client ESS FedEx_UPS Swift_Senvoy_SDS_Other	
	Do VOA Vials have Visible Headspace? Yes No NA Comments Water Samples: pH Checked and Appropriate (except VOAs): Yes NoNA Comments: Additional Information: abeled by: Witness: Cooler Inspected by: See Project Contact Form: Y	

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 EPA ID: OR01039

Wednesday, May 23, 2018

Andrew S. Blake, R.G., L.G. Succeed Environmental Consulting 6028 NE 49th Ave. Portland, OR 97218

RE: A8E0551 - HE-1-01 - HE-1-01

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8E0551, which was received by the laboratory on 5/17/2018 at 12:38:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <u>pnerenberg@apex-labs.com</u>, or by phone at 503-718-2323.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>HE-1-</u>	<u>1</u>	
6028 NE 49th Ave.	Project Number: HE-1-	1	Report ID:
Portland, OR 97218	Project Manager: Andre	v S. Blake, R.G., L.G.	A8E0551 - 05 23 18 1636

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION								
Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received				
MW-4	A8E0551-01	Water	05/16/18 11:00	05/17/18 12:38				
MW-4 DUP	A8E0551-02	Water	05/16/18 11:00	05/17/18 12:38				
MW-3D	A8E0551-03	Water	05/16/18 12:20	05/17/18 12:38				
MW-3	A8E0551-04	Water	05/16/18 13:00	05/17/18 12:38				
MW-2	A8E0551-05	Water	05/16/18 14:00	05/17/18 12:38				
MW-1	A8E0551-06	Water	05/16/18 15:30	05/17/18 12:38				
Trip Blank	A8E0551-07	Water	05/16/18 00:00	05/17/18 12:38				

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Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>HE-1-01</u>	
6028 NE 49th Ave.	Project Number: HE-1-01	<u>Report ID:</u>
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G	G., L.G. A8E0551 - 05 23 18 1636

ANALYTICAL SAMPLE RESULTS

	Sample	Detection	Reporting			Date		
Analyte	Result	Limit	Limit	Units	Dilution	Analyzed	Method Ref.	Note
MW-4 (A8E0551-01)			Matrix:	Water		Batch: 8050	875	
Chloroform	ND	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	1.10	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 110 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			98 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			93 %	80-120 %	1	05/18/18	EPA 8260C	
MW-4 DUP (A8E0551-02)			Matrix:	Water		Batch: 8050	898	
Chloroform	ND	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	1.01	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 102 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			99 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	05/18/18	EPA 8260C	
MW-3D (A8E0551-03)			Matrix:	Water		Batch: 8050	898	
Chloroform	ND	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 103 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			99 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	05/18/18	EPA 8260C	
MW-3 (A8E0551-04)			Matrix:	Water		Batch: 8050	875	
Chloroform	ND	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	0.450	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>H</u>	E-1-01	
6028 NE 49th Ave.	Project Number: H	E-1-01	<u>Report ID:</u>
Portland, OR 97218	Project Manager: A	ndrew S. Blake, R.G., L.G.	A8E0551 - 05 23 18 1636

ANALYTICAL SAMPLE RESULTS

L	паюдег		nyanic Co	ompounds by E	FA 020U	U		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-3 (A8E0551-04)			Matrix:	Water		Batch: 8050	0875	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 111 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			97 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			94 %	80-120 %	1	05/18/18	EPA 8260C	
MW-2 (A8E0551-05)			Matrix:	Water		Batch: 8050)898	
Chloroform	ND	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	0.741	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 106 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			100 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			99 %	80-120 %	1	05/18/18	EPA 8260C	
MW-1 (A8E0551-06)			Matrix:	Water		Batch: 8050)898	
Chloroform	0.605	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	J
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 105 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			100 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	05/18/18	EPA 8260C	
Trip Blank (A8E0551-07)			Matrix:	Water		Batch: 8050)875	
Chloroform	ND	0.500	1.00	ug/L	1	05/18/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	05/18/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	v: 108 %	Limits: 80-120 %	1	05/18/18	EPA 8260C	
Toluene-d8 (Surr)			99 %	80-120 %	1	05/18/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			96 %	80-120 %	1	05/18/18	EPA 8260C	

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12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	
6028 NE 49th Ave.	
Portland, OR 97218	

Project: HE-1-01 Project Number: HE-1-01

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

		Haloge	nated Vola	tile Orga	nic Comp	ounds by	/ EPA 826	50C				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050875 - EPA 5030B							Wate	er				
Blank (8050875-BLK1)			Prepared	l: 05/18/18 ()8:36 Anal	yzed: 05/18	/18 10:58					
EPA 8260 <u>C</u>												
Chloroform	ND	0.500	1.00	ug/L	1							
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1							
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1							
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1							
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1							
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1							
Vinyl chloride	ND	0.200	0.400	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 109 %	Limits: 80	-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			98 %		-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80	-120 %		"					
LCS (8050875-BS1)			Preparec	l: 05/18/18 ()8:36 Anal	yzed: 05/18	/18 09:59					
EPA 8260 <u>C</u>												
Chloroform	21.6	0.500	1.00	ug/L	1	20.0		108	80-120%			
1,1-Dichloroethene	20.1	0.200	0.400	ug/L	1	20.0		100	80-120%			
cis-1,2-Dichloroethene	20.4	0.200	0.400	ug/L	1	20.0		102	80-120%			
trans-1,2-Dichloroethene	20.4	0.200	0.400	ug/L	1	20.0		102	80-120%			
Tetrachloroethene (PCE)	17.9	0.200	0.400	ug/L	1	20.0		89	80-120%			
Trichloroethene (TCE)	20.0	0.200	0.400	ug/L	1	20.0		100	80-120%			
Vinyl chloride	22.0	0.200	0.400	ug/L	1	20.0		110	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 108 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			97 %	80	-120 %		"					
Duplicate (8050875-DUP1)			Preparec	l: 05/18/18	0:34 Anal	yzed: 05/18	/18 20:26					
OC Source Sample: Non-SDG (A8	E0557-01)											
Chloroform	ND	5.00	10.0	ug/L	10		ND				30%	
1,1-Dichloroethene	ND	2.00	4.00	ug/L	10		ND				30%	
cis-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10		ND				30%	
trans-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10		ND				30%	
Tetrachloroethene (PCE)	ND	2.00	4.00	ug/L	10		ND				30%	
Trichloroethene (TCE)	ND	2.00	4.00	ug/L	10		ND				30%	
Vinyl chloride	ND	2.00	4.00	ug/L	10		ND				30%	

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Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting
6028 NE 49th Ave.
Portland, OR 97218

Project: <u>HE-1-01</u> Project Number: HE-1-01

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

	Halogenated Volatile Organic Compounds by EPA 8260C											
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050875 - EPA 5030B							Wate	er				
Duplicate (8050875-DUP1)			Preparec	l: 05/18/18	10:34 Anal	yzed: 05/18	/18 20:26					
OC Source Sample: Non-SDG (A8)	E0557-01)											
Surr: 1,4-Difluorobenzene (Surr)		Recov	very: 114 %	Limits: 8	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			97 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			92 %	80	0-120 %		"					
Matrix Spike (8050875-MS1)			Preparec	l: 05/18/18	10:34 Anal	yzed: 05/18	/18 15:28					
<u>QC Source Sample: Non-SDG (A81 EPA 8260C</u>	E0569-07 <u>)</u>											
Chloroform	23.7	0.500	1.00	ug/L	1	20.0	ND	119	79-124%			
1,1-Dichloroethene	23.0	0.200	0.400	ug/L	1	20.0	0.915	111	71-131%			
cis-1,2-Dichloroethene	60.1	0.200	0.400	ug/L	1	20.0	37.9	111	78-123%			
trans-1,2-Dichloroethene	22.2	0.200	0.400	ug/L	1	20.0	0.216	110	75-124%			
Tetrachloroethene (PCE)	22.7	0.200	0.400	ug/L	1	20.0	3.01	98	74-129%			
Trichloroethene (TCE)	29.3	0.200	0.400	ug/L	1	20.0	7.60	108	79-123%			
Vinyl chloride	24.1	0.200	0.400	ug/L	1	20.0	ND	120	58-137%			
Surr: 1,4-Difluorobenzene (Surr)		Recov	very: 109 %	Limits: 8	0-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)	Toluene-d8 (Surr) 96 % 80-120 % "											
4-Bromofluorobenzene (Surr)			95 %	80	0-120 %		"					

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	
6028 NE 49th Ave.	Pro
Portland, OR 97218	Pro

Project: <u>HE-1-01</u> roject Number: **HE-1-01**

oject Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

		Haloge	nated Vola	tile Orga	nic Comp	ounds by	/ EPA 826	50C				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050898 - EPA 5030B							Wat	er				
Blank (8050898-BLK1)			Prepared	: 05/18/18	12:46 Anal	yzed: 05/18	/18 14:58					
EPA 8260C												
Bromobenzene	ND	0.250	0.500	ug/L	1							
Bromochloromethane	ND	0.500	1.00	ug/L	1							
Bromodichloromethane	ND	0.500	1.00	ug/L	1							
Bromoform	ND	0.500	1.00	ug/L	1							
Bromomethane	ND	5.00	5.00	ug/L	1							
Carbon tetrachloride	ND	0.500	1.00	ug/L	1							
Chlorobenzene	ND	0.250	0.500	ug/L	1							
Chloroethane	ND	10.0	10.0	ug/L	1							
Chloroform	ND	0.500	1.00	ug/L	1							
Chloromethane	ND	2.50	5.00	ug/L	1							
2-Chlorotoluene	ND	0.500	1.00	ug/L	1							
4-Chlorotoluene	ND	0.500	1.00	ug/L	1							
Dibromochloromethane	ND	0.500	1.00	ug/L	1							
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1							
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1							
Dibromomethane	ND	0.500	1.00	ug/L	1							
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1							
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1							
1.1-Dichloroethane	ND	0.200	0.400	ug/L	1							
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1							
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1							
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1							
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L ug/L	1							
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1							
1,3-Dichloropropane	ND	0.500	1.00	ug/L ug/L	1							
2,2-Dichloropropane	ND	0.500	1.00	ug/L ug/L	1							
1,1-Dichloropropene	ND	0.500	1.00	ug/L ug/L	1							
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L ug/L	1							
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L ug/L	1							
Hexachlorobutadiene	ND	2.50	5.00	ug/L ug/L	1							
Methylene chloride	ND	2.50 1.50	3.00	ug/L ug/L	1							
1,1,1,2-Tetrachloroethane	ND	0.200	0.400		1							
1,1,1,2-Tetracinoroethane	IND	0.200	0.400	ug/L	1							

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	
6028 NE 49th Ave.	
Portland, OR 97218	

Project: <u>HE-1-01</u> Project Number: **HE-1-01**

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

		Haloge	nated Vola	atile Orga	nic Comp	ounds by	/ EPA 826	0C				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050898 - EPA 5030B							Wat	er				
Blank (8050898-BLK1)			Prepared	1: 05/18/18	12:46 Ana	lyzed: 05/18/	/18 14:58					
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1							
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1							
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1							
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1							
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1							
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1							
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1							
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1							
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1							
Vinyl chloride	ND	0.200	0.400	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 107 %)-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			100 %	80)-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80)-120 %		"					
LCS (8050898-BS1)			Preparec	d: 05/18/18	12:46 Ana	lyzed: 05/18/	/18 14:02					
EPA 8260C												
Bromobenzene	20.0	0.250	0.500	ug/L	1	20.0			80-120%			
Bromochloromethane	19.7	0.500	1.00	ug/L	1	20.0		98	80-120%			
Bromodichloromethane	19.9	0.500	1.00	ug/L	1	20.0		99	80-120%			
Bromoform	18.8	0.500	1.00	ug/L	1	20.0		94	80-120%			
Bromomethane	17.7	5.00	5.00	ug/L	1	20.0		88	80-120%			
Carbon tetrachloride	19.1	0.500	1.00	ug/L	1	20.0		95	80-120%			
Chlorobenzene	19.4	0.250	0.500	ug/L	1	20.0		97	80-120%			
Chloroethane	19.0	10.0	10.0	ug/L	1	20.0		95	80-120%			
Chloroform	19.1	0.500	1.00	ug/L	1	20.0		96	80-120%			
Chloromethane	17.0	2.50	5.00	ug/L	1	20.0		85	80-120%			
2-Chlorotoluene	20.9	0.500	1.00	ug/L	1	20.0		105	80-120%			
4-Chlorotoluene	21.0	0.500	1.00	ug/L	1	20.0		105	80-120%			
Dibromochloromethane	21.8	0.500	1.00	ug/L	1	20.0		109	80-120%			
1,2-Dibromo-3-chloropropane	19.3	2.50	5.00	ug/L	1	20.0		96	80-120%			
1,2-Dibromoethane (EDB)	20.5	0.250	0.500	ug/L	1	20.0		103	80-120%			
Dibromomethane	19.7	0.500	1.00	ug/L	1	20.0			80-120%			
1,2-Dichlorobenzene	20.1	0.250	0.500	ug/L	1	20.0			80-120%			
1,3-Dichlorobenzene	20.9	0.250	0.500	ug/L	1	20.0			80-120%			
1,4-Dichlorobenzene	19.0	0.250	0.500	ug/L ug/L	1	20.0			80-120%			

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting
6028 NE 49th Ave.
Portland, OR 97218

Project: <u>HE-1-01</u> Project Number: HE-1-01

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

		D (D C				C		0/ 850		DDD	
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050898 - EPA 5030B							Wate	er				
LCS (8050898-BS1)			Prepared	: 05/18/18	12:46 Ana	yzed: 05/18	/18 14:02					
Dichlorodifluoromethane	17.6	0.500	1.00	ug/L	1	20.0		88	80-120%			
1,1-Dichloroethane	18.7	0.200	0.400	ug/L	1	20.0		94	80-120%			
1,2-Dichloroethane (EDC)	18.9	0.200	0.400	ug/L	1	20.0		94	80-120%			
1,1-Dichloroethene	16.9	0.200	0.400	ug/L	1	20.0		84	80-120%			
cis-1,2-Dichloroethene	19.2	0.200	0.400	ug/L	1	20.0		96	80-120%			
trans-1,2-Dichloroethene	18.5	0.200	0.400	ug/L	1	20.0		93	80-120%			
1,2-Dichloropropane	18.8	0.250	0.500	ug/L	1	20.0		94	80-120%			
1,3-Dichloropropane	20.1	0.500	1.00	ug/L	1	20.0		101	80-120%			
2,2-Dichloropropane	20.2	0.500	1.00	ug/L	1	20.0		101	80-120%			
1,1-Dichloropropene	20.1	0.500	1.00	ug/L	1	20.0		100	80-120%			
cis-1,3-Dichloropropene	18.2	0.500	1.00	ug/L	1	20.0		91	80-120%			
trans-1,3-Dichloropropene	18.6	0.500	1.00	ug/L	1	20.0		93	80-120%			
Hexachlorobutadiene	20.7	2.50	5.00	ug/L	1	20.0		103	80-120%			
Methylene chloride	18.4	1.50	3.00	ug/L	1	20.0		92	80-120%			
1,1,1,2-Tetrachloroethane	21.3	0.200	0.400	ug/L	1	20.0		107	80-120%			
1,1,2,2-Tetrachloroethane	20.5	0.250	0.500	ug/L	1	20.0		102	80-120%			
Tetrachloroethene (PCE)	19.4	0.200	0.400	ug/L	1	20.0		97	80-120%			
1,2,3-Trichlorobenzene	21.8	1.00	2.00	ug/L	1	20.0		109	80-120%			
1,2,4-Trichlorobenzene	19.6	1.00	2.00	ug/L	1	20.0		98	80-120%			
1,1,1-Trichloroethane	19.4	0.200	0.400	ug/L	1	20.0		97	80-120%			
1,1,2-Trichloroethane	19.9	0.250	0.500	ug/L	1	20.0		100	80-120%			
Trichloroethene (TCE)	18.5	0.200	0.400	ug/L	1	20.0		92	80-120%			
Trichlorofluoromethane	19.1	1.00	2.00	ug/L	1	20.0		95	80-120%			
1,2,3-Trichloropropane	20.8	0.500	1.00	ug/L	1	20.0		104	80-120%			
Vinyl chloride	17.5	0.200	0.400	ug/L	1	20.0		88	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	overy: 96 %	Limits: 80)-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80	-120 %		"					
Duplicate (8050898-DUP1)			Prepared	: 05/18/18	12:46 Ana	yzed: 05/18	/18 21:20					v
QC Source Sample: Non-SDG (A8	E0579-04)											
Bromobenzene	ND	12500	25000	ug/L	50000		ND				30%	
Bromochloromethane	ND	25000	50000	ug/L	50000		ND				30%	
Bromodichloromethane	ND	25000	50000	ug/L	50000		ND				30%	

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	
6028 NE 49th Ave.	
Portland, OR 97218	

Project: <u>HE-1-01</u> Project Number: HE-1-01

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

		Haloge	nated Vola	tile Orga	nic Comp	ounds by	/ EPA 826	0C				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050898 - EPA 5030B							Wat	er				
Duplicate (8050898-DUP1)			Prepared	05/18/18	12:46 Ana	lyzed: 05/18	/18 21:20					V-2
OC Source Sample: Non-SDG (A8	E0579-04)											
Bromoform	ND	25000	50000	ug/L	50000		ND				30%	
Bromomethane	ND	250000	250000	ug/L	50000		ND				30%	
Carbon tetrachloride	ND	25000	50000	ug/L	50000		ND				30%	
Chlorobenzene	ND	12500	25000	ug/L	50000		ND				30%	
Chloroethane	ND	500000	500000	ug/L	50000		ND				30%	
Chloroform	ND	25000	50000	ug/L	50000		ND				30%	
Chloromethane	ND	125000	250000	ug/L	50000		ND				30%	
2-Chlorotoluene	ND	25000	50000	ug/L	50000		ND				30%	
4-Chlorotoluene	ND	25000	50000	ug/L	50000		ND				30%	
Dibromochloromethane	ND	25000	50000	ug/L	50000		ND				30%	
1,2-Dibromo-3-chloropropane	ND	125000	250000	ug/L	50000		ND				30%	
1,2-Dibromoethane (EDB)	ND	12500	25000	ug/L	50000		ND				30%	
Dibromomethane	ND	25000	50000	ug/L	50000		ND				30%	
1,2-Dichlorobenzene	ND	12500	25000	ug/L	50000		ND				30%	
1,3-Dichlorobenzene	ND	12500	25000	ug/L	50000		ND				30%	
1,4-Dichlorobenzene	ND	12500	25000	ug/L	50000		ND				30%	
Dichlorodifluoromethane	ND	25000	50000	ug/L	50000		ND				30%	
1,1-Dichloroethane	ND	10000	20000	ug/L	50000		ND				30%	
1,2-Dichloroethane (EDC)	ND	10000	20000	ug/L	50000		ND				30%	
1,1-Dichloroethene	ND	10000	20000	ug/L	50000		ND				30%	
cis-1,2-Dichloroethene	ND	10000	20000	ug/L	50000		ND				30%	
trans-1,2-Dichloroethene	ND	10000	20000	ug/L	50000		ND				30%	
1,2-Dichloropropane	ND	12500	25000	ug/L	50000		ND				30%	
1,3-Dichloropropane	ND	25000	50000	ug/L	50000		ND				30%	
2,2-Dichloropropane	ND	25000	50000	ug/L	50000		ND				30%	
1,1-Dichloropropene	ND	25000	50000	ug/L	50000		ND				30%	
cis-1,3-Dichloropropene	ND	25000	50000	ug/L	50000		ND				30%	
trans-1,3-Dichloropropene	ND	25000	50000	ug/L	50000		ND				30%	
Hexachlorobutadiene	ND	125000	250000	ug/L	50000		ND				30%	
Methylene chloride	ND	75000	150000	ug/L	50000		ND				30%	
1,1,1,2-Tetrachloroethane	ND	10000	20000	ug/L	50000		ND				30%	
1,1,2,2-Tetrachloroethane	ND	12500	25000	ug/L	50000		ND				30%	
Tetrachloroethene (PCE)	ND	10000	20000	ug/L	50000		ND				30%	

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	
6028 NE 49th Ave.	
Portland, OR 97218	

Project: <u>HE-1-01</u> Project Number: HE-1-01

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

		Haloge	nated Vola	tile Orga	nic Comp	bounds by	/ EPA 826	50C				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050898 - EPA 5030B							Wate	er				
Duplicate (8050898-DUP1)			Prepared	: 05/18/18	12:46 Ana	lyzed: 05/18	/18 21:20					V-2
OC Source Sample: Non-SDG (A8	<u>E0579-04)</u>											
1,2,3-Trichlorobenzene	ND	50000	100000	ug/L	50000		ND				30%	
1,2,4-Trichlorobenzene	ND	50000	100000	ug/L	50000		ND				30%	
1,1,1-Trichloroethane	ND	10000	20000	ug/L	50000		ND				30%	
1,1,2-Trichloroethane	ND	12500	25000	ug/L	50000		ND				30%	
Trichloroethene (TCE)	ND	10000	20000	ug/L	50000		ND				30%	
Trichlorofluoromethane	ND	50000	100000	ug/L	50000		ND				30%	
1,2,3-Trichloropropane	ND	25000	50000	ug/L	50000		ND				30%	
Vinyl chloride	ND	10000	20000	ug/L	50000		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 105 %	Limits: 80	-120 %	Dilı	ution: 1x					
Toluene-d8 (Surr)			98 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			100 %	80	-120 %		"					
Matrix Spike (8050898-MS1)			Prepared	: 05/18/18	12:46 Ana	lyzed: 05/18	/18 19:59					
QC Source Sample: Non-SDG (A8	E0557-05)											
EPA 8260C												
Bromobenzene	995	12.5	25.0	ug/L	50	1000	ND	100	80-120%			
Bromochloromethane	931	25.0	50.0	ug/L	50	1000	ND	93	78-123%			
Bromodichloromethane	918	25.0	50.0	ug/L	50	1000	ND	92	79-125%			
Bromoform	876	25.0	50.0	ug/L	50	1000	ND	88	66-130%			
Bromomethane	873	250	250	ug/L	50	1000	ND	87	53-141%			
Carbon tetrachloride	936	25.0	50.0	ug/L	50	1000	ND	94	72-136%			
Chlorobenzene	958	12.5	25.0	ug/L	50	1000	ND	96	80-120%			
Chloroethane	868	500	500	ug/L	50	1000	ND	87	60-138%			
Chloroform	920	25.0	50.0	ug/L	50	1000	ND	92	79-124%			
Chloromethane	838	125	250	ug/L	50	1000	ND	84	50-139%			
2-Chlorotoluene	1070	25.0	50.0	ug/L	50	1000	ND	107	79-122%			
4-Chlorotoluene	1050	25.0	50.0	ug/L	50	1000	ND	105	78-122%			
Dibromochloromethane	1040	25.0	50.0	ug/L	50	1000	ND	104	74-126%			
1,2-Dibromo-3-chloropropane	928	125	250	ug/L	50	1000	ND	93	62-128%			
1,2-Dibromoethane (EDB)	1010	12.5	25.0	ug/L	50	1000	ND	101	77-121%			
Dibromomethane	918	25.0	50.0	ug/L	50	1000	ND		79-123%			
1,2-Dichlorobenzene	1020	12.5	25.0	ug/L	50	1000	ND		80-120%			
	1040	12.5										

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting
6028 NE 49th Ave.
Portland, OR 97218

Project: <u>HE-1-01</u> Project Number: HE-1-01

Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C												
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8050898 - EPA 5030B							Wat	er				
Matrix Spike (8050898-MS1)			Prepared	1: 05/18/18	12:46 Ana	lyzed: 05/18	/18 19:59					
OC Source Sample: Non-SDG (A8	<u>3E0557-05)</u>											
1,4-Dichlorobenzene	942	12.5	25.0	ug/L	50	1000	ND	94	79-120%			
Dichlorodifluoromethane	898	25.0	50.0	ug/L	50	1000	ND	90	32-152%			
1,1-Dichloroethane	915	10.0	20.0	ug/L	50	1000	ND	92	77-125%			
1,2-Dichloroethane (EDC)	886	10.0	20.0	ug/L	50	1000	ND	89	73-128%			
1,1-Dichloroethene	847	10.0	20.0	ug/L	50	1000	ND	85	71-131%			
cis-1,2-Dichloroethene	935	10.0	20.0	ug/L	50	1000	ND	93	78-123%			
trans-1,2-Dichloroethene	915	10.0	20.0	ug/L	50	1000	ND	91	75-124%			
1,2-Dichloropropane	904	12.5	25.0	ug/L	50	1000	ND	90	78-122%			
1,3-Dichloropropane	985	25.0	50.0	ug/L	50	1000	ND	98	80-120%			
2,2-Dichloropropane	875	25.0	50.0	ug/L	50	1000	ND	88	60-139%			
1,1-Dichloropropene	1020	25.0	50.0	ug/L	50	1000	ND	102	79-125%			
cis-1,3-Dichloropropene	795	25.0	50.0	ug/L	50	1000	ND	79	75-124%			
trans-1,3-Dichloropropene	888	25.0	50.0	ug/L	50	1000	ND	89	73-127%			
Hexachlorobutadiene	1070	125	250	ug/L	50	1000	ND	107	66-134%			
Methylene chloride	870	75.0	150	ug/L	50	1000	ND	87	74-124%			
1,1,1,2-Tetrachloroethane	1030	10.0	20.0	ug/L	50	1000	ND	103	78-124%			
1,1,2,2-Tetrachloroethane	1010	12.5	25.0	ug/L	50	1000	ND	101	71-121%			
Tetrachloroethene (PCE)	998	10.0	20.0	ug/L	50	1000	ND	100	74-129%			
1,2,3-Trichlorobenzene	1150	50.0	100	ug/L	50	1000	ND	115	69-129%			
1,2,4-Trichlorobenzene	1120	50.0	100	ug/L	50	1000	ND	112	69-130%			
1,1,1-Trichloroethane	974	10.0	20.0	ug/L	50	1000	ND	97	74-131%			
1,1,2-Trichloroethane	980	12.5	25.0	ug/L	50	1000	ND	98	80-120%			
Trichloroethene (TCE)	893	10.0	20.0	ug/L	50	1000	ND	89	79-123%			
Trichlorofluoromethane	947	50.0	100	ug/L	50	1000	ND	95	65-141%			
1,2,3-Trichloropropane	1010	25.0	50.0	ug/L	50	1000	ND	101	73-122%			
Vinyl chloride	906	10.0	20.0	ug/L	50	1000	ND	91	58-137%			
Surr: 1,4-Difluorobenzene (Surr)		Reco	overy: 93 %	Limits: 80	0-120 %	Dilı	tion: 1x					
Toluene-d8 (Surr)			97 %	80	0-120 %		"					
4-Bromofluorobenzene (Surr)			101 %	80)-120 %		"					

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>HE-1-01</u>	
6028 NE 49th Ave.	Project Number: HE-1-01	<u>Report ID:</u>
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	A8E0551 - 05 23 18 1636

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260C												
Prep: EPA 5030B					Sample	Default	RL Prep					
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor					
Batch: 8050875												
A8E0551-01	Water	EPA 8260C	05/16/18 11:00	05/18/18 10:34	5mL/5mL	5mL/5mL	1.00					
A8E0551-04	Water	EPA 8260C	05/16/18 13:00	05/18/18 10:34	5mL/5mL	5mL/5mL	1.00					
A8E0551-07	Water	EPA 8260C	05/16/18 00:00	05/18/18 10:34	5mL/5mL	5mL/5mL	1.00					
Batch: 8050898												
A8E0551-02	Water	EPA 8260C	05/16/18 11:00	05/18/18 14:12	5mL/5mL	5mL/5mL	1.00					
A8E0551-03	Water	EPA 8260C	05/16/18 12:20	05/18/18 14:12	5mL/5mL	5mL/5mL	1.00					
A8E0551-05	Water	EPA 8260C	05/16/18 14:00	05/18/18 14:12	5mL/5mL	5mL/5mL	1.00					
A8E0551-06	Water	EPA 8260C	05/16/18 15:30	05/18/18 14:12	5mL/5mL	5mL/5mL	1.00					

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	
6028 NE 49th Ave.	
Portland, OR 97218	

Project: <u>HE-1-01</u>

Project Number: HE-1-01 Project Manager: Andrew S. Blake, R.G., L.G. <u>Report ID:</u> A8E0551 - 05 23 18 1636

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.

V-20 Appropriate containers for volatiles analysis were not provided by the client. VOA vials were poured off in the laboratory from 8oz Glass jar.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Succeed Environmental Consulting</u> 6028 NE 49th Ave.

Portland, OR 97218

Project: HE-1-01

Project Number: HE-1-01 Project Manager: Andrew S. Blake, R.G., L.G. <u>Report ID:</u> A8E0551 - 05 23 18 1636

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET	Analyte DETECTED at or above the detection or reporting limit.
ND	Analyte NOT DETECTED at or above the detection or reporting limit.

- NR Result Not Reported
- RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

- <u>" dry"</u> Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry") See Percent Solids section for details of dry weight analysis.
- "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
- "____ Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- "---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- "*** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL). -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier. -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy. For further details, please request a copy of this document.

Apex Laboratories

Philip Nevenberg



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Project: HE-1-01

Project Number: HE-1-01 Project Manager: Andrew S. Blake, R.G., L.G. <u>Report ID:</u> A8E0551 - 05 23 18 1636

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met. Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project:	<u>HE-1-01</u>										
6028 NE 49th Ave.	Project Number:	HE-1-01]	Report ID:								
Portland, OR 97218	Project Manager:	Andrew S. Blake, R.G., L.G.	A8E0551	1 - 05 23 18 1636								
LABORATORY ACCREDITATION INFORMATION												
TNI Certification ID: OR1	TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039											
	All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the <u>exception</u> of any analyte(s) listed below:											
Apex Laboratories												
Matrix Analysis TNI_	ĪD	Analyte	TNI_ID	Cert?								

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

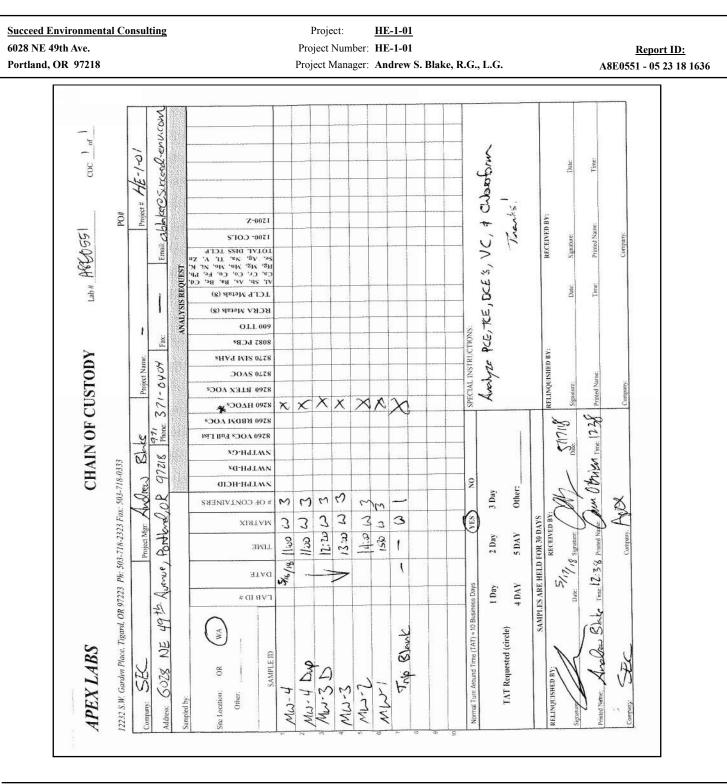
Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>



Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmen	al Consulting	Project:	<u>HE-1-01</u>	
6028 NE 49th Ave.		Project Number:	HE-1-01	Report ID:
Portland, OR 97218		Project Manager:	Andrew S. Blake, R.G., L.G.	A8E0551 - 05 23 18 1636
	APEX Client: SEC Project/Project #: $HE - I - O$ Delivery info: $HE - I - O$ Date/Time Received: $MIII8$ @ [] Delivered by: ApexClient XESS Cooler Inspection Inspected by: Chain of Custody Included? Yes X Signed/Dated by Client? Yes X Signed/Dated by Apex? Yes X Cooler #1 Temperature (deg. C) 2 · 8 Received on Ice? ON	LABS COOLE (238 By: FedEx OW No No No Cooler #2 Coole	R RECEIPT FORM Element WO#: A8 £055]	
				-
	Condition:			-
	Cooler out of temp? (YN) Possible reaso If some coolers are in temp and some out Samples Inspection: Inspected by: All Samples Intact? Yes Y No C	, were green dot a	applied to out of temperature samples? Yes/No/N - 510018 @ 1052	a
	Bottle Labels/COCs agree? Yes No Trip Blank # 1784 f Containers/Volumes Received Appropria	rovided		
	Do VOA Vials have Visible Headspace? Comments	Yes No	<u>× na</u>	
	Water Samples: pH Checked and Approp Comments:	oriate (except VO	As): YesNoNAY	
1	Additional Information:			
	Labeled by: Witness:	Cooler Inspe	ected by: See Project Contact Form: Z	>

Apex Laboratories

Philip Nevenberg



ANALYTICAL REPORT

Succeed Environmental Consulting

Sample Delivery Group: Samples Received: L1025020 09/12/2018 HE-1

Description:

Project Number:

Report To:

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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PAGE: 2 of 11

SAMPLE SUMMARY

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			Collected by	Collected date/time	Received date/time
EB L1025020-01 GW			Andrew Blake	09/10/18 09:00	09/12/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1165634	1	09/13/18 16:01	09/13/18 16:01	RAS
			Collected by	Collected date/time	Received date/time
MW-3 L1025020-02 GW			Andrew Blake	09/10/18 10:30	09/12/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1165634	1	09/13/18 16:21	09/13/18 16:21	RAS
			Collected by	Collected date/time	Received date/time
MW-3(DUP) L1025020-03 GW			Andrew Blake	09/10/18 10:30	09/12/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1165634	1	09/13/18 16:41	09/13/18 16:41	RAS

SDG: L1025020

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Project Manager



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SDG: L1025020 DATE/TIME: 09/14/18 15:23 PAGE: 4 of 11

SAMPLE RESULTS - 01 L1025020

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Volatile Organic Compounds (GC/MS) by Method 8260C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	Cp
Analyte	ug/l		ug/l	ug/l		date / time		2
Chloroform	U		0.0860	0.500	1	09/13/2018 16:01	WG1165634	Tc
1,1-Dichloroethene	U		0.188	0.500	1	09/13/2018 16:01	WG1165634	L
cis-1,2-Dichloroethene	U		0.0933	0.500	1	09/13/2018 16:01	WG1165634	³ Ss
trans-1,2-Dichloroethene	U		0.152	0.500	1	09/13/2018 16:01	<u>WG1165634</u>	55
Tetrachloroethene	U		0.199	0.500	1	09/13/2018 16:01	<u>WG1165634</u>	4
Trichloroethene	U		0.153	0.500	1	09/13/2018 16:01	<u>WG1165634</u>	Cn
Vinyl chloride	U		0.118	0.500	1	09/13/2018 16:01	<u>WG1165634</u>	
(S) Toluene-d8	100			80.0-120		09/13/2018 16:01	<u>WG1165634</u>	⁵ Sr
(S) Dibromofluoromethane	101			75.0-120		09/13/2018 16:01	<u>WG1165634</u>	
(S) 4-Bromofluorobenzene	93.1			77.0-126		09/13/2018 16:01	WG1165634	6

ACCOUNT:

SAMPLE RESULTS - 02

Volatile Organic Compounds (GC/MS) by Method 8260C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	ug/l		ug/l	ug/l		date / time		2
Chloroform	0.203	J	0.0860	0.500	1	09/13/2018 16:21	WG1165634	[1
1,1-Dichloroethene	U		0.188	0.500	1	09/13/2018 16:21	<u>WG1165634</u>	L
cis-1,2-Dichloroethene	U		0.0933	0.500	1	09/13/2018 16:21	WG1165634	3
trans-1,2-Dichloroethene	U		0.152	0.500	1	09/13/2018 16:21	<u>WG1165634</u>	Ň
Tetrachloroethene	U		0.199	0.500	1	09/13/2018 16:21	WG1165634	4
Trichloroethene	U		0.153	0.500	1	09/13/2018 16:21	WG1165634	
Vinyl chloride	U		0.118	0.500	1	09/13/2018 16:21	WG1165634	
(S) Toluene-d8	103			80.0-120		09/13/2018 16:21	WG1165634	5
(S) Dibromofluoromethane	101			75.0-120		09/13/2018 16:21	WG1165634	
(S) 4-Bromofluorobenzene	90.3			77.0-126		09/13/2018 16:21	WG1165634	6
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SDG: L1025020 DATE/TIME: 09/14/18 15:23

SAMPLE RESULTS - 03 L1025020

Volatile Organic Compounds (GC/MS) by Method 8260C

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	(
Analyte	ug/l		ug/l	ug/l		date / time		2
Chloroform	0.284	J	0.0860	0.500	1	09/13/2018 16:41	WG1165634	[² T
1,1-Dichloroethene	U		0.188	0.500	1	09/13/2018 16:41	WG1165634	L
cis-1,2-Dichloroethene	U		0.0933	0.500	1	09/13/2018 16:41	WG1165634	3
trans-1,2-Dichloroethene	U		0.152	0.500	1	09/13/2018 16:41	<u>WG1165634</u>	~
Tetrachloroethene	U		0.199	0.500	1	09/13/2018 16:41	WG1165634	4
Trichloroethene	U		0.153	0.500	1	09/13/2018 16:41	<u>WG1165634</u>	Ċ
Vinyl chloride	U		0.118	0.500	1	09/13/2018 16:41	WG1165634	
(S) Toluene-d8	105			80.0-120		09/13/2018 16:41	WG1165634	5
(S) Dibromofluoromethane	104			75.0-120		09/13/2018 16:41	WG1165634	
(S) 4-Bromofluorobenzene	94.0			77.0-126		09/13/2018 16:41	WG1165634	6
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SDG: L1025020

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Volatile Organic Compounds (GC/MS) by Method 8260C

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3341822-3 09/13/18 12:41								
	MB Result	MB Qualifier	MB MDL	MB RDL				
Analyte	ug/l		ug/l	ug/l				
Chloroform	U		0.0860	0.500				
1,1-Dichloroethene	U		0.188	0.500				
cis-1,2-Dichloroethene	U		0.0933	0.500				
trans-1,2-Dichloroethene	U		0.152	0.500				
Tetrachloroethene	U		0.199	0.500				
Trichloroethene	U		0.153	0.500				
Vinyl chloride	U		0.118	0.500				
(S) Toluene-d8	106			80.0-120				
(S) Dibromofluoromethane	103			75.0-120				
(S) 4-Bromofluorobenzene	94.1			77.0-126				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3341822-1 09/13/18 11:41 • (LCSD) R3341822-2 09/13/18 12:01													
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits			
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%			
Chloroform	25.0	25.1	25.0	100	100	73.0-120			0.306	20			
1,1-Dichloroethene	25.0	23.0	23.1	91.8	92.4	71.0-124			0.657	20			
cis-1,2-Dichloroethene	25.0	23.1	22.2	92.5	88.7	73.0-120			4.16	20			
trans-1,2-Dichloroethene	25.0	24.3	24.3	97.3	97.1	73.0-120			0.231	20			
Tetrachloroethene	25.0	27.2	28.5	109	114	72.0-132			4.58	20			
Trichloroethene	25.0	24.3	24.9	97.0	99.6	78.0-124			2.63	20			
Vinyl chloride	25.0	22.8	22.6	91.1	90.3	67.0-131			0.824	20			
(S) Toluene-d8				101	104	80.0-120							
(S) Dibromofluoromethane				102	102	75.0-120							
(S) 4-Bromofluorobenzene				92.3	92.3	77.0-126							

SDG: L1025020 DATE/TIME: 09/14/18 15:23

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GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

SDG: L1025020

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska
Alaska	17-026	Nevada
Arizona	AZ0612	New Hampshire
Arkansas	88-0469	New Jersey–NELAP
California	2932	New Mexico ¹
Colorado	TN00003	New York
Connecticut	PH-0197	North Carolina
Florida	E87487	North Carolina ¹
Georgia	NELAP	North Carolina ³
Georgia ¹	923	North Dakota
Idaho	TN00003	Ohio–VAP
Illinois	200008	Oklahoma
Indiana	C-TN-01	Oregon
lowa	364	Pennsylvania
Kansas	E-10277	Rhode Island
Kentucky ¹⁶	90010	South Carolina
Kentucky ²	16	South Dakota
Louisiana	AI30792	Tennessee ^{1 4}
Louisiana 1	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermont
Michigan	9958	Virginia
Minnesota	047-999-395	Washington
Mississippi	TN00003	West Virginia
Missouri	340	Wisconsin
Montana	CERT0086	Wyoming

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico 1	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 1 4	2006
Texas	T 104704245-17-14
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

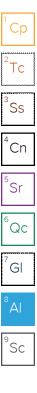
Succeed Environmental Consulting

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



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cceed Environmental Consulting 28 NE 49th Avenue artland, OR 97218				ake Chie 9th Avenue			0.011 addin	Analy	(Jas / Container /)				NOVE LAD	SC I.E.N.C.E.S			
anort to:	succeed-env.		De							12065 Lebanon Rd Mount Juliet, 1N 371 Phone: 615-758-585 Phone: 800-767-585	I SALARA						
ndrew Blake			ablake@	City/State Collected: Te		A	VCr							Fax: 615-758-5859	5020		
hescription: hone: 971-371-0404	Client Project #						RE,TCE,	2					(D01	8		
Collected by (print): Andrew Blake	Site/Facility ID	and a set of the set of the		P.O. #	-		Re	260 0						Acctnum: SU Template:	LENVFOR		
Collected by (signature):	Rush? (La Same Day Next Day Two Day Three Oa	5 Day 10 Da		Quote # Date Res	ults Needed	No	Workin	EPH 81						Prelogin: TSR: PB: Shipped Via:			
Packed on Ice N Y	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	US	C			1			Bernarks	Sample # (1sb cmb)		
EB	-	W	-	9/10/18	9:00	30	XX				7		66		702		
110.3		6	-	1/10/19	10:30	33	X				1	12			-03-		
MU-300p)		6	J.	40011	10.30												
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* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater 9 - Bioassay				1	pH Temp Flow Other					-	COC Seal Present/Intact:OP COC Signed/Accurate: Bottles arrive intact: Correct bottles used: correct bottles used: correct bottles used:						
WW - WasteWater DW - Drinking Water OT - Other	LUPS A	Samples returned via: UPS Fedex Tracking # 4					The Dis				rip Blank Received: Yes / No			VOA Zero Headspace. Preservation Correct/Checked			
Relinquished by : (Signature)		Date	118	Time: FEDEX	Received by: (-		ICL / MeoH BR is Received:	If preserv	ation required (oy Login: Date/Time		
Relinquished by : (Signature)		Date:		Time:	Received by: (and the			Temp: 1.01 Date:		9	Hold:		Conditio		
Relinquished by : (Signature)		Date:		Time:	Received for t	~V		15		19/12/18	8	:45			((



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 EPA ID: OR01039

Friday, September 14, 2018

Andrew S. Blake, R.G., L.G. Succeed Environmental Consulting 6028 NE 49th Ave. Portland, OR 97218

RE: A8I0224 - HE-1-01 - HE-1

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8I0224, which was received by the laboratory on 9/11/2018 at 9:10:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: <u>pnerenberg@apex-labs.com</u>, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>HE-1-01</u>	
6028 NE 49th Ave.	Project Number: HE-1	<u>Report ID:</u>
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	A8I0224 - 09 14 18 1356

ANALYTICAL REPORT FOR SAMPLES

	SAMPLE INFOR	RMATION	
Client Sample ID	Laboratory ID	Matrix	Date Sampled Date Received
EB	A8I0224-01	Water	09/10/18 09:00 09/11/18 09:10
MW-3	A8I0224-02	Water	09/10/18 10:30 09/11/18 09:10
MW-3 (Dup)	A8I0224-03	Water	09/10/18 10:30 09/11/18 09:10

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>HE-1-01</u>	
6028 NE 49th Ave.	Project Number: HE-1	<u>Report ID:</u>
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	A8I0224 - 09 14 18 1356

ANALYTICAL SAMPLE RESULTS

	Halogen	ated Volatile C	organic Co	ompounds by E	PA 8260	C		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB (A810224-01)				Matrix: Wate	r	Ва	tch: 8090605	
Chloroform	ND	0.500	1.00	ug/L	1	09/11/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 104 %	Limits: 80-120 %	1	09/11/18	EPA 8260C	
Toluene-d8 (Surr)			97 %	80-120 %	1	09/11/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			101 %	80-120 %	1	09/11/18	EPA 8260C	
/IW-3 (A810224-02)				Matrix: Wate	r	Ва	tch: 8090605	
Chloroform	ND	0.500	1.00	ug/L	1	09/11/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 106 %	Limits: 80-120 %	1	09/11/18	EPA 8260C	
Toluene-d8 (Surr)			98 %	80-120 %	1	09/11/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	09/11/18	EPA 8260C	
/IW-3 (Dup) (A8l0224-03)				Matrix: Wate	r	Ва	tch: 8090605	
Chloroform	ND	0.500	1.00	ug/L	1	09/11/18	EPA 8260C	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Tetrachloroethene (PCE)	0.213	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	J
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Vinyl chloride	ND	0.200	0.400	ug/L	1	09/11/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery	: 106 %	Limits: 80-120 %	1	09/11/18	EPA 8260C	
Toluene-d8 (Surr)			98 %	80-120 %	1	09/11/18	EPA 8260C	
4-Bromofluorobenzene (Surr)			98 %	80-120 %	1	09/11/18	EPA 8260C	

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting
6028 NE 49th Ave.
Portland, OR 97218

Project: <u>HE-1-01</u>

Project Number: HE-1 Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8I0224 - 09 14 18 1356

QUALITY CONTROL (QC) SAMPLE RESULTS

		Haloge	nated Vola	atile Orga	nic Comp	ounds by	/ EPA 826	50C				
Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090605 - EPA 5030B							Wat	er				
Blank (8090605-BLK1)			Prepareo	1: 09/11/18	10:48 Anal	lyzed: 09/11	/18 12:09					
EPA 8260C												
Chloroform	ND	0.500	1.00	ug/L	1							
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1							
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1							
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1							
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1							
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1							
Vinyl chloride	ND	0.200	0.400	ug/L	1							
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 103 %	Limits: 80)-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			99 %	80	-120 %		"					
LCS (8090605-BS1)			Prepared	d: 09/11/18	10:48 Anal	lyzed: 09/11	/18 11:15					
EPA 8260C												
Chloroform	22.5	0.500	1.00	ug/L	1	20.0		113	80-120%			
1,1-Dichloroethene	21.1	0.200	0.400	ug/L	1	20.0		105	80-120%			
cis-1,2-Dichloroethene	20.9	0.200	0.400	ug/L	1	20.0		104	80-120%			
trans-1,2-Dichloroethene	20.5	0.200	0.400	ug/L	1	20.0		102	80-120%			
Tetrachloroethene (PCE)	21.8	0.200	0.400	ug/L	1	20.0		109	80-120%			
Trichloroethene (TCE)	22.4	0.200	0.400	ug/L	1	20.0		112	80-120%			
Vinyl chloride	19.6	0.200	0.400	ug/L	1	20.0		98	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 102 %	Limits: 80)-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			97 %	80	-120 %		"					
4-Bromofluorobenzene (Surr)			97 %	80	-120 %		"					
Duplicate (8090605-DUP1)			Prepareo	d: 09/11/18	11:41 Anal	lyzed: 09/11/	/18 14:51					
, ,												
OC Source Sample: Non-SDG (A8	10227-05)											
QC Source Sample: Non-SDG (A8 Chloroform	<u>10227-05)</u> ND	50.0	100	ug/L	100		ND				30%	
Chloroform		50.0 20.0	100 40.0	ug/L ug/L	100 100		ND ND				30% 30%	
Chloroform 1,1-Dichloroethene	ND ND	20.0	40.0	ug/L	100							
Chloroform 1,1-Dichloroethene cis-1,2-Dichloroethene	ND ND ND	20.0 20.0	40.0 40.0	ug/L ug/L	100 100		ND ND				30% 30%	
Chloroform 1,1-Dichloroethene	ND ND	20.0	40.0	ug/L	100		ND				30%	

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting
6028 NE 49th Ave.
Portland, OR 97218

Project: <u>HE-1-01</u>

Project Number: HE-1 Project Manager: Andrew S. Blake, R.G., L.G.

<u>Report ID:</u> A8I0224 - 09 14 18 1356

QUALITY CONTROL (QC) SAMPLE RESULTS

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090605 - EPA 5030B							Wat	er				
Duplicate (8090605-DUP1)			Preparec	l: 09/11/18	11:41 Anal	lyzed: 09/11/	/18 14:51					
QC Source Sample: Non-SDG (A8	<u>810227-05)</u>											
Vinyl chloride	ND	20.0	40.0	ug/L	100		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 103 %	Limits: 80	0-120 %	Dilt	ution: 1x					
Toluene-d8 (Surr)			97 %	80)-120 %		"					
4-Bromofluorobenzene (Surr)			96 %	80	0-120 %		"					
Matrix Spike (8090605-MS2)			Preparec	l: 09/11/18	17:00 Ana	lyzed: 09/11	/18 21:37					
QC Source Sample: Non-SDG (A8	BI0227-07RE	<u></u>										
EPA 8260C												
Chloroform	464	10.0	20.0	ug/L	20	400	ND	116	79-124%			
1,1-Dichloroethene	443	4.00	8.00	ug/L	20	400	ND	111	71-131%			
cis-1,2-Dichloroethene	424	4.00	8.00	ug/L	20	400	9.32	104	78-123%			
trans-1,2-Dichloroethene	421	4.00	8.00	ug/L	20	400	ND	105	75-124%			
Tetrachloroethene (PCE)	447	4.00	8.00	ug/L	20	400	ND	112	74-129%			
Trichloroethene (TCE)	449	4.00	8.00	ug/L	20	400	ND	112	79-123%			
Vinyl chloride	413	4.00	8.00	ug/L	20	400	ND	103	58-137%			
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 104 %	Limits: 80	0-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			96 %	80)-120 %		"					
4-Bromofluorobenzene (Surr)			94 %	80)-120 %		"					
Matrix Spike Dup (8090605-M	SD2)		Preparec	l: 09/11/18	17:00 Ana	lyzed: 09/11	/18 22:04					
QC Source Sample: Non-SDG (A8	810227-07RE	21)										
Chloroform	448	10.0	20.0	ug/L	20	400	ND	112	79-124%	3	30%	
1,1-Dichloroethene	433	4.00	8.00	ug/L	20	400	ND	108	71-131%	2	30%	
cis-1,2-Dichloroethene	420	4.00	8.00	ug/L	20	400	9.32	103	78-123%	0.9	30%	
trans-1,2-Dichloroethene	410	4.00	8.00	ug/L	20	400	ND	102	75-124%	3	30%	
Tetrachloroethene (PCE)	443	4.00	8.00	ug/L	20	400	ND	111	74-129%	0.9	30%	
Trichloroethene (TCE)	444	4.00	8.00	ug/L	20	400	ND	111	79-123%	1	30%	
Vinyl chloride	409	4.00	8.00	ug/L	20	400	ND	102	58-137%	1	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recov	ery: 103 %	Limits: 80	0-120 %	Dili	ution: 1x					
Toluene-d8 (Surr)			95 %	80)-120 %		"					
4-Bromofluorobenzene (Surr)			97%	80)-120 %		"					

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project: <u>HE-1-01</u>	
6028 NE 49th Ave.	Project Number: HE-1	<u>Report ID:</u>
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	A810224 - 09 14 18 1356

SAMPLE PREPARATION INFORMATION

		Halogenated \	/olatile Organic Com	pounds by EPA 826	C		
Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 8090605							
A8I0224-01	Water	EPA 8260C	09/10/18 09:00	09/11/18 11:41	5mL/5mL	5mL/5mL	1.00
A8I0224-02	Water	EPA 8260C	09/10/18 10:30	09/11/18 11:41	5mL/5mL	5mL/5mL	1.00
A8I0224-03	Water	EPA 8260C	09/10/18 10:30	09/11/18 11:41	5mL/5mL	5mL/5mL	1.00

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting
6028 NE 49th Ave.
Portland, OR 97218

Project: <u>HE-1-01</u>

Project Number: HE-1 Project Manager: Andrew S. Blake, R.G., L.G. <u>Report ID:</u> A8I0224 - 09 14 18 1356

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

J Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Succeed Environmental Consulting</u> 6028 NE 49th Ave.

Portland, OR 97218

Project: HE-1-01

Project Number: HE-1 Project Manager: Andrew S. Blake, R.G., L.G. <u>Report ID:</u> A8I0224 - 09 14 18 1356

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET	Analyte DETECTED at or above the detection or reporting limit.
ND	Analyte NOT DETECTED at or above the detection or reporting limit.

- NR Result Not Reported
- RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ). If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

- <u>" dry"</u> Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry") See Percent Solids section for details of dry weight analysis.
- "wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
- "____ Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- "---" QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- "*** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL). -For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier. -For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy. For further details, please request a copy of this document.

Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

<u>Succeed Environmental Consulting</u> 6028 NE 49th Ave.

Portland, OR 97218

Project: HE-1-01

Project Number: HE-1 Project Manager: Andrew S. Blake, R.G., L.G. <u>Report ID:</u> A8I0224 - 09 14 18 1356

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmen	ntal Consulting	Project:	<u>HE-1-01</u>	
6028 NE 49th Ave.		Project Number:	HE-1	Report ID:
Portland, OR 97218	3	Project Manager:	Andrew S. Blake, R.G., L.G.	A8I0224 - 09 14 18 1356
		LABORATORY ACCRED	TATION INFORMATION	
	nd analytes reported	ification ID: OR100062 (Primar d from work performed at Apex Labor <u>xception</u> of any analyte(s) listed below	atories are included on Apex Lab	
<u>Apex Labora</u>	<u>atories</u>			
Matrix	Analysis	TNI_ID	Analyte	TNI_ID Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

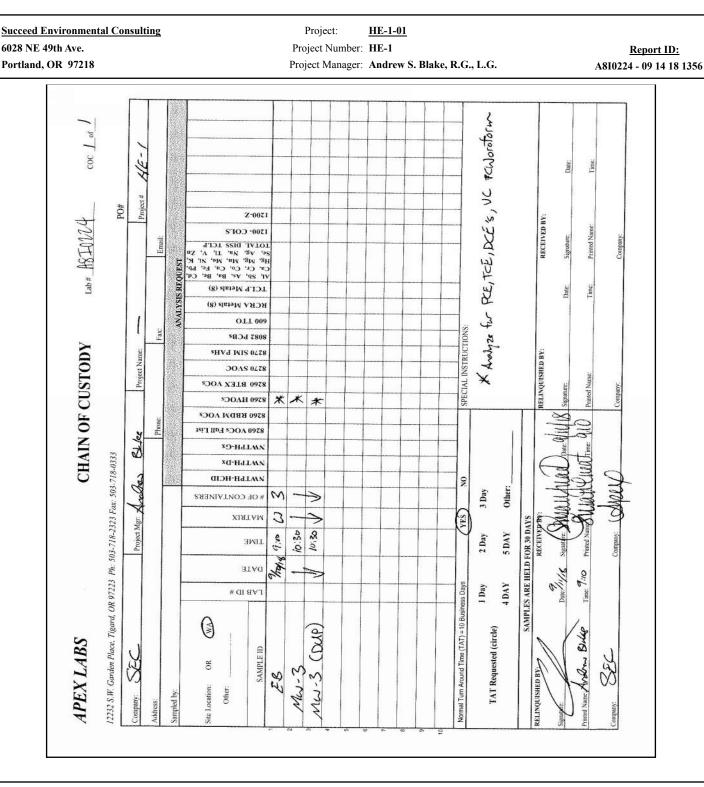
Apex Laboratories

Philip Nevenberg

Philip Nerenberg, Lab Director



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>



Apex Laboratories

Philip Nevenberg



12232 S.W. Garden Place Tigard, OR 97223 503-718-2323 <u>EPA ID: OR01039</u>

Succeed Environmental Consulting	Project:	<u>HE-1-01</u>	
6028 NE 49th Ave.	Project Number	: HE-1	Report ID:
Portland, OR 97218	Project Manager	Andrew S. Blake, R.G., L.G.	A8I0224 - 09 14 18 1356
0-0		R RECEIPT FORM Element WO#: A8_I0224	
Cooler Inspection Inspected Chain of Custody Included? Yes Signed/Dated by Client? Yes Signed/Dated by Apex? Yes Signed/Dated by Apex? Yes Cooler Temperature (deg. C) 5 Received on Ice? YN) Yes Ice Type: Gel/Real/Other) JU Condition: Q0)d	ESS FedEx t by: (2) No (2) No (2) No (2) No (2) No (2)	JPS Swift Senvoy SDS Oth $: 9 1 1 8 0 0 1 0 0 0 0 0 0 0 0$	<u>Cooler #7</u>
All Samples Intact? Yes L No	_ Comments:	applied to out of temperature samples? Yo :	
Containers/Volumes Received Appro	opriate for Analysis?	Yes No Comments:	
Do VOA Vials have Visible Headspace Comments Water Samples: pH Checked and Ap Comments: Additional Information:	······		
Labeled by: Witness:	Cooler Insp	ected by: See Project Contact F	orm: Y

Apex Laboratories

Philip Nevenberg



Environmental

Services Network

December 23, 2015

RECEIVED DEC 2 8 2015 AEG

Becky Dilba Associated Environmental Group, Inc. 605 11th Ave. SE, Suite 201 Olympia, WA 98501

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Adams Street Building Project in Tacoma, Washington. Probe services were conducted on December 9, 2015. Soil vapor samples were analyzed for Chlorinated VOC's by Method 8260 on December 11, 2015.

The results of the analyses are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Associated Environmental Group, Inc. for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

michaela Korosee

Michael A. Korosec President

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington

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ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

O11D	Malaanlan	Reporting	MB	LCS	LCSD	B 1	B2	B3	B4
Sample 1D	Weight	Limits	1910	LCS	LCSD	12/09/15	12/09/15	12/09/15	12/09/15
Date Sampled	-	ug/m3	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15
Date Analyzed	g	ug/m5	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15
Dichlorodifluoromethane	120.9	10	nd			nd	nd	nd	nd
Chloromethane	50.49	50	nd			nd	nd	nd	nd
Vinyl chloride	62.50	10	nd	102%	94%	nd	nd	nd	nd
Chloroethane	64.52	10	nd	10270	2470	nd	nd	nd	nd
Trichlorofluoromethane	137.4	10	nd			nd	nd	nd	nd
1,1-Dichloroethene	96.95	10	nd			nd	nd	nd	nd
	84.93	100	nd			nd	nd	nd	nd
Methylene chloride trans-1,2-Dichloroethene	96.95	100	nd			nd	nd	nd	nd
	90.95 98.96	10	nd			nd	nd	nd	nd
1,1-Dichloroethane	96.90 96.95	10	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	96.93 113.0	10	nd			nd	nd	nd	nd
2,2-Dichloropropane	113.0	10	nd nd	120%	113%	nd	nd	nd	nd
Chloroform		10	nd	12070	11370	nd	nd	nd	nd
Bromochloromethane	129.4	10	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	133.4		nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	98.96	10 10				nd	nd	nd	nd
1,1-Dichloropropene	111.0		nd				nd	nd	nd
Carbon tetrachloride	153.2	10	nd	1150/	1050/	nd		nd	nd
Trichloroethene	131.4	10	nd	115%	105%	nd	nd	nd	nd
1,2-Dichloropropane	113.0	10	nd	118%	110%	nd	nd		nd
Bromodichloromethane	163.8	10	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	111.0	10	nd			nd	nd	nd	
trans-1,3-Dichloropropene	111.0	10	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	133.4	10	nd			nd	nd	nd	nd
1,3-Dichloropropane	113.0	10	nd			nd	nd	nd	nd
Dibromochloromethane	208.3	10	nd		000/	nd	nd	nd	nd
Tetrachloroethene	165.8	10	nd	99%	90%	340	1,200	570	nd
Chlorobenzene	112.6	10	nd	109%	100%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	167.9	10	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	167.9	10	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	147.4	10	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	147.0	10	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	147.0	10	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	147.0	10	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	181.5	75	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	260.8	100	nd			nd	nd	nd	nd
Surrogate recoveries									
Dibromofluoromethane			105%	102%	101%	94%	105%	104%	103%
Toluene-d8			103%	95%	93%	103%	102%	104%	104%
4-Bromofluorobenzene			104%	92%	93%	103%	103%	101%	102%

Analyses of Volatile Organic Componds in Air by Method 8260

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

ESN	Enviro	nnental																C	H	A	N	-0	F-	-C	USTOD	YR	ECC	DR	D
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1210 Eastside Stre	et SE, Sui	te 200			1					Phe	one:	360-4	59-4	670										201		Website:	www.e	snnw	.com

Olympia, Washington 98501



Environmental

Services Network

January 26, 2016

Becky Dilba Associated Environmental Group, Inc. 605 11th Ave. SE, Suite 201 Olympia, WA 98501 RECEIVED JAN 2 9 Z016 AEG

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Adams St Building Project in Tacoma, Washington. Probe services were conducted on January 15, 2016. Soil and water samples were analyzed for Chlorinated VOC's by Method 8260 on January 19 - 22, 2016.

The results of the analyses are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Associated Environmental Group, Inc. for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

michaela Korace

Michael A. Korosec President

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington

ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

Date extracted	RL	MB	LCS	LCSD	B5-5	B5-13	B5-15	B6-4	B6-9.5	B6-13.5	B7- 4
Date analyzed	(01/19/16	01/19/16	01/19/16	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	5 01/15/1
% Moisture	(mg/Kg)	01/19/16	01/19/16	01/19/16	01/19/16	01/19/16	01/19/16	01/19/16	01/19/16	01/19/16	5 01/19/1
70 IVIOIStule				n en het het de	4%	8%	12%	6%	6%	8%	4%
Dichlorodifluoromethane	0.05										
Chloromethane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.05	nd			nd	nd	nd	nd	nd	nd	nd
Chloroethane	0.02	nd	82%	83%	nd	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
	0.05	nd			nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	92%	104%	nd	nd	nd	nd	nd	nd	nd
Methylene chloride	0.05	nd			nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	102%	125%	nd	nd	nd	nd	nd	nd	nd
Bromochloromethane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd	nd	nd	nd	nd	
1,1-Dichloropropene	0.05	nd			nd	nd	nd	nd	nd		nd
Carbon tetrachloride	0.05	nd			nd	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.02	nd	121%	134%	nd	nd	nd	nd		nd	nd
1,2-Dichloropropane	0.05	nd	112%	128%	nd	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.05	nd		12070	nd	nd	nd		nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
rans-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,1,2-Trichloroethane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,3-Dichloropropane	0.05	nd			nd	nd		nd	nd	nd	nd
Dibromochloromethane	0.05	nd			nd		nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	114%	131%	nd	nd 0.03 4	nd	nd	nd	nd	nd
Chlorobenzene	0.05	nd	117%	133%	nd		nd	0.037	0.052	nd	nd
,1,1,2-Tetrachloroethane	0.05	nd	11//0	13370	nd	nd	nd	nd	nd	nd	nd
,1,2,2-Tetrachloroethane	0.05	nd				nd	nd	nd	nd	nd	nd
,2,3-Trichloropropane	0.05	nd			nd	nd	nd	nd	nd	nd	nd
-Chlorotoluene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
-Chlorotoluene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,3-Dichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,4-Dichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,2-Dichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,2-Dibromo-3-Chloropropane	0.05				nd	nd	nd	nd	nd	nd	nd
,2,4-Trichlorobenzene		nd			nd	nd	nd	nd	nd	nd	nd
lexachloro-1,3-butadiene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
2,3-Trichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
,2,3-11101000enzene	0.05	nd			nd	nd	nd	nd	nd	nd	nd
urrogate recoveries											
ibromofluoromethane		1010/	000/	10.00							
oluene-d8		101%	98%	101%	99%	94%	96%	97%	98%	98%	95%
Bromofluorobenzene		107%	94%	97%			102%		104%	102%	105%
Diomonuorobenzene		111%	102%	105%	108%	106%	109%	108%		109%	111%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135% Acceptable RPD limit: 35%

Associated Environmental (PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington

ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

Date extracted	RL	B7-9	B7-13	B8-4	B8-9.5	B8-13.5	B9-4	B9-9	B9-13	B10-4.5	B10-10
Date analyzed	(177)	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	01/15/16	01/16/10
% Moisture	(mg/Kg)	01/19/10	01/19/10	01/19/16	01/20/16	01/20/16	01/20/16	01/20/16	01/20/16	01/20/16	01/21/16
		4%	9%	4%	2%	15%	5%	5%	7%	9%	5%
Dichlorodifluoromethane	0.07										
Chloromethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene chloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromochloromethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	0.026	0.054	0.037	0.034	0.14	nd	nd	nd	nd	nd
Chlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	
I-Chlorotoluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
,3-Dichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd		nd
,4-Dichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
,2-Dichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd _
,2-Dibromo-3-Chloropropane	0.05	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
,2,4-Trichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd		nd	nd
Iexachloro-1,3-butadiene	0.05	nd	nd	nd	nd	nd	nd		nd nd	nd nd	nd
,2,3-Trichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd nd	nd	nd nd	nd
						10	114	10	nd	nd	nd
urrogate recoveries											
Dibromofluoromethane		97%	95%	93%	95%	100%	104%	98%	000/	048/	10.00/
'oluene-d8			103%	102%					98%		100%
-Bromofluorobenzene			110%	10276							102%
				10770	111/0	11370	11370	113%	112%	111%	110%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington

Analytical Results

ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Water by Method 8260C/5030C

Date analyzed	RL	MB	LCS	LCSD	B5-W	B6-W	B7-W	B8-W	B9-W	B10-W	Trip Blan
	(ug/L)	01/22/16	01/22/16	01/22/16	01/22/16	01/22/16	01/22/16	01/22/16	01/22/16	01/22/16	01/22/16
Dichlorodifluoromethane	1.0	nd									
Chloromethane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
Vinyl chloride	0.2	nd	79%	79%	nd	nd	nd	nd	nd	nd	nd
Chloroethane	1.0	nd	19%	/9%	nd	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	1.0		760/	700/	nd	nd	nd	nd	nd	nd	nd
Methylene chloride	1.0	nd	75%	72%	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene		nd			nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
• • • • • • • • • • • • • • • • • • • •	1.0	nd			nd	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene 2,2-Dichloropropane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
	1.0	nd			nd	nd	nd	nd	nd	nd	nd
Chloroform	1.0	nd	99%	101%	nd	nd	nd	nd	nd	nd	nd
Bromochloromethane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd			nd	nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd			nd	nd	nd	nd	nd	nd	
Carbon tetrachloride	1.0	nd			nd	nd	nd	nd	nd		nd
Trichloroethene (TCE)	1.0	nd	94%	97%	nd	nd	nd	nd		nd	nd
,2-Dichloropropane	1.0	nd	99%	99%	nd	nd	nd	nd	nd	nd	nd
Bromodichloromethane	1.0	nd		5570	nd	nd	nd		nd	nd	nd
sis-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
rans-1,3-Dichloropropene	1.0	nd			nd	nd		nd	nd	nd	nd
,1,2-Trichloroethane	1.0	nd			nd		nd	nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd				nd	nd	nd	nd	nd	nd
Dibromochloromethane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	86%	91%	nd	nd	nd	nd	nd	nd	nd
Chlorobenzene	1.0	nd	91%		1.0	2.3	5.6	9.6	nd	nd	nd
,1,1,2-Tetrachloroethane	1.0	nd	9170	96%	nd	nd	nd	nd	nd	nd	nd
,1,2,2-Tetrachloroethane	1.0				nd	nd	nd	nd	nd	nd	nd
,2,3-Trichloropropane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
P-Chlorotoluene		nd			nd	nd	nd	nd	nd	nd	nd
-Chlorotoluene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
,3-Dichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
	1.0	nd			nd	nd	nd	nd	nd	nd	nd
,4-Dichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
,2-Dichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
,2-Dibromo-3-Chloropropane	1.0	nd			nd	nd	nd	nd	nd	nd	nd
,2,4-Trichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
lexachloro-1,3-butadiene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
,2,3-Trichlorobenzene	1.0	nd			nd	nd	nd	nd	nd	nd	nd
urrogate recoveries											
Dibromofluoromethane	····	102%	102%	000/	1010/	1000/	1010/				
'oluene-d8		102%		98%	101%	103%	101%	105%	102%	104%	102%
-Bromofluorobenzene		103%	96%	95%	100%	103%	103%	102%	103%	102%	102%
2. c.mondorobonizono		11270	103%	105%	114%	112%	114%	111%	112%	110%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135% Acceptable RPD limit: 35%

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Olympia, Washington 9850		*					1.301-1		Fax:	360-45	9-34	32	1										E-M	1ail: info@	Desnnv	w.com

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Environmental

NORTHWEST, INC. Y Services Network

ESN

CHAIN-OF-CUSTODY RECORD

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Environmental

Services Network

March 9, 2016

RECEIVED

Becky Dilba Associated Environmental Group, Inc. 605 11th Ave. SE, Suite 201 Olympia, WA 98501 MAR 1 4 2016 AEG

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Adams Street Building Project in Tacoma, Washington. Probe services were conducted on February 23, 2016. Soil samples were analyzed for VOC's by Method 8260 on March 3, 2016.

The results of the analyses are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Associated Environmental Group, Inc. for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

michael a Korace

Michael A. Korosec President

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington

ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	MW1-10	MW1-13	MW2-9.5	MW2-15	MW3-9.5	
Date extracted		03/03/16	03/03/16	03/03/16	02/23/16	02/23/16	02/23/16	02/23/16	02/23/16	02/23/16
Date analyzed	(mg/Kg)	03/03/16	03/03/16	03/03/16	<u>03/03/16</u>	03/03/16	03/03/16	03/03/16	03/03/16	03/03/16
% Moisture	a gaga si tu			n en el referire	4%	8%	5%	9%	7%	14%
Dichlorodifluoromethane	0.05	nd			nd	nd	nd	nd	nd	nd
Chloromethane	0.05	nd			nd	nd	nd	nd	nd	nd
Vinyl chloride	0.02	nd	107%	99%	nd	nd	nd	nd	nd	nd
Chloroethane	0.05	nd			nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	96%	89%	nd	nd	nd	nd	nd	nd
Methylene chloride	0.05	nd			nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	114%	109%	nd	nd	nd	nd	nd	nd
Bromochloromethane	0.05	nd			nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd	nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd	nd	nd	nd	nd
1,1-Dichloropropene	0.05	nd			nd	nd	nd	nd	nd	nd
Carbon tetrachloride	0.05	nd			nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.02	nd			nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	0.05	nd	111%	106%	nd	nd	nd	nd	nd	nd
Bromodichloromethane	0.05	nd			nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd	nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd	nd	nd	nd	nd
Dibromochloromethane	0.05	nd			nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	81%	75%	nd	nd	nd	nd	0.06	0.12
Chlorobenzene	0.05	nd	84%	80%	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd			nd	nd	nd	nd	nd	nd
2-Chlorotoluene	0.05	nd			nd	nd	nd	nd	nd	nd
4-Chlorotoluene	0.05	nd			nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane		nd			nd	nd	nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.05	nd			nd	nd	nd	nd	nd	nd
1,2,3-Trichlorobenzene	0.05	nd			nd	nd	nd	nd	nd	nd
				*						
Surrogate recoveries			1100/	1100/	1100/	1110/	1000/	1070/	1110/	10/0/
Dibromofluoromethane		111%	113%	112%	112%	111%	102%	107%	111%	106%
Toluene-d8		89%	84%	84%	92%	90%	90%	87%	89%	90%
4-Bromofluorobenzene		105%	97%	95%	102%	101%	105%	101%	106%	107%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

a a de la compositiva de la compositiv A de la compositiva d A de la compositiva d	RL	MW4-9.5	MW4-15
Date extracted		02/23/16	02/23/16
Date analyzed	(mg/Kg)	03/03/16	03/03/16
% Moisture	(3%	20%
Dichlorodifluoromethane	0.05	nd	nd
Chloromethane	0.05	nd	nd
Vinyl chloride	0.02	nd	nd
Chloroethane	0.05	nd	nd
Trichlorofluoromethane	0.05	nd	nd
1,1-Dichloroethene	0.05	nd	nd
Methylene chloride	0.05	nd	nd
trans-1,2-Dichloroethene	0.05	nd	nd
1,1-Dichloroethane	0.05	nd	nd
cis-1,2-Dichloroethene	0.05	nd	nd
2,2-Dichloropropane	0.05	nd	nd
Chloroform	0.05	nd	nd
Bromochloromethane	0.05	nd	nd
1,1,1-Trichloroethane	0.05	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd	nd
1,1-Dichloropropene	0.05	nd	nd
Carbon tetrachloride	0.05	nd	nd
Trichloroethene (TCE)	0.02	nd	nd
1,2-Dichloropropane	0.05	nd	nd
Bromodichloromethane	0.05	nd	nd
cis-1,3-Dichloropropene	0.05	nd	nd
trans-1,3-Dichloropropene	0.05	nd	nd
1,1,2-Trichloroethane	0.05	nd	nd
1,3-Dichloropropane	0.05	nd	nd
Dibromochloromethane	0.05	nd	nd
Tetrachloroethene (PCE)	0.02	nd	0.28
Chlorobenzene	0.05	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd
1,2,3-Trichloropropane	0.05	nd	nd
2-Chlorotoluene	0.05	nd	nd
4-Chlorotoluene	0.05	nd	nd
1,3-Dichlorobenzene	0.05	nd	nd
1,4-Dichlorobenzene	0.05	nd	nd
1,2-Dichlorobenzene	0.05	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd
Hexachloro-1,3-butadiene	0.05	nd	nd
1,2,3-Trichlorobenzene	0.05	nd	nd
Surrogate recoveries			
Dibromofluoromethane		108%	107%
Toluene-d8		92%	88%
4-Bromofluorobenzene		103%	103%
		10370	10570

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135% Acceptable RPD limit: 35%

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10. MW3-9.5	9.5	1202	1			1								4	_						HALZ	Am		
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Environmental

Services Network

April 7, 2016

APR 1 4 2016

AEG

Becky Dilba Associated Environmental Group, Inc. 605 11th Ave. SE, Suite 201 Olympia, WA 98501

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Adams St Building in Tacoma, Washington. Soil samples were analyzed for Chlorinated VOC's by Method 8260 on March 3, 2016.

The results of the analyses are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Associated Environmental Group, Inc. for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

michael a Kornec

Michael A. Korosec President

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	MW3-5	MW3-15
Date extracted		04/04/16	04/04/16	04/04/16	02/23/16	02/23/16
Date analyzed	(mg/Kg)	04/04/16	04/04/16	04/04/16	03/03/16	03/03/16
% Moisture		e e setter e			2%	12%
Dichlorodifluoromethane	0.05					
Chloromethane		nd			nd	nd
Vinyl chloride	0.05 0.02	nd	0.407	070/	nd	nd
		nd	94%	97%	nd	nd
Chloroethane Trichlorofluoromethane	0.05	nd			nd	nd
1,1-Dichloroethene	0.05	nd	700/	(nd	nd
	0.05	nd	70%	65%	nd	nd
Methylone chloride	0.05	nd			nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd
2,2-Dichloropropane	0.05	nd	1170/	11007	nd	nd
Chloroform	0.05	nd	117%	113%	nd	nd
Bromochloromethane	0.05	nd			nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd
I,1-Dichloropropene	0.05	nd			nd	nd
Carbon tetrachloride	0.05	nd			nd	nd
Trichloroethene (TCE)	0.02	nd	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		nd	nd
1,2-Dichloropropane	0.05	nd	139%	138%	nd	nd
Bromodichloromethane	0.05	nd			nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd
rans-1,3-Dichloropropene	0.05	nd			nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd
Dibromochloromethane	0.05	nd			nd	nd
Tetrachloroethene (PCE)	0.02	nd	112%	111%	0.060	0.74
Chlorobenzene	0.05	nd	111%	113%	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd
,2,3-Trichloropropane	0.05	nd			nd	nd
2-Chlorotoluene	0.05	nd			nd	nd
-Chlorotoluene	0.05	nd			nd	nd
,3-Dichlorobenzene	0.05	nd			nd	nd
,4-Dichlorobenzene	0.05	nd			nd	nd
,2-Dichlorobenzene	0.05	nd			nd	nd
,2-Dibromo-3-Chloropropane	0.05	nd			nd	nd
,2,4-Trichlorobenzene	0.05	nd			nd	nd
lexachloro-1,3-butadiene	0.05	nd			nd	nd
,2,3-Trichlorobenzene	0.05	nd			nd	nd
Surrogate recoveries						
Dibromofluoromethane		103%	100%	100%	102%	104%
Foluene-d8		99%	86%	87%	90%	92%
-Bromofluorobenzene		116%	105%	104%	113%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits Acceptable Recovery limits: 65% TO 135% Acceptable RPD limit: 35%

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Environmental

Services Network

March 25, 2016

RECEIVED MAR 3 0 2016 AEG

Becky Dilba Associated Environmental Group, Inc. 605 11th Ave. SE, Suite 201 Olympia, WA 98501

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Adams St Building Project in Tacoma, Washington. Water samples were analyzed for Chlorinated VOC's by Method 8260 on March 23, 2016.

The results of the analyses are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Associated Environmental Group, Inc. for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

michaela Korona

Michael A. Korosec President

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

Analysis of Chlorinated Volatile Organic Compounds in Water by Method 8260C/5030C

	RL	MB	LCS	LCSD	MW-2	MW-3	MW-4	MW-1
Date analyzed	(ug/L)	03/23/16	03/23/16	03/23/16	03/23/16	03/23/16	03/23/16	03/23/10
Dichlorodifluoromethane	1.0	nd			nd	nd	nd	nd
Chloromethane	1.0	nd			nd	nd	nd	nd
Vinyl chloride	0.2	nd	98%	107%	nd	nd	nd	nd
Chloroethane	1.0	nd			nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd			nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd	131%	136%	nd	nd	nd	nd
Methylene chloride	1.0	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd	* • • •		nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd			nd	nd	nd	nd
Chloroform	1.0	nd	122%	132%	nd	nd	nd	nd
Bromochloromethane	1.0	nd	12270	10270	nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd			nd	nd	nd	
1,1-Dichloropropene	1.0	nd			nd	nd	10000	nd
Carbon tetrachloride	1.0	nd			nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	121%	132%	nd		nd	nd
1,2-Dichloropropane	1.0	nd	12170	13270	10000	nd	nd	nd
Bromodichloromethane	1.0	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
					nd	nd	nd	nd
rans-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd			nd	nd	nd	nd
,3-Dichloropropane	1.0	nd			nd	nd	nd	nd
Dibromochloromethane	1.0	nd	1050/	1150/	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	105%	117%	nd	10	2.0	nd
Chlorobenzene	1.0	nd	104%	114%	nd	nd	nd	nd
,1,1,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
,1,2,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd			nd	nd	nd	nd
2-Chlorotoluene	1.0	nd			nd	nd	nd	nd
-Chlorotoluene	1.0	nd			nd	nd	nd	nd
,3-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
,4-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
,2-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
,2-Dibromo-3-Chloropropane	1.0	nd			nd	nd	nd	nd
,2,4-Trichlorobenzene	1.0	nd			nd	nd	nd	nd
Iexachloro-1,3-butadiene	1.0	nd			nd	nd	nd	nd
,2,3-Trichlorobenzene	1.0	nd		-	nd	nd	nd	nd
urrogate recoveries								
Dibromofluoromethane		102%	106%	105%	101%	105%	108%	106%
oluene-d8		99%	90%	91%	98%	100%	101%	99%
-Bromofluorobenzene		108%	102%	102%	110%	110%	111%	113%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 65% TO 135%

* Analysis of LCSD yielded high recovery for 1,1-Dicholoroethene, because this analyte was not detected in the samples, no further action was taken.

Acceptable RPD limit: 35%

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ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L952230 11/18/2017 HE-1-01

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SDG: L952230 DATE/TIME: 11/27/17 15:19 **PAGE**: 2 of 20

SAMPLE SUMMARY

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	SAMPLE SC		X I		
SV-1 L952230-01 Air			Collected by Andrew Blake	Collected date/time 11/16/17 15:30	Received date/time 11/18/17 08:45
/lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 19:40	11/21/17 19:40	AMC
			Collected by	Collected date/time	Received date/time
SV-2 L952230-02 Air			Andrew Blake	11/16/17 15:40	11/18/17 08:45
ethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 20:23	11/21/17 20:23	AMC
			Collected by	Collected date/time	Received date/time
V-3 L952230-03 Air			Andrew Blake	11/16/17 15:45	11/18/17 08:45
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 21:04	11/21/17 21:04	AMC
			Collected by	Collected date/time	Received date/time
SV-4 L952230-04 Air			Andrew Blake	11/16/17 15:50	11/18/17 08:45
fethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 21:46	11/21/17 21:46	AMC
			Collected by	Collected date/time	Received date/time
SV-5 L952230-05 Air			Andrew Blake	11/16/17 15:55	11/18/17 08:45
lethod	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 22:28	11/21/17 22:28	AMC
			Collected by	Collected date/time	Received date/time
SV-6 L952230-06 Air			Andrew Blake	11/16/17 15:58	11/18/17 08:45
lethod	Batch	Dilution	Preparation	Analysis	Analyst
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	date/time 11/21/17 23:10	date/time 11/21/17 23:10	AMC
olatile Organic Compounds (MS) by Method TO-15	WG1045184 WG1045674	100	11/22/17 17:47	11/22/17 17:47	AMC
Sidile organic compones (may by method 10 15	W01013071	100	11/22/11 11.11	11/22/11 11.11	Ame
			Collected by	Collected date/time	Received date/time
SV-7 L952230-07 Air			Andrew Blake	11/16/17 16:05	11/18/17 08:45
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 23:52	11/21/17 23:52	AMC
			Collected by	Collected date/time	Received date/time
SV-8 L952230-08 Air			Andrew Blake	11/16/17 16:15	11/18/17 08:45
fethod	Batch	Dilution	Preparation	Analysis	Analyst
ienou -					
olatile Organic Compounds (MS) by Method TO-15	WG1045171	2	date/time 11/21/17 22:27	date/time 11/21/17 22:27	MBF

ACCOUNT: Succeed Environmental Consulting PROJECT: HE-1-01 SDG: L952230

PAGE: 3 of 20

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

			Collected by	Collected date/time	Received date/time
SV-9 L952230-09 Air			Andrew Blake	11/16/17 16:25	11/18/17 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (MS) by Method TO-15	WG1045171	2	11/21/17 23:14	11/21/17 23:14	MBF

² Tc	
³ Ss	
⁴ Cn	
⁵Sr	
⁶ Qc	
⁷ Gl	
⁸ Al	
⁹ Sc	

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SDG: L952230 1

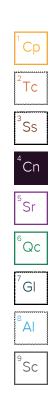
PAGE: 4 of 20

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L952230

PAGE: 5 of 20

SAMPLE RESULTS - 01 L952230

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
Analyte			ppbv	ug/m3	ppbv	ug/m3				ľ
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184	
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184	l
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184	
2-Propanol	67-63-0	60.10	2.50	6.15	5.36	13.2		2	WG1045184	
Tetrachloroethylene	127-18-4	166	0.400	2.72	42.3	287		2	WG1045184	
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045184	
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.0				WG1045184	

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SAMPLE RESULTS - 02 L952230

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
Analyte			ppbv	ug/m3	ppbv	ug/m3				ľ
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184	
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184	L
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184	
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1045184	
Tetrachloroethylene	127-18-4	166	0.400	2.72	16.2	110		2	WG1045184	
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045184	
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.9				WG1045184	

SAMPLE RESULTS - 03 L952230

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
Analyte			ppbv	ug/m3	ppbv	ug/m3				- [2
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184	
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184	L
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184	
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1045184	
Tetrachloroethylene	127-18-4	166	0.400	2.72	2.70	18.4		2	WG1045184	4
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045184	
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184	L
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.5				WG1045184	Ę

SDG: L952230 DATE/TIME: 11/27/17 15:19 PAGE: 8 of 20

SAMPLE RESULTS - 04 L952230

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Volatile Organic Compounds (MS) by Method TO-15

			RDL2	Result	Result	Qualifier	Dilution	Batch	
		ppbv	ug/m3	ppbv	ug/m3				2
/5-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184	
56-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184	L
56-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184	3
57-63-0	60.10	2.50	6.15	ND	ND		2	WG1045184	
27-18-4	166	0.400	2.72	20.6	140		2	WG1045184	4
/9-01-6	131	0.400	2.14	ND	ND		2	WG1045184	- (
/5-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184	
160-00-4	175	60.0-140		97.4				WG1045184	5
	56-59-2 56-60-5 7-63-0 27-18-4 9-01-6 5-01-4	56-59-2 96.90 56-60-5 96.90 7-63-0 60.10 27-18-4 166 9-01-6 131 5-01-4 62.50	56-59-2 96.90 0.400 56-60-5 96.90 0.400 7-63-0 60.10 2.50 27-18-4 166 0.400 9-01-6 131 0.400 5-01-4 62.50 0.400	56-59-2 96.90 0.400 1.59 56-60-5 96.90 0.400 1.59 7-63-0 60.10 2.50 6.15 27-18-4 166 0.400 2.72 9-01-6 131 0.400 2.14 5-01-4 62.50 0.400 1.02	56-59-2 96.90 0.400 1.59 ND 56-60-5 96.90 0.400 1.59 ND 7-63-0 60.10 2.50 6.15 ND 27-18-4 166 0.400 2.72 20.6 9-01-6 131 0.400 2.14 ND 5-01-4 62.50 0.400 1.02 ND	56-59-296.900.4001.59NDND56-60-596.900.4001.59NDND7-63-060.102.506.15NDND27-18-41660.4002.7220.61409-01-61310.4002.14NDND5-01-462.500.4001.02NDND	56-59-2 96.90 0.400 1.59 ND ND 56-60-5 96.90 0.400 1.59 ND ND 7-63-0 60.10 2.50 6.15 ND ND 27-18-4 166 0.400 2.72 20.6 140 9-01-6 131 0.400 2.14 ND ND 5-01-4 62.50 0.400 1.02 ND ND	56-59-2 96.90 0.400 1.59 ND ND 2 56-60-5 96.90 0.400 1.59 ND ND 2 7-63-0 60.10 2.50 6.15 ND ND 2 27-18-4 166 0.400 2.72 20.6 140 2 9-01-6 131 0.400 2.14 ND ND 2 5-01-4 62.50 0.400 1.02 ND ND 2	56-59-2 96.90 0.400 1.59 ND ND 2 WG1045184 56-60-5 96.90 0.400 1.59 ND ND 2 WG1045184 7-63-0 60.10 2.50 6.15 ND ND 2 WG1045184 27-18-4 166 0.400 2.72 20.6 140 2 WG1045184 9-01-6 131 0.400 2.14 ND ND 2 WG1045184 5-01-4 62.50 0.400 1.02 ND ND 2 WG1045184

SDG: L952230

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
rte			ppbv	ug/m3	ppbv	ug/m3			
loroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184
Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184
1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184
anol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1045184
nloroethylene	127-18-4	166	0.400	2.72	78.0	529		2	WG1045184
oethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045184
nloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184
4-Bromofluorobenzene	460-00-4	175	60.0-140		101				WG1045184

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
Analyte			ppbv	ug/m3	ppbv	ug/m3				12
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184	2-
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184	
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184	3
2-Propanol	67-63-0	60.10	125	307	3740	9200		100	WG1045674	`
Tetrachloroethylene	127-18-4	166	20.0	136	82.2	558		100	WG1045674	4
Trichloroethylene	79-01-6	131	0.400	2.14	0.415	2.22		2	WG1045184	` (
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.1				WG1045674	5
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		116				WG1045184	

SDG: L952230 DATE/TIME: 11/27/17 15:19 PAGE: 11 of 20

SAMPLE RESULTS - 07 L952230

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
Analyte			ppbv	ug/m3	ppbv	ug/m3				- E
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045184	
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045184	L
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184	
2-Propanol	67-63-0	60.10	2.50	6.15	11.2	27.5		2	WG1045184	
Tetrachloroethylene	127-18-4	166	0.400	2.72	7.35	49.9		2	WG1045184	
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045184	
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045184	L
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.5				WG1045184	5

SDG: L952230 DATE/TIME: 11/27/17 15:19

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
/te			ppbv	ug/m3	ppbv	ug/m3			
chloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045171
Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045171
1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045171
anol	67-63-0	60.10	2.50	6.15	6.10	15.0		2	WG1045171
lloroethylene	127-18-4	166	0.400	2.72	27.0	183		2	WG1045171
ethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045171
lloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045171
-Bromofluorobenzene	460-00-4	175	60.0-140		99.0				WG1045171

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SAMPLE RESULTS - 09 L952230

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Volatile Organic Compounds (MS) by Method TO-15

CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
		ppbv	ug/m3	ppbv	ug/m3				2
75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045171	2.
156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045171	L
156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045171	3
67-63-0	60.10	2.50	6.15	5.50	13.5		2	WG1045171	
127-18-4	166	0.400	2.72	39.7	270		2	WG1045171	4
79-01-6	131	0.400	2.14	0.691	3.70		2	WG1045171	
75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045171	
460-00-4	175	60.0-140		98.7				WG1045171	5
	156-59-2 156-60-5 67-63-0 127-18-4 79-01-6 75-01-4	156-59-2 96.90 156-60-5 96.90 67-63-0 60.10 127-18-4 166 79-01-6 131 75-01-4 62.50	75-35-4 96.90 0.400 156-59-2 96.90 0.400 156-60-5 96.90 0.400 67-63-0 60.10 2.50 127-18-4 166 0.400 79-01-6 131 0.400 75-01-4 62.50 0.400	75-35-4 96.90 0.400 1.59 156-59-2 96.90 0.400 1.59 156-60-5 96.90 0.400 1.59 67-63-0 60.10 2.50 6.15 127-18-4 166 0.400 2.72 79-01-6 131 0.400 2.14 75-01-4 62.50 0.400 1.02	ppbv ug/m3 ppbv 75-35-4 96.90 0.400 1.59 ND 156-59-2 96.90 0.400 1.59 ND 156-60-5 96.90 0.400 1.59 ND 67-63-0 96.90 0.400 1.59 ND 67-63-0 96.10 2.50 6.15 5.50 127-18-4 166 0.400 2.72 39.7 79-01-6 131 0.400 2.14 0.691 75-01-4 62.50 0.400 1.02 ND	ppbv ug/m3 ppbv ug/m3 75-35-4 96.90 0.400 1.59 ND ND 156-59-2 96.90 0.400 1.59 ND ND 156-60-5 96.90 0.400 1.59 ND ND 156-60-5 96.90 0.400 1.59 ND ND 67-63-0 60.10 2.50 6.15 5.50 13.5 127-18-4 166 0.400 2.72 39.7 270 79-01-6 131 0.400 2.14 0.691 3.70 75-01-4 62.50 0.400 1.02 ND ND	ppbv ug/m3 ppbv ug/m3 75-35-4 96.90 0.400 1.59 ND ND 156-59-2 96.90 0.400 1.59 ND ND 156-60-5 96.90 0.400 1.59 ND ND 67-63-0 60.10 2.50 6.15 5.50 13.5 127-18-4 166 0.400 2.72 39.7 270 79-01-6 131 0.400 2.14 0.691 3.70 75-01-4 62.50 0.400 1.02 ND ND	ppbv ug/m3 ppbv ug/m3 75-35-4 96.90 0.400 1.59 ND ND 2 156-59-2 96.90 0.400 1.59 ND ND 2 156-60-5 96.90 0.400 1.59 ND ND 2 67-63-0 60.10 2.50 6.15 5.50 13.5 2 127-18-4 166 0.400 2.72 39.7 270 2 79-01-6 131 0.400 2.14 0.691 3.70 2 75-01-4 62.50 0.400 1.02 ND ND 2	ppbv ug/m3 ppbv ug/m3 75-35-4 96.90 0.400 1.59 ND ND 2 WG1045171 156-59-2 96.90 0.400 1.59 ND ND 2 WG1045171 156-69-2 96.90 0.400 1.59 ND ND 2 WG1045171 156-60-5 96.90 0.400 1.59 ND ND 2 WG1045171 156-60-5 96.90 0.400 1.59 ND ND 2 WG1045171 67-63-0 60.10 2.50 6.15 5.50 13.5 2 WG1045171 127-18-4 166 0.400 2.72 39.7 270 2 WG1045171 79-01-6 131 0.400 2.14 0.691 3.70 2 WG1045171 75-01-4 62.50 0.400 1.02 ND ND 2 WG1045171

SDG: L952230 DATE/TIME: 11/27/17 15:19 PAGE:

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QUALITY CONTROL SUMMARY L952230-08,09

Method Blank (MB)

(MB) R3267409-3 11/21/17	09:13				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	ppbv		ppbv	ppbv	
1,1-Dichloroethene	U		0.0490	0.200	
cis-1,2-Dichloroethene	U		0.0389	0.200	
trans-1,2-Dichloroethene	U		0.0464	0.200	
2-Propanol	U		0.0882	1.25	
Tetrachloroethylene	U		0.0497	0.200	
Trichloroethylene	U		0.0545	0.200	
Vinyl chloride	U		0.0457	0.200	
(S) 1,4-Bromofluorobenzene	97.6			60.0-140	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3267409-1 11/21/17 07:42 • (LCSD) R3267409-2 11/21/17 08:26										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Vinyl chloride	3.75	3.66	3.61	97.7	96.3	70.0-130			1.44	25
1,1-Dichloroethene	3.75	3.81	3.76	102	100	70.0-130			1.24	25
2-Propanol	3.75	3.85	3.81	103	102	66.0-150			0.872	25
trans-1,2-Dichloroethene	3.75	3.83	3.77	102	100	70.0-130			1.75	25
cis-1,2-Dichloroethene	3.75	3.90	3.82	104	102	70.0-130			2.10	25
Trichloroethylene	3.75	3.89	3.80	104	101	70.0-130			2.54	25
Tetrachloroethylene	3.75	3.99	3.88	106	104	70.0-130			2.61	25
(S) 1,4-Bromofluorobenzene				98.7	101	60.0-140				

SDG: L952230 DATE/TIME: 11/27/17 15:19

PAGE: 15 of 20 Ss

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QUALITY CONTROL SUMMARY

Method Blank (MB)

(MB) R3267478-3	11/21/17 08:56

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
2-Propanol	U		0.0882	1.25
Tetrachloroethylene	U		0.0497	0.200
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
(S) 1,4-Bromofluorobenzene	96.6			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3267478-1 11/21/17 07:33 • (LCSD) R3267478-2 11/21/17 08:14										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Vinyl chloride	3.75	3.95	4.03	105	107	70.0-130			1.94	25
1,1-Dichloroethene	3.75	4.09	4.15	109	111	70.0-130			1.61	25
2-Propanol	3.75	4.14	4.18	110	112	66.0-150			1.07	25
trans-1,2-Dichloroethene	3.75	4.10	4.10	109	109	70.0-130			0.0192	25
cis-1,2-Dichloroethene	3.75	4.02	4.02	107	107	70.0-130			0.163	25
Trichloroethylene	3.75	3.99	4.00	106	107	70.0-130			0.294	25
Tetrachloroethylene	3.75	3.93	3.99	105	106	70.0-130			1.32	25
(S) 1,4-Bromofluorobenzene				99.8	99.1	60.0-140				

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QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Method Blank (MB)

(MB) R3267792-3 11/22/17	' 09:05			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
2-Propanol	0.109	J	0.0882	1.25
Tetrachloroethylene	U		0.0497	0.200
(S) 1,4-Bromofluorobenzene	92.8			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3267792-1 11/22/17 07:35 • (LCSD) R3267792-2 11/22/17 08:20										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
2-Propanol	3.75	3.73	3.75	99.4	99.9	66.0-150			0.503	25
Tetrachloroethylene	3.75	3.74	3.68	99.9	98.1	70.0-130			1.79	25
(S) 1,4-Bromofluorobenzen	e			91.7	94.7	60.0-140				

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	³ Ss
	⁴ Cn
-	⁵Sr
_	⁶ Qc
	⁷ Gl
	⁸ Al

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SDG: L952230 DATE/TIME: 11/27/17 15:19

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GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
Qualifier	Description

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The identification of the analyte is acceptable; the reported value is an estimate.

SDG: L952230 DATE/TIME: 11/27/17 15:19

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

ArizonaAZ0612New Jersey–NELAPTN002Arkansas88-0469New MexicoTN00003California01157CANew York11742ColoradoTN00003North CarolinaEnv375ConneticutPH-0197North Carolina 1DW21704FloridaE87487North Carolina 241Georgia923Ohio–VAPCl0069IdahoTN00003Oklahoma9915Illinois20008OregonTN20002IndianaC-TN-01Pennsylvania68-02979Iowa364Rhode Island221KansasE-10277South Dakotan/aKentucky 19010South Dakotan/aLouisianaAl30792Texas 5LAB0452MaineTN0002Texas 5LAB0152Maryland324Utah6157585858MissasthusettsM-TN03VermontVT2006MississippiTN0003West Virginia109MississippiTN0003Wastornia233Missouri340Wisconsin998093910Missouri340Wisconsin930039910	Alabama	40660	Nevada	TN-03-2002-34
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Montana CERT0086 Wyoming A2LA	Mississippi	TN00003	West Virginia	233
	Missouri	340	Wisconsin	9980939910
Nebraska NE-OS-15-05	Montana	CERT0086	Wyoming	A2LA
	Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



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SV-9	-		-		16:25	1	X									09
* Matrix:	Remarks:		L			I								Samp	le Receipt C	necklist
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ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L968654 02/08/2018 HE-1

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SDG: L968654 DATE/TIME: 02/14/18 15:28 ¹Cp ²Tc ³Ss ⁴Cn ⁵Sr ⁶Qc ⁷Gl ⁸Al ⁹Sc

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SAMPLE SUMMARY

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			Collected by	Collected date/time	Received date/time
SV-10 L968654-01 Air			Andrew Blake	02/07/18 11:00	02/08/18 12:52
ethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1071863	2	02/10/18 00:15	02/10/18 00:15	AMC
olatile Organic Compounds (MS) by Method TO-15	WG1072236	40	02/10/18 13:43	02/10/18 13:43	MBF
			Collected by	Collected date/time	Received date/time
A-1 L968654-02 Air			Andrew Blake	02/07/18 08:20	02/08/18 12:52
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1072243	1	02/10/18 12:02	02/10/18 12:02	MBF
			Collected by	Collected date/time	Received date/time
A-2 L968654-03 Air			Andrew Blake	02/07/18 08:25	02/08/18 12:52
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1072243	1	02/10/18 12:48	02/10/18 12:48	MBF
			Collected by	Collected date/time	Received date/time
A-3 L968654-04 Air			Andrew Blake	02/07/18 08:30	02/08/18 12:52
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1072243	1	02/10/18 13:31	02/10/18 13:31	MBF
			Collected by	Collected date/time	Received date/time
3G-1 L968654-05 Air			Andrew Blake	02/07/18 08:35	02/08/18 12:52
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
olatile Organic Compounds (MS) by Method TO-15	WG1072243	1	02/10/18 14:17	02/10/18 14:17	MBF
			Collected by	Collected date/time	Received date/time
3G-2 L968654-06 Air			Andrew Blake	02/07/18 08:40	02/08/18 12:52
lethod	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	

SDG: L968654 DATE/TIME: 02/14/18 15:28

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L968654 DATE 02/14/ PAGE: 4 of 17

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1071863
is-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1071863
rans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1071863
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1071863
etrachloroethylene	127-18-4	166	8.00	54.3	263	1780		40	WG1072236
richloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1071863
/inyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1071863
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		89.9				WG1072236
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		90.7				WG1071863

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1072243
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1072243
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1072243
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.224	1.52		1	WG1072243
Trichloroethylene	79-01-6	131	0.0200	0.107	0.108	0.576		1	WG1072243
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1072243
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1072243

ACCOUNT:
Succeed Environmental Consulting

SDG: L968654 DATE/TIME: 02/14/18 15:28

Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1072243
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1072243
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1072243
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0658	0.447		1	WG1072243
Trichloroethylene	79-01-6	131	0.0200	0.107	0.0756	0.405		1	WG1072243
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1072243
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		104				WG1072243

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1072243
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1072243
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1072243
Tetrachloroethylene	127-18-4	166	0.0200	0.136	ND	ND		1	WG1072243
Trichloroethylene	79-01-6	131	0.0200	0.107	0.0301	0.161		1	WG1072243
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1072243
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		102				WG1072243

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1072243
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1072243
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1072243
Tetrachloroethylene	127-18-4	166	0.0200	0.136	ND	ND		1	WG1072243
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1072243
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1072243
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.5				WG1072243

SDG: L968654 DATE/TIME: 02/14/18 15:28

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Volatile Organic Compounds (MS) by Method TO-15

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	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1072243
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1072243
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1072243
Tetrachloroethylene	127-18-4	166	0.0200	0.136	ND	ND		1	WG1072243
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1072243
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1072243
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		99.8				WG1072243

SDG: L968654 DATE/TIME: 02/14/18 15:28

QUALITY CONTROL SUMMARY L968654-01

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Method Blank (MB)

(MB) R3285402-3 02/09/1	18 10:35			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
1,1-Dichloroethene	U		0.0490	0.200
cis-1,2-Dichloroethene	U		0.0389	0.200
trans-1,2-Dichloroethene	U		0.0464	0.200
2-Propanol	U		0.0882	1.25
Trichloroethylene	U		0.0545	0.200
Vinyl chloride	U		0.0457	0.200
(S) 1,4-Bromofluorobenzene	90.3			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3285402-1 02/0	9/18 08:57 • (LCS	5D) R328540.	2-2 02/09/18 0	9:45							7
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	GI
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%	
Vinyl chloride	3.75	4.22	4.19	113	112	70.0-130			0.702	25	8
1,1-Dichloroethene	3.75	4.03	4.09	107	109	70.0-130			1.39	25	AI
2-Propanol	3.75	3.89	3.95	104	105	66.0-150			1.72	25	0
trans-1,2-Dichloroethene	3.75	4.31	4.37	115	117	70.0-130			1.55	25	Sc
cis-1,2-Dichloroethene	3.75	4.24	4.27	113	114	70.0-130			0.786	25	
Trichloroethylene	3.75	4.26	4.37	114	116	70.0-130			2.42	25	
(S) 1,4-Bromofluorobenzen	е			98.0	98.3	60.0-140					

SDG: L968654

DATE/TIME: 02/14/18 15:28

PAGE: 11 of 17

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Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

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Method Blank (MB)

					1 Cn	L
(MB) R3285565-2 02/10/1	8 10:45				Ср	L
	MB Result	MB Qualifier	MB MDL	MB RDL	2	¥.
Analyte	ppbv		ppbv	ppbv	Tc	
Tetrachloroethylene	U		0.0497	0.200	 	1
(S) 1,4-Bromofluorobenzene	90.0			60.0-140	³ Ss	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3285565-1 02/10/1	(LCS) R3285565-1 02/10/18 10:00 • (LCSD) R3285565-3 02/10/18 11:30										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%	
Tetrachloroethylene	3.75	4.75	4.88	127	130	70.0-130			2.75	25	
(S) 1,4-Bromofluorobenzene				93.2	93.9	60.0-140					

DATE/TIME: 02/14/18 15:28 PAGE: 12 of 17 GI

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QUALITY CONTROL SUMMARY

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Method Blank (MB)

(=)==============================	(MB) R3285570-3	02/10/18 10:36
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(=)================				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
1,1-Dichloroethene	U		0.00521	0.0200
cis-1,2-Dichloroethene	U		0.00770	0.0200
trans-1,2-Dichloroethene	U		0.00499	0.0200
Tetrachloroethylene	U		0.00457	0.0200
Trichloroethylene	U		0.00736	0.0200
Vinyl chloride	U		0.00765	0.0200
(S) 1,4-Bromofluorobenzene	99.4			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3285570-1 02/10)/18 09:13 • (LCSI	D) R3285570-	2 02/10/18 09:	55							[]
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	΄GΙ
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%	
1,1-Dichloroethene	0.500	0.523	0.517	105	103	70.0-130			1.13	25	8
cis-1,2-Dichloroethene	0.500	0.513	0.517	103	103	70.0-130			0.641	25	AI
trans-1,2-Dichloroethene	0.500	0.518	0.514	104	103	70.0-130			0.892	25	
Tetrachloroethylene	0.500	0.504	0.517	101	103	70.0-130			2.72	25	Sc
Trichloroethylene	0.500	0.504	0.508	101	102	70.0-130			0.789	25	
Vinyl chloride	0.500	0.516	0.489	103	97.8	70.0-130			5.30	25	
(S) 1,4-Bromofluorobenzen	е			100	101	60.0-140					

GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

SDG: L968654

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
lowa	364
Kansas	E-10277
Kentucky ¹	90010
Kentucky ²	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05

Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ²	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee 1 4	2006
Texas	T 104704245-07-TX
Texas⁵	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.





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Company Name/Addre	\$5:	1 2 2		Billing Informatio	Anal	ysis	Chain of Custody Page of				
Social Environmental Consulty LLC 6028 NE 4914 Avenue Forthand DR 97218			Samp	Wits S		*	ESC ENCLES				
eport to: Androw Binke				Email To: a(6)	ake C.Suc	cerlan.	1-12		Mount Juliet, TN 37	12065 Lebanon Ild Mouert Juliet, TN 37122 Phone: 615-758-5858	
roject Jescription: -	City/State Collected:	acomn,	WA	State of	4	1	Fax: 615-758-5859				
hone: 971-37 ax:	Client Project	HE-1		Lab Project #				Vc.		L# 961	1063
Collected by (print):	Site/Facility I	D#		P.O.#	- 11-	_		KEY.		Acctnum:54	CENVPO
Collected by (signature	d by (signature): Rush? (Lab MUST Be Notified) 			Email2	Date No Yes		2/15/19 Pressure/Vacuum	アラ		Prelogin: PL	ICENVPO
C.C.	<u> </u>	Two Day Three Day		FAX?		Conster		L'X		PB: BF 1/ Shipped Via:	24/18
Sample ID	Sample Description	n	Can #	Date	Time	Initial	Final	R		Rem /Contaminant	
50-10			10968	2/1/18	11:00	- 30	-1	X			-01
IA.I			15490	1	8:20	- 30	-6	\times			102
IA-2	-		15740	V	8:25	-30	-8	\times		1.1.1.1.1	03
IA-3			19756	Y	8:30	-30	- 4	\searrow			-04
BS-1	5 		19774		8:35	-30	-9	X			-45
86-2			8145		8:40	-30	-6	×			-06
	. Starter		1ª	19	1.124	- Star	0		N.	1.14	
SPRE TO	Carl Hart		. Alexandre	1 12			2 Dames and				
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				6.4m + 60							
Remarks:	stural	410		9999 0	hur (Signatura)	81 J.	Complex estimated		Hold #		
Relinquished by : (Sig	ature	- 2/7/18	Time: FED E		by: (Signature)	1000	Samples returned		Condition	: (lab	use only)
Relinquished by : (Sig	ature)	Date:	Time:	Received t	by: (Signature)	CHE -	- Parala Suparati Intera	Bottles Received:	COC Seal	Intact: Y	N NA
Relinquished by : (Sig	ature)	Date:	Time:	Received f	or lab by:{Signat	ure) Kr	Date: 2/8/18	Time: 845	pH Checke	NCF	

ESC LAB	SCIENCES		
Cooler Re	ceipt Form		
Client: SUCENVPOR	SDG	1#	
Cooler Received/Opened On: 02/ & /18	Temperature:	AMB	°C
Received by : Christian Kacar	a second and		
Signature: UMMM			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?	长 生的是中国人民的公式会议中国人产	1	1.1.1
Bottles arrive intact?	Section and the section of the secti	1	-
Correct bottles used?			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Sufficient volume sent?			1
If Applicable		-	
VOA Zero headspace?		-	-
Preservation Correct / Checked?			



ANALYTICAL REPORT



Succeed Environmental Consulting

Sample Delivery Group:

Samples Received:

Project Number:

Description:

Report To:

L994605 05/17/2018 HE-1-01

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

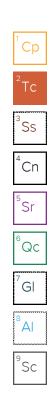
Brian Ford

Brian Ford Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
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Cn: Case Narrative	4
Sr: Sample Results	5
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BG-1 L994605-02	6
Qc: Quality Control Summary	7
Volatile Organic Compounds (MS) by Method TO-15	7
GI: Glossary of Terms	8
Al: Accreditations & Locations	9
Sc: Sample Chain of Custody	10



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SDG: L994605 D4 05/ PAGE: 2 of 10

SAMPLE SUMMARY

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			Collected by	Collected date/time	Received date/time
IA-1 L994605-01 Air			Andrew Blake	05/16/18 08:55	05/17/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (MS) by Method TO-15	WG1115154	1	05/24/18 03:09	05/24/18 03:09	MBF
			Collected by	Collected date/time	Received date/time
BG-1 L994605-02 Air			Andrew Blake	05/16/18 09:00	05/17/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (MS) by Method TO-15	WG1115154	1	05/24/18 04:04	05/24/18 04:04	MBF

SDG: L994605

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Technical Service Representative



SDG: L994605 D4 05/ PAGE: 4 of 10

SAMPLE RESULTS - 01

Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1115154
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1115154
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1115154
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.747	5.07		1	WG1115154
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1115154
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1115154
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		105				WG1115154

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SAMPLE RESULTS - 02

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Volatile Organic Compounds (MS) by Method TO-15

KaseKaseMailRbLiRbLaRbLaResultResultQualifierDilutionBatchAnalyte										
J.1-Dichloroethene 75-35-4 96.90 0.0200 0.0793 ND ND 1 WG1115154 cis-1,2-Dichloroethene 156-59-2 96.90 0.0200 0.0793 ND ND 1 WG1115154 trans-1,2-Dichloroethene 156-60-5 96.90 0.0200 0.0793 ND ND 1 WG1115154 trans-1,2-Dichloroethene 156-60-5 96.90 0.0200 0.0793 ND ND 1 WG1115154 Tetrachloroethylene 127-18-4 166 0.0200 0.136 0.455 3.09 1 WG1115154 Trichloroethylene 79-01-6 131 0.0200 0.107 ND ND 1 WG1115154 Vinyl chloride 75-01-4 62.50 0.0200 0.0511 ND ND 1 WG1115154		CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Cis-1,2-Dichloroethene 156-59-2 96.90 0.0200 0.0793 ND ND 1 WG1115154 trans-1,2-Dichloroethene 156-60-5 96.90 0.0200 0.0793 ND ND 1 WG1115154 Tetrachloroethylene 127-18-4 166 0.0200 0.136 0.455 3.09 1 WG1115154 Trichloroethylene 79-01-6 131 0.0200 0.107 ND ND 1 WG1115154 Vinyl chloride 75-01-4 62.50 0.0200 0.0511 ND ND 1 WG1115154	Analyte			ppbv	ug/m3	ppbv	ug/m3			
trans-1,2-Dichloroethene 156-60-5 96.90 0.0200 0.0793 ND ND 1 WG1115154 Tetrachloroethylene 127-18-4 166 0.0200 0.136 0.455 3.09 1 WG1115154 Trichloroethylene 79-01-6 131 0.0200 0.107 ND ND 1 WG1115154 Vinyl chloride 75-01-4 62.50 0.0200 0.0511 ND ND 1 WG1115154	1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1115154
Tetrachloroethylene 127-18-4 166 0.0200 0.136 0.455 3.09 1 WG1115154 Trichloroethylene 79-01-6 131 0.0200 0.107 ND ND 1 WG1115154 Vinyl chloride 75-01-4 62.50 0.0200 0.0511 ND ND 1 WG1115154	cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1115154
Trichloroethylene 79-01-6 131 0.0200 0.107 ND ND 1 WG1115154 Vinyl chloride 75-01-4 62.50 0.0200 0.0511 ND ND 1 WG1115154	trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1115154
Vinyl chloride 75-01-4 62.50 0.0200 0.0511 ND ND 1 WG1115154	Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.455	3.09		1	WG1115154
	Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1115154
(S) 1,4-Bromofluorobenzene 460-00-4 175 60.0-140 98.8 WG1115154	Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1115154
	(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		98.8				WG1115154

SDG: L994605 DATE/TIME: 05/24/18 15:11 PAGE: 6 of 10 Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3312651-3	05/24/18 02:25

MB Result	MB Qualifier	MB MDL	MB RDL
ppbv		ppbv	ppbv
U		0.00521	0.0200
U		0.00770	0.0200
U		0.00499	0.0200
U		0.00457	0.0200
U		0.00736	0.0200
U		0.00765	0.0200
	MB Result ppbv U U U U U U U	MB ResultMB Qualifierppbv	MB Result MB Qualifier MB MDL ppbv ppbv ppbv U 0.00521 0.00770 U 0.00499 0.00499 U 0.00457 0.00736

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3312651-1 05/24	/18 01:02 • (LCSE) R3312651-2	05/24/18 01:44								17
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	΄GΙ
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%	
1,1-Dichloroethene	0.500	0.500	0.506	100	101	70.0-130			1.22	25	8
cis-1,2-Dichloroethene	0.500	0.501	0.503	100	101	70.0-130			0.464	25	A
trans-1,2-Dichloroethene	0.500	0.498	0.504	99.6	101	70.0-130			1.20	25	0
Tetrachloroethylene	0.500	0.493	0.492	98.7	98.5	70.0-130			0.221	25	Sc
Trichloroethylene	0.500	0.505	0.508	101	102	70.0-130			0.591	25	
Vinyl chloride	0.500	0.510	0.518	102	104	70.0-130			1.65	25	
(S) 1,4-Bromofluorobenzen	ie			99.7	99.2	60.0-140					

GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resul reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

PROJECT: HE-1-01 SDG: L994605 DATE/TIME: 05/24/18 15:11

ACCREDITATIONS & LOCATIONS

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE. * Not all certifications held by the laboratory are applicable to the results reported in the attached report. * Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660	Nebraska
Alaska	17-026	Nevada
Arizona	AZ0612	New Hampshire
Arkansas	88-0469	New Jersey-NELAP
California	2932	New Mexico ¹
Colorado	TN00003	New York
Connecticut	PH-0197	North Carolina
Florida	E87487	North Carolina ¹
Georgia	NELAP	North Carolina ³
Georgia ¹	923	North Dakota
Idaho	TN00003	Ohio-VAP
Illinois	200008	Oklahoma
Indiana	C-TN-01	Oregon
lowa	364	Pennsylvania
Kansas	E-10277	Rhode Island
Kentucky ¹⁶	90010	South Carolina
Kentucky ²	16	South Dakota
Louisiana	AI30792	Tennessee ¹⁴
Louisiana ¹	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermont
Michigan	9958	Virginia
Minnesota	047-999-395	Washington
Mississippi	TN00003	West Virginia
Missouri	340	Wisconsin
Montana	CERT0086	Wyoming
		, · · · 5

Vebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Dhio-VAP	CL0069
Oklahoma	9915
Dregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee 1 4	2006
Texas	T 104704245-17-14
Гexas ⁵	LAB0152
Jtah	TN00003
/ermont	VT2006
/irginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	Δ2Ι Δ

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP.LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
Cdlldud	1401.01	USDA	P330-13-00234
FDA Crumto	TN00003		
EPA–Crypto	11000003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Succeed Environmental Consulting

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



HE-1-01

L994605

05/24/18 15:11

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				Billing Information:					Analy	Analysis / Container / Preservative					Chain of Custody Page 1 of			
			6028 NE	Andrew Blake 6028 NE 49th Ave. Portland, OR 97218														
Report to: Andrew Blake	1.191		Email To:	ablake@succer		5, K								Mount 1	ebarron Rd Juliet, TN 37			
Project Oescription:	TY.Y.				Econ, WA		DE					12.2	Na		Phone: I	615-758-585 800-767-585 5-758-5859		
Phone: 971-371-0404 Fax:	Client Project HE-1-01			Lab Project	and the second se		TTE,								L# Tab	994 M	1605	
Collected by (print):	Site/Facility ID			P.O. #	-		RE										ENVPOR	
Callected by (signature):	Rush? (L Same Da Next Da Two Day Three Da	y 5 Day 10 D		Quote #	Results Needed	No	SIM Summa								Prelog TSR: 1	late:T13 jin: P65 10 - Brian	2739	
Sample ID	Comp/Grab	Matrix *	Depth	Date Time		Cntrs	TO-15SIM						10			ed Via: Fe	Sample # (lab only)	
JA-1	-	Air	-	SINGING	8.55	1	X			7							1	
BG-1	-	Air	-	3/16/14		1	X									-	or	
			1	1.	1 100					No.					1			
			100		CARLES .						1000							
		1999 - 19	12					1						-			1212	
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				1363					1									
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bloassay WW - WasteWater	Remarks:									рН	Ter			COC Sea COC Sign Bottles	ample Rec Present/ ted/Accura arrive in	Intaët: ite: itec:	neklist NP V N	
DW - Drinking Water OT - Other	Samples retur	ned via: dExCou	ier Tracking # 4				69	5 43		Flow Other					Correct bottles used: Sufficient volume sent: If Applicable			
Relinquished by (Signature)	Date: 16/18 Time: Received by: (S			Received by: (Signa	100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100 C 100				Trip Blank Received: Yes / 166 HCL / MeoH			oH	VOA Zero Headspace: _Y _N Preservation Correct/Checked: _Y _N					
Relinquished by : (Signature)	1				Received by: (Signa	ture)			Tem	L	°C ^{Bo}	TBR ttles Receive	d	If proservation required by Login: Date/Time				
Relinquished by : (Signature) Date: Time:		Time:	Received for lab by		ture)			Date: Time: S/7/8 DAW				Hald:	1		Condition: NCF / OK			



ANALYTICAL REPORT

Succeed Environmental Consulting

Sample Delivery Group: Samples Received: Project Number: L1015524 08/08/2018 HE-1-01

Report To:

Description:

Andrew Blake 6028 NE 49th Avenue Portland, OR 97218

Entire Report Reviewed By:

Brian Ford

Brian Ford Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Sc: Sample Chain of Custody						

SDG: L1015524 DATE/TIME: 08/13/18 14:56 PAGE: 2 of 13

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

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IA-2 L1015524-01 Air			Collected by Andrew Blake	Collected date/time 08/07/18 08:50	Received date/time 08/08/18 08:45
	D. I. I.	D .H:			
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1150389	1	08/10/18 22:10	08/10/18 22:10	AMC
			Collected by	Collected date/time	Received date/time
BG-2 L1015524-02 Air			Andrew Blake	08/07/18 08:55	08/08/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
/olatile Organic Compounds (MS) by Method TO-15	WG1150389	1	08/10/18 23:10	08/10/18 23:10	AMC
			Collected by	Collected date/time	Received date/time
SV-10 L1015524-03 Air			Andrew Blake	08/07/18 11:30	08/08/18 08:45
Method	Batch	Dilution	Preparation	Analysis	Analyst
			date/time	date/time	
Volatile Organic Compounds (MS) by Method TO-15	WG1149924	2	08/09/18 18:35	08/09/18 18:35	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1150389	2	08/10/18 23:50	08/10/18 23:50	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1150727	25	08/11/18 08:52	08/11/18 08:52	AMC

SDG: L1015524

DATE/TIME: 08/13/18 14:56 PAGE: 3 of 13

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford

Brian Ford Project Manager

Project Narrative

L1015524-03, SV-10: Canister was not certified clean for 2-propanol. Canister was certified for TO-15SIM compounds only.

SDG: L1015524 DATE/TIME: 08/13/18 14:56

SAMPLE RESULTS - 01

Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1150389
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1150389
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1150389
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0529	0.359		1	WG1150389
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1150389
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1150389
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		97.0				WG1150389

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SAMPLE RESULTS - 02

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
Analyte			ppbv	ug/m3	ppbv	ug/m3			
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG1150389
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG1150389
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG1150389
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0350	0.238		1	WG1150389
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG1150389
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG1150389
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.1				WG1150389

SDG: L1015524

SAMPLE RESULTS - 03 L1015524

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Volatile Organic Compounds (MS) by Method TO-15

	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch	
Analyte			ppbv	ug/m3	ppbv	ug/m3				1
I,1-Dichloroethene	75-35-4	96.90	0.0400	0.159	ND	ND		2	WG1150389	
cis-1,2-Dichloroethene	156-59-2	96.90	0.0400	0.159	ND	ND		2	WG1150389	1
trans-1,2-Dichloroethene	156-60-5	96.90	0.0400	0.159	ND	ND		2	WG1150389	
Tetrachloroethylene	127-18-4	166	0.500	3.39	70.6	480		25	WG1150727	
2-Propanol	67-63-0	60.10	2.50	6.15	ND	ND		2	WG1149924	[
Trichloroethylene	79-01-6	131	0.0400	0.214	ND	ND		2	WG1150389	
Vinyl chloride	75-01-4	62.50	0.0400	0.102	ND	ND		2	WG1150389	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.6				WG1150389	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.0				WG1150727	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.5				WG1149924	1

ACCOUNT:	
Succeed Environmental Consulting	

PROJECT: HE-1-01

SDG: L1015524

DATE/TIME: 08/13/18 14:56 PAGE: 7 of 13

WG1149924

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Method Blank (MB)

(MB) R3332269-3 08/09/18 10:11							
	MB Result	MB Qualifier	MB MDL	MB RDL			
Analyte	ppbv		ppbv	ppbv			
2-Propanol	U		0.0882	1.25			
(S) 1,4-Bromofluorobenzene	92.6			60.0-140			

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3332269-1 08/09/	18 08:42 • (LCS	D) R3332269	-2 08/09/18 09	9:26						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
2-Propanol	3.75	3.73	3.58	99.5	95.5	66.0-150			4.06	25
(S) 1,4-Bromofluorobenzene				101	102	60.0-140				



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Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

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Method Blank (MB)

(MB) R3332808-3	08/10/18 10:01
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()				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ppbv		ppbv	ppbv
1,1-Dichloroethene	U		0.00521	0.0200
cis-1,2-Dichloroethene	U		0.00770	0.0200
trans-1,2-Dichloroethene	U		0.00499	0.0200
Tetrachloroethylene	U		0.00457	0.0200
Trichloroethylene	U		0.00736	0.0200
Vinyl chloride	U		0.00765	0.0200
(S) 1,4-Bromofluorobenzene	93.0			60.0-140

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3332808-1 08/10	/18 08:34 • (LCS	D) R3332808	-2 08/10/18 09:	18							r=1
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits	΄GΙ
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%	
1,1-Dichloroethene	0.500	0.437	0.436	87.4	87.1	70.0-130			0.333	25	8
cis-1,2-Dichloroethene	0.500	0.468	0.466	93.5	93.3	70.0-130			0.261	25	AI
trans-1,2-Dichloroethene	0.500	0.427	0.428	85.3	85.5	70.0-130			0.244	25	<u> </u>
Tetrachloroethylene	0.500	0.511	0.514	102	103	70.0-130			0.527	25	Sc
Trichloroethylene	0.500	0.461	0.465	92.3	93.0	70.0-130			0.817	25	
Vinyl chloride	0.500	0.442	0.443	88.3	88.5	70.0-130			0.222	25	
(S) 1,4-Bromofluorobenzene	ç			95.8	94.8	60.0-140					

	ACCOUNT:	
Succeed	Environmental	Consulting

DATE/TIME: 08/13/18 14:56

WG1150727

Volatile Organic Compounds (MS) by Method TO-15

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.

Method Blank (MB)

					1 CD
(MB) R3332809-3 08/11/18	3 05:47				Cp
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	ppbv		ppbv	ppbv	Tc
Tetrachloroethylene	U		0.00457	0.0200	
(S) 1,4-Bromofluorobenzene	93.7			60.0-140	³ Ss

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3332809-1 08/11/18	8 04:18 • (LCSD)) R3332809-2	08/11/18 05:04	Ļ						
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ppbv	ppbv	ppbv	%	%	%			%	%
Tetrachloroethylene	0.500	0.511	0.519	102	104	70.0-130			1.67	25
(S) 1,4-Bromofluorobenzene				94.0	94.7	60.0-140				

DATE/TIME: 08/13/18 14:56 Sc

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GLOSSARY OF TERMS

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Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
o 110	
Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

SDG: L1015524

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska
Alaska	17-026	Nevada
Arizona	AZ0612	New Hampshire
Arkansas	88-0469	New Jersey–NELAP
California	2932	New Mexico ¹
Colorado	TN00003	New York
Connecticut	PH-0197	North Carolina
Florida	E87487	North Carolina ¹
Georgia	NELAP	North Carolina ³
Georgia ¹	923	North Dakota
ldaho	TN00003	Ohio–VAP
Illinois	200008	Oklahoma
Indiana	C-TN-01	Oregon
lowa	364	Pennsylvania
Kansas	E-10277	Rhode Island
Kentucky ¹⁶	90010	South Carolina
Kentucky ²	16	South Dakota
Louisiana	Al30792	Tennessee ¹⁴
Louisiana 1	LA180010	Texas
Maine	TN0002	Texas ⁵
Maryland	324	Utah
Massachusetts	M-TN003	Vermont
Michigan	9958	Virginia
Minnesota	047-999-395	Washington
Mississippi	TN00003	West Virginia
Missouri	340	Wisconsin
Montana	CERT0086	Wyoming

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LAO00356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T 104704245-17-14
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 5	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Succeed Environmental Consulting

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.

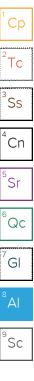


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PAGE: 08/13/18 14:56 12 of 13





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Environmental

Services Network

December 23, 2015

RECEIVED DEC 2 8 2015 AEG

Becky Dilba Associated Environmental Group, Inc. 605 11th Ave. SE, Suite 201 Olympia, WA 98501

Dear Ms. Dilba:

Please find enclosed the analytical data report for the Adams Street Building Project in Tacoma, Washington. Probe services were conducted on December 9, 2015. Soil vapor samples were analyzed for Chlorinated VOC's by Method 8260 on December 11, 2015.

The results of the analyses are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Associated Environmental Group, Inc. for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

michaela Korosee

Michael A. Korosec President

ESN NORTHWEST CHEMISTRY LABORATORY

Associated Environmental Group PROJECT ADAMS ST BUILDING PROJECT #15-171 Tacoma, Washington

.

ESN Northwest 1210 Eastside Street SE Suite 200 Olympia, WA 98501 (360) 459-4670 (360) 459-3432 Fax lab@esnnw.com

011D	Malaanlan	Reporting	МВ	LCS	LCSD	B 1	B2	B3	B4
Sample 1D	Weight	Limits	1910	LCS	LCSD	12/09/15	12/09/15	12/09/15	12/09/15
Date Sampled	-	ug/m3	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15
Date Analyzed	g	ug/m5	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15	12/11/15
Dichlorodifluoromethane	120.9	10	nd			nd	nd	nd	nd
Chloromethane	50.49	50	nd			nd	nd	nd	nd
Vinyl chloride	62.50	10	nd	102%	94%	nd	nd	nd	nd
Chloroethane	64.52	10	nd	10270	2470	nd	nd	nd	nd
Trichlorofluoromethane	137.4	10	nd			nd	nd	nd	nd
1,1-Dichloroethene	96.95	10	nd			nd	nd	nd	nd
	84.93	100	nd			nd	nd	nd	nd
Methylene chloride trans-1,2-Dichloroethene	96.95	100	nd			nd	nd	nd	nd
	90.95 98.96	10	nd			nd	nd	nd	nd
1,1-Dichloroethane	96.90 96.95	10	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	96.93 113.0	10	nd			nd	nd	nd	nd
2,2-Dichloropropane	113.0	10	nd nd	120%	113%	nd	nd	nd	nd
Chloroform		10	nd	12070	11370	nd	nd	nd	nd
Bromochloromethane	129.4	10	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	133.4		nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	98.96	10 10				nd	nd	nd	nd
1,1-Dichloropropene	111.0		nd				nd	nd	nd
Carbon tetrachloride	153.2	10	nd	1150/	1050/	nd		nd	nd
Trichloroethene	131.4	10	nd	115%	105%	nd	nd	nd	nd
1,2-Dichloropropane	113.0	10	nd	118%	110%	nd	nd		nd
Bromodichloromethane	163.8	10	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	111.0	10	nd			nd	nd	nd	
trans-1,3-Dichloropropene	111.0	10	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	133.4	10	nd			nd	nd	nd	nd
1,3-Dichloropropane	113.0	10	nd			nd	nd	nd	nd
Dibromochloromethane	208.3	10	nd		000/	nd	nd	nd	nd
Tetrachloroethene	165.8	10	nd	99%	90%	340	1,200	570	nd
Chlorobenzene	112.6	10	nd	109%	100%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	167.9	10	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	167.9	10	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	147.4	10	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	147.0	10	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	147.0	10	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	147.0	10	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	181.5	75	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	260.8	100	nd			nd	nd	nd	nd
Surrogate recoveries									
Dibromofluoromethane			105%	102%	101%	94%	105%	104%	103%
Toluene-d8			103%	95%	93%	103%	102%	104%	104%
4-Bromofluorobenzene			104%	92%	93%	103%	103%	101%	102%

Analyses of Volatile Organic Componds in Air by Method 8260

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

ESN	Enviro	nnental																C	H	A	N	-0	F-	-C	USTOD	YR	ECC	DR	D
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1210 Eastside Stre	et SE, Sui	te 200			1					Phe	one:	360-4	59-4	670										201		Website:	www.e	snnw	.com

Olympia, Washington 98501

APPENDIX C

SUPPORTING INFORMATION

Model Input	Site Name/Run Number:	Example, Run 1
Note:		
-Yellow highlighted cells indicate parameters	that typically are changed or n	nust be inputted by

Use English / Metric Converter

the user. -Dotted outline cells indicate default values that may be changed with justification.

-Toxicity values are taken from Regional Screening Level tables. These tables are updated semi-annually and may not reflect the most current toxicity information.

Source Characteristics:	Units	Symbol	Value	Default	Potential Span	CV	Flag	Comment
Source medium		Source	Sub-slab Soil Gas		-			
Soil gas concentration	(ug/m3)	Cmedium	1780		NA			
Depth below grade to soil gas sample	(m)	Ls	0.15		Vary - 50	NA		
Average vadose zone temperature	(°C)	Ts	25	25	3-30			
Calc: Source vapor concentration	(ug/m3)	Cs	1780					
Calc: % of pure component saturated vapor concentration	(%)	%Sat	0.001%					
<u>Chemical:</u>	Units	Symbol	Value	Default	Potential Span	CV	Flag	Comment
Chemical Name		Chem	Tetrachloroethylene					
CAS No.		CAS	127-18-4	-				
Toxicity Factors								
Unit risk factor	(ug/m ³) ⁻¹	IUR	2.60E-07	2.60E-07	NA	NA		
Mutagenic compound		Mut	No	NA	NA	NA		
Reference concentration	(mg/m ³)	RfC	4.00E-02	4.00E-02	NA	NA		
Chemical Properties:	Units	Symbol	Value	Default	Potential Span	CV	Flag	Comment
Pure component water solubility	(mg/L)	S	2.06E+02	2.06E+02	NA	NA		
Henry's Law Constant @ 25°C	(atm-m³/mol)	Hc	1.77E-02	1.77E-02	NA	NA		
Calc: Henry's Law Constant @ 25°C	(dimensionless)	Hr	7.24E-01	7.24E-01				
Calc: Henry's Law Constant @ system temperature	(dimensionless)	Hs	7.24E-01	7.24E-01				
Diffusivity in air	(cm2/s)	Dair	5.05E-02	5.05E-02	NA	NA		
Diffusivity in water	(cm2/s)	Dwater	9.46E-06	9.46E-06	NA	NA		
Building Characteristics:								
Select Building Assumptions								
Ouse ratio for Qsoil/Qbuilding (recommended if no site specific da	ta available)							
OSpecify Qsoil and Qbuilding separately; calculate ratio								
	Units	Symbol	Value	Default	Potential Span	CV	Flag	Comment
Building setting		Bldg_Setting	Residential	Residential				
Foundation type		Found_Type	Slab-on-grade	Slab-on-grade				

Depth below grade to base of foundation	(m)	Lb	0.10	0.10	0.1 - 2.44	NA
Foundation thickness	(m)	Lf	0.10	0.10	0.1 - 0.25	NA
Fraction of foundation area with cracks	(-)	eta	0.001	0.001	0.00019-0.0019	1.00
Enclosed space floor area	(m2)	Abf	150.00	150.00	80 - 200	NA
Enclosed space mixing height	(m)	Hb	2.44	2.44	2.13 - 3.05	NA
Indoor air exchange rate	(1 / hr)	ach	0.45	0.45	.15-1.26	NA
Qsoil/Qbuilding	(-)	Qsoil_Qb	0.0030	0.0030	0.0001 - 0.05	1.24
Calc: Building ventilation rate	(m3/hr)	Qb	164.70	164.70	NA	0.30
Calc: Average vapor flow rate into building	(m3/hr)	Qsoil	0.49	0.49	NA	NA

Model Input Site Name/Run Number: Example, Run 1 Chemical Name: Tetrachloroethylene CAS No. 127-18-4 Depth below grade to soil gas sample: 0.15 meters

Units	Symbol	Value	Default	Potential Span	CV	Flag	Comment
	-						
		Sand					
(m)	hSA	0.15					
(-)	nSA	0.375	0.375	NA	0.20		
(-)	nwSA	0.054	0.054	0.053 - 0.055	0.25		
(g/cm ³)	rhoSA	1.660	1.660	NA	0.05		
	_						
	_	Not Present					
(m)	hSB	0.00					
(-)	nSB			NA	NA		
(-)	nwSB			NA	NA		
(g/cm ³)	rhoSB			NA	NA		
	SCS_C	Not Present					
(m)	hSC	0.00					
(-)	nSC			NA	NA		
(-)	nwSC			NA	NA		
(g/cm ³)	rhoSC			NA	NA		
	Ľ						
	src_soil	Stratum A					
				NA	NA		
				NA			
				NA			
Units	Symbol	Value	Default	Potential Span	CV	Flag	Comment
(-)	Target CR	1.00E-06	1.00E-06	NA	NA		
	-	1	1	NA	NA		
	•	Residential	Residential				
(yrs)	ATc	70	70	NA	NA		
				NA	NA		
,							
. ,						NOTE	MMOAF not relevant for non-mutager
	(m) (-) (g/cm ³) (m) (-) (g/cm ³) (m) (-) (g/cm ³)	(m) hSA (-) nSA (-) nWSA (g/cm ³) rhoSA (g/cm ³) rhoSA (g/cm ³) rhoSA (g/cm ³) rhoSB (-) nSB (-) nSB (-) nSB (-) nSB (g/cm ³) rhoSB (g/cm ³) rhoSC (-) nSC (-) SC (-) SC	SCS_A Sand (m) hSA 0.15 (-) nSA 0.375 (-) nWSA 0.054 (g/cm ³) rhoSA 1.660 SCS_B Not Present (m) hSB 0.00 (-) nSB 0.00 (-) nSC 0.00 (g/cm ³) rhoSC 0.00 (g/cm ³)<	SCS_A Sand (m) hSA 0.15 (-) nSA 0.375 (-) nwSA 0.054 (g/cm ³) rhoSA 1.660 SCS_B Not Present (n) hSB 0.00 (-) nSB 1.660 (-) nSCS_C Not Present (g/cm ³) rhoSB 1.00E-06 (-) nSC 0.00 (-) nSC 0.00 (g/cm ³) rhoSC 1.00E-06 (-) rarget_CR 1.00	Units Symbol Value Derault Span (m) hSA 0.15 0.375 0.375 NA (-) nwSA 0.054 0.054 0.054 0.054 (g/cm ³) rhoSA 1.660 1.660 NA (g/cm ³) rhoSB 0.00 1.660 NA (h) nwSB 0.00 NA NA (g/cm ³) rhoSB 0.00 NA NA (g/cm ³) rhoSB 0.00 NA NA (g/cm ³) rhoSB 0.00 NA NA (g/cm ³) rhoSC 0.00 NA NA (g/rcm ³)<	Units Symbol Value Default Span CV span SCS_A Sand	Units Symbol Value Derault Span CV Prag (m) hSA 0.15 0.375 0.375 NA 0.20 (h) nSA 0.0375 0.375 0.0375 0.053 0.25 (h) nSA 0.054 0.054 0.053 0.055 0.25 (g/cm ³) rhoSA 1.660 1.660 NA 0.05 0.05 (g/cm ³) rhoSA 0.00 NA NA 0.05 0.05 (h) nSB 0.00 NA NA NA NA (h) nSB 0.00 NA NA NA (g/cm ³) rhoSB 0.00 NA NA NA (g/cm ³) rhoSC 0.00 NA NA NA (g/cm ³) rhoSC 0.00 NA NA NA (g/cm ³) rhoSC 0.00 NA NA NA (r) rosc_soil Stra

Chemical Name: Tetrachloroethylene CAS No. 127-1 ource to Indoor Air Attenuation Factor	Units	Symbol	Value	Banao	Default	Default Panao	Flag
Soil gas to indoor air attenuation coefficient	(-)	alpha	3.0E-03	Range 1.0E-04 - 5.0E-02	3.0E-03	Default Range 1.0E-04 - 5.0E-02	riag
soli gas lo indoor dii dhenodilori coenicieni	(-)	aipha	3.0E-03	1.01-04 - 3.01-02	3.0E-03	1.0E-04 - 3.0E-02	
redicted Indoor Air Concentration	Units	Symbol	Value	Range	Default	Default Range	Flag
Indoor air concentration due to vapor intrusion	(ug/m3)	Cia	5.3E+00	1.8E-01 - 8.9E+01	5.3E+00	1.8E-01 - 8.9E+01	
	(ppbv)		7.9E-01	2.6E-02 - 1.3E+01	7.9E-01	2.6E-02 - 1.3E+01	
redicted Vapor Conc. Beneath Foundation	Units	Symbol	Value	Range	Default	Default Range	Flag
Subslab vapor concentration	(ug/m3) (ppbv)	Css	1.8E+03 2.6E+02	1.8E+03 - 1.8E+03 2.6E+02 - 2.6E+02	1.8E+03 2.6E+02	1.8E+03 - 8.9E+05 2.6E+02 - 1.3E+05	
iffusive Transport Upward Through Vadose Zone	Units	Symbol	Value	Range	Default	Default Range	Flag
Effective diffusion coefficient through Stratum A Effective diffusion coefficient through Stratum B Effective diffusion coefficient through Stratum C	(cm2/sec) (cm2/sec)	DeffA DeffB DeffC	8.2E-03	-	8.2E-03	-	
Elective diffusion coefficient moogn stratom C	(cm2/sec)	Delic		-		-	
Effective diffusion coefficient through unsaturated zone	(cm2/sec)	DeffT	8.2E-03	-	8.2E-03	-	
ritical Parameters		Symbol	Value	Range	Default	Default Range	Flag
α for diffusive transport from source to building with dirt floor foundation	(-)	A_Param	5.5E-02	-	5.5E-02		
Pe (Peclet Number) for transport through the foundation (advection / diffusion)	(-)	B_Param	1.1E+02	3.6E+00 - 1.8E+03	1.1E+02	3.6E+00 - 1.8E+03	
$\boldsymbol{\alpha}$ for convective transport from subslab to building	(-)	C_Param	3.0E-03	1.0E-04 - 5.0E-02	3.0E-03	1.0E-04 - 5.0E-02	
terpretation_	C	Concentration vers	us Depth Profile				
Advection is the dominant machanism across the foundation		0.0		Measured			
Advection is the dominant mechanism across the foundation. Advection through the foundation is the overall rate-limiting proce	ss.	0.2		Wedsuleu			
		਼ ਿ 0.4					
itical Parameters		0.6 (met					
Qsoil_Qb		0.4 0.6 41 0.8				Measured	
		1.0					
on-Critical Parameters		-					
Lf, DeffA, DeffT, eta, Ls, ach		1.2 0.0E+00 2.0	0E-01 4.0E-01	6.0E-01 8.0E-01 s Concentration (ug/m3)	1 1.0E+00	1.2E+00	

Model Output Chemical Name: Tetrachloroethylene	Site Name/Run Number: CAS No. 127-18-4	Example, Run 1					
Risk Calculations	Units	Symbol	Value	Range	Default	Range	Flag
Risk-Based Target Screening Levels	Scenario: Residential						
Target risk for carcinogens Target hazard quotient for noncarcinogens	(-) (-)	Target_CR Target_HQ	1E-06 1	-	1E-06 1		
Target indoor air concentration	(ug/m3)	Target_IA	1.08E+01	-	1.08E+01	_	Target indoor air concentration based o
Target soil gas concentration	(ppbv) (ug/m3)	Target_SV	1.59E+00 3.60E+03	- 2.2E+02 - 1.1E+05	1.59E+00 3.60E+03	2.2E+02 - 1.1E+05	
Incremental Risk Estimates							
Incremental cancer risk from vapor intrusion	(-)	Cancer_Risk	4.94E-07	1.6E-08 - 8.2E-06	4.94E-07	1.6E-08 - 8.2E-06	
Hazard quotient from vapor intrusion	(-)	HQ	1.28E-01	4.3E-03 - 2.1E+00	1.28E-01	4.3E-03 - 2.1E+00	