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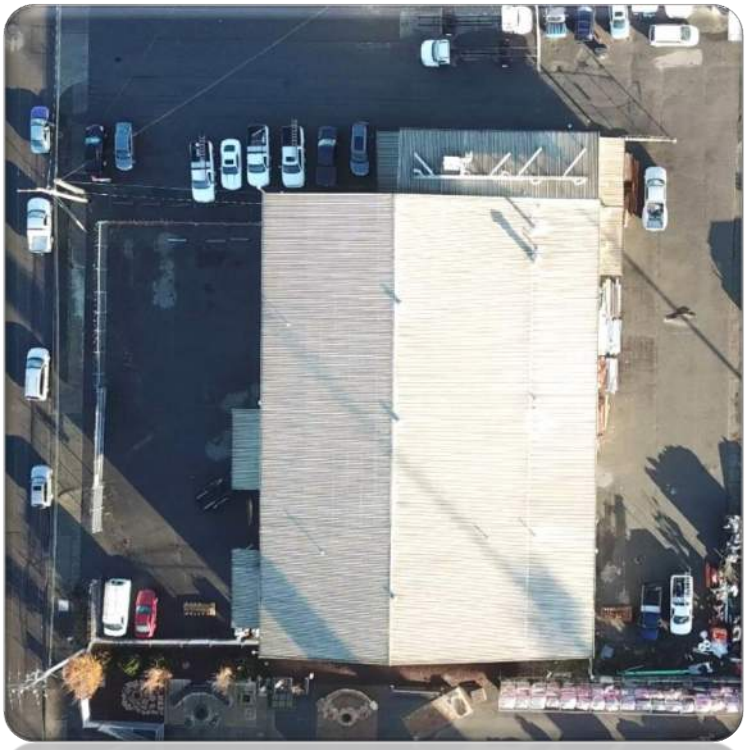

SUPPLEMENTAL DATA REPORT
AND INVESTIGATIVE WORK PLAN
6707-6709 S Adams Street
Tacoma, Washington
Cleanup Site I.D.: 13051

Prepared For:
Washington State Department of Ecology
and Mr. Formal, Inc.

January 11, 2018
Project ID: HE-1-01

6028 NE 49th Avenue | Portland, OR 97218 | 971.371.0404 | www.succeed-env.com

SUCCEED ENVIRONMENTAL CONSULTING, LLC

January 11, 2018

Washington State Department of Ecology
Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

Attention: Tim Mullin, LG

SUPPLEMENTAL DATA REPORT
AND INVESTIGATIVE WORK PLAN
6707-6709 S Adams Street
Tacoma, Washington
Cleanup Site I.D.: 13051
SEC Project: HE-1-01

Succeed Environmental Consulting LLC is pleased to submit our Supplemental Data Report and Investigative Work Plan for the property located at 6707-6709 S Adams Street in Tacoma, Washington (project site). This report summarizes the results of recent investigation activities that were conducted at the project site, and presents a work plan for further investigation. Once Ecology has completed a review of this report, we respectively request that Ecology provide an opinion on the investigative work plan. We appreciate the opportunity to assist with this project. Please contact us if you have questions regarding this report.

Sincerely,

Succeed Environmental Consulting LLC

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

Attachments
Three copies submitted
Document ID: HE-1-01-011118-envr

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FIGURES

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

1.0 INTRODUCTION

Succeed Environmental Consulting (SEC) is pleased to present this supplemental report for the 6707-6709 S Adams Street site in Tacoma, Washington (project site). This report includes supplemental information that has been requested by the Washington Department of Ecology (Ecology), the results of fourth quarter 2017 groundwater monitoring activities, the results of recent sub-slab vapor sampling activities, and a plan for further remedial investigation (RI) activities at the project site. The information discussed herein will ultimately be included in a forthcoming RI report for submittal to Ecology. The project site is shown relative to surrounding physical features on Figure 1. The project site layout is shown on Figure 2. Acronyms and abbreviations used herein are defined at the end of this document.

2.0 BACKGROUND

Between 2015 and 2016, Associated Environmental Group, LLC (AEG) of Olympia, Washington conducted a subsurface investigation at the project site, which was historically occupied by two dry cleaning machines (discussed herein). The investigation included the installation of four groundwater monitoring wells (MW-1 through MW-4 shown on Figure 2), a subsequent well monitoring event, and the collection of numerous soil, vapor, and grab groundwater samples. During this time, tetrachloroethylene (PCE) was detected in soil, groundwater, and vapor at the project site. Specifically, PCE was detected in eight soil samples[1] and three groundwater samples at concentrations that slightly exceeded the corresponding Model Toxics Control Act (MTCA) Method A cleanup levels. The project site was enrolled in the Ecology Voluntary Cleanup Program (Site ID:13051) and the results of AEG's investigation were included in a subsurface investigation report[2] that was submitted to Ecology. In December 2016, Ecology issued a letter[3] requesting additional information prior to providing an opinion regarding the establishment of appropriate cleanup standards or cleanup actions (if necessary) at the project site.

3.0 INFORMATION REQUESTED BY ECOLOGY

3.1 GENERAL SITE INFORMATION

The following information was requested by Ecology in the December 2016 opinion letter[3]:

1. *Verify the historical occupancy and operations at the project site.*
2. *Where known, present a summary of dry cleaning years of operation, chemical inventory, handling, and disposal process.*
3. *Provide building construction and utility details.*
4. *Clarify previously-unexplained information presented in AEG's April 2016 subsurface investigation report[2].*

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[1] Seven of the eight soil samples collected by AEG appear to have been collected from depths below the water table. Accordingly, those reported results may be biased high.

[2] *Subsurface Investigation Report; Conducted on: Adams Street Building; 6707 S Adams Street; Tacoma, Washington 98409*, prepared by AEG, dated April 28, 2016.

[3] Ecology 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

3.1.1 Historical Occupancy and Site Operations

The project site historically consisted of vacant land until approximately 1974, when the existing 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), and materials storage for a roofing installation company (2015 – present day).

3.1.2 Historical Dry Cleaning and Hazardous Substance Storage Activities

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 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. There were (and are) no floor drains located within 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.

3.1.3 Project Site Layout and Utilities

The project site structure consists of a single-level warehouse with an attached two-level office area. There are no floor drains located inside the building. One sanitary sewer line is located in the northeastern portion of the project site and connects 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 sewer line connection is located near monitoring well MW-1, where no elevated concentrations of PCE have been detected in groundwater.

Surface water that accumulates at the project site is generally expected to infiltrate the ground surface or flow across paved surfaces towards catch basins located to the west of the project site structure. No evidence of sumps, drains, septic systems, or other subsurface utilities were identified at the project site.

3.1.4 Clarification Regarding Information Previously Reported to Ecology

AEG's April 2016 subsurface investigation report[2] noted 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. Ecology requested additional information regarding the "former steam cleaning pad" and clarification regarding the significance of the dashed lines.

SEC has reviewed the AEG report, corresponded with 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 is 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 project site.

3.2 SOIL

The following information was requested by Ecology in the December 2016 opinion letter[3]:

1. *Delineate (vertically and aerially) the presence of PCE contamination in soil at the project site.*
2. *Examine the likelihood of preferential pathways to determine if there is a connection between impacts identified near groundwater monitoring wells MW-3 and MW-4.*

3.2.1 Delineation of PCE in Soil

Ecology requested delineation (vertically and aerially) of the presence of PCE contamination in soil at the project site. SEC agrees that additional delineation is necessary. Section 5.0 presents our approach for the collection of additional soil samples. It should be noted that the groundwater monitoring events previously conducted at the project site indicate that the depth to groundwater fluctuates seasonably between depths of 7.89 and 9.77 feet BGS. Accordingly, soil samples that were previously collected from depths below the water table were likely saturated.

We believe that the comparison of laboratory results representing saturated soil samples to soil-specific cleanup levels should be avoided, as saturated soil samples contain both soil and groundwater (and can result in a high bias). Accordingly, it is our professional opinion that PCE soil contamination should be delineated vertically from the ground surface to depths of no greater than the soil/groundwater interface (estimated at less than 10.0 feet BGS), below which only groundwater should be evaluated.

3.2.2 Discussion of Preferential Pathways

Ecology requested further examination of the likelihood of preferential pathways to determine if there is a connection between impacts identified near groundwater monitoring wells MW-3 and MW-4. There are no floor drains located inside the building and both MW-3 and MW-4 are located west of the sanitary sewer line. No evidence of sumps, drains, septic systems, or other subsurface utilities were identified between the two wells at the project site. Accordingly, no preferential pathways were identified between the two wells.

3.3 GROUNDWATER

The following information was requested by Ecology in the December 2016 opinion letter[3]:

1. *Determine the thickness of any potentially PCE-impacted aquifer(s) beneath the project site.*
2. *Identify the direction, depth, and distance of the nearest water supply wells from the project site.*
3. *Install additional groundwater monitoring well(s) to evaluate the extent of groundwater impact.*
4. *Implement a routine groundwater monitoring program at the project site.*

3.3.1 Thickness of PCE in Groundwater

Ecology requested a determination of the thickness of PCE contamination in groundwater beneath the project site. Section 5.0 presents SEC's approach regarding the collection of additional groundwater data.

3.3.2 Nearest Water Supply Wells

Ecology requested the directions, depths, and distances of the nearest water supply wells from the project site. On January 9, 2018, SEC conducted a search the Ecology Water Resources Database[4] for water wells located within approximately ¼ to ½ mile of the project site. The following table presents the water wells that were identified during SEC's search:

Well ID No.	Screened Interval (Depth in Feet BGS)	Distance[4] from Site (Feet BGS)	Direction[4] from Project Site
34044	244 – 285 (City of Tacoma Well)	> 450	North
34045	1,074 – 1,121 (City of Tacoma Well)	> 450	North
37882	40 – 60	>1,250	South-Southwest
38289	22 – 30	>1,250	South
40600	61.5 – 71.5 & 264 – 274 (Piezometers)	> 450	North-Northwest
274215	204 – 224 (Irrigation Well)	>3,500	West-Southwest

Copies of the corresponding well logs are presented in Appendix A.

3.3.3 Additional Groundwater Monitoring Wells

Ecology has requested the installation of additional groundwater monitoring well(s) at the project site. Section 5.0 presents SEC's approach regarding the installation of one or more additional monitoring well(s).

3.3.4 Groundwater Monitoring Program

Ecology requested the implementation of a routine groundwater monitoring program at the project site. On November 16, 2017, SEC accessed and sampled all project site wells during a fourth quarter 2017 groundwater monitoring event. The purpose of the November 16, 2017 groundwater monitoring event was to collect groundwater elevation data and to sample water from wells MW-1 through MW-4 for chemical analysis. The specific scope of services completed during the November 16, 2017 groundwater monitoring event was performed 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 procedures[5].

[4]https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/WellConstructionMapSearch.aspx

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

- 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.
- Transported the groundwater samples to Apex Laboratories of Tigard, Oregon for analysis of VOCs by EPA Method 8260C.

3.3.4.1 Groundwater Levels and Inferred Flow Directions

Groundwater was encountered in each well at depths ranging between approximately 8.06 and 8.65 feet below the ground surface (BGS). Based on our review of the November 16, 2017 elevation data, groundwater beneath the subject site appears to be flowing in a south-southwesterly direction. The groundwater elevation data obtained by SEC are presented on Table 1 and Figure 3.

The groundwater levels and inferred flow directions associated with monitoring wells MW-2, MW-3, and MW-4 are consistent with those reported by AEG[2]. A detailed discussion of groundwater flow directions from this groundwater monitoring event, previous events, and forthcoming events will be presented in the forthcoming RI report.

3.3.4.2 Groundwater Chemical Analytical Results

Groundwater samples MW-1 through MW-4 were analyzed for 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 corresponding MTCA Method A Cleanup Levels. The chemical analytical results are presented on Table 2 and are included in Appendix B.

Although additional deeper groundwater monitoring data will be required, the results of the November 2017 groundwater monitoring event indicate that the concentration of PCE in shallow groundwater beneath the project may have reduced to levels that will support regulatory closure of the site. A detailed discussion of groundwater chemical analytical results from this groundwater monitoring event, previous events, and future events will be presented in the forthcoming RI report.

3.4 SOIL GAS (VAPOR)

The following information was requested by Ecology in the December 2016 opinion letter[3]:

- *Utilize EPA Method TO-15 (rather than EPA Method 8260) to evaluate VOCs in soil gas.*
- *Conduct concurrent sub-slab, ambient (outdoor) air, and indoor air sampling at the project site.*

3.4.1 Supplemental Sub-Slab Vapor Sampling Program

Ecology requested the collection of supplemental sub-slab vapor samples utilizing EPA Method TO-15 (rather than EPA Method 8260) to evaluate VOCs in soil gas. On November 16, 2017, SEC advanced nine borings (SV-1 through SV-9 shown on Figure 4) 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. 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.

3.4.1.1 Vapor Chemical Analytical Results

Vapor samples SV-1 through SV-9 were analyzed for HVOCs and 2-propanol by EPA Method TO-15. PCE was detected in sub-slab vapor samples SV-5 and SV-6 at respective concentrations of 529 µg/m^3 and 588 µg/m^3, which slightly exceed the MTCA Method B Screening Level of 321 µg/m^3. VOCs were otherwise not detected in the sub-slab vapor samples collected at the project site at concentrations greater than corresponding MTCA Method B Screening Levels, which indicates that the area of impact to the vadose zone is limited to the east-central portion of the project site and the risk of an adverse vapor intrusion condition at the project site is low. The chemical analytical results are presented in Table 3. The chemical analytical laboratory report and chain-of-custody documentation are provided in Appendix B .

3.4.1.2 Interim Remedial Measure

On November 17, 2017, SEC drilled a 4-inch-diameter hole through the concrete floor slab near the former dry-cleaning machines, and placed a 3-inch-diameter PVC vent pipe equipped with an in-line fan in the 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 fan was activated.

3.5 SURFACE WATER AND SEDIMENT

Ecology requested a determination whether surface water or sediment pose a complete pathway (mechanism for transport) for PCE contamination at the project site. Based on our understanding of subsurface conditions and the layout of the project site, surface water and sediment would only be expected to accumulate in exterior areas of the project site. Since PCE at the project site was identified beneath pavement (with no floor drains) at the project site, surface water and sediment are not considered complete pathways for PCE at the project site.

3.6 TERRESTRIAL ECOLOGICAL EVALUATION

Ecology requested the preparation of 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. On January 10, 2017, SEC conducted a TEE simplified evaluation (contaminant analysis). Based on our findings, 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),

it is our professional opinion that no further terrestrial ecological evaluation is warranted. A copy of the completed TEE form is provided in Appendix C.

4.0 EIM DATA SUBMITTAL

The data summarized in this report are currently being entered into the Ecology EIM database, as required under WAC 173-340-840(5).

5.0 INVESTIGATIVE WORK PLAN

SEC intends to further investigate project site soil, groundwater, and vapor as summarized in the following sections.

5.1 SOIL

Ecology requested the delineation of PCE contamination in soil at the project site. As previously discussed, groundwater beneath the project site has been measured at depths ranging between 7.89 and 9.77 feet BGS. Since laboratory results representing saturated soil samples (containing both soil and groundwater) are difficult to compare to soil-specific cleanup levels, SEC proposes to delineate the extent of PCE soil contamination from the ground surface to depths of no greater than the soil/groundwater interface (estimated at less than 10.0 feet BGS). Specifically SEC intends to conduct the following scope of scope of services:

- Contact the Washington One-Call Utility Notification Center to mark the location of public utilities beneath the project site. In addition, subcontract a private utility locator to clear proposed boring locations prior to drilling.
- Subcontract a drilling contractor to complete 12 direct-push soil explorations (DP-1 through DP-12) to depths of up to approximately 10.0 feet BGS (contingent upon measured groundwater levels).
- Collect soil samples from each exploration for field screening and potential chemical analytical laboratory testing.
- Screen the soil samples in the field using visual methods, headspace vapor screening methods using a hand-held photoionization detector, and water sheen testing.
- Submit two soil samples from each exploration to an analytical laboratory for of HVOCs by EPA Methods 5035/8260.

The proposed soil exploration locations are presented in Figure 5. Soil exploration activities will be considered complete upon identifying the horizontal and vertical extent of vadose zone soil contamination exceeding MTCA Method A cleanup levels. If the aforementioned scope doesn't sufficiently delineate the horizontal or vertical extent of vadose zone soil impact, additional borings will be added. Also, if the chemical analytical results indicate the presence PCE at concentrations exceeding MTCA Method A cleanup levels near the soil-water interface, then a groundwater sample may become necessary (discussed below).

5.2 GROUNDWATER

The following information was requested by Ecology in the December 2016 opinion letter[3]:

- *Determine the thickness of any potentially PCE-impacted aquifer(s) beneath the project site.*

- *Install additional groundwater monitoring well(s) to evaluate the extent of groundwater impact.*

Ecology requested a determination of the thickness of PCE contamination in groundwater beneath the project site. PCE was not detected at concentrations greater than corresponding MTCA Method A Cleanup Level in any of the wells sampled by SEC in November 2017. To date, only three groundwater samples have been collected at the project containing PCE at concentrations greater than the corresponding MTCA Method A Cleanup Level. Although all three of these exceedances may be attributed to turbidity (related to the sample collection method), all three of these samples were collected from depths ranging between 10.0 and 15.0 feet BGS in the east-central portion of the project site structure (the apparent PCE source area). SEC proposes the installation of one deeper groundwater monitoring well (MW-3D shown on Figure 5) to a depth of 25.0 feet BGS to demonstrate whether concentrations of HVOCs in groundwater remain below MTCA Method A Cleanup Levels with increased depth.

If groundwater chemical analytical results obtained from proposed monitoring well MW-3D indicate the presence of PCE in groundwater at a depth of 25.0 feet BGS at a concentration greater than the MTCA Method A Cleanup Level, SEC will provide Ecology with a plan to obtain deeper groundwater data. Similarly, if soil chemical analytical results associated with borings discussed in Section 5.1 indicate the presence PCE in soil at concentrations exceeding MTCA Method A soil cleanup levels near the soil-water interface, then SEC will correspond with Ecology regarding the necessity for additional groundwater monitoring well(s).

Ecology requested the implementation of a routine groundwater monitoring program at the project site. On November 16, 2017, SEC accessed and sampled all project site wells during a fourth quarter 2017 groundwater monitoring event. SEC will conduct at least two additional quarterly groundwater monitoring events consisting of the collection and analysis of water from all project site wells. A detailed discussion of the resulting groundwater chemical analytical data and groundwater flow data will be presented in the forthcoming RI report.

5.3 VAPOR

Ecology requested a concurrent sub-slab, ambient (outdoor) air, and indoor air sampling event at the project site utilizing the EPA Method TO-15 analytical method. SEC intends to collect one sub-slab vapor sample (SV-10) concurrent with the collection of one indoor air sample (IA-1) and two ambient (outdoor) air samples BG-1 and BG-2 at the approximate locations shown on Figure 5.

Sub-slab vapor sample SV-10 will be collected from a sampling system consisting of laboratory provided 1-liter Summa™ canisters with an in-line filter (0.7 micron) and a flow controller (less than 200 milliliters per minute), which will connected to a decontaminated stainless steel soil-gas sampling probe via Teflon™ tubing. SEC will seal 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 will be used to create a reasonably closed system. The sampling train will be slowly purged using a photoionization detector and a leak-check system will be installed at this location consistent with previous samples collected at the project site. After purging the sample train and waiting at least 30 minutes (equilibration time), SV-10 will be collected.

Vapor samples IA-1, BG-1, and BG-2 will be collected from the breathing zone using laboratory-provided 5-liter summa sample containers and 8-hour flow controllers. The barometric pressure will be recorded, as requested by Ecology. All samples will be shipped to ESC Lab Sciences of Mt. Juliet, Tennessee under general chain-of-custody protocols for analysis of HVOCs and 2-propanol by EPA Method TO-15.

5.4 IMPLEMENTATION SCHEDULE

We have tentatively scheduled the aforementioned scope of services to occur on February 12th and 13th, 2018. Laboratory chemical analytical results are expected by February 28, 2018.

5.5 QUALITY ASSURANCE AND QUALITY CONTROL

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

5.5.1 Field Quality Assurance

Field quality assurance will consist of the following:

- Collection and analysis of field rinsate blanks
- Collection and analysis of field duplicate samples
- Maintenance of chain-of-custody documentation

Equipment rinsate blanks will be collected each day that field equipment is used to collect samples. The analytical results of the equipment blanks will be reviewed to evaluate the adequacy of the equipment decontamination procedures and the possibility of cross-contamination caused by decontamination of sampling equipment. The equipment rinsate samples will be collected from the distilled water used to rinse soil and groundwater sampling equipment after decontamination. The rinsate blanks will be analyzed for HVOCs by EPA Method 8260/5035 (as appropriate).

Field duplicates consist of two samples collected sequentially from one sample location to assess data variability. If necessary, relative percent differences for field duplicates will be calculated to assess the data precision and accuracy and potential variability caused by sample handling. Field duplicate samples will be collected at a minimum frequency of 10 percent of the total number of samples submitted for each analysis.

5.5.2 Laboratory Quality Assurance and Objectives

The laboratory maintains an internal QA program as documented in its laboratory QA manual. 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. Any data quality exceptions documented by the laboratory will be reviewed by SEC and will be addressed in the final RI report.

Since the purpose of this investigation is to identify the extent and magnitude of PCE in soil, groundwater, and vapor at concentrations greater than MTCA Method A cleanup levels (for soil and groundwater) and MTCA Method B screening levels (for vapor) for unrestricted land use. Because of

this, it is imperative that the laboratory MRLs are less than or equal to the corresponding cleanup and screening levels. SEC will coordinate with the chemical analytical laboratories to ensure that laboratory RDLs are less than or equal to the regulatory criteria prior to conducting sampling activities to ensure that the data generated will be sufficient to meet the goals of this project.

5.6 REPORTING

SEC will summarize the results of future investigation activities in the forthcoming RI report, which will include a description of the methods used, summary of the subsurface conditions encountered, evaluation of the analytical data, soil exploration logs, site plans, analytical reports, and chain-of-custody documentation. The data generated during future sampling activities will be entered into the Ecology EIM database, as required under WAC 173-340-840(5).

5.7 IDW DISPOSAL

SEC will subcontract a licensed waste disposal service to dispose of all investigation-derived waste (soil cuttings, purge water, and decontamination water) generated at the project site.

6.0 LIMITATIONS

The information presented in this report is based on the above-described research. Information provided by others was relied on in our description of historical conditions and review of regulatory databases and files. SEC makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions relating to a property. The available data does not provide definitive information regarding all past uses, operations, or incidents at the project site or adjacent properties. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions relating to a property. There is always a potential that areas with contamination that were not identified during this assessment exist at the project site or in the study areas. Further evaluation of such potential would require additional research, subsurface exploration, sampling, and/or testing.

Some substances may be present in the project site vicinity in quantities or under conditions that may have led or may lead to contamination of the project site but are not included in current local, state, or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. SEC cannot be responsible if the standards of all appropriate inquiry or regulatory definitions of hazardous substance change or if you are required to meet more stringent standards in the future. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

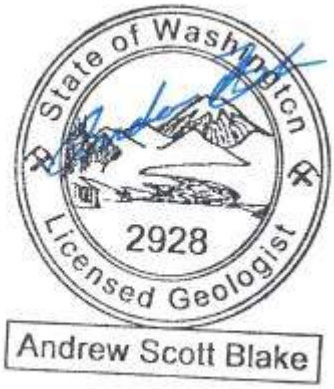
Reliance on this report by other parties is strictly at the risk of those parties, and SEC will grant no third-party reliance unless specifically requested in writing by our client for whom this report was prepared. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

We appreciate the opportunity to work with you on this project. Please call if you have questions regarding this report.

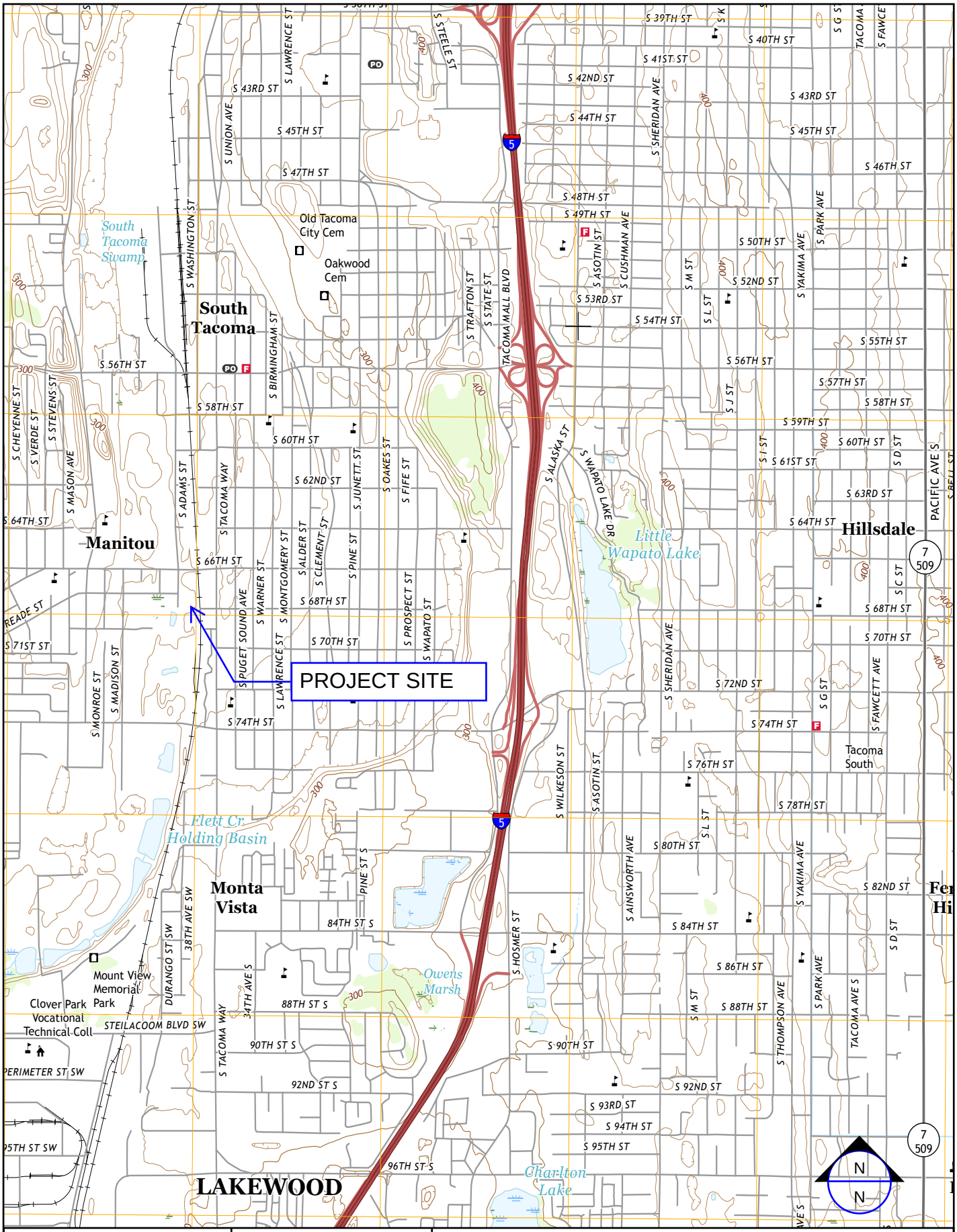
Sincerely,

Succeed Environmental Consulting LLC

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



FIGURES



SUCCEED ENVIRONMENTAL CONSULTING, LLC	HE-1-01	VICINITY MAP	
	JANUARY 2018	6707 SOUTH ADAMS STREET TACOMA, WASHINGTON	FIGURE 1

SITE PLAN

FIGURE 2

6707 SOUTH ADAMS STREET
TACOMA, WASHINGTON

COMMERCIAL LAND

SOUTH ADAMS STREET

RAILWAY

MW-1

OFFICE AREA

SV-1

OFFICE

SV-2

SV-3

CLOSET / RESTROOMS

FORMER COMMERCIAL WASHING MACHINE FOUNDATION

SV-4

MW-4

SV-5

MW-3

SV-6

COMMERCIAL BUILDING
6707 SOUTH ADAMS STREET
(GROUND-LEVEL LAYOUT)

SV-7

SV-8

SV-9

WAREHOUSE

MW-2

COMMERCIAL LAND

LEGEND:

- LOCATION OF FORMER DRYCLEANERS (APPROXIMATE)
- MW-1 GROUNDWATER MONITORING WELL
- SV-1 SUBSLAB VAPOR SAMPLE LOCATION
- SANITARY SEWER LINE LOCATION (APPROXIMATE)

N
N

(APPROXIMATE SCALE IN FEET)

50

SITE PLAN BASED ON FIELD MEASUREMENTS AND OBSERVATIONS MADE BY SEC. THIS FIGURE SHOULD BE CONSIDERED APPROXIMATE.

HE-1-01

JANUARY 2018

SUCCEED ENVIRONMENTAL CONSULTING, LLC

SOUTH ADAMS STREET

RAILWAY

MW-1

MW-2

MW-3

MW-4

91.36

91.34

91.34

91.36

LEGEND:

LOCATION OF FORMER DRYCLEANERS (APPROXIMATE)

MW-1 GROUNDWATER MONITORING WELL

91.36 GROUNDWATER SURFACE COUNTOUR (ELEVATION DENOTED IN FEET)

INFERRED FLOW DIRECTION

N

N

(APPROXIMATE SCALE IN FEET)

50

SITE PLAN BASED ON FIELD MEASUREMENTS AND OBSERVATIONS MADE BY SEC. THIS FIGURE SHOULD BE CONSIDERED APPROXIMATE.

INFERRED GROUNDWATER SURFACE COUNTOURS AND FLOW DIRECTION

6707 SOUTH ADAMS STREET
TACOMA, WASHINGTON

FIGURE 3

HE-1-01

JANUARY 2018

SUCCEED ENVIRONMENTAL CONSULTING, LLC

SUB-SLAB VAPOR SAMPLING RESULTS

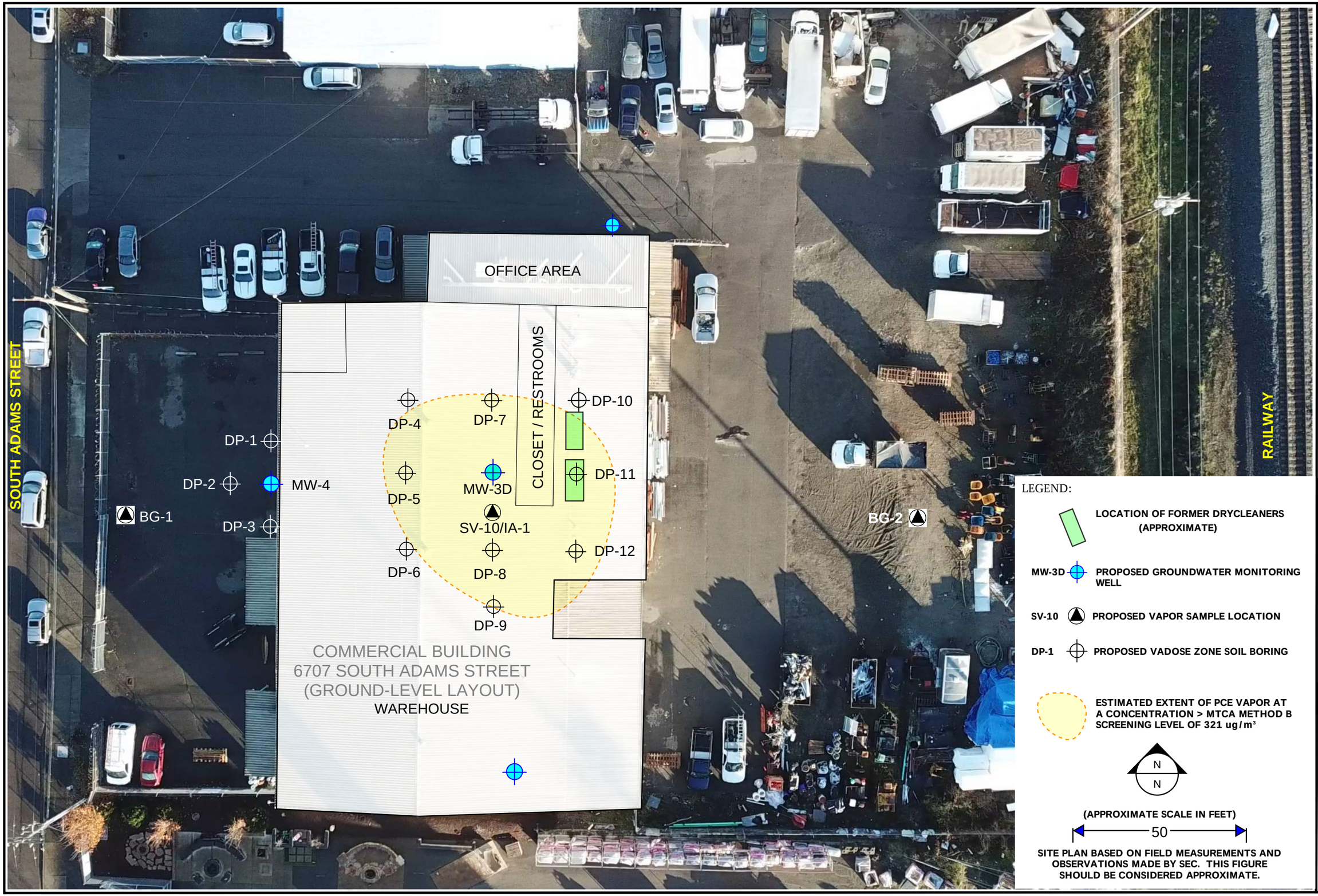
6707 SOUTH ADAMS STREET
TACOMA, WASHINGTON

FIGURE 4

HE-1-01

JANUARY 2018

SUCCEED ENVIRONMENTAL CONSULTING, LLC



EXPLORATION PLAN

6707 SOUTH ADAMS STREET
TACOMA, WASHINGTON

FIGURE 5

HE-1-01

JANUARY 2018

SUCCEED ENVIRONMENTAL CONSULTING, LLC

TABLES

TABLE 1
Summary of Groundwater Elevations and Purge Stabilization Parameters
6707 S Adams Street
Tacoma, Washington
16-Nov-17

Sample I.D.	Screened Interval (feet BGS)	Time	Depth to Water (Feet)	Groundwater Elevation	pH	ORP (mV)	DO (mg/L)
			Results				
MW-1	9.0 - 19.0	12:57	8.06	91.39	--	--	--
		17:10	8.06	91.39	--	--	--
		17:15	--	--	6.50	13.2	6.0
		17:20	--	--	6.50	10.3	6.0
		17:25	--	--	6.50	11.6	6.0
		17:30	--	--	6.50	12	6.0
		17:35	--	--	6.50	10.5	6.0
MW-2	6.0 - 16.0	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
		15:30	--	--	6.50	22.5	6.0
		15:35	--	--	6.50	27.2	6.0
		15:45	--	--	6.50	34.0	6.0
		15:55	--	--	6.50	37.2	6.0
		16:05	--	--	6.50	28.0	6.0
MW-3	7.0 - 16.0	12:50	8.65	91.35	--	--	--
		14:45	8.65	91.35	--	--	--
		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
		14:05	--	--	6.50	42.2	6.1
		14:15	--	--	6.50	30.3	6.0
		14:25	--	--	6.50	37.7	6.0
		14:35	--	--	6.50	32.3	6.0
MW-4	12.0 - 17.0	12:55	8.32	91.34	--	--	--
		13:05	8.32	91.34	--	--	--
		16:15	8.32	91.34	--	--	--
		16:25	--	--	6.40	37.1	6.0
		16:30	--	--	6.50	44.5	6.0
		16:45	--	--	6.50	44.9	6.0

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

Sample I.D.	Screened Interval (feet BGS)	Sample Date	Collected By	Chloroform	Tetrachloroethylene (PCE)	Trichloroethlyene (TCE)	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Vinyl Chloride
				Results (ug/L)					
MW-1	9.0 - 19.0	11/16/17	SEC	**4.32**	0.200 U	0.200 U	0.200 U	0.200 U	0.200 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-3	7.0 - 16.0	11/16/17	SEC	0.500 U	**4.54**	0.200 U	0.500 U	0.500 U	0.200 U
MW-4	12.0 - 17.0	11/16/17	SEC	0.500 U	**2.39**	0.200 U	0.200 U	0.200 U	0.200 U
MTCA Method A Cleanup Levels (WAC 173-340-900)				NE	5.0	5.0	NE	NE	0.2
EPA MCLs (dated June 2017)				80	5.0	5.0	70	100	2.0

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.
NE: not established

TABLE 3
Summary of Vapor Sample Chemical Analytical Results
VOCs by EPA Method TO-15
6707 S Adams Street
Tacoma, Washington

Sample I.D.	Sample Type	Sample Date	Collected By	1,1-Dichloroethene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	2-Propanol	Tetrachloroethylene (PCE)	Trichloroethlyene (TCE)	Vinyl Chloride
				Results (ug/m^3)						
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
MTCA Method B Screening Levels -C- (revised 2015)				NE	NE	NE	NE	321	12.3	9.33

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

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

DUP.

Application No. G2-27861

Permit No. .....

(1) **OWNER:** Name City of Tacoma Address PO Box 11007, Tacoma, WA 98411

(2) **LOCATION OF WELL:** County Pierce — NW ¼ NE ¼ Sec. 37 T. 20 N., R. 2E W.M.

Bearing and distance from section or subdivision corner N. 25 (Law)

(3) **PROPOSED USE:** Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 87.2
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 16 inches.
Drilled 400 ft. Depth of completed well 293 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 20 " Diam. from 0 ft. to 33 ft.
Threaded ☐ 16 " Diam. from 0 ft. to 244.5 ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐ Manufacturer's Name Johnson
Type 304 Stainless Model No. 16" Teles.
Diam. 14 Slot size 0.100 from 244.5 ft. to 285 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 33 ft.
Material used in seal Cement + 5% Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level 245 ft.
Static level 22.24 ft. below top of well Date 5/11/88
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Carr/Assoc
Yield: 2000 gal./min. with 71.32 ft. drawdown after 28 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1	47.40	40	29.46	140	26.26
10	33.42	65	27.41	200	25.72
20	30.51	100	26.57	240	25.40

Date of test 5/11-12/88
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) **WELL LOG:**
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Grvl, sand, loose, water-25'	0	40
Grvl, sand, silt, gray-brn	40	43
Grvl, sand, water	43	67
Grvl, sand, silt, yellow-brn	67	70
Grvl, sand, water	70	94
Grvl, sand, silt, peat-128'	94	142
Grvl, sand, water	142	150
Grvl, sand, silt, yellow-brn	150	160
Grvl, sand, water, orange-brn	160	170
Grvl, sand, silt, hard	170	180
Grvl, sand, water	180	207
Grvl, sand, silt, hard	207	242
Grvl, sand, water	242	294
Silt, gray-green	294	400

RECEIVED SEP 12 1988 DEPARTMENT OF ECOLOGY

SEP 00 1988 DEPARTMENT OF ECOLOGY NORTHWEST REGION

Work started 10-19 19 87 Completed 5-16 19 88

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Co.
(Person, firm, or corporation) (Type or print)
Address 219 So. 115th St. Tacoma, WA 98444

[Signed] (Well Driller)

License No. 0419 Date 9-2 19 88

(USE ADDITIONAL SHEETS IF NECESSARY)

DUP. (Test Well)

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name City of Tacoma Address PO Box 11007, Tacoma, WA 98411

(2) LOCATION OF WELL: County Pierce — NW ¼ NE ¼ Sec 27 T 20 N. R 2E W.M.
25

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☒ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 88.1
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 1139 ft. Depth of completed well 1123 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 8 " Diam. from 0 ft. to 273 ft.
Threaded ☐ 6 " Diam. from 0 ft. to 1026 ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐ (upper zone)
Type of perforator used Star
SIZE of perforations ¼ in. by 1 in.
400 perforations from 1002 ft. to 1022 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐ (lower zone)
Manufacturer's Name Johnson
Type 304 Stainless Model No. 5" P.S.
Diam. 5 Slot size 0.020 from 1074 ft. to 1090 ft.
Diam. 5 Slot size 0.020 from 1105 ft. to 1121 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 245 ft.
Upper Static level 143.52 ft. below top of well Date 5/16/88
Lower Artesian pressure 151.26 lbs. per square inch Date 6/08/88
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Carr/Assoc
Upper Yield: 330 gal./min. with 24.30 ft. drawdown after 48 hrs.
Lower " 250 " " 68.71 " " 22 " "
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) (Upper zone)

Time	Water Level	Time	Water Level	Time	Water Level
6	151.08	30	150.80	100	150.35
10	151.02	60	150.58	120	150.25
20	150.89	75	150.49	550	148.63

Date of test 5/16-18/88
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 56°F Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Sand, silt, gravel	0	55
Sand, gravel, water-bearing	55	127
Sand, gravel, rusty, wtr-brg	127	220
Cobbles, sand, grvl, wtr-brg	220	284
Clay	284	288
Sand, water-bearing	288	298
Clay	298	323
Sand, silty, gray	323	350
Clay, gray, sand, silty	350	360
Silt, brown	360	417
Sand, grvl, silt, wood-420'	417	480
Sand, grvl layers, silt bndr	480	555
Sand, silt, clay, grvl lyrs	555	609
Silt, gray, sand, silty	609	620
Sand, gravelly, gray	620	624
Sand, silt, sandy, red-gray	624	638
Gravel & sand, wtr-brg	638	665
Silt, sandy gray, grvl zones	665	680
Silt, brown, sand, layers	680	690
Sand, silty gry, 6" grvl lyr	690	712
Silt, clay, grn, gry, tan	712	725
Sand, becoming gravelly	725	735
Clay, sand, silt, grvl lyrs	735	770
Sand, silt, clayey pumiceous	770	797
Sand, silt lyrs, pea grvl	797	815
Sand, silt lyrs, grvl lyrs	815	860
Sand, silt & clay, red-brn	860	920
Sand, gravel, silt layers	920	952
Pea grvl, sand, silt lyrs	952	1000
Grvl, sandy grvl, mud loss	1000	1023
Gravel with binder	1023	1046
Clay, brown, gray	1046	1077
Sand, some clay layers	1077	1139

RECEIVED SEP 08 1988 DEPARTMENT OF ECOLOGY NORTHWEST REGION

Work started 1-28 19 88 Completed 6-10 19 88

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Co.
(Person, firm, or corporation) (Type or print)
Address 219 So. 115th Tacoma, WA 98444

[Signed] (Well Driller)

License No. 0419 Date 9-2 19 88

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

WELL LOG Well No. 2 No. Appli. 910
Cert. 1060-A

Date April 25, 1949

Record by L. R. Gaudio

Source Driller's Record

Location: State of WASHINGTON

County Pierce

Area

Map

N½ of W.P. Daugherty D.L.C.
¼ ¼ sec. 25 T. 20 N., R. 2 E. W.

DIAGRAM OF SECTION

Drilling Co. L. R. Gaudio

Address Route 6 Box 151; Tacoma

Method of Drilling

Owner Louis J. Schuler Date April 25 1949

Address Tacoma, Wash.

Land surface, datum ft. above / below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Topsoil & gravel	16	16
	Clay, sand & gravel	4	20
	Water gravel	33	53
	Sand & water gravel	9	62
	Pump Test:		
	Dim: 62' x 10" Drilled		
	SWL: 9'		
	DD: 9'		
	Yield: 450 g.p.m.		
	Casing: 10" dia. from 0 to 62'		
	Perforations:		
	250 perf. with Mills Knife from 40 to 60 ft.		

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Turn up

Sheet of sheets

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

WELL LOG Well No. 1 No. Appli. 910
Cert. 1060-A

Date April 21, 1948

Record by L. R. Gaudio

Source Driller's Record

Location: State of WASHINGTON

County Pierce

Area

Map N½ of W.P. Daugherty D.L.C. ¼ ¼ sec. 25 T. 20 N., R. 2 E. W.

DIAGRAM OF SECTION

Drilling Co. L. R. Gaudio

Address

Method of Drilling Date April 22 1948

Owner Louis J. Schuler

Address Tacoma, Wash.

Land surface, datum ft. above / below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Top soil & gravel	16	16
	Clay, sand & gravel	4	20
	Gravel, water bearing	33	53
	Sand & water gravel	9	62
	Pump Test:		
	Dim: 62' x 10" Drilled		
	SWL: 9'		
	DD: 25'		
	Yield: 450 g.p.m.		
	Casing: 10" dia. std. drive pipe from 0 to 62'		
	Perforations: 250 Mills knife perf. from 40 to 60'		

Sheet of sheets

Turn up

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

No. Appli. 4573

WELL LOG

Date 5-12, 1959

Record by well driller

Source driller's record

Location: State of WASHINGTON

County Pierce

Area

Map W.P. Dougherty D.L.C.

¼ ¼ sec 25 T. 20 N., R. 2 E. W.

Diagram of Section

Drilling Co. G. H. Hillman

Address

Method of Drilling Date 4-23, 1959

Owner Melvin Chase

Address Tacoma, Washington

Land surface, datum ft above below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Top soil	8	8
	Gravel & water, some clay	14	22
	Clean water bearing gravel	9	31
	PUMP TEST:		
	Dim. 31'x10"		
	SWL: 35 inches		
	DD: 9 inches		
	~~Yield: 200 g.p.m.~~		
	~~Type & size of pump: Test pump 4"~~ contractor pump		
	Type & size of engine; 10 h.p. gas		
	CASING:		
	10" diam. std. blk. pipe from 0 to 31 ft.		
	~~PERFORATIONS:~~		
	~~9 perforations every 8" from 22 to 30 ft.~~		

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Turn up

Sheet of sheets

RESOURCE PROTECTION WELL REPORT

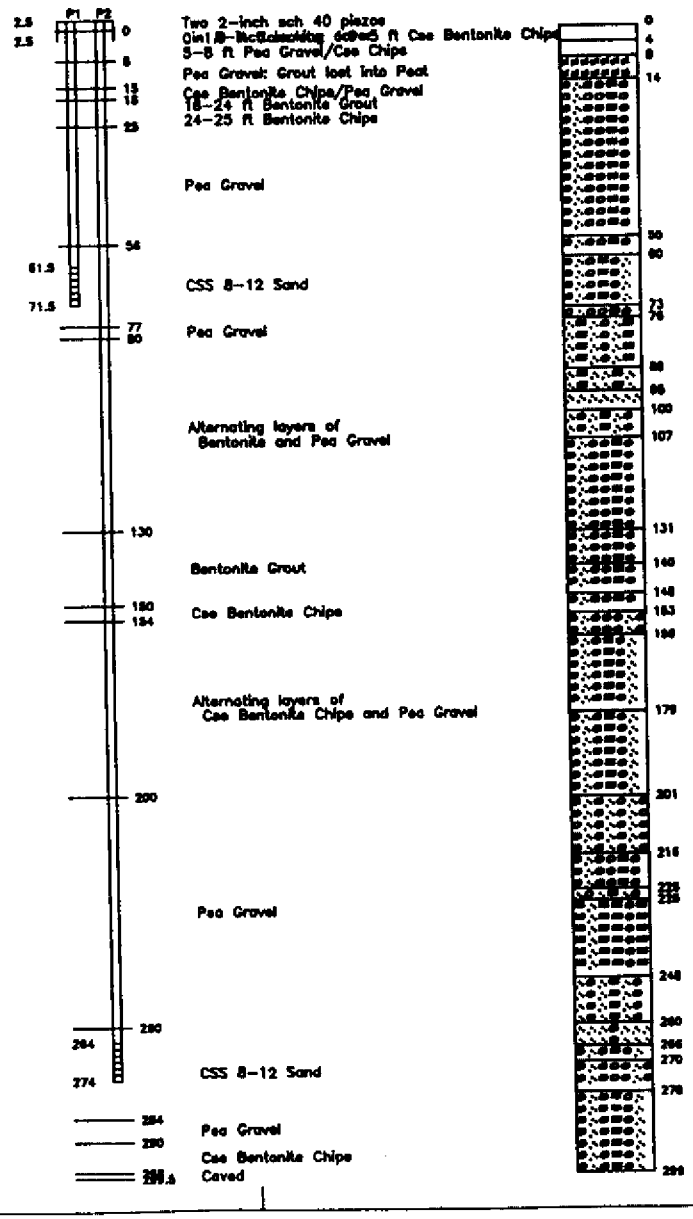
START CARD NO. 005659

PROJECT NAME: Tacoma Wellhead Protection
WELL IDENTIFICATION NO. MW 92.2
DRILLING METHOD: Cable Tool
DRILLER: John Morris
FIRM: Tacoma Pump & Drilling Co., Inc.
SIGNATURE: [signature] FOR JMORRIS 0684
CONSULTING FIRM: Carr/Associates, Inc.
REPRESENTATIVE: Don Kellum

COUNTY: Pierce
LOCATION: NE ¼ NE ¼ Sec 25 Twn 20N R 2E
STREET ADDRESS OF WELL: South 66th Street and Adams Street
WATER LEVEL ELEVATION: P1 = 222; P2 = 217
GROUND SURFACE ELEVATION: ± 235
INSTALLED: 6-24-92
DEVELOPED: 8-18-92

AS-BUILT | WELL DATA | FORMATION DESCRIPTION

MW 92.2
PIEZO CONSTRUCTION



TPU Monitoring Well 92.2

FILL: Sand, Gravel, Topsoil
FILL?: Silt, Sand, Organic matter
PEAT, dark brown, soft, saturated
GRAVEL, SAND, SILT: till-like making water below 30 ft
GRAVEL, SAND, SILT; WL 17 ft
GRAVEL, SAND, decreasing silt; WB
GRAVEL, SAND, SILT; WB
SAND, SILT, GRAVEL; fairly soft denser 81-85 ft
SAND, silty, cemented
SAND, fine to medium, brn/red
SAND & GRAVEL, silty, tight; minor WB
GRAVEL, SAND, SILT, brn: till-like minor WB
GRAVEL, SAND, SILT: till-like, dense
GRAVEL, SAND, SILT: increasing sand minor WB
GRAVEL, SAND, SILT: till-like wl cobbles
GRAVEL, sandy, loose WB, 8.75 gpm/ft, WL 44 ft
GRAVEL, SAND, SILT, cemented WL down
GRAVEL, SAND, SILT, siltbound, brown darker brown 197-201 ft
Layered: clean SAND & GRVL, silty GRVL: WB bail & drv 201-204 ft WL 61 ft
GRAVEL, silty, sandy: Till-like
SAND, small-lg GRVL, trace silt
SILT layers, brown, hard, sandy to gravelly
SAND, gray/brn, with small to lg GRVL cemented or silt-bound
SAND, loose, med-sml grvl, trace silt; WB
SAND, GRVL, SILT; layered, siltbound
GRAVEL, sandy, loose, trace silt; med SAND 271-278 ft WB: bail & drive
GRAVEL, sandy, siltbound, 1-3 inch sizes cemented SAND 281-293 ft drilled open hole 291-299 ft

SCALE: 1" = _____ PAGE _____ OF _____

ECY 050-12 (Rev. 11/89)

Appli: No. 9669
Per: No. 8851
Cert: No.

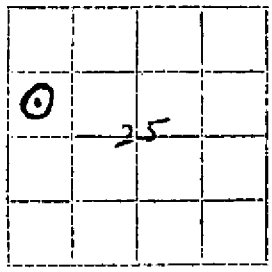
STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL LOG

Record by Driller
Source Drillers Record

Location: State of WASHINGTON
County Pierce
Area
Map
¼ ¼ sec 25 T 20 N., R 2E E. W.

Diagram of Section



Drilling Co. Richardson Well Drilling Company
Address P.O. Box 2266, Tacoma, Wash. 9844
Method of Drilling Cable Date March 26, 19 69
Owner Calvary Cemetery Asso., Inc.
Address 7201 54th Ave. West, Tacoma, Wash.
Land surface, datum ft above below
SWL: 28.6' Date March 21, 1969 19 Dims.: 16"x224'

Correlation	Material	From (feet)	To (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Irrigation		
	topsoil & dirty gravel	0	2
	clay, sand & gravel, yellow	2	41
	sand with gravel, fine silty	41	53
	sand, blue clay with gravel	53	70
	clay, sand & gravel, yellow	70	91
	sand & gravel fine, course	91	97
	clay, sand & gravel, gray	97	140
	clay, sand & gravel, yellow	140	155
	sand & gravel, yellow silty	155	160
	hardpan	160	177
	clay, sand & gravel, yellow	177	180
	hardpan	180	196
	clay, sand & gravel, yellow	196	214
	sand & gravel, fine & course	214	224

Turn up

Sheet ____ of ____ sheets

File number 20/2E-25E

WELL LOG.—Continued No...../.....

CORRELATION	MATERIAL	From (feet)	To (feet)
	Depth forward	———	
	clay, sand & gravel, gray	224	226
	clay, sand & some gravel, gray	226	231
	clay, sand & gravel, yellow & green	231	238
	clay & some gravel, yellow	238	270
	casing 16" from 0 to 204'		
	screens installed from 204-210'		
	210-214'		
	214-224'		
	Yield: 400 gpm with 169' DD after 4 hrs		
	402 gpm with 174' DD after 8 hrs		
	Recovery data- Date of Test: March 24, 1969		
	Pump: 50 HP, Turbine, Jacuzzi Bros., Inc.		

S. F. No. 7449—OS—12-65.

APPENDIX B

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 A7K0815, 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: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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.

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

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 Nerenberg, Lab Director

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Apex Labs

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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

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-1 (A7K0815-01RE1)			**Matrix: Water**		**Batch: 7111035**			
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 Nerenberg, Lab Director

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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

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-1 (A7K0815-01RE1)			**Matrix: Water**		**Batch: 7111035**			
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)			*Recovery: 109 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*93 %*	*Limits: 80-120 %*	"	"	"	
MW-2 (A7K0815-02RE1)			**Matrix: Water**		**Batch: 7111035**			
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 Nerenberg, Lab Director

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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

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-2 (A7K0815-02RE1)			**Matrix: Water**		**Batch: 7111035**			
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 (Surr)			*Recovery: 108 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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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

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-3 (A7K0815-03RE1)			**Matrix: Water**		**Batch: 7111035**			
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	"	"	"	"	

Apex Laboratories

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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

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-3 (A7K0815-03RE1)			**Matrix: Water**		**Batch: 7111035**			
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)			*Recovery: 109 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*97 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*95 %*	*Limits: 80-120 %*	"	"	"	
MW-4 (A7K0815-04RE1)			**Matrix: Water**		**Batch: 7111035**			
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	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	"	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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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

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW-4 (A7K0815-04RE1)			**Matrix: Water**		**Batch: 7111035**			
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 (Surr)			*Recovery: 108 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*94 %*	*Limits: 80-120 %*	"	"	"	

Apex Laboratories

Philip Nerenberg, Lab Director

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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

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							**Water**					
Blank (7111000-BLK1)					Prepared: 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 Nerenberg, Lab Director

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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

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									**Water**			
Blank (7111000-BLK1)					Prepared: 11/22/17 11:02 Analyzed: 11/22/17 12:27							
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)			*Recovery: 110 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*93 %*	*80-120 %*			*"*					
LCS (7111000-BS1)					Prepared: 11/22/17 11:02 Analyzed: 11/22/17 11:30							
EPA 8260C												
Bromobenzene	19.1	0.250	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
Bromochloromethane	20.2	0.500	1.00	"	"	"	---	101	"	---	---	
Bromodichloromethane	21.6	0.500	1.00	"	"	"	---	108	"	---	---	
Bromoform	25.9	0.500	1.00	"	"	"	---	129	"	---	---	Q-56
Bromomethane	24.3	5.00	5.00	"	"	"	---	122	"	---	---	Q-56
Carbon tetrachloride	20.0	0.500	1.00	"	"	"	---	100	"	---	---	
Chlorobenzene	19.5	0.250	0.500	"	"	"	---	98	"	---	---	
Chloroethane	23.1	5.00	5.00	"	"	"	---	116	"	---	---	
Chloroform	20.4	0.500	1.00	"	"	"	---	102	"	---	---	
Chloromethane	15.9	5.00	5.00	"	"	"	---	79	"	---	---	Q-55
2-Chlorotoluene	19.3	0.500	1.00	"	"	"	---	97	"	---	---	
4-Chlorotoluene	18.4	0.500	1.00	"	"	"	---	92	"	---	---	
Dibromochloromethane	22.1	0.500	1.00	"	"	"	---	110	"	---	---	
1,2-Dibromo-3-chloropropane	21.7	2.50	5.00	"	"	"	---	108	"	---	---	
1,2-Dibromoethane (EDB)	20.4	0.250	0.500	"	"	"	---	102	"	---	---	
Dibromomethane	21.4	0.500	1.00	"	"	"	---	107	"	---	---	
1,2-Dichlorobenzene	19.7	0.250	0.500	"	"	"	---	98	"	---	---	
1,3-Dichlorobenzene	19.4	0.250	0.500	"	"	"	---	97	"	---	---	
1,4-Dichlorobenzene	19.7	0.250	0.500	"	"	"	---	98	"	---	---	

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Philip Nerenberg, Lab Director

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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

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									**Water**			
LCS (7111000-BS1)					Prepared: 11/22/17 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)			*Recovery: 106 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*97 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*91 %*		*80-120 %*				*"*			
Matrix Spike (7111000-MS1)					Prepared: 11/22/17 11:52 Analyzed: 11/22/17 19:59							
QC Source Sample: MW-4 (A7K0815-04)												
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 Nerenberg, Lab Director

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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

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							**Water**					
Matrix Spike (7111000-MS1)					Prepared: 11/22/17 11:52 Analyzed: 11/22/17 19:59							
QC Source Sample: MW-4 (A7K0815-04)												
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-54b
Bromomethane	277	50.0	50.0	"	"	"	ND	138	53-141%	---	---	Q-54
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-54c
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	106	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	222	2.50	5.00	"	"	"	ND	111	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	196	5.00	10.0	"	"	"	ND	98	73-127%	---	---	
Hexachlorobutadiene	190	25.0	50.0	"	"	"	ND	95	66-134%	---	---	
Methylene chloride	223	15.0	30.0	"	"	"	ND	112	74-124%	---	---	
1,1,1,2-Tetrachloroethane	227	2.00	4.00	"	"	"	ND	114	78-124%	---	---	
1,1,2,2-Tetrachloroethane	235	2.50	5.00	"	"	"	ND	117	71-121%	---	---	

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Philip Nerenberg, Lab Director

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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

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									**Water**			
Matrix Spike (7111000-MS1)					Prepared: 11/22/17 11:52 Analyzed: 11/22/17 19:59							
QC Source Sample: MW-4 (A7K0815-04)												
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)			*Recovery: 106 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*90 %*		*80-120 %*			*"*				

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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

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**					
Blank (7111035-BLK1)					Prepared: 11/27/17 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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Philip Nerenberg, Lab Director

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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

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			
Blank (7111035-BLK1)					Prepared: 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)			*Recovery: 108 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*98 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*				*"*			
LCS (7111035-BS1)					Prepared: 11/27/17 09:26 Analyzed: 11/27/17 09:54							
EPA 8260C												
Bromobenzene	19.7	0.250	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Bromochloromethane	20.6	0.500	1.00	"	"	"	---	103	"	---	---	
Bromodichloromethane	21.8	0.500	1.00	"	"	"	---	109	"	---	---	
Bromoform	25.3	0.500	1.00	"	"	"	---	127	"	---	---	Q-56
Bromomethane	21.2	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	19.8	0.500	1.00	"	"	"	---	99	"	---	---	
4-Chlorotoluene	18.5	0.500	1.00	"	"	"	---	93	"	---	---	
Dibromochloromethane	22.0	0.500	1.00	"	"	"	---	110	"	---	---	
1,2-Dibromo-3-chloropropane	19.5	2.50	5.00	"	"	"	---	98	"	---	---	
1,2-Dibromoethane (EDB)	19.8	0.250	0.500	"	"	"	---	99	"	---	---	
Dibromomethane	20.9	0.500	1.00	"	"	"	---	104	"	---	---	
1,2-Dichlorobenzene	19.6	0.250	0.500	"	"	"	---	98	"	---	---	
1,3-Dichlorobenzene	19.9	0.250	0.500	"	"	"	---	99	"	---	---	
1,4-Dichlorobenzene	19.8	0.250	0.500	"	"	"	---	99	"	---	---	

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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.	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)					Prepared: 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)	*Recovery: 104 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*96 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*91 %*	*80-120 %*	*"*

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Philip Nerenberg, Lab Director

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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

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260C

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep 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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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

Qualifiers:

Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +2%. The results are reported as Estimated Values.
Q-54b	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by +9%. The results are reported as Estimated Values.
Q-54c	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260C/8270D by -1%. The results are reported as Estimated Values.
Q-55	Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260C, however there is adequate sensitivity to ensure detection at the reporting level.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260C

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they 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. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	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).

Apex Laboratories

Philip Nerenberg, Lab Director

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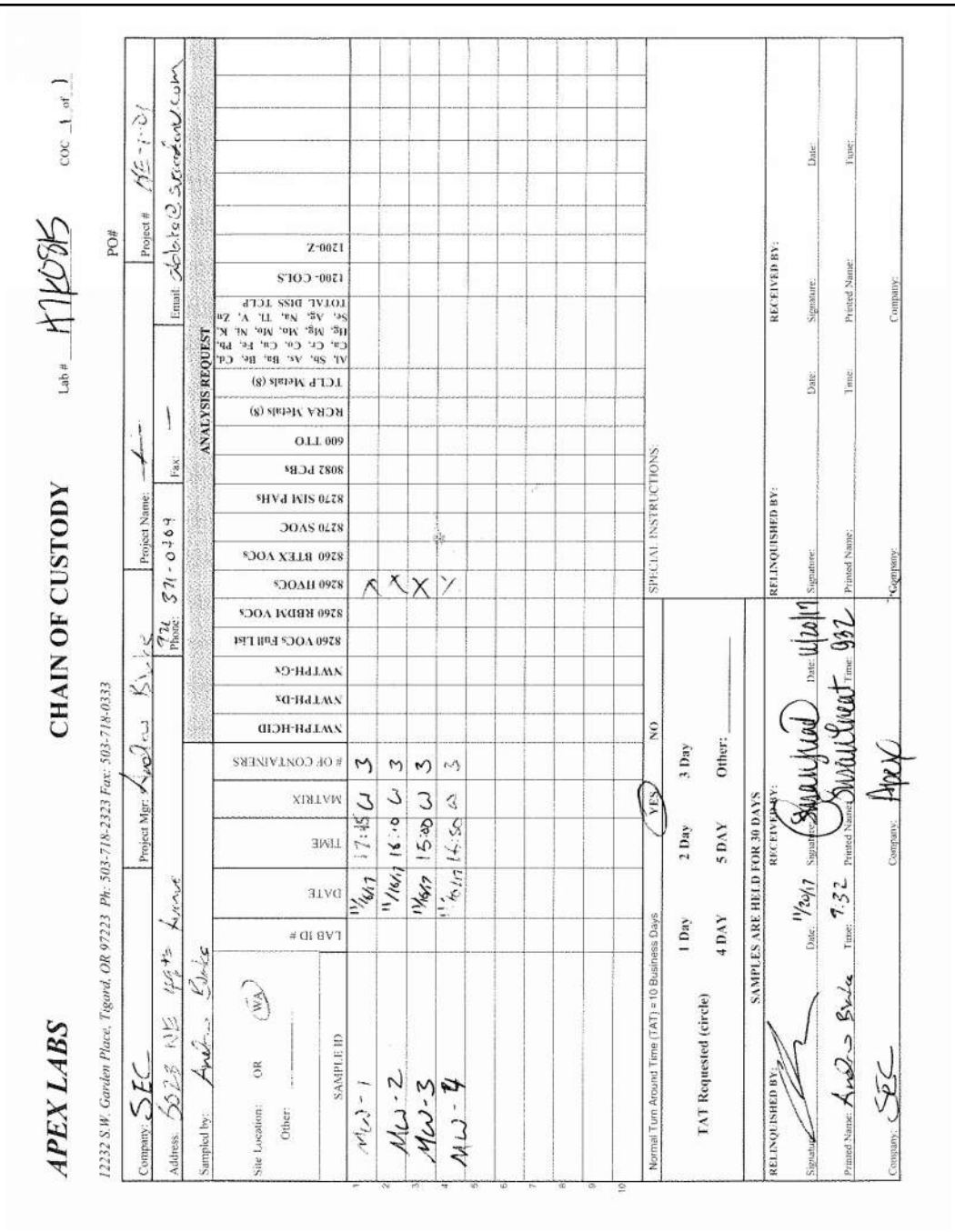
Succeed Environmental Consulting	Project: **HE-1-01**	
6028 NE 49th Ave.	Project Number: [none]	**Reported:**
Portland, OR 97218	Project Manager: Andrew S. Blake, R.G., L.G.	11/28/17 14:31



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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

APEX LABS COOLER RECEIPT FORM

Client: SEC Element WO#: A7 K0815

Project/Project #: K HE-1-01

Delivery info:

Date/Time Received: 11/20/17 @ 932 By: [illegible]

Delivered by: Apex___ Client ✓ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other_____

Cooler Inspection Inspected by: [illegible] : 11/20/17 @ 932

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes_____ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	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)	39						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KM : 11/22/17 @ 1105

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes ___ No X Comments: T on MW-3 reads 1455

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

KM

Do VOA Vials have Visible Headspace? Yes ___ No X NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___No___NA X

Comments:

Additional Information:

Labeled by: KM Witness: B Cooler Inspected by: — See Project Contact Form: Y

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

November 27, 2017

Succeed Environmental Consulting

Sample Delivery Group:	L952230
Samples Received:	11/18/2017
Project Number:	HE-1-01
Description:	

Report To: Andrew Blake
6028 NE 49th Avenue
Portland, OR 97218

Entire Report Reviewed By: Brian Ford

Brian Ford
Technical Service Representative

TABLE OF CONTENTS

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

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 19:40	11/21/17 19:40	AMC

SV-2 L952230-02 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 15:40 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 20:23	11/21/17 20:23	AMC

SV-3 L952230-03 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 15:45 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 21:04	11/21/17 21:04	AMC

SV-4 L952230-04 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 15:50 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 21:46	11/21/17 21:46	AMC

SV-5 L952230-05 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 15:55 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 22:28	11/21/17 22:28	AMC

SV-6 L952230-06 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 15:58 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 23:10	11/21/17 23:10	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG1045674	100	11/22/17 17:47	11/22/17 17:47	AMC

SV-7 L952230-07 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 16:05 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045184	2	11/21/17 23:52	11/21/17 23:52	AMC

SV-8 L952230-08 Air

Collected by: Andrew Blake | Collected date/time: 11/16/17 16:15 | Received date/time: 11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045171	2	11/21/17 22:27	11/21/17 22:27	MBF

SV-9 L952230-09 Air

Collected by	Collected date/time	Received date/time
Andrew Blake	11/16/17 16:25	11/18/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG1045171	2	11/21/17 23:14	11/21/17 23:14	MBF

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
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
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

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
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

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

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
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
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*		*98.5*				WG1045184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
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	20.6	140		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*		*97.4*				WG1045184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
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	78.0	529		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*		*101*				WG1045184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045184
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
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
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*116*				WG1045184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
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
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
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.5*				WG1045184

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045171
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045171
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045171
2-Propanol	67-63-0	60.10	2.50	6.15	6.10	15.0		2	WG1045171
Tetrachloroethylene	127-18-4	166	0.400	2.72	27.0	183		2	WG1045171
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG1045171
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045171
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.0*				WG1045171

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG1045171
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG1045171
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG1045171
2-Propanol	67-63-0	60.10	2.50	6.15	5.50	13.5		2	WG1045171
Tetrachloroethylene	127-18-4	166	0.400	2.72	39.7	270		2	WG1045171
Trichloroethylene	79-01-6	131	0.400	2.14	0.691	3.70		2	WG1045171
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG1045171
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.7*				WG1045171

Method Blank (MB)

(MB) R3267409-3 11/21/17 09:13

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL 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

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
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*				

Method Blank (MB)

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

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL 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

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
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*				

Method Blank (MB)

(MB) R3267792-3 11/22/17 09:05

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL 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

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
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-Bromofluorobenzene				*91.7*	*94.7*	*60.0-140*				

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

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	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
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.**

Succeed Environmental Consulting

Billing information:
Andrew Blake
6028 NE 49th Avenue
Portland, OR 97218

Pres Chk

Report to: **Andrew Blake**

Email To: **ablake@succeed-env.com**

Project Description: —

City/State Collected:

Phone: **971-371-0404**
Fax:

Client Project # NE-1-01

Lab Project # **Sucenvpor**

Collected by (print): **Andrew Blake**

Site/Facility ID # —

P.O. # —

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # —

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative: 15-15 AVOCs + IPA	Remarks	Sample # (lab only)
SV-1	—	Air	—	11/16/17	15:30	1	X		-01
SV-2	—		—		15:40	1	X		02
SV-3	—		—		15:45	1	X		03
SV-4	—		—		15:50	1	X		04
SV-5	—		—		15:55	1	X		05
SV-6	—		—		15:58	1	X		06
SV-7	—		—		16:05	1	X		07
SV-8	—		—		16:15	1	X		08
SV-9	—		—		16:25	1	X		09

Chain of Custody Page 1 of 1

ESC LABORATORY SCIENCES
THE LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L952236

Tab M228

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier __ _____

Tracking # 7305 8951 4228

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	11/17/17	FED EX			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: AMB °C Bottles Received: 9	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/18/17 Time: 8:45	Hold: Condition: NCF / OK

APPENDIX C

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

Step 1: IDENTIFY HAZARDOUS WASTE SITE	
Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: Adams Street Property	
Facility/Site Address: 6707-6709 S Adams Street, Tacoma, WA	
Facility/Site No: 13051	VCP Project No.: 13737

Step 2: IDENTIFY EVALUATOR			
Please identify below the person who conducted the evaluation and their contact information.			
Name: Andrew Blake		Title: Principal Geologist	
Organization: Succeed Environmental Consulting LLC			
Mailing address: 6028 NE 49th Avenue			
City: Portland	State: OR	Zip code: 97218	
Phone: 971-371-0404	Fax: --	E-mail: ablake@succeed-env.com	

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 2**.*

☒ No or Unknown *If you answered **"NO" or "UKNOWN,"** then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

- ☒ Yes — *If you answered **"YES,"** then answer **Question 2** below.*
- ☐ No or Unknown — *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

- ☒ Yes — *If you answered **"YES,"** then answer **Question 3** below.*
- ☐ No — *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

- ☐ Yes — *If you answered **"YES,"** then answer **Question 4** below.*
- ☒ No — *If you answered **"NO,"** then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

- ☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- ☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

- ☐ Area of soil contamination at the Site is not more than 350 square feet.
- ☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

- ☐ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

- ☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

1. Was there a problem? *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? *See* WAC 173-340-7493(3).

☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*

☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?
Check all that apply. See WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

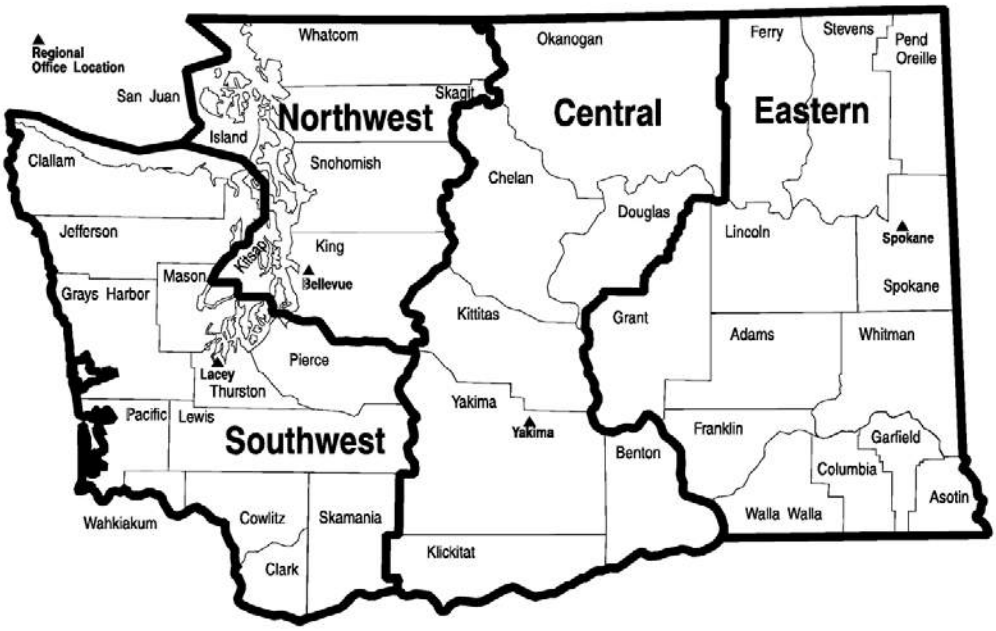
☐ Yes If so, please identify the Ecology staff who approved those steps:

☐ No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.

Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295



COMMON ACRONYMS AND ABBREVIATIONS

AEG	Associated Environmental Group, LLC of Olympia, Washington
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
BGS	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
DEQ	Oregon Department of Environmental Quality
Ecology	Washington Department of Ecology
EIM	Ecology Environmental Information Management System
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
ESC	ESC Lab Sciences of Mt. Juliet, Tennessee
HOT	Heating Oil Tank
HVOC	halogenated volatile organic compound
IDW	investigation derived waste
LUST	Leaking Underground Storage Tank
MDL	method detection limit
MRL	method reporting limit
MTCA	Model Toxics Control Act
PAHs	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RDL	reported detection limit
RI	remedial investigation
SEC	Succeed Environmental Consulting LLC
$\mu g/m^3$	micrograms per cubic meter
USGS	U.S. Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program
WAC	Washington Administrative Code