Supplemental Limited Site Investigation

Gibraltar Senior Living
10816 18th Avenue East
Tacoma, Pierce County, Washington

November 6, 2015
Terracon Project No. B2157004

Prepared for:
155 Tremont Ave, LLC
Bellingham, Washington

Prepared by:
Terracon Consultants, Inc.
Mountlake Terrace, Washington

November 6, 2015

155 Tremont Ave, LLC
4200 Guide Meridian, Ste. 101A
Bellingham, Washington 98226

Attn: Mr. Vinson Latimore

Re: Supplemental Limited Site Investigation
Gibraltar Senior Living
10816 18th Avenue East
Tacoma, Pierce County, Washington 98445
Terracon Project No. B2157004

Dear Mr. Latimore:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report of Supplemental Limited Site Investigation (LSI) activities completed at the site referenced above. The report presents data from recent field activities that included the completion of soil borings and the collection of soil vapor, soil and groundwater samples for chemical analysis. The activities were completed to address site data gaps raised by Ecology via electronic mail on July 22, 2015. Terracon conducted the Supplemental LSI in general accordance with our proposal (P81150266) dated September 3, 2015, your notice to proceed dated September 17, 2015, and the Supplemental Change Request dated October 26, 2015.

Terracon appreciates this opportunity to provide environmental engineering services to 155 Tremont Ave, LLC. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

FOR: Elizabeth Rachman, L.G., L.Hg.
Project Manager

Michael D. Noll, L.G., L.Hg.
Senior Project Manager

Eric A. Dubcak
Project Manager

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SUPPLEMENTAL LIMITED SITE INVESTIGATION
GIBRALTAR SENIOR LIVING
10816 18TH Avenue East, Tacoma,
Tacoma, Pierce County, Washington

Terracon Project No. B2157004
November 6, 2015

1.0 SITE DESCRIPTION

The site is located at 10816 18th Avenue East in Tacoma, Pierce County, Washington, and is comprised of one parcel encompassing approximately 1.42 acres of developed land. The site is occupied by a three-story, 7,529-square-foot nursing home built in 1920, a one-story, 2,169-square-foot nursing home built in 1920, and a single-story, 2,170-square-foot nursing home built in 1960. The site is currently occupied by a mental health facility, also known as Gibraltar Senior Living. A Topographic Map showing the site location is included as Exhibit 1 and a Site Diagram is included as Exhibit 2 in Appendix A. Detailed Site Diagrams are included in Appendix A for UST #1 (Exhibit 3), UST #2 (Exhibit 4) and UST 3 (Exhibit 5). Cross sections of the three UST excavations are included in Appendix A, Exhibit 6, 7 and 8, respectively.

Terracon performed a Limited Site Investigation (LSI) at the site (*Limited Site Investigation, Gibraltar Senior Living, 10816 18th Avenue East, Tacoma, WA, Terracon Project B2157004*) dated July 7, 2015) to characterize and identify existing impacts to soil following the removal of three heating oil underground storage tanks (USTs) and remedial efforts previously performed by Seattle Tank Services in October 2011.

Based on the findings of our LSI, previous remedial actions, and previous reports by others, Terracon submitted the LSI report to the Ecology Voluntary Cleanup Program (VCP) Site Manager for review. In summary, Ecology recommended the following to further characterize the site:

- Completion of a Terrestrial Ecological Evaluation (TEE).
- Further characterization of the lateral extent of impacts to the south of UST #3, located on the southern portion of the Property. The eastern and western extents had been previously defined, and the presence of a basement to the north was determined to have restricted the northern migration of impacts. However, soils impacted above the Site Specific MTCA Method B cleanup level of 8,027 milligrams per kilogram (mg/kg) were previously identified along the southern sidewall of the former UST #3 excavation. Ecology requested that soil and groundwater samples be collected south of the former excavation and analyzed for diesel-range total petroleum hydrocarbons (TPH).
- Further characterization of the impacts identified at UST #2, located on the western portion of the Property. A shallow soil sample (1 foot below ground surface, or bgs)

with a result of 12,000 milligrams per kilogram (mg/kg) diesel-range TPH had been reported on the eastern sidewall of the UST excavation; however, it was not clear whether the affected soil had been removed from, or remained on, the site.

- Completion of a Tier 1 vapor intrusion assessment.

Per the client's request, Terracon performed the additional site investigation tasks recommended by Ecology, as described in the following sections.

2.0 SCOPE OF SERVICES

Terracon's scope of work was conducted in general accordance with our proposal P81150266 dated September 3, 2015 and our Supplemental Change Request dated October 26, 2015. Upon mobilization to the site, it was determined that the building north of UST #3 had only a crawlspace and not a full basement. Therefore, the northern extent of the adversely-affected media in the vicinity of UST #3 required further characterization and a change order was issued for the additional work. Our scope of services included completion of the following tasks:

- Pre-Field Work Activities including a site-specific Health and Safety Plan (HASP), coordination of subcontractors and public and private utility location services.
- Advancement of three direct push borings and collection of soil samples from each boring. One shallow boring was placed at former UST #2, and two borings were located north and south of former UST #3. The southern boring at former UST #3 was advanced on the south-adjoining property.
- Installation of a temporary groundwater monitoring well within both direct push borings at former UST #3 and attempted collection of a groundwater sample from each boring. A groundwater grab sample was collected from the southern boring; however, the northern boring did not produce groundwater.
- Advancement of three sub-slab vapor points within the on-site structures and collection of one sub-slab vapor sample from each sampling point.
- Completion of laboratory analyses of soil, groundwater and soil vapor samples.
- Completion of the TEE.
- Preparation of this Supplemental LSI summary report.

This Supplemental LSI was conducted to further characterize the adverse impacts reported during the previous heating oil UST removal activities and our previous LSI, and to satisfy the recommendations issued by the Ecology VCP Site Manager in a July 2015 email.

2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These Supplemental LSI services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-11.

2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this Supplemental LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

2.3 Reliance

This report has been prepared for the exclusive use of 155 Tremont Ave. LLC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of 155 Tremont Ave. LLC and Terracon. Any unauthorized distribution or reuse is at 155 Tremont Ave. LLC's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, Supplemental LSI report, and Terracon's Agreement for Services. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to 155 Tremont Ave. LLC and all relying parties unless otherwise agreed in writing.

3.0 TERRESTRIAL ECOLOGICAL EVALUATION

Washington Administrative Code (WAC) 173-340-350 requires that a terrestrial ecological evaluation (TEE) be conducted as part of the VCP application in order to "determine the impact

or potential impact of the hazardous substance from the facility on natural resources and ecological receptors." For the purposes of this investigation, a simplified TEE was conducted in accordance with WAC 173-340-7492.

Based on the area of remaining contamination being less than 350 square feet, the simplified TEE was ended. Documentation of the TEE process is attached in Appendix E.

4.0 FIELD INVESTIGATION

Terracon has a 100% commitment to the safety of all its employees. As such, and in accordance with our *Incident and Injury Free*® safety goals, Terracon conducted the fieldwork under a site specific health and safety plan developed for this project. Work was performed using the Occupational Health and Safety Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots. In an effort to locate underground utilities in the work area, Terracon contacted the Washington State Utility Notification Center to arrange for public underground utility clearance for the proposed borings. In addition, Terracon subcontracted with a private utility location service to identify the locations and depths of the various utilities located near the boring locations and within the structure to avoid damage to such utilities.

On October 8, 2015 Terracon field staff, Emily Blakeway and Adam Stauffer, mobilized to the site to complete the field investigation. Field activities were performed in three locations at the site. Soil boring EB-15 was advanced at the approximate eastern excavation sidewall of former UST #2, soil boring EB-16 was advanced off-Property in a south-adjoining access road and EB-17 was added to the north of the structure associated with UST #3. Soil boring EB-15 was completed to confirm either the presence or absence of a reported concentration of diesel-range TPH. EB-16 was advanced in order to determine the southern extent of impacts at UST #3 and soil boring EB-17 was drilled to determine the northern extent of impacts at UST #3 since it was determined that the north-adjoining building lacked a basement. Soil vapor sampling points were advanced at the following locations: in the northwestern portion of the building near UST #2 (SSV-1), in the northern portion of the building near UST #1 (SSV-3) and in the southern portion of the on-site building near UST #3 (SSV-2). Boring locations relative to site features are depicted on Exhibit 2 of Appendix A. Detailed diagrams of the three areas are depicted on Exhibits 3, 4 and 5 of Appendix A.

4.1 Soil Sampling

A total of three soil borings (EB-15, EB-16 and EB-17) were advanced utilizing direct-push sampling technology on a truck-mounted drill rig owned and operated by Holocene Drilling, Inc., a Washington State licensed driller. All borings were advanced using a direct-push sampler equipped with disposable acetate sample sleeves. Throughout the drilling operation, soil samples

were obtained continuously (to the extent practical) from four-foot long pushes driven into the ground using a percussion hammer. The steel sampling tube was extracted from the hole and the liners were removed and split open. Drilling and non-disposable sampling equipment was cleaned using an Alconox® wash and potable water prior to the beginning of the project and before collecting each soil sample.

Boring EB-15 was advanced to 1 foot bgs and borings EB-16 and EB-17 could only be advanced to 10 feet bgs due to drilling refusal.

Soil samples from select depths were field-screened using a photoionization detector (PID). Samples were screened by first segregating, at a minimum, one ounce of soil into a sealed plastic bag. The samples were placed into the sealed bag and set aside to allow volatilization from the sample to accumulate. Headspace analysis was performed by subsequently puncturing each plastic bag with the probe of the PID to estimate the concentration of volatile components partitioned into the atmosphere ("headspace") within the plastic bag.

Soil samples were extracted by hand using disposable gloves and placed directly into laboratory supplied glassware. Each sample container was labeled with the project number, date, time, boring number and sample number. Sample containers were placed in a chilled cooler immediately after sampling, and subsequently transported to the analytical laboratory under strict chain-of-custody procedures. A total of three soil samples, one from each boring, were submitted for laboratory analysis at ALS Laboratory Group (ALS), a Washington-accredited laboratory. Additional soil samples collected were placed on hold pending initial analytical results.

A field log of each boring was maintained, including the thickness and depth of each soil unit encountered and the depth to the uppermost water table. Soil samples were observed to document soil lithology, color, and moisture content. Soils were logged in general accordance with American Society for Testing and Materials (ASTM) Practice Designation D-2488, *Standard Practice for Description of Soils (Visual-Manual Procedure)*. Boring logs are attached in Appendix C.

4.2 Temporary Groundwater Monitoring Wells and Groundwater Sampling

Soil borings EB-16 and EB-17 were converted to temporary groundwater monitoring wells. The temporary groundwater monitoring wells were constructed with the following materials:

- A 5-foot, 2-inch diameter, 0.010-inch machine slotted polyvinyl chloride (PVC) well screen with a threaded bottom cap
- A 2-inch diameter, threaded, flush-joint PVC riser pipe to surface
- Pre-sieved 10/20 grade silica sand for annular sand pack around the well screen from the bottom of the boring to approximately two feet above the top of the well screen interval

At the time of drilling, groundwater was not observed in the borings. After the temporary well was installed and allowed to equilibrate, groundwater was observed in EB-16 at approximately 8.5 feet bgs. Groundwater was not observed in EB-17; therefore, a groundwater sample was not collected from the temporary well. Recharge in EB-16 was slow and did not allow for standard purging of the temporary well.

The EB-16 groundwater sample was collected using a peristaltic pump and dedicated tubing and placed in laboratory-supplied glassware. The sample containers were labeled with the project number, date, time, and sample number and placed in a chilled cooler immediately after sampling. The sample containers were subsequently transported to ALS under strict chain-of-custody procedures.

At the completion of field activities, Terracon removed the temporary well casings and abandoned the borings with commercial bentonite sealant and concrete. The boring completed in a paved area (EB-16) was completed to surface level with cold-patch asphalt.

4.3 Soil Vapor Sampling

Terracon completed a Tier I vapor assessment at the same time of the additional soil and groundwater characterization activities. At the time of the investigation field work, it was determined that the buildings associated with UST #2 and #3 were designed with a crawl space and were not of slab-on-grade construction. Small utility closets (approximately 50 square feet) were associated with each of these locations that contained a slab on grade floor, and allowed for the installation of vapor points for vapor sampling. The structure adjacent to UST #1 contained a basement, and the vapor point was installed within the basement area for sampling. The soil vapor sampling locations and foundation structures are included on Exhibit 2 of Appendix A.

Three soil vapor points were installed at the site utilizing hand tools, including a roto-hammer electric drill. The sampling points were advanced by drilling a 5/8-inch diameter hole through the approximately 4-inch concrete slab. A dedicated Vapor Pin™ with a silicon sleeve was tapped into the sampling point. Dedicated Teflon® sample tubing with a dedicated quick-connect valve was connected to the Vapor Pin™ at the ground surface to allow for purging and collection of the soil vapor samples. A water dam was used to visually identify any potential leaks with placement of the Vapor Pin™ into the concrete foundation.

Prior to the start of the equilibration period, approximately three air volumes were purged from the sampling tubing connected to the Vapor Pin™. Once three volumes were purged, the inline quick-connect valve was closed to begin the 2-hour equilibration process. The completely assembled sampling train was leak tested by using a low flow purge pump (~250 milliliters per minute [mL/m]) to generate a vacuum on the system. The sampling assembly was then sealed and allowed to sit with an approximate 10 inches of mercury (in Hg) negative pressure vacuum

during the 2 hours required for the equilibration period. The system integrity was verified when the negative pressure was confirmed to remain at 10 in Hg during equilibration.

The Summa® canisters used for this assessment were pre-tested and batch-certified as free of chemicals of concern (COCs) by the analytical laboratory. All canisters were equipped with laboratory-supplied flow regulators allowing for sample collection at a low-flow rate (i.e., <200 mL/m). The flow regulator valve was opened to start sub-slab soil vapor collection for approximately five to ten minutes. Once the flow regulator indicated that the Summa® canister was full, the valve was closed and the sampling assembly was dismantled. The Vapor Pin™ was removed and the boreholes was patched with concrete.

Upon completion of sample collection as described above, the Summa® canisters were closed, secured, and appropriately labeled with pertinent sample information. Canister pressures were recorded upon initiating sample collection, after sample collection, and after receipt at the laboratory. All soil vapor samples were labeled accordingly and submitted to ESC Lab Sciences, a Washington State accredited laboratory, under standard chain-of-custody procedures for chemical analysis.

5.0 RESULTS OF THE FIELD INVESTIGATION

5.1 Geology/Hydrogeology

In general, Terracon encountered predominantly silty sand deposits with occasional silt, sandy silt and silty clay layers. Groundwater was only encountered in boring EB-16, at a depth of approximately 8.5 feet bgs. The boring logs in Appendix C detail the observed soil stratigraphy. The boring logs and the data provided by others was used to generate cross sections for each of the UST excavations. Exhibits 6, 7 & 8 included in Appendix A depict a cross section of the UST excavations and the associated samples.

5.2 Field Screening

The field screening results are summarized on the boring logs in Appendix C. PID readings for the soil samples ranged from 3.9 parts per million (ppm) in boring EB-15, 9.8 to 12 ppm in boring EB-16, and 2.7 to 7.1 ppm in boring EB-17. Odors or sheens were not observed on any of the soil samples or groundwater samples collected.

6.0 ANALYTICAL RESULTS

Soil samples and a groundwater grab sample were analyzed for diesel and oil-range total petroleum hydrocarbons (TPH) by Northwest Method NWTPH-DX. The soil vapor samples were analyzed for VOCs by EPA Method TO-15.

Terracon had previously calculated a site-specific Method B diesel-range TPH cleanup level of 8,027 mg/kg, which was accepted by Ecology on July 22, 2015. Reported soil and groundwater concentrations were compared to the Washington State Model Toxics Control Act (MTCA) Method B and MTCA Method A cleanup levels, respectively. Reported soil vapor concentrations were compared to the Ecology guidance document *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, Review Draft* dated October 2009 and the August 2015 updated screening levels. This document is intended to address exposures and risks from subsurface contaminants that may be intruding into indoor air in residential, commercial, and recreational settings.

The laboratory analytical reports and chain-of-custody records are attached in Appendix D. The following sections describe the results of the testing.

6.1 Soil Analytical Results

Four soil samples (EB-15, S-1; EB-16, S-1; EB-16, S-2; and EB-17, S-1) were submitted for analysis. None of the analytes were identified in any of the soil samples above laboratory reporting limits for diesel- and oil-range TPH. The analytical soil sampling results are summarized in Table 1 of Appendix B.

6.2 Groundwater Analytical Results

One groundwater sample (EB-16) was submitted for analysis. Diesel-range TPH was identified at 690 micrograms per liter (µg/l) and oil-range TPH was identified at 1,300 µg/l. These concentrations are both above the MTCA Method A cleanup level for diesel- and oil-range TPH of 500 µg/l. The groundwater sample results are summarized in Table 2 of Appendix B.

6.3 Soil Vapor Analytical Results

Three soil vapor samples (SSV-1 through SSV-3) were submitted for analysis. Several VOCs were detected in the three soil vapor samples collected at the site; however, none of the concentrations were identified above screening levels except for chloroform and naphthalene. A chloroform concentration of 70.1 micrograms per cubic meter (µg/m^3) was detected in SSV-2, which is above the screening level of 3.62 µg/m^3. A naphthalene concentration of 39.9 µg/m^3 was detected in SSV-1, which is above the screening level of 2.45 µg/m^3. SSV-2 was collected near

UST #3 in the southern site portion, and SSV-1 was collected in the northwestern portion of the building near UST #2. Soil vapor sample results are summarized in Table 3 of Appendix B.

The chloroform concentration reported above the screening level was used to calculate theoretical indoor air concentrations for the overlying building using the EPA's Site Assessment Calculation for Indoor Air Concentration, which utilizes the Johnson and Ettinger simplified model (JEM) for vapor intrusion. The model calculates the probable range of indoor air concentrations (expressed as high and low theoretical values) for a given contaminant in a structure based on the identified subsurface concentrations and site conditions, including soil and building properties.

Based on the JEM model calculations, the predicted indoor air concentration for chloroform was between 0.2135 µg/m^3 (low prediction) and 0.3122 µg/m^3 (high prediction), which are both above the chloroform indoor air screening level of 0.109 µg/m^3.

The naphthalene concentration reported above the screening level was also used to calculate theoretical indoor air concentrations with the JEM simplified model for vapor intrusion. Based on the calculations, the predicted indoor air concentration for naphthalene was between 0.09445 µg/m^3 (low prediction) and 0.1657 µg/m^3 (high prediction), which are both above the naphthalene indoor air screening level of 0.0735 µg/m^3.

A copy of the JEM calculations are attached in Appendix B.

6.4 Quality Assurance/Quality Control Results

The analytical results for the current investigation were checked for completeness immediately upon receipt from the laboratory to ensure that data and QA/QC information requested were present. Data quality was assessed by considering hold times, surrogate recovery, method blanks, matrix spike and matrix spike duplicate (MS/MSD) recovery, and detection limits. QA/QC review was completed using guidance described in *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (Draft Final, USEPA, 2005). Our evaluation assumes that the QA/QC is correct as reported by the laboratory, and merely provides an interpretation of the QA/QC results.

Hold Times. All analyses were completed within specified hold times.

Surrogate Recoveries. All surrogate recoveries were within laboratory limits.

Method Blanks. Analytes were not detected in any of the laboratory method blanks.

MS/MSD Results. MS and MSD recoveries were all within laboratory limits, and Relative Percent Differences (RPDs) between MS and MSD recoveries were all within laboratory limits.

Laboratory Reporting Limits. Reporting limits were below relevant MTCA cleanup levels. The naphthalene reporting limit was established by the analytical laboratory at 6.60 µg/m^3, which is above the screening level of 2.45 µg/m^3. Terracon performed JEM calculations for theoretical naphthalene of 6.60 µg/m^3 in SSV-2 and SSV-3. Both low and high predictions did not exceed the MTCA Method B Indoor Air Cleanup level. Therefore, the elevated reporting limit does not represent a concern.

The analytical laboratory report included a note that the chromatogram for the groundwater sample collected from EB-16 indicates that the sample contains an unidentified diesel-range product, and lube oil and diesel-range TPH results may be biased high due to oil-range product overlap.

Based upon our interpretation of quality control information provided by the laboratories, it is our opinion that the overall dataset is useable as qualified for the purposes of this Supplemental LSI.

7.0 INVESTIGATION DERIVED WASTE (IDW)

Drill cuttings, purged groundwater and decontamination water was containerized into the two drums that have been present on site since Terracon's previous LSI. Given the previous and current analytical results, soils may have to be properly disposed of off-site. Terracon can provide costs for the removal and disposal of IDW upon request.

8.0 CONCLUSIONS

Based on the scope of services described in this report, and subject to the limitations described herein, Terracon concludes the following:

Diesel- and/or oil-range TPH concentrations were not identified above laboratory reporting limits in any of the soil samples collected during this Supplemental LSI; however, diesel- and oil-range TPH were identified in the groundwater sample collected from a temporary well installed in boring EB-16, advanced south of former UST #3 and the southern site boundary. According to the analytical laboratory the chromatogram for the EB-16 groundwater sample indicated an unidentified diesel-range product and lube oil, and that the diesel-range TPH results may be biased high due to oil-range TPH overlap. Furthermore, oil-range TPH was not detected in soil samples collected from the area of UST #3 during Terracon's previous LSI.

The chromatograms from the diesel-range TPH analyses performed on the soil samples collected from the Property during Terracon's previous LSI were compared to the chromatogram from the groundwater sample collected from EB-16. The response time for the Property samples was significantly shorter (approximately 2 to 4 units) than the response time for the off-Property sample

(approximately 5 to 15 units). In addition, the shape of the chromatogram and the associated peaks were different. The differences in the chromatograms suggest that a different petroleum product was detected in the on-site and off-site samples. The Property samples were more characteristic of a diesel product, while the south-adjoining groundwater sample was more characteristic of an oil product. Moreover, the groundwater grab sample collected from EB-16 was from a location that is inferred to be hydraulically up gradient relative to the release associated with former UST #3. Furthermore, no analytes were detected in the soil samples collected and analyzed from EB-16.

Based on a review of the chromatograms that suggest the presence of two different petroleum products, the inferred upgradient position of the off-Property sample, and the lack of soil impacts in the off-Property sample, it is our opinion that the oil-range TPH detection (and the diesel-range TPH overlap) is not associated with the heating oil release at UST #3. The former use of heavy oil for heating has been documented at the south-adjoining property, including a reported release southwest of the Property. It is our opinion that the oil-range TPH detected in the groundwater collected from EB-16 is most likely associated with the heavy oil use on the south-adjoining property.

*Naphthalene and chloroform were detected above screening levels in two of the vapor samples collected. Chloroform, a trihalomethane, has a wide range of potential sources, including the discharge of chlorinated drinking water through leaking water pipes; leakage of chlorinated water from swimming pools, spas, or distribution systems for drinking water; or wastewater sewers. Other sources can include laundry wastewater containing bleach. In addition, chloroform was historically used as a solvent for oils and greases, and also as a dry cleaning spot remover. No specific source for the chloroform concentration detected in the vapor sample collected was identified. Therefore, it appears most likely that the chloroform is associated with common drinking water disinfection by-products, which volatilize into the soil vapor as a result of a leaking drinking water/drain line or during activities such as dishwashing or laundry operations, which do occur in the basement adjacent to former UST #1. The chloroform detection does not appear to be associated with the reported heating oil release.

According to the EPA, individuals may be exposed to naphthalene through the use of mothballs. In pure form it can be used to produce concrete plasticizers and concrete bond breakers. It has also been historically used as a concrete mold release agent that prevents concrete from sticking or adhering to a mold surface. These could be potential sources of naphthalene at the site. Naphthalene is also a petroleum component and can be a component of heating oil, which also may be the source of the naphthalene detection at former UST #2. However, as discussed in Section 4.3, the building adjoining former UST #2 was designed with a crawl space foundation, which allows for constant air circulation and exchange beneath the areas of occupation. Therefore, accumulation of naphthalene-containing vapors within the living spaces of the building

is not likely occurring. The results of the Tier 1 vapor intrusion assessment indicate that adversely-affected vapors are not accumulating in the occupied spaces of the site buildings.

9.0 RECOMMENDATIONS

The lack of diesel-range TPH detections in the soil samples collected north and south of former UST #3 indicates that the lateral extent of the remaining impacts has been defined. No further soil characterization work is recommended at the site. Based on the results of the investigations performed to-date, a small area (less than 350 square feet) of adversely-affected soil (above the site-specific Method B cleanup level of 8,027 mg/kg) remains along the southern sidewall of the former UST #3 excavation and may partially extend beneath the access road on the south-adjoining property in the vicinity of former UST #3. Due to its proximity to a fiber optic utility, it may not be feasible to access the residual soils safely. Terracon recommends that the soils be left in-place at this time.

Based on the different petroleum product detected in the groundwater south of the Property, the lack of groundwater in the boring drilled north of UST #3, and the previous lack of representative diesel-range TPH groundwater detections on the subject Property, no further groundwater characterization work appears warranted.

Based on the results of the soil vapor sampling and the current building design, an accumulation of the select soil vapors above screening levels appears unlikely due to the continual air exchange associated with typical crawl spaces. Furthermore, the utility closet adjacent to former UST #2 is not an air-tight structure and the space is not occupied. Terracon does not recommend any additional soil vapor sampling at this time.

The results of the TEE suggest that further evaluation of the site with regard to wildlife and soil biota exposures is not necessary.

Based on the results of the subsurface investigations performed at the subject Property, Terracon will request that Ecology issue a Property-Specific No Further Action determination for the Site.

APPENDIX A – EXHIBITS

Exhibit 1 – Topographic Map

Exhibit 2 – Site Diagram

Exhibit 3 – Site Diagram UST#1

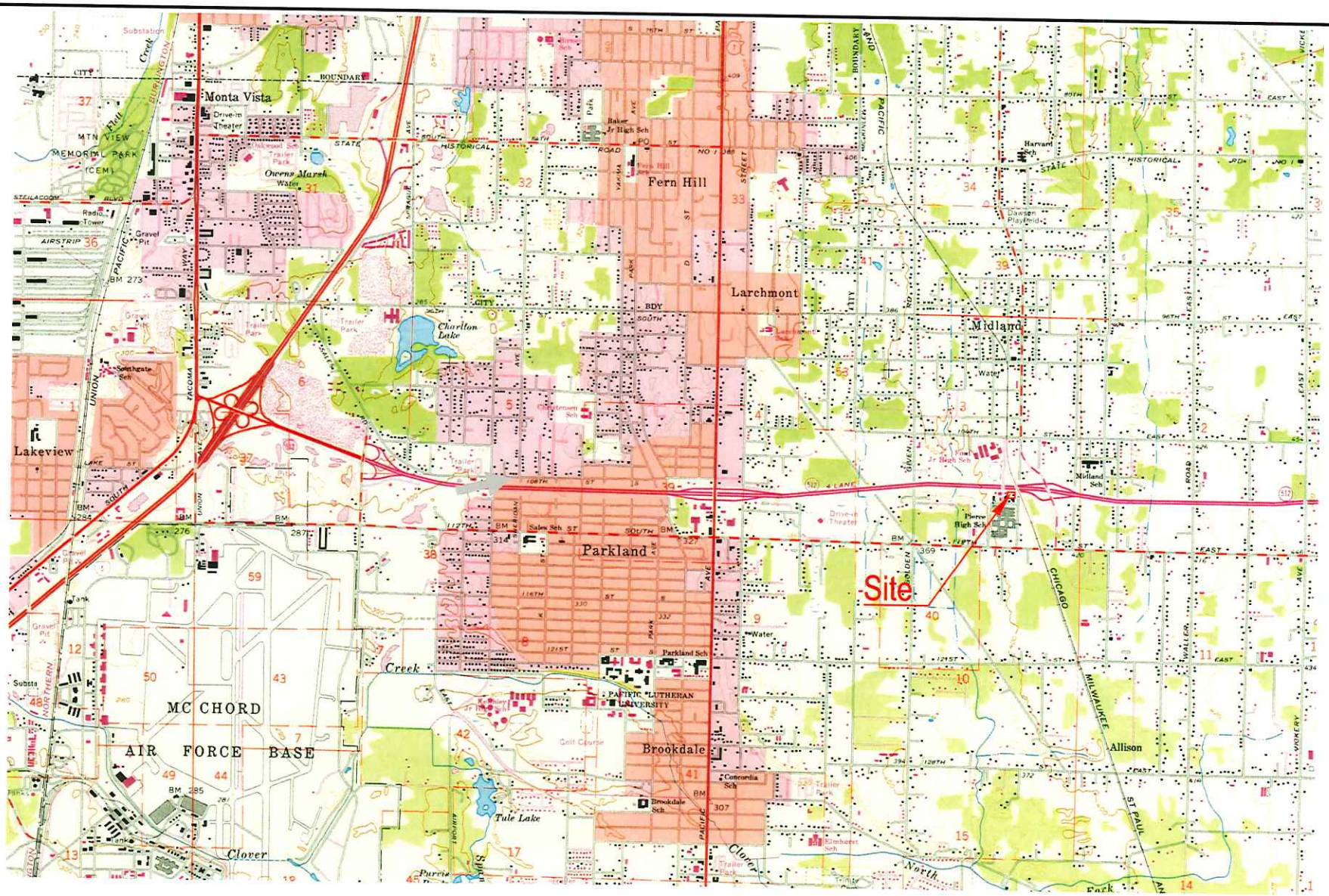
Exhibit 4 – Site Diagram UST#2

Exhibit 5 – Site Diagram UST#3

Exhibit 6 – Cross Section for UST#1

Exhibit 7 – Cross Section for UST#2

Exhibit 8 – Cross Section for UST#3



LEGEND:

APPROXIMATE SITE LOCATION

Topographic map section borrowed form the USGS Tacoma South Quadragle Washington - Pierce Co. 7.5 Minute Series, photorevised 1973

Project Mngr:	LS
Drawn By:	HRG
Checked By:	LS
Approved By:	MYW
Project No.	B2157004
Scale:	as shown
File No.	.dwg
Date:	May 2015

Terracon
Consulting Engineers and Scientists
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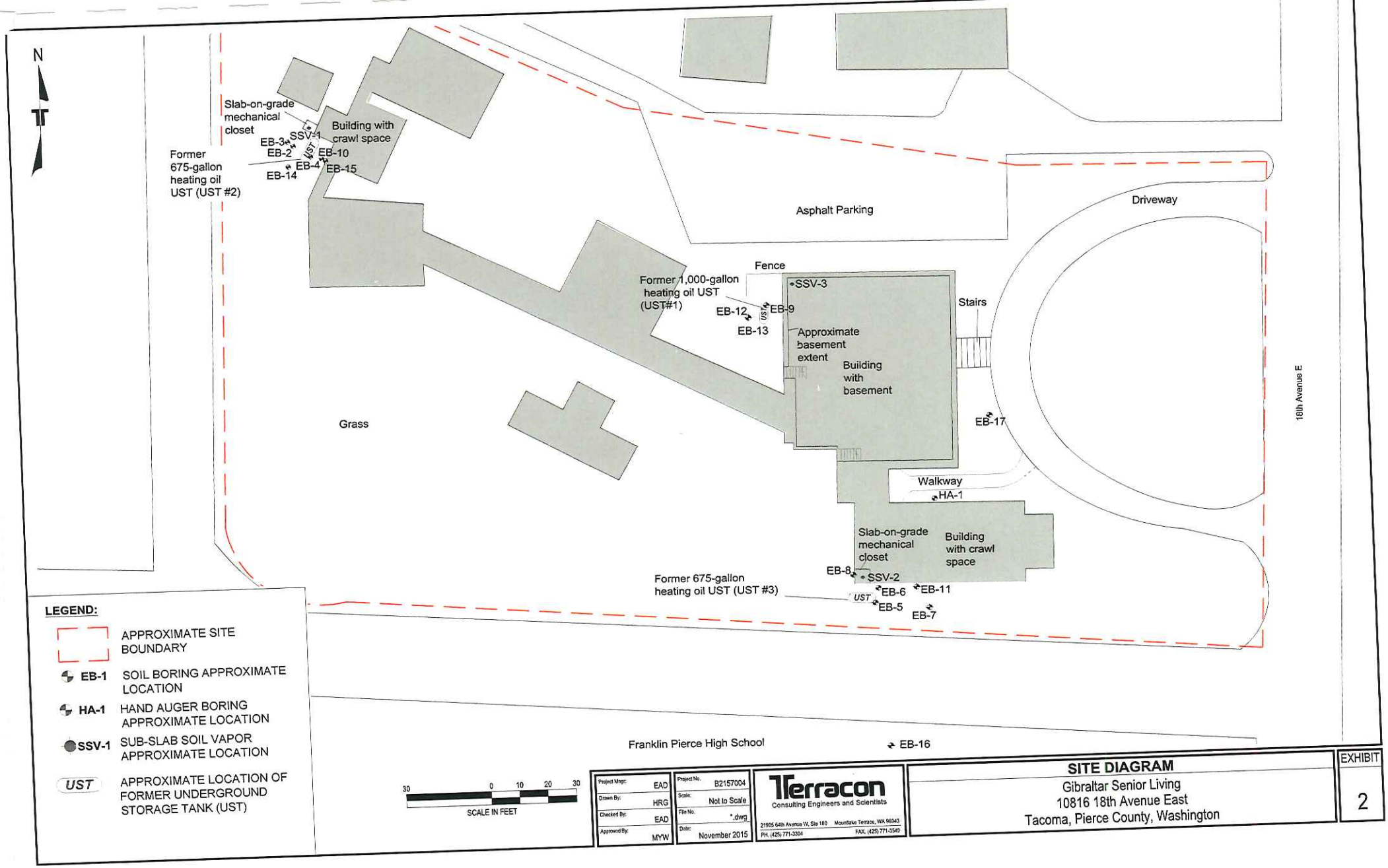
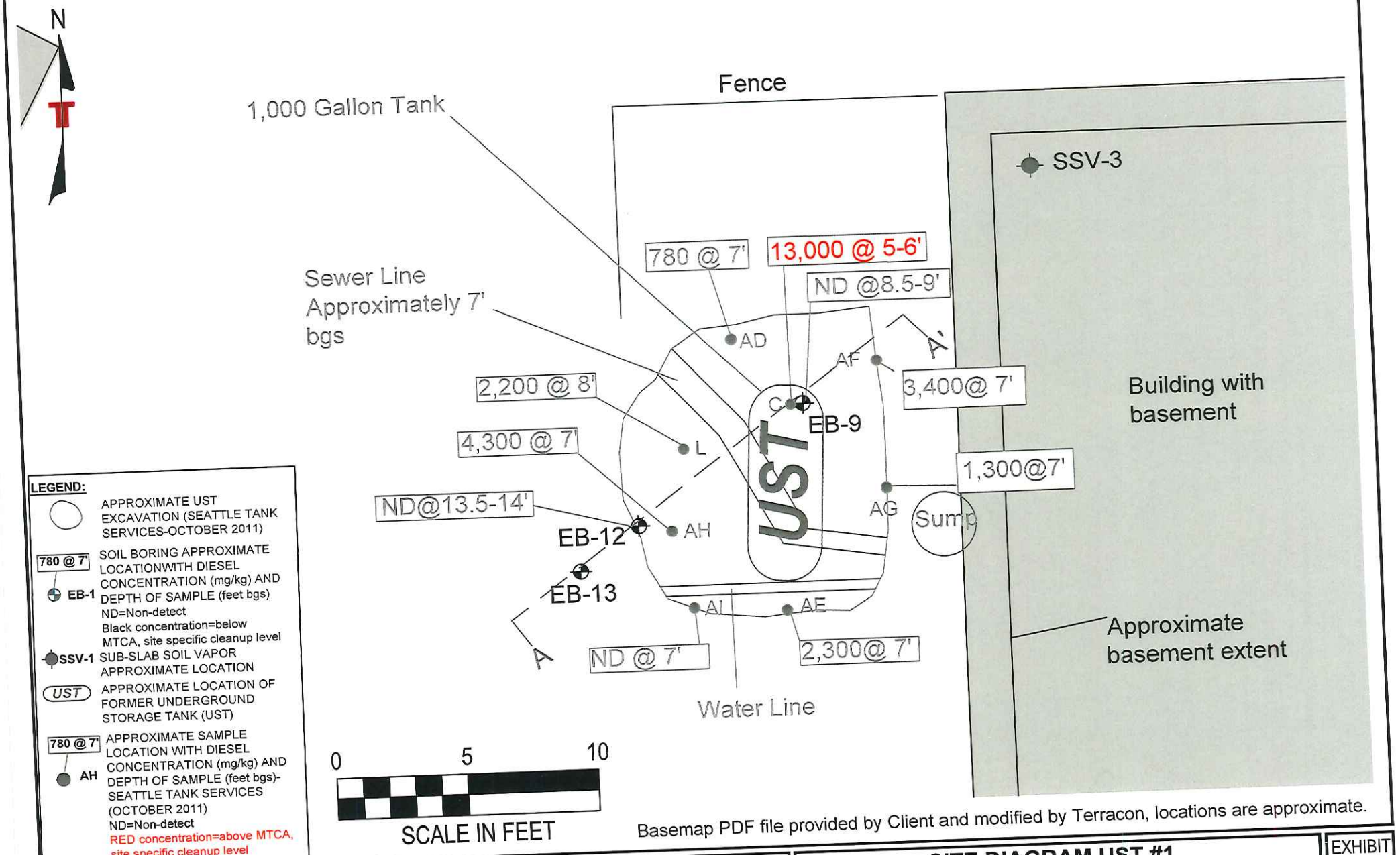
PH. (425) 771-3304 FAX. (425) 771-3549

Topographic Map

Gibraltar Senior Living
10816 18th Avenue East
Tacoma, Pierce County, Washington

FIG. No. 1


N
Slab-on-grade mechanical closet
Building with crawl space
SSV-1
EB-3
EB-2
EB-10
EB-15
EB-14
EB-4
UST
Former 675-gallon heating oil UST (UST #2)
Asphalt Parking
Driveway
Fence
Former 1,000-gallon heating oil UST (UST#1)
SSV-3
EB-12
EB-13
EB-9
UST
Stairs
Approximate basement extent
Building with basement
Grass
EB-17
18th Avenue E
Walkway
HA-1
Slab-on-grade mechanical closet
Building with crawl space
EB-8
SSV-2
EB-6
EB-11
Former 675-gallon heating oil UST (UST #3)
UST
EB-5
EB-7
Franklin Pierce High School
EB-16
LEGEND:
APPROXIMATE SITE BOUNDARY
EB-1 SOIL BORING APPROXIMATE LOCATION
HA-1 HAND AUGER BORING APPROXIMATE LOCATION
SSV-1 SUB-SLAB SOIL VAPOR APPROXIMATE LOCATION
UST APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK (UST)
30 0 10 20 30
SCALE IN FEET
Project Mngr: EAD
Drawn By: HRG
Checked By: EAD
Approved By: MYW
Project No. B2157004
Scale: Not to Scale
File No. *.dwg
Date: November 2015
Terracon
Consulting Engineers and Scientists
21905 64th Avenue W, Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3540
SITE DIAGRAM
Gibraltar Senior Living
10816 18th Avenue East
Tacoma, Pierce County, Washington
EXHIBIT
2



Basemap PDF file provided by Client and modified by Terracon, locations are approximate.

Project Mngr:	EAD
Drawn By:	HRG
Checked By:	EAD
Approved By:	MYW
Project No.	B2157002
Scale:	1:5
File No.	*.dwg
Date:	October 2015

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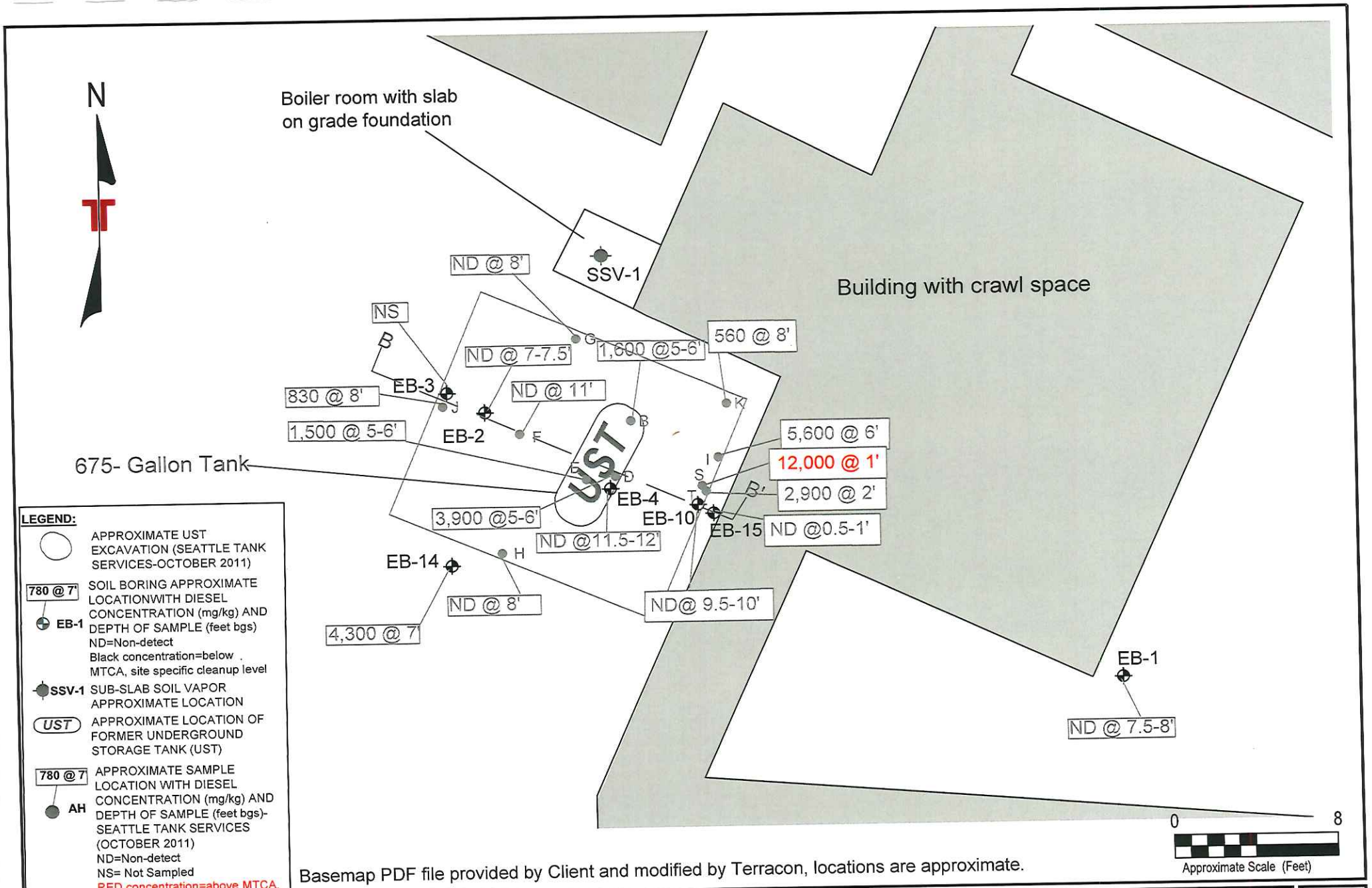
SITE DIAGRAM UST #1

Gibraltar Senior Living
10816 18th avenue East
Tacoma, Pierce County, Washington

EXHIBIT 3



Basemap PDF file provided by Client and modified by Terracon, locations are approximate.

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Drawn By:	HRG
Checked By:	EAD
Approved By:	MYW
Project No.	B2157004
Scale:	1:8
File No.	*.dwg
Date:	November 2015

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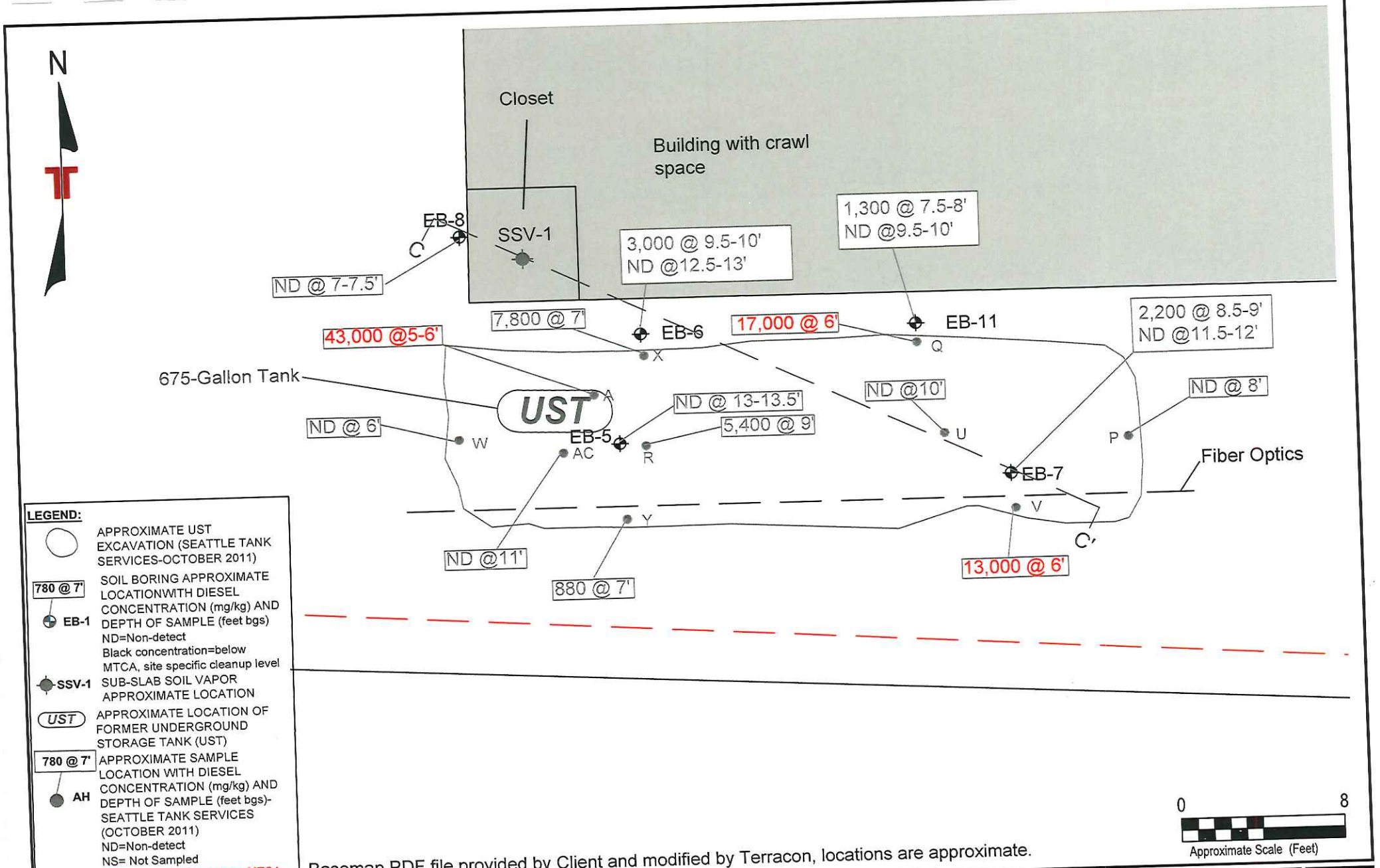
SITE DIAGRAM UST#2

Gibraltar Senior Living
10816 18th avenue East
Tacoma, Pierce County, Washington

EXHIBIT 4



Basemap PDF file provided by Client and modified by Terracon, locations are approximate.

Project Mngr:	EAD
Drawn By:	HRG
Checked By:	EAD
Approved By:	MYW
Project No.	B2157004
Scale:	1:8
File No.	*.dwg
Date:	November 2015

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Consulting Engineers and Scientists
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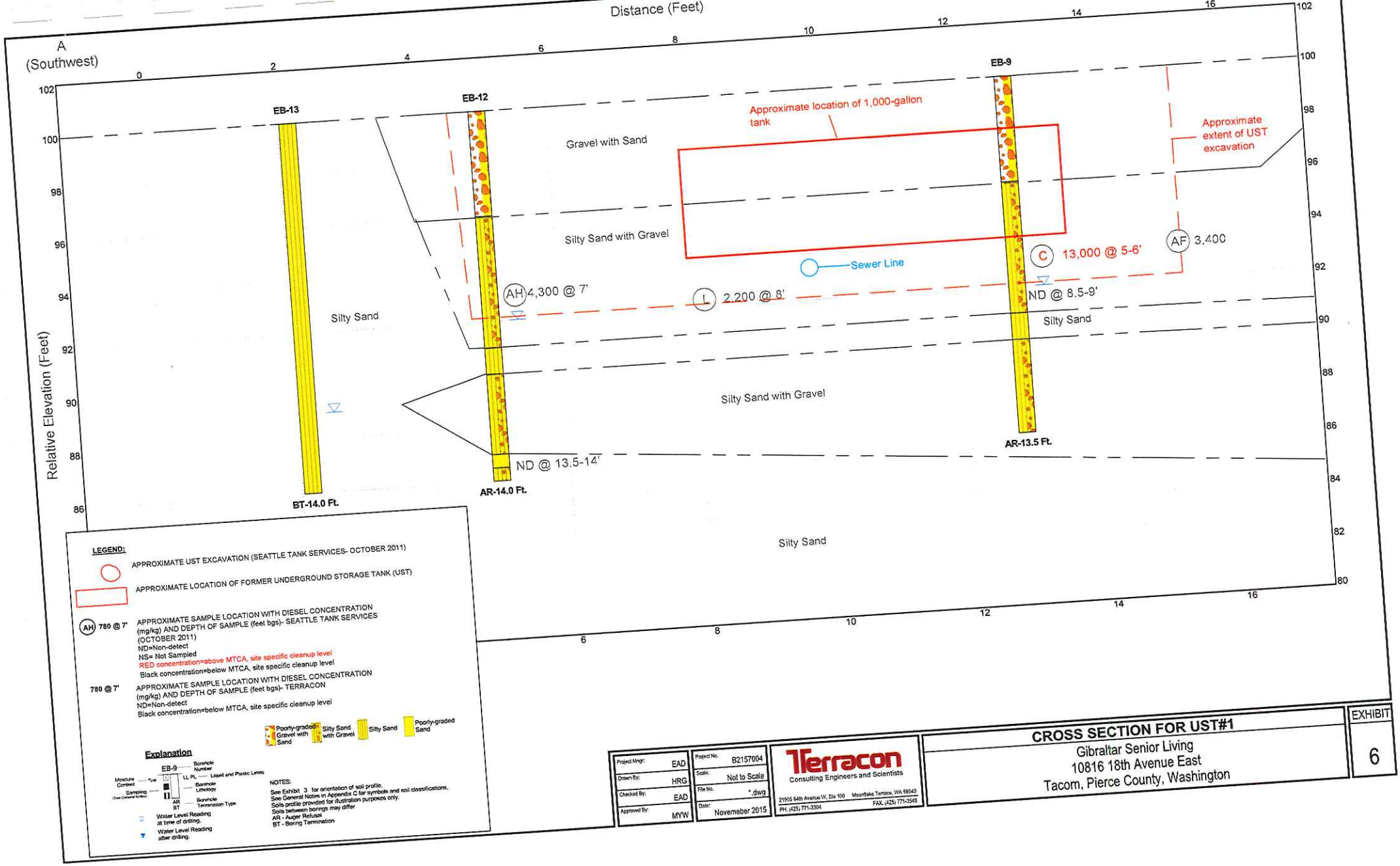
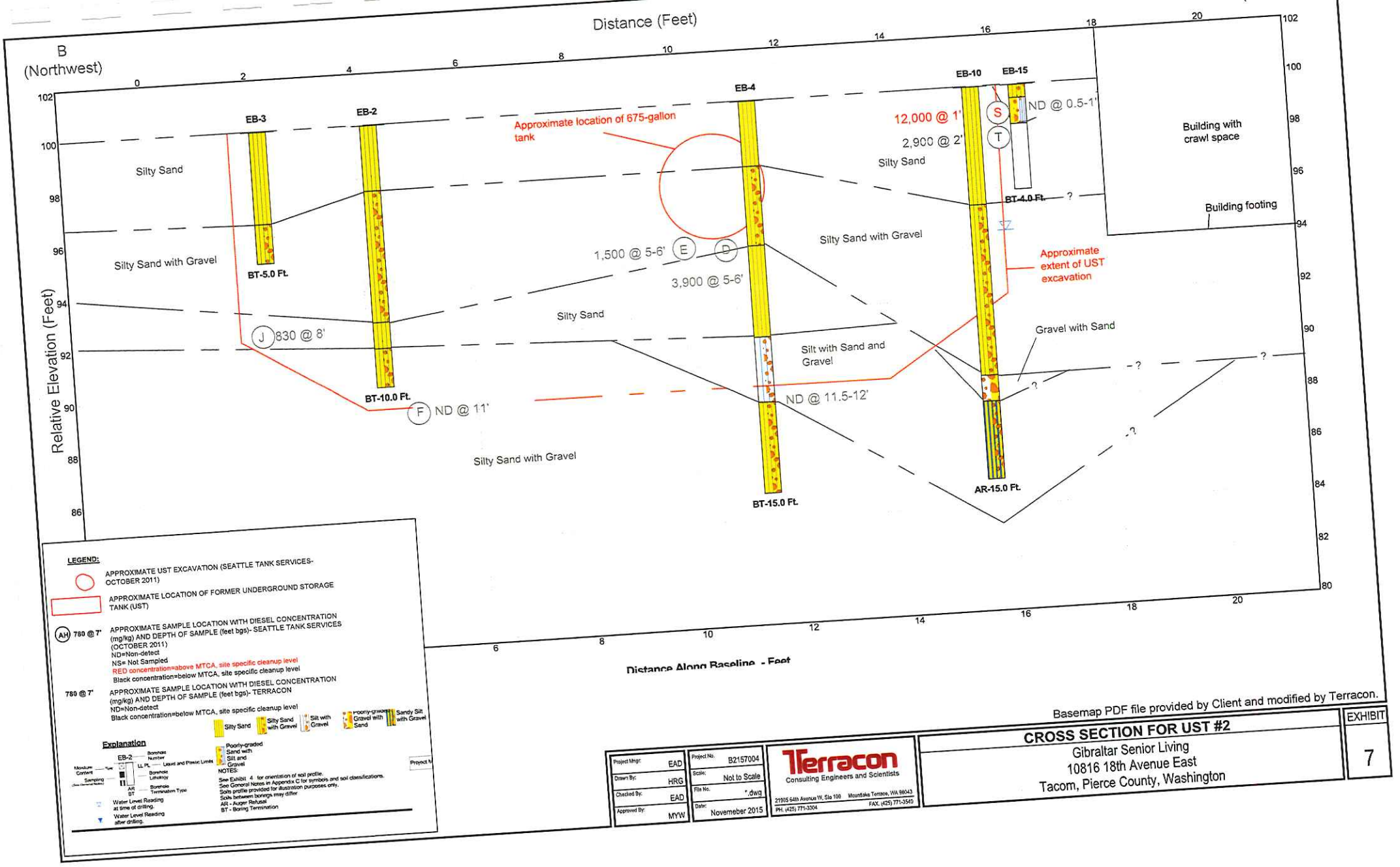
PH. (425) 771-3304 FAX. (425) 771-3549

SITE DIAGRAM UST #3

Gibraltar Senior Living
10816 18th avenue East
Tacoma, Pierce County, Washington

EXHIBIT 5


A
(Southwest)
Distance (Feet)
Relative Elevation (Feet)
EB-13
EB-12
EB-9
Approximate location of 1,000-gallon tank
Approximate extent of UST excavation
Gravel with Sand
Silty Sand with Gravel
Silty Sand
Silty Sand with Gravel
Silty Sand
Sewer Line
AH 4,300 @ 7'
L 2,200 @ 8'
C 13,000 @ 5-6'
AF 3,400
ND @ 8.5-9'
ND @ 13.5-14'
BT-14.0 Ft.
AR-14.0 Ft.
AR-13.5 Ft.
LEGEND:
APPROXIMATE UST EXCAVATION (SEATTLE TANK SERVICES- OCTOBER 2011)
APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK (UST)
AH 780 @ 7' APPROXIMATE SAMPLE LOCATION WITH DIESEL CONCENTRATION (mg/kg) AND DEPTH OF SAMPLE (feet bgs)- SEATTLE TANK SERVICES (OCTOBER 2011)
ND=Non-detect
NS= Not Sampled
RED concentration=above MTCA, site specific cleanup level
Black concentration=below MTCA, site specific cleanup level
780 @ 7' APPROXIMATE SAMPLE LOCATION WITH DIESEL CONCENTRATION (mg/kg) AND DEPTH OF SAMPLE (feet bgs)- TERRACON
ND=Non-detect
Black concentration=below MTCA, site specific cleanup level
Poorly-graded Gravel with Sand
Silty Sand with Gravel
Silty Sand
Poorly-graded Sand
Explanation
EB-9 Borehole Number
Moisture Content %w LL PL Liquid and Plastic Limits
Sampling (See General Notes) Borehole Lithology
AR BT Borehole Termination Type
Water Level Reading at time of drilling.
Water Level Reading after drilling.
NOTES:
See Exhibit 3 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination
Project Mngr: EAD
Drawn By: HRG
Checked By: EAD
Approved By: MYW
Project No. B2157004
Scale: Not to Scale
File No. *.dwg
Date: Novemeber 2015
Terracon
Consulting Engineers and Scientists
21905 64th Avenue W, Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3545
CROSS SECTION FOR UST#1
Gibraltar Senior Living
10816 18th Avenue East
Tacom, Pierce County, Washington
EXHIBIT
6



Basemap PDF file provided by Client and modified by Terracon.

Project Mngr:	EAD
Drawn By:	HRG
Checked By:	EAD
Approved By:	MYW
Project No.	B2157004
Scale:	Not to Scale
File No.	*.dwg
Date:	Novemeber 2015

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Consulting Engineers and Scientists
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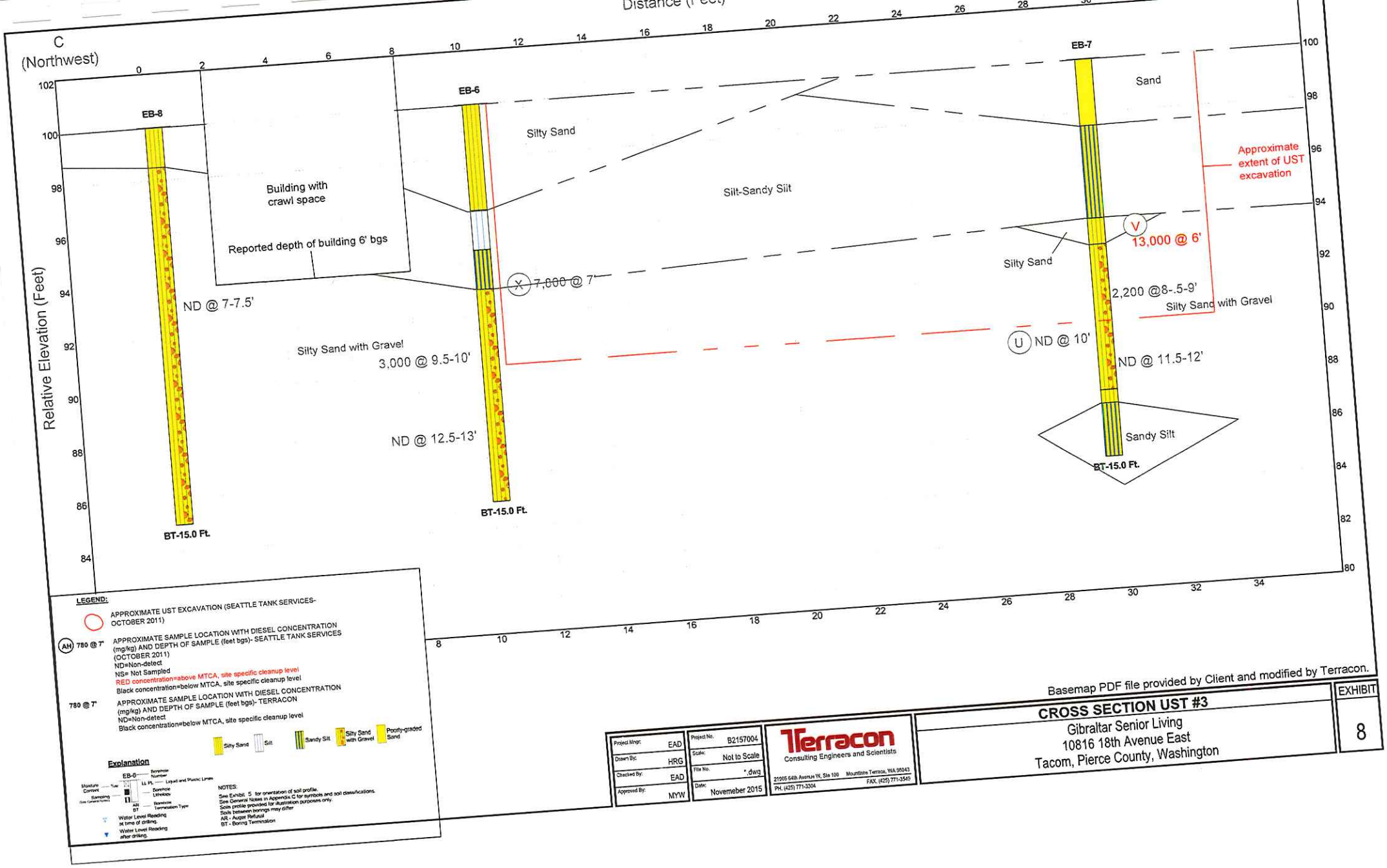
PH. (425) 771-3304 FAX. (425) 771-3549

CROSS SECTION FOR UST #2

Gibraltar Senior Living
10816 18th Avenue East
Tacom, Pierce County, Washington

EXHIBIT 7


C
(Northwest)
C
Distance (Feet)
Relative Elevation (Feet)
EB-8
EB-6
EB-7
Building with crawl space
Reported depth of building 6' bgs
Silty Sand
Silt-Sandy Silt
Sand
Silty Sand
Silty Sand with Gravel
Sandy Silt
ND @ 7-7.5'
7,000 @ 7'
3,000 @ 9.5-10'
ND @ 12.5-13'
13,000 @ 6'
2,200 @8-.5-9'
ND @ 10'
ND @ 11.5-12'
Approximate extent of UST excavation
BT-15.0 Ft.
BT-15.0 Ft.
BT-15.0 Ft.
LEGEND:
APPROXIMATE UST EXCAVATION (SEATTLE TANK SERVICES- OCTOBER 2011)
AH 780 @ 7' APPROXIMATE SAMPLE LOCATION WITH DIESEL CONCENTRATION (mg/kg) AND DEPTH OF SAMPLE (feet bgs)- SEATTLE TANK SERVICES (OCTOBER 2011)
ND=Non-detect
NS= Not Sampled
RED concentration=above MTCA, site specific cleanup level
Black concentration=below MTCA, site specific cleanup level
780 @ 7' APPROXIMATE SAMPLE LOCATION WITH DIESEL CONCENTRATION (mg/kg) AND DEPTH OF SAMPLE (feet bgs)- TERRACON
ND=Non-detect
Black concentration=below MTCA, site specific cleanup level
Silty Sand
Silt
Sandy Silt
Silty Sand with Gravel
Poorly-graded Sand
Explanation
EB-6 Borehole Number
Moisture Content
Sampling
LL PL Liquid and Plastic Limits
Borehole Lithology
AR Borehole Termination Type
BT
Water Level Reading at time of drilling.
Water Level Reading after drilling.
NOTES:
See Exhibit 5 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination
Basemap PDF file provided by Client and modified by Terracon.
Project Mngr: EAD
Drawn By: HRG
Checked By: EAD
Approved By: MYW
Project No. B2157004
Scale: Not to Scale
File No. *.dwg
Date: Novemeber 2015
Terracon
Consulting Engineers and Scientists
21905 64th Avenue W, Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3545
CROSS SECTION UST #3
Gibraltar Senior Living
10816 18th Avenue East
Tacom, Pierce County, Washington
EXHIBIT
8

WELL LOG NO. EB-16

PROJECT: Gibraltar Senior Living

CLIENT: 155 Tremont Ave. LLC
Bellingham, Washington

SITE: 10816 18th Avenue East
Tacoma, Washington

LOCATION See Figure 2

Surface Elev.: 100 (Ft.)

DEPTH	MATERIAL DESCRIPTION	ELEVATION (Ft.)
		99.8
0.3	**ASPHALT**, 3"	
	SANDY SILT (ML), fine gravel, dark brown, moist	
	gray/brown with orange mottling	96
4.0	**SILTY SAND**, fine gravel, gray	
		90
10.0	***Boring Refusal at 10 Feet***	

INSTALLATION DETAILS
Well Completion:

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	OVA/PID (ppm)	SAMPLE ID
5	▽			9.8	
				10.6	
				12	
				11.1	EB-16, S-1, 7.5-8
10				11.2	EB-15, S-2, 9.5-10

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

WATER LEVEL OBSERVATIONS
▽ *In temporary monitoring well*

Notes:

Terracon
21905 64th Ave. W, Suite 100
Mountlake Terrace, Washington

Well Started: 10/8/2015
Well Completed: 10/8/2015
Drill Rig: GeoProbe
Driller: Holocene
Project No.: B2157004
Exhibit: EB-16

APPENDIX B – TABLES

Table 1 – Summary of Soil Analytical Results
Table 2 – Summary of Groundwater Analytical Results
Table 3 – Summary of Soil Vapor Analytical Results
JEM Calculations

TABLE 1

CUMMULATIVE SUMMARY OF SOIL ANALYTICAL RESULTS

Gibraltar Senior Living

10816 18th Avenue E

Tacoma, Pierce County, Washington

all concentrations are in milligrams per kilogram (mg/kg)

Sample ID[2]	Sample Depth (ft)	Associated Confirmation Sample	Sample Date	Removed or In-Place	TPH[1]	
					Diesel-Range	Oil-Range
UST #1						
C	12" below UST (approximatly 5-6')	NA	7/1/2011	**Removed**	**13,000**	
L	8'	NA	9/13/2011	In-Place	**2,200**	
AD	7'	NA	9/19/2011	In-Place	**780**	
AE	7'	NA	9/19/2011	In-Place	**2,300**	
AF	7'	NA	9/19/2011	In-Place	**3,400**	
AG	7'	NA	9/19/2011	In-Place	**1,300**	
AH	7'	NA	9/19/2011	**Removed**	**4,300**	
AI	Under water pipe	NA	9/20/2011	In-Place	ND (<50)	
EB-9	8.5-9'	**C**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-12	13.5-14'	**AH**	5/20/2015	In-Place	ND (<50)	ND (<250)
UST #2						
B	12" below UST (approximatly 5-6')	NA	7/1/2011	**Removed**	**1,600**	
D	12" below UST (approximatly 5-6')	NA	7/1/2011	**Removed**	**3,900**	
E	12" below UST (approximatly 5-6')	NA	7/1/2011	**Removed**	**1,500**	
F	11'	NA	9/13/2011	In-Place	ND (<50)	
G	8'	NA	9/13/2011	In-Place	ND (<50)	
H	8'	NA	9/13/2011	In-Place	ND (<50)	
I	6'	NA	9/13/2011	In-Place	**5,600**	

TABLE 1

CUMMULATIVE SUMMARY OF SOIL ANALYTICAL RESULTS

Gibraltar Senior Living
10816 18th Avenue E
Tacoma, Pierce County, Washington

all concentrations are in milligrams per kilogram (mg/kg)

Sample ID[2]	Sample Depth (ft)	Associated Confirmation Sample	Sample Date	Removed or In-Place	TPH[1]	
					Diesel-Range	Oil-Range
J	8'	NA	9/13/2011	In-Place	830	
K	8'	NA	9/13/2011	In-Place	560	
S	1'	NA	9/15/2011	**In-Place[3]**	12,000	
T	2'	**S**	9/15/2011	In-Place	2,900	
EB-1	7.5-8'	**S, T**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-2	7-7.5'	**F**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-4	11.5-12'	**D, E**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-10	9.5-10'	**S, T**	5/20/2015	In-Place	ND (<50)	ND (<250)
EB-15, S-1	0.5-1'	**S**	10/08/2015	In-Place	ND (<25)	ND (<50)
UST #3						
A	12" below UST (approximatly 5-6')	NA	7/1/2011	**Removed**	43,000	
P	8'	NA	9/14/2011	In-Place	ND (<50)	
Q	6'	NA	9/14/2011	**In-Place**	17,000	
R	9'	NA	9/14/2011	**Removed**	5,400	
U	10'	NA	9/16/2011	In-Place	ND (<50)	
V	6'	NA	9/16/2011	In-Place	13,000	
W	6'	NA	9/16/2011	In-Place	ND (<50)	
X	7'	NA	9/16/2011	In-Place	7,800	
Y	7'	NA	9/16/2011	In-Place	880	

TABLE 1

CUMMULATIVE SUMMARY OF SOIL ANALYTICAL RESULTS

Gibraltar Senior Living

10816 18th Avenue E

Tacoma, Pierce County, Washington

all concentrations are in milligrams per kilogram (mg/kg)

Sample ID[2]	Sample Depth (ft)	Associated Confirmation Sample	Sample Date	Removed or In-Place	TPH[1]	
					Diesel-Range	Oil-Range
AC	11'	NA	9/16/2011	In-Place	ND (<50)	
EB-5	13-13.5'	**R**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-6	9.5-10'	**X**	5/14/2015	In-Place	**3,000**	ND (<250)
	12.5-13'	**X**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-7	8.5-9'	**V**	5/14/2015	In-Place	**2,200**	ND (<250)
	11.5-12'	**V**	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-8	7-7.5'	NA	5/14/2015	In-Place	ND (<50)	ND (<250)
EB-11	7.5-8'	Q	5/20/2015	In-Place	**1,300**	ND (<250)
	9.5-10'	Q	5/20/2015	In-Place	ND (<50)	ND (<250)
EB-16, S-1	7.5-8'	NA	10/08/2015	In-Place	ND (<25)	ND (<50)
EB-16, S-2	9.5-10'	NA	10/08/2015	In-Place	ND (<25)	ND (<50)
EB-17, S-1	7-7.5'	NA	10/08/2015	In-Place	ND (<25)	ND (<50)
Site Specific MTCA Method B Cleanup Level					**8,027**	**8,027**

Note: Concentrations detected above laboratory reporting limits are in bold type.
Concentrations detected above cleanup levels are in bold type and shaded.

TPH - Total Petroleum Hydrocarbons
MTCA - Model Toxics Control Act
ND - Not detected above laboratory reporting limit.
1 - The TPH results from 2011 were not seperated into diesel- and oil-range concentrations; therefore, total diesel extended concentration was reported.
2 - The sample depths for the samples completed by others are an approxiamte and based on the information provided in the UST report.
3 - Although reported "in place" by others, EB-15 did not identify these similar concentations.
NA - Not available

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Gibraltar Senior Living

10816 18th Avenue E

Tacoma, Pierce County, Washington

all concentrations are in micrograms per liter (µg/l)

Sample ID	Sample Date	Former UST Excavation Area	TPH	
			Diesel-Range	Oil-Range
EB-8 GW	5/14/15	#3	**55** [1]	ND (<250)
EB-13 GW	5/20/15	#1	ND (<50)	ND (<250)
EB-14 GW	5/20/15	#2	**87** [1]	ND (<250)
EB-16	10/8/15	South of #3	**690** [2]	**1300** [2]
MTCA Method A Cleanup Level			**500**	**500**

Note: Concentrations detected above laboratory reporting limits are in BOLD type.
Concentrations above MTCA Method A cleanup levels in bold type and shaded.

TPH - Total Petroleum Hydrocarbons

MTCA - Model Toxics Control Act

ND - Not detected above laboratory reporting limit.

1 - The sample chromatographic pattern does not resemble the fuel standard used for qauntitation.

2 - Chromatogram indicates that the sample contains an unidentified diesel-range product, and lube oil and diesel-range TPH results may be biased high due to oil-range product overlap.

TABLE 3

SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS
Gibraltar Senior Living
10618 18th Avenue East
Tacoma, Washington

all concentrations are in micrograms per cubic meter (µg/m³)

Sample ID	UST Location	Sample Date	VOCs[1]																						
			Acetone	Benzene	Carbon disulfide	Chloroform	Cyclohexane	Chloromethane	Ethanol	4-Ethyltoluene	1,4-Dioxane	Dichlorodifluoromethane	Heptane	n-Hexane	MEK	Methyl methacrylate	Naphthalene	Propene	2-Propanol	Tetrachloroethylene (PCE)	Tetrahydrofuran	Toluene	2-Chlorotoluene	1,2,4 Trimethylbenzene	1,3,5 Trimethylbenzene	m&p-Xylene	o-Xylene
SSV-1	#2	10/8/2015	86.2	2.26	ND	ND	ND	ND	102	6.41	ND	2.37	2.05	1.78	19.7	ND	39.9	3.25	44.5	7.06	ND	4.04	ND	67.2	20.3	3.91	1.84
SSV-2	#3	10/8/2015	56.6	2.26	7.86	70.1	2.86	0.908	874E	ND	9.32	2.28	4.03	5.07	9.36	1.95	ND (<6.60)	ND	40.0	8.02	2.20	6.41	ND	ND	ND	3.98	ND
SSV-3	#1	10/8/2015	46.8	ND	ND	ND	ND	ND	74.6	ND	ND	2.30	2.08	1.73	ND	ND	ND (<6.60)	ND	45.2	4.37	ND	3.46	ND	ND	ND	ND	ND
Screening Level			NE	10.7	10,700	3.62	NE	1,370	NE	NE	NE	1,520	NE	10,700	76,200	10,700	2.45	NE	NE	321	NE	76,200	NE	107	NE	1,520	1,520

Note: Concentrations detected above laboratory reporting limits are in **BOLD** type; concentrations exceeding screening levels are BOLD and the cell is shaded.

VOCs - volatile organic compounds
UST - Underground storage tank
MTCA - Model Toxics Control Act
NE - not estalished per the CLARC August 2015 data tables
ND - Not detected above laboratory reporting limit
1 - only those analytes detected above the laboratory reporting limits are lincluded; refer to the analytical report for a complete list of analytes.
E - the analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Gibraltar SSV-1
Report Date: Thu Oct 15 11:34:18 PDT 2015
Report Generated From: http://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 39.9[µg/m^3]
Depth of soil gas sample: 1ft +/- 0.1ft
Average soil/ground water temperature: 58F

CHEMICAL PROPERTIES
Chemical of Concern: Naphthalene CAS Number: 91203
Molecular Weight: 128.18 [g/mole] Henrys Constant: 0.009200896 [unitless]
Diffusivity in Air: 5.900e-2 [cm^2/sec] Diffusivity in Water: 7.500e-6 [cm^2/sec]
Unit Risk Factor: 0 [(µg/m^3)$^{-1}$] Reference Concentration: 0.003 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005959[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.003508

[1]Low Indoor Air Prediction: 0.09445 [µg/m^3] or 0.01803 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.03148

Best Estimate Indoor Air Prediction: 0.1400[µg/m^3] or 0.02671 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.04665

[2]High Indoor Air Prediction: 0.1657[µg/m^3] or 0.03163 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.05524

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Gibraltar SSV-2
Report Date: Thu Oct 15 11:29:12 PDT 2015
Report Generated From: http://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 70.1[µg/m^3]
Depth of soil gas sample: 1ft +/- 0.1ft
Average soil/ground water temperature: 58F

CHEMICAL PROPERTIES
Chemical of Concern: Chloroform CAS Number: 67663
Molecular Weight: 119.38 [g/mole] Henrys Constant: 0.09743509 [unitless]
Diffusivity in Air: 0.1040 [cm^2/sec] Diffusivity in Water: 1.000e-5 [cm^2/sec]
Unit Risk Factor: 0.000023 [(µg/m^3)$^{-1}$] Reference Concentration: 0 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.0105[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.004004

[1]Low Indoor Air Prediction: 0.2135 [µg/m^3] or 0.04376 [ppbv]
Cancer Risk of this concentration: 2.018e-6 Hazard Risk of this concentration: 0.

Best Estimate Indoor Air Prediction: 0.2807[µg/m^3] or 0.05753 [ppbv]
Cancer Risk of this concentration: 2.653e-6 Hazard Risk of this concentration: 0.

[2]High Indoor Air Prediction: 0.3122[µg/m^3] or 0.06398 [ppbv]
Cancer Risk of this concentration: 2.951e-6 Hazard Risk of this concentration: 0.

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Gibraltar SSV-2
Report Date: Thu Oct 15 11:35:23 PDT 2015
Report Generated From: http://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 6.60[µg/m^3]
Depth of soil gas sample: 1ft +/- 0.1ft
Average soil/ground water temperature: 58F

CHEMICAL PROPERTIES
Chemical of Concern: Naphthalene CAS Number: 91203
Molecular Weight: 128.18 [g/mole] Henrys Constant: 0.009200896 [unitless]
Diffusivity in Air: 5.900e-2 [cm^2/sec] Diffusivity in Water: 7.500e-6 [cm^2/sec]
Unit Risk Factor: 0 [(µg/m^3)$^{-1}$] Reference Concentration: 0.003 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Slab-on-Grade Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 2.44[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 106[m^2] Building Crack Ratio: 0.00038[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005959[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.003508

[1]Low Indoor Air Prediction: 0.01562 [µg/m^3] or 0.002982 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.005208

Best Estimate Indoor Air Prediction: 0.02315[µg/m^3] or 0.004419 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.007717

[2]High Indoor Air Prediction: 0.02741[µg/m^3] or 0.005233 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.009138

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

INDOOR AIR SIMULATION RESULTS

Screening-Level Johnson and Ettinger Model

Site Name: Gibraltar SSV-3
Report Date: Thu Oct 15 11:36:25 PDT 2015
Report Generated From: http://www3.epa.gov/ceampubl/learn2model/part-two/onsite/JnE_lite_forward.htm
Type of sample: SOIL GAS Concentration = 6.60[µg/m^3]
Depth of soil gas sample: 1ft +/- 0.1ft
Average soil/ground water temperature: 58F

CHEMICAL PROPERTIES
Chemical of Concern: Naphthalene CAS Number: 91203
Molecular Weight: 128.18 [g/mole] Henrys Constant: 0.009200896 [unitless]
Diffusivity in Air: 5.900e-2 [cm^2/sec] Diffusivity in Water: 7.500e-6 [cm^2/sec]
Unit Risk Factor: 0 [(µg/m^3)$^{-1}$] Reference Concentration: 0.003 [mg/m^3]

SOIL PROPERTIES
Soil Type: Sandy Loam Total Porosity: 0.387
Unsaturated Zone Moisture Content:
low= 0.039 best estimate= 0.103 high= 0.17
Capillary Zone Moisture Content: 0.32 Height of Capillary Rise: 0.25 [m]
Soil-Gas Flow Rate into Building: 5 [L/min]

BUILDING PROPERTIES
Building Type: Basement Air Exchange Rate: 0.25[hr^{-1}]
Building Mixing Height: 3.66[m] Building Footprint Area: 100[m^2]
Subsurface Foundation Area: 180[m^2] Building Crack Ratio: 0.0002[unitless]
Foundation Slab Thickness: 0.1[m]

EXPOSURE PARAMETERS
Exposure Duration: carcinogens 30 [years] non-carcinogens: 30 [years]
Exposure Frequency: carcinogens 350 [days/year] non-carcinogens: 365 [days/year]
Averaging Time: carcinogens 70 [years] non-carcinogens: 30 [years]

JOHNSON & ETTINGER SIMULATION RESULTS
Effective Diffusion Coefficient (D_{eff}): 0.005959[cm^2/s]
Soil Gas to Indoor Air Attenuation Factor (α_{SG}) = 0.002651

[1]Low Indoor Air Prediction: 0.01324 [µg/m^3] or 0.002527 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.004413

Best Estimate Indoor Air Prediction: 0.01750[µg/m^3] or 0.003340 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.005832

[2]High Indoor Air Prediction: 0.01952[µg/m^3] or 0.003726 [ppbv]
Cancer Risk of this concentration: 0. Hazard Risk of this concentration: 0.006508

Based on parameter analysis: Advection is the dominant mechanism across foundation.

[1]"Low Prediction" concentrations produced with HIGHEST moisture content and DEEPEST depth to contamination.
[2]"High Prediction" concentrations produced with LOWEST moisture content and SHALLOWEST depth to contamination.

APPENDIX C – SOIL BORING LOGS

Boring Logs for EB-15 through EB-17

BORING LOG NO. EB-15

PROJECT: Gibraltar Senior Living

CLIENT: 155 Tremont Ave. LLC
Bellingham, Washington

SITE: 10816 18th Avenue East
Tacoma, Washington

LOCATION See Figure 2

DEPTH	MATERIAL DESCRIPTION	ELEVATION (Ft.)	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	OVA/PID (ppm)	SAMPLE ID
0.5	SILTY SAND WITH GRAVEL (SM), gray, no odor							
	SAND WITH SILT AND GRAVEL (SP-SM), gray, no odor				■	25	3.9	EB-15, S-1, 0.5-1
1.5	no recovery							
4.0	***Boring Terminated at 4 Feet***							

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

Notes:

WATER LEVEL OBSERVATIONS

Terracon
21905 64th Ave. W, Suite 100
Mountlake Terrace, Washington

Boring Started: 10/8/2015	Boring Completed: 10/8/2015
Drill Rig: GeoProbe	Driller: Holocene
Project No.: B2157004	Exhibit: EB-15

WELL LOG NO. EB-17

PROJECT: Gibraltar Senior Living

CLIENT: 155 Tremont Ave. LLC
Bellingham, Washington

SITE: 10816 18th Avenue East
Tacoma, Washington

LOCATION See Figure 2

Surface Elev.: 100 (Ft.)

DEPTH	MATERIAL DESCRIPTION	ELEVATION (Ft.)
	SILTY SAND (SM), brown	
	gray, with orange mottling	96
4.0	**SILTY SAND WITH GRAVEL (SM)**, gray, with orange mottling, moist	
	gray	90
10.0	***Boring Refusal at 10 Feet***	

INSTALLATION DETAILS
Well Completion:

DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	OVA/PID (ppm)	SAMPLE ID
				6.6	
				3.7	
				4.5	
5				6.1	
				2.7	EB-17, S-1, 7-7.5
				7.1	
10				6.9	EB-17, S-1, 9.5-10

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push

Abandonment Method:
Borings backfilled with bentonite chips upon completion

Notes:

WATER LEVEL OBSERVATIONS
Not encountered
Not in temporary well

Terracon
21905 64th Ave. W, Suite 100
Mountlake Terrace, Washington

Well Started: 10/8/2015
Well Completed: 10/8/2015
Drill Rig: GeoProbe
Driller: Holocene
Project No.: B2157004
Exhibit: EB-17

APPENDIX D – ANALYTICAL REPORT AND CHAIN OF CUSTODY

October 12, 2015

Mr. Eric Dubcak
Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

Dear Mr. Dubcak,

On October 9th, 3 samples were received by our laboratory and assigned our laboratory project number EV15100061. The project was identified as your B2157004. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	10/12/2015
		ALS JOB#:	EV15100061
		ALS SAMPLE#:	EV15100061-01
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	10/09/2015
CLIENT PROJECT:	B2157004	COLLECTION DATE:	10/8/2015 9:35:00 AM
CLIENT SAMPLE ID	EB-15, S-1, 0.5-1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	ND	25	1	MG/KG	10/09/2015	DLC
TPH-Oil Range	NWTPH-DX	ND	50	1	MG/KG	10/09/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	89.4	10/09/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

LIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	10/12/2015
		ALS JOB#:	EV15100061
LIENT CONTACT:	Eric Dubcak	ALS SAMPLE#:	EV15100061-02
LIENT PROJECT:	B2157004	DATE RECEIVED:	10/09/2015
LIENT SAMPLE ID	EB-17, S-1, 7-7.5'	COLLECTION DATE:	10/8/2015 12:36:00 PM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	ND	25	1	MG/KG	10/09/2015	DLC
TPH-Oil Range	NWTPH-DX	ND	50	1	MG/KG	10/09/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.8	10/09/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE: ALS SDG#: WDOE ACCREDITATION:	10/12/2015 EV15100061 C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	B2157004		

LABORATORY BLANK RESULTS

MB-100915S - Batch 97952 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U		MG/KG	25	10/09/2015	DLC
TPH-Oil Range	NWTPH-DX	U		MG/KG	50	10/09/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE: ALS SDG#: WDOE ACCREDITATION:	10/12/2015 EV15100061 C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	B2157004		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 97952 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	**105**			10/09/2015	DLC
TPH-Diesel Range - BSD	NWTPH-DX	**115**	**9**		10/09/2015	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1510006 1

Date 10-8-15 Page 1 Of 1

PROJECT ID:	B2157004
REPORT TO COMPANY:	TERRACON
PROJECT MANAGER:	ERIC DUBCAK
ADDRESS:	21905 - 64TH AVE. W., STE. 100 MOUNTLAKE TERRACE, WA 98043
PHONE:	425-771-3304 FAX:
P.O. #:	E-MAIL: eadubcak@terracon.com
INVOICE TO COMPANY:	
ATTENTION:	
ADDRESS:	SAME

ANALYSIS REQUESTED

OTHER (Specify)

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	HOLD	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. EB-15, S-1, 0.5-1	10/8/15	09:35	Soil	1		X															1	
2. EB-17, S-1, 7-7.5'	"	12:36	↓	2		X															1	
3. EB-17, S-2, 9.5-10	"	12:38	↓	3																X	1	
4.																						
5.																						
6.																						
7.																						
8.																						
9.																						
10.																						

SPECIAL INSTRUCTIONS: 5-DAY T.A.T. PER NATIONAL PRICING/TERMS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: TERRACON, 10/9/15, 12:10
   Received By: ALS 10/9/15 12:10
2. Relinquished By:
   Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: Standard | 3 | 1 | SAME DAY

OTHER: Specify:

*Turnaround request less than standard may incur Rush Charges

October 14, 2015

Mr. Eric Dubcak
Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

Dear Mr. Dubcak,

On October 9th, 3 samples were received by our laboratory and assigned our laboratory project number EV15100062. The project was identified as your B2157004. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	10/14/2015
		ALS JOB#:	EV15100062
		ALS SAMPLE#:	EV15100062-01
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	10/09/2015
CLIENT PROJECT:	B2157004	COLLECTION DATE:	10/8/2015 10:30:00 AM
CLIENT SAMPLE ID	EB-16, S-1, 7.5-8	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	ND	25	1	MG/KG	10/09/2015	DLC
TPH-Oil Range	NWTPH-DX	ND	50	1	MG/KG	10/09/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	93.4	10/09/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	10/14/2015
		ALS JOB#:	EV15100062
		ALS SAMPLE#:	EV15100062-02
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	10/09/2015
CLIENT PROJECT:	B2157004	COLLECTION DATE:	10/8/2015 10:40:00 AM
CLIENT SAMPLE ID	EB-16, S-2, 9.5-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	ND	25	1	MG/KG	10/13/2015	DLC
TPH-Oil Range	NWTPH-DX	ND	50	1	MG/KG	10/13/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	90.4	10/13/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	10/14/2015
		ALS JOB#:	EV15100062
		ALS SAMPLE#:	EV15100062-03
CLIENT CONTACT:	Eric Dubcak	DATE RECEIVED:	10/09/2015
CLIENT PROJECT:	B2157004	COLLECTION DATE:	10/8/2015 10:55:00 AM
CLIENT SAMPLE ID	EB-16	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	690	130	1	UG/L	10/12/2015	DLC
TPH-Oil Range	NWTPH-DX	1300	250	1	UG/L	10/12/2015	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	88.5	10/12/2015	DLC

Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and lube oil.
Diesel range product results biased high due to oil range product overlap.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

LIENT: Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

LIENT CONTACT: Eric Dubcak
LIENT PROJECT: B2157004

DATE: 10/14/2015
ALS SDG#: EV15100062
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-100915S - Batch 97952 - Soil by NWTPH-DX

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U		MG/KG	25	10/09/2015	DLC
TPH-Oil Range	NWTPH-DX	U		MG/KG	50	10/09/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-100715W - Batch 97902 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	QUAL	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U		UG/L	130	10/08/2015	DLC
TPH-Oil Range	NWTPH-DX	U		UG/L	250	10/08/2015	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE: ALS SDG#: WDOE ACCREDITATION:	10/14/2015 EV15100062 C601
CLIENT CONTACT:	Eric Dubcak		
CLIENT PROJECT:	B2157004		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 97952 - Soil by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	105			10/09/2015	DLC
TPH-Diesel Range - BSD	NWTPH-DX	115	9		10/09/2015	DLC

ALS Test Batch ID: 97902 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	98.3			10/08/2015	DLC
TPH-Diesel Range - BSD	NWTPH-DX	102	4		10/08/2015	DLC

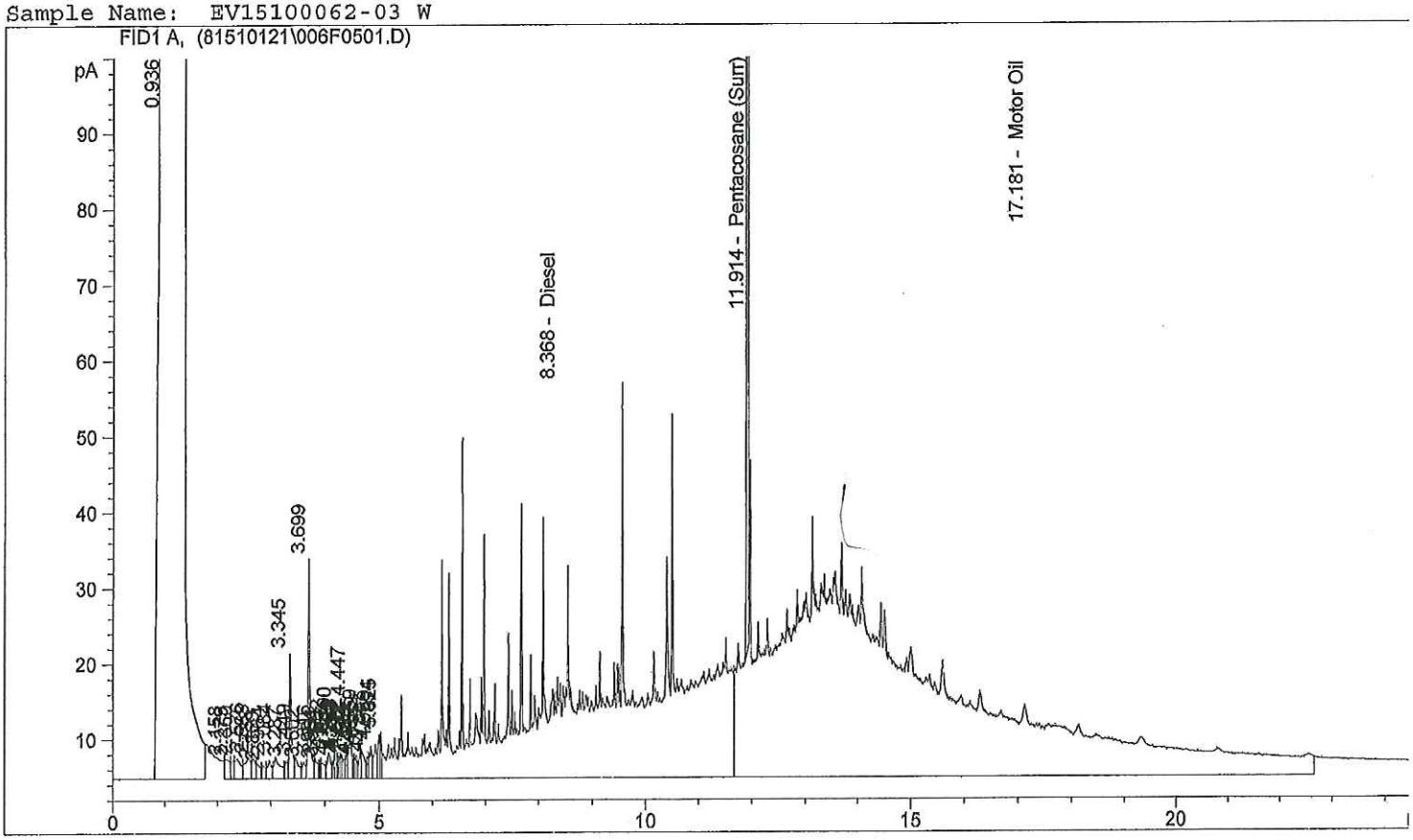
APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp

Instrument #81 Data File: C:\HPCHEM\1\DATA\81510121\006F0501.D
Operator: DLC
Method: C:\HPCHEM\1\METHODS\FDMO0914.M
Injection Date & Time: 10/12/2015 9:03:58 AM 10/12/2015 9:03:58 AM
Report Creation: 10/12/2015 10:23:57 AM

Sample Name: EV15100062-03 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.368	FID1 A,	Diesel	3675.696	317.350
11.914		Pentacosane (Surr)	859.393	35.393 88%
17.181		Motor Oil	6513.179	599.788

460 ml

$D = 317.350 \mu g/ml \times \frac{1.0 ml}{460 ml} = 690 \mu g/L$

unidentified diesel range product

MO = 1300 µg/L (biased high due to motor oil range product overlap)

lube oil

REVIEWED BY & DATE 10/12/15

10-12-15 DC

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1510062

Date 10-8-15 Page 1 Of 1

PROJECT ID: B215 7004
REPORT TO COMPANY: TERRACON
PROJECT MANAGER: ERIC DUBLAK
ADDRESS: 21905 - 64TH AVE. W., STE. 100
MOUNTLAKE TERRACE, WA 98043
PHONE: 425-771-3304 FAX:
P.O. #: E-MAIL: edublak@terracon.com
INVOICE TO COMPANY:
ATTENTION: SAME
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#
1. EB-16, S-1, 7.5-8	10/8/15	10:30	SOIL	1
2. EB-16, S-2, 9.5-10	"	10:40	"	2
3. EB-16	"	10:55	GW	3
4.				
5.				
6.				
7.				
8.				
9.				
10.				

ANALYSIS REQUESTED

NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐
	X													
	X													
	X													

OTHER (Specify)

HOLD							NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
							1	
X							1	
							1	

SPECIAL INSTRUCTIONS 5-DAY T.A.T. PER NATIONAL PRICING/TERMS (X) Added 10/12/15 per Eric Standard TAT

SIGNATURES (Name, Company, Date, Time)

1. Relinquished By: TERRACON, 10/9/15, 12:10
Received By: ALS 10/9/15 12:10
2. Relinquished By:
Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: (X) Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

October 15, 2015

myESC
REAL TIME DATA ACCESS

Terracon- Mountlake Terrace, WA

Sample Delivery Group:	L793910
Samples Received:	10/10/2015
Project Number:	B2157004
Description:	Gibraltar Senior Living

Report To:

Eric Dubcak
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

Entire Report Reviewed By:

Jarred Willis
Technical Service Representative

TABLE OF CONTENTS

ONE LAB. NATIONWIDE.

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

SSV-1 L793910-01 Air

Collected by: Adam Stauffer
Collected date/time: 10/08/15 11:40
Received date/time: 10/10/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG821849	2	10/15/15 01:55	10/15/15 01:55	MBF

SSV-2 L793910-02 Air

Collected by: Adam Stauffer
Collected date/time: 10/08/15 13:30
Received date/time: 10/10/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG821849	2	10/15/15 02:47	10/15/15 02:47	MBF

SSV-3 L793910-03 Air

Collected by: Adam Stauffer
Collected date/time: 10/08/15 13:40
Received date/time: 10/10/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG821849	2	10/15/15 03:38	10/15/15 03:38	MBF

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

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

Jarred Willis
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppb	RDL2 ug/m3	ppbv ppb	ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	36.3	86.2		2	WG821849
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG821849
Benzene	71-43-2	78.10	0.400	1.28	0.709	2.26		2	WG821849
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG821849
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG821849
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG821849
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG821849
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG821849
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG821849
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG821849
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG821849
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG821849
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG821849
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG821849
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG821849
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG821849
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG821849
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG821849
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG821849
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG821849
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG821849
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG821849
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG821849
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG821849
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG821849
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG821849
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG821849
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG821849
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG821849
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG821849
Ethanol	64-17-5	46.10	1.26	2.38	53.9	102		2	WG821849
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG821849
4-Ethyltoluene	622-96-8	120	0.400	1.96	1.31	6.41		2	WG821849
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG821849
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.480	2.37		2	WG821849
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG821849
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG821849
Heptane	142-82-5	100	0.400	1.64	0.501	2.05		2	WG821849
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG821849
n-Hexane	110-54-3	86.20	0.400	1.41	0.505	1.78		2	WG821849
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG821849
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG821849
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG821849
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	6.69	19.7		2	WG821849
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG821849
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG821849
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG821849
Naphthalene	91-20-3	128	1.26	6.60	7.63	39.9		2	WG821849
2-Propanol	67-63-0	60.10	2.50	6.15	18.1	44.5		2	WG821849
Propene	115-07-1	42.10	0.800	1.38	1.89	3.25		2	WG821849
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG821849
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG821849
Tetrachloroethylene	127-18-4	166	0.400	2.72	1.04	7.06		2	WG821849
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG821849
Toluene	108-88-3	92.10	0.400	1.51	1.07	4.04		2	WG821849
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG821849

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppb	RDL2 ug/m3	ppbv ppb	ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG821849
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG821849
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG821849
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	13.7	67.2		2	WG821849
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	4.14	20.3		2	WG821849
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG821849
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG821849
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG821849
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG821849
m&p-Xylene	1330-20-7	106	0.800	3.47	0.902	3.91		2	WG821849
o-Xylene	95-47-6	106	0.400	1.73	0.425	1.84		2	WG821849
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*118*				WG821849

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 ppb	RDL2 ug/m3	ppbv ppb	ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	23.8	56.6		2	WG821849
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG821849
Benzene	71-43-2	78.10	0.400	1.28	0.707	2.26		2	WG821849
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG821849
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG821849
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG821849
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG821849
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG821849
Carbon disulfide	75-15-0	76.10	0.400	1.24	2.53	7.86		2	WG821849
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG821849
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG821849
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG821849
Chloroform	67-66-3	119	0.400	1.95	14.4	70.1		2	WG821849
Chloromethane	74-87-3	50.50	0.400	0.826	0.439	0.908		2	WG821849
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG821849
Cyclohexane	110-82-7	84.20	0.400	1.38	0.832	2.86		2	WG821849
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG821849
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG821849
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG821849
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG821849
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG821849
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG821849
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG821849
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG821849
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG821849
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG821849
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG821849
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG821849
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG821849
1,4-Dioxane	123-91-1	88.10	0.400	1.44	2.59	9.32		2	WG821849
Ethanol	64-17-5	46.10	1.26	2.38	464	874	E	2	WG821849
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG821849
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG821849
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG821849
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.461	2.28		2	WG821849
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG821849
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG821849
Heptane	142-82-5	100	0.400	1.64	0.986	4.03		2	WG821849
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG821849
n-Hexane	110-54-3	86.20	0.400	1.41	1.44	5.07		2	WG821849
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG821849
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG821849
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG821849
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	3.17	9.36		2	WG821849
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG821849
Methyl methacrylate	80-62-6	100.12	0.400	1.64	0.477	1.95		2	WG821849
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG821849
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG821849
2-Propanol	67-63-0	60.10	2.50	6.15	16.3	40.0		2	WG821849
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG821849
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG821849
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG821849
Tetrachloroethylene	127-18-4	166	0.400	2.72	1.18	8.02		2	WG821849
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	0.748	2.20		2	WG821849
Toluene	108-88-3	92.10	0.400	1.51	1.70	6.41		2	WG821849
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG821849

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

SAMPLE RESULTS - 02

L793910

SSV-2

Collected date/time: 10/08/15 13:30

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppb	RDL2 ug/m3	ppbv ppb	ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.400	2.18	ND	ND		2	WG821849
1,1,2-Trichloroethane	79-00-5	133	0.400	2.18	ND	ND		2	WG821849
Trichloroethylene	79-01-6	131	0.400	2.14	ND	ND		2	WG821849
1,2,4-Trimethylbenzene	95-63-6	120	0.400	1.96	ND	ND		2	WG821849
1,3,5-Trimethylbenzene	108-67-8	120	0.400	1.96	ND	ND		2	WG821849
2,2,4-Trimethylpentane	540-84-1	114.22	0.400	1.87	ND	ND		2	WG821849
Vinyl chloride	75-01-4	62.50	0.400	1.02	ND	ND		2	WG821849
Vinyl Bromide	593-60-2	106.95	0.400	1.75	ND	ND		2	WG821849
Vinyl acetate	108-05-4	86.10	0.400	1.41	ND	ND		2	WG821849
m&p-Xylene	1330-20-7	106	0.800	3.47	0.919	3.98		2	WG821849
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG821849
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*114*				

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppb	RDL2 ug/m3	ppbv ppb	ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	2.50	5.94	19.7	46.8		2	WG821849
Allyl chloride	107-05-1	76.53	0.400	1.25	ND	ND		2	WG821849
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG821849
Benzyl Chloride	100-44-7	127	0.400	2.08	ND	ND		2	WG821849
Bromodichloromethane	75-27-4	164	0.400	2.68	ND	ND		2	WG821849
Bromoform	75-25-2	253	1.20	12.4	ND	ND		2	WG821849
Bromomethane	74-83-9	94.90	0.400	1.55	ND	ND		2	WG821849
1,3-Butadiene	106-99-0	54.10	4.00	8.85	ND	ND		2	WG821849
Carbon disulfide	75-15-0	76.10	0.400	1.24	ND	ND		2	WG821849
Carbon tetrachloride	56-23-5	154	0.400	2.52	ND	ND		2	WG821849
Chlorobenzene	108-90-7	113	0.400	1.85	ND	ND		2	WG821849
Chloroethane	75-00-3	64.50	0.400	1.06	ND	ND		2	WG821849
Chloroform	67-66-3	119	0.400	1.95	ND	ND		2	WG821849
Chloromethane	74-87-3	50.50	0.400	0.826	ND	ND		2	WG821849
2-Chlorotoluene	95-49-8	126	0.400	2.06	ND	ND		2	WG821849
Cyclohexane	110-82-7	84.20	0.400	1.38	ND	ND		2	WG821849
Dibromochloromethane	124-48-1	208	0.400	3.40	ND	ND		2	WG821849
1,2-Dibromoethane	106-93-4	188	0.400	3.08	ND	ND		2	WG821849
1,2-Dichlorobenzene	95-50-1	147	0.400	2.40	ND	ND		2	WG821849
1,3-Dichlorobenzene	541-73-1	147	0.400	2.40	ND	ND		2	WG821849
1,4-Dichlorobenzene	106-46-7	147	0.400	2.40	ND	ND		2	WG821849
1,2-Dichloroethane	107-06-2	99	0.400	1.62	ND	ND		2	WG821849
1,1-Dichloroethane	75-34-3	98	0.400	1.60	ND	ND		2	WG821849
1,1-Dichloroethene	75-35-4	96.90	0.400	1.59	ND	ND		2	WG821849
cis-1,2-Dichloroethene	156-59-2	96.90	0.400	1.59	ND	ND		2	WG821849
trans-1,2-Dichloroethene	156-60-5	96.90	0.400	1.59	ND	ND		2	WG821849
1,2-Dichloropropane	78-87-5	113	0.400	1.85	ND	ND		2	WG821849
cis-1,3-Dichloropropene	10061-01-5	111	0.400	1.82	ND	ND		2	WG821849
trans-1,3-Dichloropropene	10061-02-6	111	0.400	1.82	ND	ND		2	WG821849
1,4-Dioxane	123-91-1	88.10	0.400	1.44	ND	ND		2	WG821849
Ethanol	64-17-5	46.10	1.26	2.38	39.5	74.6		2	WG821849
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG821849
4-Ethyltoluene	622-96-8	120	0.400	1.96	ND	ND		2	WG821849
Trichlorofluoromethane	75-69-4	137.40	0.400	2.25	ND	ND		2	WG821849
Dichlorodifluoromethane	75-71-8	120.92	0.400	1.98	0.465	2.30		2	WG821849
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.400	3.07	ND	ND		2	WG821849
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.400	2.80	ND	ND		2	WG821849
Heptane	142-82-5	100	0.400	1.64	0.508	2.08		2	WG821849
Hexachloro-1,3-butadiene	87-68-3	261	1.26	13.5	ND	ND		2	WG821849
n-Hexane	110-54-3	86.20	0.400	1.41	0.490	1.73		2	WG821849
Isopropylbenzene	98-82-8	120.20	0.400	1.97	ND	ND		2	WG821849
Methylene Chloride	75-09-2	84.90	0.400	1.39	ND	ND		2	WG821849
Methyl Butyl Ketone	591-78-6	100	2.50	10.2	ND	ND		2	WG821849
2-Butanone (MEK)	78-93-3	72.10	2.50	7.37	ND	ND		2	WG821849
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	2.50	10.2	ND	ND		2	WG821849
Methyl methacrylate	80-62-6	100.12	0.400	1.64	ND	ND		2	WG821849
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG821849
Naphthalene	91-20-3	128	1.26	6.60	ND	ND		2	WG821849
2-Propanol	67-63-0	60.10	2.50	6.15	18.4	45.2		2	WG821849
Propene	115-07-1	42.10	0.800	1.38	ND	ND		2	WG821849
Styrene	100-42-5	104	0.400	1.70	ND	ND		2	WG821849
1,1,2,2-Tetrachloroethane	79-34-5	168	0.400	2.75	ND	ND		2	WG821849
Tetrachloroethylene	127-18-4	166	0.400	2.72	0.644	4.37		2	WG821849
Tetrahydrofuran	109-99-9	72.10	0.400	1.18	ND	ND		2	WG821849
Toluene	108-88-3	92.10	0.400	1.51	0.918	3.46		2	WG821849
1,2,4-Trichlorobenzene	120-82-1	181	1.26	9.33	ND	ND		2	WG821849

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

Method Blank (MB)

(MB) 10/14/15 09:52

Analyte	MB Result ppb	MB Qualifier	MB RDL ppb
Acetone	ND		1.25
Allyl Chloride	ND		0.200
Benzene	ND		0.200
Benzyl Chloride	ND		0.200
Bromodichloromethane	ND		0.200
Bromoform	ND		0.600
Bromomethane	ND		0.200
1,3-Butadiene	ND		2.00
Carbon disulfide	ND		0.200
Carbon tetrachloride	ND		0.200
Chlorobenzene	ND		0.200
Chloroethane	ND		0.200
Chloroform	ND		0.200
Chloromethane	ND		0.200
2-Chlorotoluene	ND		0.200
Cyclohexane	ND		0.200
Dibromochloromethane	ND		0.200
1,2-Dibromoethane	ND		0.200
1,2-Dichlorobenzene	ND		0.200
1,3-Dichlorobenzene	ND		0.200
1,4-Dichlorobenzene	ND		0.200
1,2-Dichloroethane	ND		0.200
1,1-Dichloroethane	ND		0.200
1,1-Dichloroethene	ND		0.200
cis-1,2-Dichloroethene	ND		0.200
trans-1,2-Dichloroethene	ND		0.200
1,2-Dichloropropane	ND		0.200
cis-1,3-Dichloropropene	ND		0.200
trans-1,3-Dichloropropene	ND		0.200
1,4-Dioxane	ND		0.200
Ethylbenzene	ND		0.200
4-Ethyltoluene	ND		0.200
Trichlorofluoromethane	ND		0.200
Dichlorodifluoromethane	ND		0.200
1,1,2-Trichlorotrifluoroethane	ND		0.200
1,2-Dichlorotetrafluoroethane	ND		0.200

Method Blank (MB)

(MB) 10/14/15 09:52

Analyte	MB Result ppb	MB Qualifier	MB RDL ppb
Heptane	ND		0.200
Hexachloro-1,3-butadiene	ND		0.630
n-Hexane	ND		0.200
Isopropylbenzene	ND		0.200
Methylene Chloride	ND		0.200
Methyl Butyl Ketone	ND		1.25
2-Butanone (MEK)	ND		1.25
4-Methyl-2-pentanone (MIBK)	ND		1.25
Methyl Methacrylate	ND		0.200
MTBE	ND		0.200
Naphthalene	ND		0.630
2-Propanol	ND		1.25
Propene	ND		0.400
Styrene	ND		0.200
1,1,2,2-Tetrachloroethane	ND		0.200
Tetrachloroethylene	ND		0.200
Tetrahydrofuran	ND		0.200
Toluene	ND		0.200
1,2,4-Trichlorobenzene	ND		0.630
1,1,1-Trichloroethane	ND		0.200
1,1,2-Trichloroethane	ND		0.200
Trichloroethylene	ND		0.200
1,2,4-Trimethylbenzene	ND		0.200
1,3,5-Trimethylbenzene	ND		0.200
2,2,4-Trimethylpentane	ND		0.200
Vinyl chloride	ND		0.200
Vinyl Bromide	ND		0.200
Vinyl acetate	ND		0.200
m&p-Xylene	ND		0.400
o-Xylene	ND		0.200
Ethanol	ND		0.630
(S) 1,4-Bromofluorobenzene	*94.8*		*60.0-140*

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

(LCS) 10/14/15 08:07 • (LCSD) 10/14/15 08:59

Analyte	Spike Amount ppb	LCS Result ppb	LCSD Result ppb	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.92	4.29	105	114	34.3-167			8.97	25
Propene	3.75	3.44	3.63	91.9	96.9	53.9-143			5.34	25
Dichlorodifluoromethane	3.75	3.54	3.73	94.3	99.5	56.7-140			5.36	25
1,2-Dichlorotetrafluoroethane	3.75	3.49	3.65	93.0	97.2	70.0-130			4.51	25
Chloromethane	3.75	3.76	3.96	100	106	70.0-130			5.25	25
Vinyl chloride	3.75	3.54	3.79	94.4	101	70.0-130			6.69	25
1,3-Butadiene	3.75	3.61	3.78	96.3	101	70.0-130			4.49	25
Bromomethane	3.75	3.34	3.55	89.0	94.7	70.0-130			6.12	25
Chloroethane	3.75	3.40	3.67	90.7	97.8	70.0-130			7.53	25
Trichlorofluoromethane	3.75	3.25	3.48	86.6	92.8	70.0-130			6.87	25
1,1,2-Trichlorotrifluoroethane	3.75	3.33	3.51	88.9	93.7	70.0-130			5.30	25
1,1-Dichloroethene	3.75	3.44	3.58	91.6	95.5	70.0-130			4.19	25
1,1-Dichloroethane	3.75	3.36	3.57	89.5	95.1	70.0-130			6.01	25
Acetone	3.75	3.25	3.46	86.8	92.4	70.0-130			6.26	25
2-Propanol	3.75	3.49	3.68	93.0	98.1	50.4-152			5.35	25
Carbon disulfide	3.75	3.44	3.62	91.8	96.4	70.0-130			4.99	25
Methylene Chloride	3.75	3.06	3.25	81.7	86.6	70.0-130			5.83	25
MTBE	3.75	3.28	3.47	87.6	92.6	70.0-130			5.57	25
trans-1,2-Dichloroethene	3.75	3.33	3.51	88.8	93.6	70.0-130			5.23	25
n-Hexane	3.75	3.19	3.37	85.1	89.9	70.0-130			5.42	25
Vinyl acetate	3.75	3.09	3.32	82.4	88.5	70.0-130			7.15	25
Methyl Ethyl Ketone	3.75	3.37	3.61	89.9	96.2	70.0-130			6.76	25
cis-1,2-Dichloroethene	3.75	3.32	3.53	88.6	94.2	70.0-130			6.16	25
Chloroform	3.75	3.35	3.57	89.3	95.1	70.0-130			6.25	25
Cyclohexane	3.75	3.28	3.52	87.6	93.8	70.0-130			6.82	25
1,1,1-Trichloroethane	3.75	3.29	3.49	87.8	93.1	70.0-130			5.88	25
Carbon tetrachloride	3.75	3.30	3.50	88.0	93.4	70.0-130			5.90	25
Benzene	3.75	3.61	3.83	96.3	102	70.0-130			5.85	25
1,2-Dichloroethane	3.75	3.63	3.85	96.9	103	70.0-130			5.71	25
Heptane	3.75	3.68	3.93	98.2	105	70.0-130			6.48	25
Trichloroethylene	3.75	3.71	3.94	98.8	105	70.0-130			6.24	25
1,2-Dichloropropane	3.75	3.68	3.97	98.1	106	70.0-130			7.49	25
1,4-Dioxane	3.75	3.05	3.32	81.4	88.5	48.0-156			8.26	25
Bromodichloromethane	3.75	3.70	3.93	98.7	105	70.0-130			6.12	25
cis-1,3-Dichloropropene	3.75	3.49	3.72	93.1	99.3	70.0-130			6.41	25
4-Methyl-2-pentanone (MIBK)	3.75	3.84	4.10	102	109	55.3-154			6.43	25

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

(LCS) 10/14/15 08:07 • (LCSD) 10/14/15 08:59

Analyte	Spike Amount ppb	LCS Result ppb	LCSD Result ppb	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Toluene	3.75	3.55	3.82	94.7	102	70.0-130			7.37	25
trans-1,3-Dichloropropene	3.75	3.49	3.74	93.0	99.7	70.0-130			7.01	25
1,1,2-Trichloroethane	3.75	3.55	3.78	94.8	101	70.0-130			6.24	25
Tetrachloroethylene	3.75	3.48	3.74	92.8	99.8	70.0-130			7.21	25
Methyl Butyl Ketone	3.75	3.59	3.90	95.6	104	47.9-165			8.50	25
Dibromochloromethane	3.75	3.64	3.91	97.0	104	70.0-130			7.12	25
1,2-Dibromoethane	3.75	3.48	3.77	92.8	101	70.0-130			8.06	25
Chlorobenzene	3.75	3.53	3.75	94.1	99.9	70.0-130			5.99	25
Ethylbenzene	3.75	3.49	3.73	93.0	99.6	70.0-130			6.86	25
m&p-Xylene	7.50	6.73	7.17	89.8	95.6	70.0-130			6.27	25
o-Xylene	3.75	3.46	3.71	92.4	98.9	70.0-130			6.88	25
Styrene	3.75	3.69	3.95	98.3	105	70.0-130			6.89	25
Bromoform	3.75	3.75	3.97	100	106	70.0-130			5.82	25
1,1,2,2-Tetrachloroethane	3.75	3.53	3.78	94.0	101	70.0-130			7.00	25
4-Ethyltoluene	3.75	3.72	3.98	99.2	106	70.0-130			6.74	25
1,3,5-Trimethylbenzene	3.75	3.68	3.94	98.1	105	70.0-130			6.94	25
1,2,4-Trimethylbenzene	3.75	3.75	3.98	100	106	70.0-130			5.95	25
1,3-Dichlorobenzene	3.75	3.75	4.01	100	107	70.0-130			6.80	25
1,4-Dichlorobenzene	3.75	3.82	4.09	102	109	70.0-130			6.76	25
Benzyl Chloride	3.75	3.72	3.94	99.1	105	55.6-160			5.84	25
1,2-Dichlorobenzene	3.75	3.65	3.96	97.3	106	70.0-130			8.22	25
1,2,4-Trichlorobenzene	3.75	3.97	4.28	106	114	53.6-154			7.48	25
Hexachloro-1,3-butadiene	3.75	3.60	3.80	95.9	101	62.1-143			5.50	25
Naphthalene	3.75	3.88	4.16	103	111	52.0-158			6.87	25
Allyl Chloride	3.75	3.50	3.70	93.4	98.6	70.0-130			5.42	25
2-Chlorotoluene	3.75	3.62	3.84	96.6	103	70.0-130			5.94	25
Methyl Methacrylate	3.75	3.41	3.71	90.9	99.0	70.0-130			8.44	25
Tetrahydrofuran	3.75	3.54	3.83	94.5	102	65.0-140			7.89	25
2,2,4-Trimethylpentane	3.75	3.40	3.62	90.7	96.6	70.0-130			6.40	25
Vinyl Bromide	3.75	3.29	3.59	87.9	95.7	70.0-130			8.57	25
Isopropylbenzene	3.75	3.54	3.78	94.4	101	70.0-130			6.56	25
(S) 1,4-Bromofluorobenzene				*105*	*106*	*60.0-140*				

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

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(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.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

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.**

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 [14]	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		

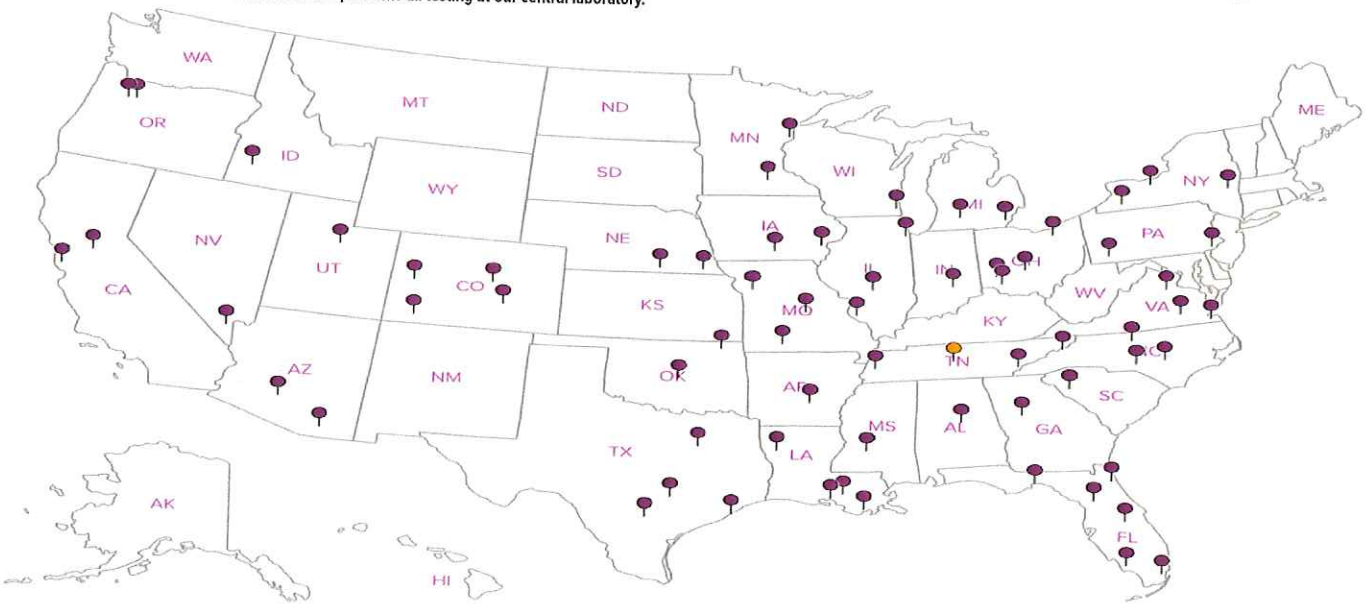
[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

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.**



Terracon- Mountlake Terrace, WA

21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

Billing Information:
Accounts Payable
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

Report to: Eric Dubcak

Email To: eadubcak@terracon.com; Sabine.Datum@terracon.com;

Project Description: GIBRALTAR SENIOR LIVING

City/State Collected: TACOMA, WA

Phone: 425-771-3304
Fax: 425-771-3549

Client Project # B2157004

Lab Project # TERRLWA-B2157004

Collected by (print): ADAM A. STAUFFER

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: 10-16-15

Email? ___No X_Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TO-15 Summa	Rem./Contaminant	Sample # (lab only)
SSV-1		Air		10/8/15	11:40	1	X		-01
SSV-2		Air		"	13:30	1	X		02
SSV-3		Air		"	13:40	1	X		03
		Air				1	X		

Chain of Custody Page ___ of ___

ESC LABS SCIENCES
YOUR LAB OF CHOICE
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Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L793910

L049

Acctnum: TERRLWA
Template: T105916
Prelogin: P525529
TSR: 358 - Jarred Willis
PB: JAK 9-23-15
Shipped Via: FedEX Ground

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks: (3) 1L summa cans and (3) soil vapor sampling manifolds with tubing/fittings

pH _____ Temp _____

Flow _____ Other _____

650372152574

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	10-9-15	09:15	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____

Temp: AMB °C Bottles Received: 3

Date: 10/10/15 Time: 0900

Condition: (lab use only) 4=ST 1=empty MP (OK)

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

APPENDIX E – TEE

Terrestrial Ecological Evaluation Process- Simplified or Site-Specific Evaluation?

Documentation Form

	Terrestrial Concern	Response (Circle One)
*1	Is the site is located on or directly adjacent to an area where management or land use plans will maintain or restore native or semi-native vegetation?	Yes / (No)
*2a	Is the site used by a threatened or endangered species?	Yes / (No)
*2b	Is the site used by a wildlife species classified by the state department of fish and wildlife as a "priority species" or "species of concern" under Title 77 RCW?	Yes / (No)
*2c	Is the site used by a plant species classified by the Washington state department of Natural Resources natural heritage program as "endangered," "threatened," or "sensitive" under Title 79 RCW.	Yes / (No)
*3	Is the site (area where the contamination is located) located on a property that contains at least ten acres of native vegetation within 500 feet of the area where the contamination is located?	Yes / (No)
4	Has the department determined that the site may present a risk to significant wildlife populations?	Yes / (No)

*1 This includes for example, green-belts, protected wetlands, forestlands, locally designated environmentally sensitive areas, open space areas managed for wildlife, and some parks or outdoor recreation areas. This does not include park areas used for intensive sport activities such as baseball or football.

*2a What are the threatened or endangered species in Washington state?

*2b Which plant species are classified as threatened, endangered, or sensitive? Where can I find out more information about this topic?

*2c For plants, "used" means that a plant species grows at the site or has been found growing at the site. For animals, "used" means that individuals of a species have been observed to live, feed or breed at the site.

*3 For this analysis, do not include native vegetation beyond the property boundary.

The following sources shall be used in making this determination: Natural Vegetation of Oregon and Washington, J.F. Franklin and C.T. Dyrness, Oregon State University Press, 1988, and L.C. Hitchcock, C.L. Hitchcock, J.W. Thompson and A. Cronquist, 1955-1969, Vascular Plants of the Pacific Northwest(5 volumes). Areas planted with native species for ornamental or landscaping purposes shall not be considered to be native vegetation. [WAC 173-340-7491(2)(c)(i)]

(Here's a link to the Seattle Public Library and the Washington State Library to borrow a copy of Natural Vegetation of Oregon and Washington, J.F. Franklin and C.T. Dyrness, Oregon State University Press, 1988, or you may purchase it through your favorite bookseller. Here's an additional link to a useful online Field Guide to Selected Rare Plants of Washington developed by the Washington State Department of Natural Resources' Natural Heritage Program (WNHP) and the Spokane District of the U.S.D.I. Bureau of Land Management (BLM) which contains fact sheets for 139 vascular plant species and one lichen species.

Here is an aid to calculating area and an aerial photo depicting a site, its 500 foot boundary and several labeled circles identifying various areas for reference in judging the area of native vegetation within the 500 foot radius.

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493] [Index of Tables]

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Washington State Department of Ecology
Toxics Cleanup Program

Terrestrial Ecological Evaluation Process- Simplified Evaluation

Documentation Form

Criteria # (Concern)	Criteria	Response (Circle One)
1 (exposure)	Is the total area of soil contamination at the site less than or equal to 350 square feet	**Yes (End TEE) / No**
2 (exposure)	Does land use at the site and surrounding area make substantial wildlife exposure unlikely based on completion of Table 749-1?	**Yes (End TEE) / No**
3 (pathway)	Is there a potential exposure pathway from soil contamination to soil biota, plants, or wildlife?	**Yes / No (End TEE)**
4 (contaminant)	Are the hazardous substances at your site listed in Table 749-2 and is (or will) their location in the soil at your site be at a depth not exceeding the point of compliance, and at concentrations that do not exceed the values provided in Table 749-2.	**Yes (End TEE) / No** **Note: You must perform bioassays for contaminants at your site if no table value is provided.**
5 (contaminant)	Will hazardous substances listed in Table 749-2 be present in the soil at your site within 6 feet of the ground surface at concentrations likely to be toxic, or with the potential to bioaccumulate, based on bioassays using methods approved by the department.	**Yes / No (End TEE)**

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493] [Index of Tables]

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