

**Underground Storage Tank
Site Assessment Report
Sound Transit
Former Key Bank Site
1000 NE 45th Street
Seattle, Washington**

December 19, 2016



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UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT
SOUND TRANSIT
FORMER KEY BANK SITE
1000 NE 45TH STREET
SEATTLE, WASHINGTON

1.0 INTRODUCTION

This report includes a summary of the environmental services provided by Shannon & Wilson, Inc. (Shannon & Wilson) during the removal of two unregistered underground storage tanks (USTs) discovered at the Sound Transit property in Seattle, Washington (also known as the Former Key Bank site). This report documents the site activities performed during the UST removal, presents laboratory results, and provides our conclusions. Our scope of services included:

- Observing the removal of one approximately 3,000-gallon UST and one approximately 500-gallon UST, referred to as UST-1 and UST-2, respectively.
- Field screening of soil samples to provide a preliminary assessment of the potential presence or absence of petroleum hydrocarbon contamination in the excavated soil and the soil on the walls and bottom of the UST excavation.
- Collecting soil samples for laboratory analysis to characterize the soils on the walls and bottom of the UST excavations.
- Collecting soil samples for laboratory analysis to characterize the soils on the walls and bottom of the excavation limits corresponding to the former USTs.
- Preparing this report summarizing methods and findings, and providing conclusions based on our observations and the laboratory analytical data.

This work was performed in general accordance with Washington State Department of Ecology (Ecology) UST regulations (Chapter 173-360 Washington Administrative Code) and the Ecology guidance for site checks and site assessments for USTs (Ecology, 2003).

2.0 BACKGROUND

2.1 Site Description

The Sound Transit property is located at 1000 NE 45th Street, in Seattle, Washington (Figure 1). The property encompasses an area of approximately 18,034 square feet and is divided into western and eastern portions by an alley. The site is bordered to the north by the University Mazda Auto dealer and an apartment complex, to the west by Roosevelt Way NE, to the south by NE 45th Street, and to the west by 11th Avenue NE (Figure 2). The subject property is identified

as King County tax parcel 773360-0155 and is owned by Central Puget Sound Regional Transit Authority (Sound Transit). The property slopes gently toward the southeast and ranges in elevation from approximately 177 to 187 feet.

Most recently, the property was developed with a drive-thru bank (Key Bank) and paved parking and driveway areas. The bank building, which was constructed in 1970, was situated on the western portion of the property. Prior to this, the western portion of the site has featured a service station and retail businesses. The eastern portion of the property has previously been occupied by retail businesses and a laundromat, which is believed to have provided dry cleaning services.

2.2 Releases

During a Phase II Environmental Site Assessment (ESA) and subsequent investigations, petroleum and petroleum-related volatile organic compounds (VOCs), including benzene, have been identified on the western portion of the site. The contamination is believed to have originated from former service station operations. Tetrachloroethene (PCE) and other halogenated VOCs (HVOCs), believed to be associated with former dry cleaning operations, have been encountered on the eastern portion of the site (Shannon & Wilson, 2012). The site has been identified on Ecology's Confirmed and Suspected Contaminated Sites List and is identified as Cleanup Site #12019 with Facility-Site ID #8342. A geophysical survey, performed in September 2011 as part of the Phase II ESA, identified anomalies to the west of the former bank building and an anomaly on the eastern portion of the property, potentially indicating USTs.

3.0 PROPOSED INTERIM REMEDIAL ACTION

3.1 Proposed Activities

As part of an interim remedial action, mass soil excavations were completed to address petroleum-impacted soils on the western portion of the site, and soils impacted with HVOCs on the eastern portion of the site. The east excavation is approximately 35 feet by 36 feet in size, extending to between 16 and 20 feet deep. The western excavation is approximately 66 feet by 36 feet in size and between 11 and 20 feet deep. During excavation, USTs, if encountered, would be removed. The former site building was also slated for demolition.

3.2 Responsibilities

Site excavation activities were being conducted by Pellco Construction, Inc. (Pellco). O'Neill Service Group (OSG), on behalf of Pellco, provided notice to Ecology that up to three USTs were to be removed during the site excavation activities. OSG arranged for Galloway Environmental, Inc. (GEI) to oversee tank decommissioning and for Marine Vacuum Services

(MarVac) of Seattle, Washington, to remove encountered USTs. Shannon & Wilson is conducting site assessment sampling and documentation on behalf of Sound Transit.

4.0 SITE ASSESSMENT ACTIVITIES

Two USTs, referred to as UST-1 and UST-2, were encountered within the western excavation. Utilities present within the vicinity of the USTs included both water and sanitary service, located to the west and south of UST-1. Underground power and communications were present to the north and east of the western excavation. Utilities were discontinued, cut, and capped at the limits of the excavation and/or property line prior to excavation activities.

No USTs were found within the eastern excavation. The anomaly identified during the 2011 geophysical survey was apparently building debris, which was found during the excavation of the eastern side of the property.

The analytical results for samples collected during the assessment of UST-1 and the Site Check/Site Assessment Checklist prepared for UST-1 are presented in Appendix A. Submittals provided by the contractor for UST-1 are provided in Appendix B. The analytical results for samples collected during the assessment of UST-2 and the Site Check/Site Assessment Checklist for UST-2 are presented in Appendix C. Submittals provided by the contractor for UST-2 are provided in Appendix D. Analytical results for samples collected from the final excavation limits are presented in Appendix E.

4.1 UST-1

4.1.1 Tank Removal

On September 1, 2016, Pellco explored the area in the vicinity of the western anomalies and uncovered UST-1. OSG contacted the Seattle Fire Department to obtain the tank removal permit and coordinated with MarVac to remove the UST. UST-1 was encountered to the west of the former bank building at a distance of approximately 20 feet from the western property boundary at a depth of approximately 3.5 feet below ground surface (bgs). The tank measured approximately 6 feet in diameter, was 14 feet in length, and had a capacity of approximately 3,000 gallons. On September 2, 2016, MarVac was on site to triple rinse the tank, which had been empty upon discovery.

On September 6, 2016, a Shannon & Wilson representative was on site to complete UST assessment activities. A Marine Chemist from Sound Testing, Inc. used carbon dioxide to inert the tank and certified that it was safe for excavation and transportation. The Seattle Fire Department inspector subsequently approved the permit for tank removal and Pellco pulled and removed the tank. It was placed directly onto the MarVac truck for transportation to its South

Seattle facility for processing. The tank was then delivered to Seattle Iron & Metals Recycling facility.

The tank was observed to be in fair condition, with some visible rusting. No fuel lines, vent pipes, or fill ports were present.

The soils immediately surrounding the tank were visibly stained a blue/gray color. The UST was situated within fill material consisting of brown and gray, silty, gravelly, fine to medium sand. Hydrocarbon odor was apparent. No groundwater was observed. The excavated soils were stockpiled for removal during mass excavation activities.

4.1.2 Sampling and Analysis

Five soil samples were collected from the UST excavation (Figure 2). Samples UD-SW-E, UD-SW-W, UD-SW-N, and UD-SW-S were collected from the east, west, north, and south sidewalls, respectively. Sample UD-B1 was taken from below the tank's former location. Sample UD-SW-N was collected from a depth of approximately 7 feet bgs. Samples UD-SW-E and UD-SW-W were taken from approximately 8 feet bgs. Samples UD-SW-S and UD-B1 were taken from 10 to 11 feet bgs.

Selected analytical methods included gasoline-range petroleum hydrocarbons using Northwest Total Petroleum Hydrocarbons (NWTPH) as gasoline (NWTPH-Gx); diesel- and oil-range petroleum hydrocarbons using NWTPH as Diesel-Extended (NWTPH-Dx); total lead using U.S. Environmental Protection Agency (EPA) Method 6020; and VOCs using EPA Method 8260B.

The results suggested that UST-1 had been used to store gasoline. Analytical results are summarized in Table 1 and the laboratory analytical report is presented in Appendix A. Gasoline-range petroleum hydrocarbons were detected in the five samples at concentrations ranging from 28.4 milligrams per kilogram (mg/kg) (UD-SW-S) to 5,390 mg/kg (UD-B1). Four of the detections exceeded the Model Toxics Control Act (MTCA) Method A cleanup level, which is set at 30 mg/kg when benzene is present (Ecology, 2013). None of the samples contained detectable concentrations of oil- or diesel-range petroleum hydrocarbons. Total lead concentrations ranged from 2.5 to 25.3 mg/kg, well below the MTCA Method A cleanup level of 250 mg/kg.

Benzene and toluene were not detected within any of the samples. Ethylbenzene and xylene were each detected within at least one sample at levels below their respective MTCA Method A cleanup levels. Several other petroleum-related compounds were detected, with the highest concentrations typically measured within the sample taken from below the UST (UD-B1) and within the east sidewall sample (UD-SW-E). One sample (UD-B1) contained naphthalene at

6.66 mg/kg, exceeding the MTCA Method A cleanup level of 5 mg/kg. No other compounds were detected at levels exceeding MTCA Method A cleanup levels.

4.2 UST-2

4.2.1 Tank Removal

The second UST was encountered during excavation activities on September 9, 2016. UST-2 was encountered at a location below the former bank building footprint, approximately 45 feet from the western property boundary at a depth of approximately 3 feet bgs. The tank was 10 feet in length, 3 feet in diameter, and had an approximate capacity of 500 gallons.

Shannon & Wilson was notified of the discovery and visited the site on September 9, 2016, to observe uncovering of the tank. OSG collected a wipe sample from the surface of the tank and soil samples from near the eastern and western ends of the tank. As mass excavation was underway, the soils in the vicinity of the UST were stockpiled temporarily and the tank was left in place, pending results from the sample analyses. The results suggested that the tank had been used to store gasoline. OSG contacted the Seattle Fire Department to obtain the tank removal permit and coordinated with MarVac and GEI to remove the UST.

On September 12, 2016, MarVac was on site to triple rinse the tank, which had been empty (with the exception of a small quantity of water) upon discovery. On September 13, 2016, a Shannon & Wilson representative was on site to complete UST assessment activities. A Marine Chemist from Sound Testing, Inc. had inspected the tank and concluded that it was “free of combustible gas and product residue” and certified that it was safe for excavation and transportation without inertion. The Seattle Fire Department inspector subsequently approved the permit for tank removal and Pellco pulled and removed the tank. The tank was set aside, pending MarVac arrival. It was subsequently placed onto the MarVac truck for transportation and taken to its South Seattle facility for processing. The tank was then delivered to Seattle Iron & Metals Recycling facility.

The tank was observed to be in poor condition, with visible corrosion. A hole was present in the bottom of the north end of the tank. It appeared to have been punctured by soil moving equipment; however, rust was visible within the scrape marks, indicating that the damage had occurred in the past. No fuel lines, vent pipes, or fill ports were present.

The soils immediately surrounding the tank were visibly stained. The UST was situated within fill material consisting of brown and gray, silty, gravelly, fine to medium sand. No groundwater was observed.

4.2.2 Sampling and Analysis

Three soil samples were collected from the UST excavation (Figure 2). Samples UD2-SW-N and UD2-SW-S were collected from the northern and southern sidewalls at depths of 5 and 6 feet, respectively. Sample UD2-B1 was collected from below the tank at a depth of approximately 6 feet bgs.

Analytical results are summarized in Table 1 and the laboratory report is provided in Appendix C. Gasoline-range petroleum hydrocarbons were detected within the sample collected from below UST-2 at a concentration of 23.1 mg/kg and from the southern sidewall at a concentration of 2,780 mg/kg, exceeding the MTCA Method A cleanup level of 30 mg/kg. The sample collected from the southern sidewall also contained oil-range hydrocarbons at a concentration of 169 mg/kg, below the MTCA Method A cleanup level of 2,000 mg/kg. No diesel-range hydrocarbons were detected in the samples. Total lead was detected at concentration ranging from 2.5 to 25.3 mg/kg, below the MTCA Method A cleanup level of 250 mg/kg.

Benzene and toluene were not detected within any of the samples. Ethylbenzene, xylene, and several other petroleum-related compounds were each detected within at least one sample at levels below their respective MTCA Method A cleanup levels. The highest concentrations were typically measured within the sample taken from the southern sidewall sample (UD2-SW-S).

PCE was detected within the northern sidewall sample (UD2-SW-N) and from the sample collected below the tank (UD2-B1) at concentrations of 0.14 and 0.0635 mg/kg, respectively. Both detections exceed the MTCA Method A cleanup level of 0.05 mg/kg. PCE has previously been detected on the western portion of the property at low concentrations. The source of the PCE is unknown.

4.3 Excavation Limits

4.3.1 Additional Excavation

As previously discussed, the USTs were encountered within mass soil excavations being completed as an interim remedial action at the site. The samples collected during tank removal activities (Figure 2) and discussed in Sections 4.1.2 and 4.2.2 were taken from the soils immediately surrounding the former tank locations. The excavation activities continued beyond these locations to a total size of approximately 66 feet by 36 feet and between 11 and 20 feet deep.

4.3.2 Sampling and Analysis

A total of eight additional soil samples were collected from the final excavation limits. The sample locations are shown in Figure 3 and were selected to correspond to the former UST locations. As the tanks were found in a north-south orientation, two samples were collected from each of the northern and southern excavation walls, one sample was collected from each of the eastern and western excavation walls, and two samples were collected from the bottom of the excavation.

Samples UD-W-T1N and UD-W-T2N were taken from the northern wall of the excavation from approximate depths of 7.5 and 5 feet, respectively. Samples UD-W-T1S and UD-W-T2S were collected from the southern wall of the excavation from depths of approximately 10 and 6 feet, respectively. Sample UD-W-T1W was taken from the western wall of the excavation at a depth of approximately 8 feet and sample UD-W-T2E was taken from the eastern wall of the excavation at a depth of 6.5 feet. Sample UD-B2 was taken from an approximate depth of 20 feet below the former location of UST-1. Sample UD2-B2 was taken from below the former location of UST-2 at a depth of approximately 16 feet.

The samples were analyzed for NWTPH-Gx, NWTPH-Dx, total lead, and VOCs. Analytical results are summarized in Table 2 and the laboratory analytical reports are provided in Appendix E. Gasoline-range petroleum hydrocarbons were detected in two of the eight samples. The samples taken from the excavation wall to the north of UST-1 (UD-W-T1N) and from the excavation wall to the south of UST-1 (UD-W-T1S) contained gasoline-range petroleum hydrocarbons at 398 and 1,410 mg/kg, respectively. Both detections exceed the MTCA Method A cleanup level of 30 mg/kg. No other samples contained detectable concentrations of gasoline-range petroleum hydrocarbons. The sample taken from the excavation wall to the south of UST-1 (UD-W-T1S) also contained detectable oil-range petroleum hydrocarbons at 122 mg/kg, below the cleanup level of 2,000 mg/kg. Diesel-range petroleum hydrocarbons were not detected in any of the samples.

Total lead concentrations ranged from 1.07 to 6.11 mg/kg, well below the MTCA Method A cleanup level of 250 mg/kg.

Benzene and toluene were not detected within any of the samples. Ethylbenzene was detected within the southern excavation wall across from UST-1 (UD-W-T1S) and from the bottom of the excavation below UST-1 (UD-B2) at concentrations of 0.279 and 0.0248 mg/kg, below the cleanup level of 6 mg/kg. The sample from the bottom of the excavation below UST-1 also contained m,p-Xylene at 0.0152 mg/kg, well below the cleanup level of 9 mg/kg. Several other petroleum-related compounds were detected at low concentrations, typically occurring at the western end of the excavation near UST-1.

PCE was detected within the northern and southern excavation sidewalls corresponding to UST-2 at concentrations of 0.0559 and 0.0454 mg/kg, respectively. The MTCA Method A cleanup level for PCE is 0.05 mg/kg. As mentioned within Section 4.2.2, PCE has been detected at low concentrations on the western portion of the property. The source of the PCE is not known.

The eight samples collected from the full excavation limit contained fewer compounds at detectable levels and lower concentrations than the samples collected from the soils immediately surrounding the USTs. For example, gasoline-range petroleum hydrocarbons were detected within all except one sample collected from the soils near the USTs, while only two of the eight samples from the excavation limits contained gasoline-range petroleum hydrocarbons. Three of the eight samples each contained one compound at concentrations exceeding MTCA Method A cleanup levels (Table 2). These include the two gasoline-range petroleum hydrocarbon detections and one of the PCE detections. No other cleanup level exceedances were observed.

4.4 Soil Disposal

Soil generated during UST removal activities were disposed of offsite at a Subtitle D facility concurrent with interim action mass excavation. Disposal documentation will be provided in the interim action report.

4.5 Methodology

Site assessment samples were collected using disposable sampling equipment and immediately placed into laboratory-supplied glassware. Each sample was identified with a unique sample name, immediately logged, and placed within an iced cooler. The samples were transported under standard chain of custody procedures to Fremont Analytical (Fremont) of Seattle, Washington.

5.0 CONCLUSIONS

It is our opinion that the UST removals and site assessment were completed in accordance with Ecology guidelines (Ecology, 2003). Field observations and sampling results indicate that contamination present above MTCA Method A cleanup levels was present within the immediate vicinity of the USTs, indicating that a release had occurred. This is consistent with previous site investigations. Concentrations detected within samples collected from the full excavation limits were consistently lower and typically below MTCA Method A cleanup levels, with the exception of the three detections previously discussed.

Additional excavation and site characterization were completed as part of the interim remedial action. These activities and analytical laboratory reports will be summarized in an interim action report.

6.0 LIMITATIONS


Within the limitations of scope, schedule, and budget, Shannon & Wilson has prepared this report in a professional manner, using that level of skill and care normally exercised for similar projects under similar conditions by reputable and competent environmental consultants currently practicing in this area.

The data presented in this report are based on limited research and sampling at the site and should be considered representative at the time of our observations. Shannon & Wilson is not responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. We also note that the facts and conditions referenced in this report may change over time, and that the facts and conditions set forth here are applicable to the facts and conditions as described only at the time of this report. We believe that the conclusions stated here are factual, but no guarantee is made or implied.

This report was prepared for the exclusive use of the Sound Transit and their respective representatives, and in no way guarantees that any agency or its staff will reach the same conclusions as Shannon & Wilson. We have prepared the enclosed Appendix F, "Important Information About Your Geotechnical/Environmental Report," to assist you and others in understanding the use and limitations of our report.

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7.0 REFERENCES

Shannon & Wilson, Inc. (Shannon & Wilson), 2012, Phase II environmental site assessment, former Key Bank Property, 1000 NE 45th Street, Seattle, Washington: Report prepared by Shannon & Wilson, Inc., Seattle, Wash., project no. 21-1-16604-005, for Sound Transit, Seattle, Wash., January 9.

Washington State Department of Ecology (Ecology), 2003, Guidance for site checks and site assessments for underground storage tanks, Department of Ecology: Olympia, Wash., Washington State Department of Ecology, publication No. 90-52, revised April.

Washington State Department of Ecology (Ecology), 2013, Model Toxics Control Act cleanup regulation, chapter 173-340 Washington Administrative Code (WAC): Olympia, Wash., Washington State Department of Ecology, publication No. 94-06, revised 2013.

**TABLE 1
ANALYTICAL RESULTS
TANK REMOVAL SAMPLES**

Sample Number	Location	Sample Depth ⁽¹⁾	Sample Date	Laboratory Report Number	Total Petroleum Hydrocarbons			Total Lead	VOCs ⁽²⁾																				
					Gasoline-Range	Diesel-Range	Oil-Range		1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Chlorotoluene	4-Chlorotoluene	Benzene	Chloroform	Cumene	Ethylbenzene	m, p-Xylene	o-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	Sec-Butylbenzene	Tert-Butylbenzene	Tetrachloroethene	Toluene		
UST-1	UD-SW-E	Eastern Sidewall	8	9/6/2016	1609081	4,340 D	<21.3	<53.2	2.83	<0.0245	0.946	0.600	<0.0245	<0.0245	<0.0245	<0.0245	1.16	<0.0368	<0.0245	<0.0245	<0.0368	5.87 D	1.37	3.08 D	3.70 D	0.214	<0.0245	<0.0245	
	UD-SW-W	Western Sidewall	8			50.9	<22.7	<56.8	5.90	<0.0223	0.246	<0.0223	<0.0223	<0.0223	<0.0223	<0.0223	<0.0223	<0.0892	<0.0334	0.0223	<0.0223	0.0368	0.0797	0.0463	0.0407	0.0362	<0.0223	<0.0223	<0.0223
	UD-SW-N	Northern Sidewall	7			192	<20.8	<52.1	25.3	<0.0175	0.584	0.114	<0.0175	0.0192	<0.0175	<0.0175	<0.0699	0.114	0.240	0.0192	<0.0262	<0.0175	0.0892	0.0691	<0.0175	<0.0175	<0.0175	<0.0175	<0.0175
	UD-SW-S	Southern Sidewall	10			28.4	<23.1	<57.7	3.40	<0.0213	0.0304	<0.0213	<0.0213	<0.0213	<0.0213	<0.0213	<0.0852	<0.0320	<0.0213	<0.0213	<0.0320	0.0309	<0.0213	<0.0213	0.0389	<0.0213	<0.0213	<0.0213	<0.0213
	UD-B1	Bottom of tank	11			5,390 D	<23.0	<57.6	2.50	<0.0204	<0.0204	0.980	<0.0204	0.205	<0.0204	<0.0204	3.98 D	3.03 D	3.52 D	<0.0204	6.66 D	11.2 D	8.73 D	5.14 D	<0.0204	0.251	<0.0204	<0.0204	<0.0204
UST-2	UD2-SW-N	Northern Sidewall	5	9/13/2016	1609155	<4.78	<23.4	<58.5	19.7	<0.0191	0.0306	0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0765	<0.0287	0.0330	<0.0191	<0.0287	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	0.140	<0.0191	
	UD2-SW-S	Southern Sidewall	6			2,780 D	<22.5	169	19.3	0.0445	15.7 D	8.35 D	0.0529	1.12	<0.0210	<0.0210	1.55	0.700	1.73	<0.0210	3.29 D	<0.0210	2.14 D	4.01 D	<0.0210	0.171	<0.0210	<0.0210	
	UD2-B1	Bottom of tank	6			23.1	<23.5	<58.8	19.9	<0.0197	0.313	0.145	<0.0197	<0.0197	<0.0197	<0.0197	<0.0788	<0.0296	0.0537	0.0246	0.098	<0.0197	0.0256	0.0502	0.0222	<0.0197	0.0635	<0.0197	
MTCA Method A Criteria for Unrestricted Land Use						30 ⁽³⁾	2,000	2,000	250	**	**	**	**	**	0.03	**	**	6	9	5	**	**	**	**	**	0.05	7		

Notes:

⁽¹⁾ Approximate feet below ground surface.⁽²⁾ VOCs = volatile organic compounds; only compounds that were detected above laboratory detection limits are shown.⁽³⁾ Criteria is based on benzene being present. Benzene was historically detected onsite.

** No MTCA Method A cleanup criteria is established for this analyte.

Bold text indicates a detected analyte.

Shaded text indicates concentration exceeds state cleanup criterion.

Results are reported in milligrams per kilogram (mg/kg).

< = analyte not detected above indicated laboratory detection limit.

D = dilution was required

MTCA = Washington Model Toxics Control Act

**TABLE 2
ANALYTICAL RESULTS
EXCAVATION SIDEWALL SAMPLES**

Sample Number	Location	Sample Depth ⁽¹⁾	Sample Date	Laboratory Report Number	Total Petroleum Hydrocarbons				VOCs ⁽²⁾																				
					Gasoline-Range	Diesel-Range	Oil-Range	Total Lead	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Chlorotoluene	4-Chlorotoluene	Benzene	Chloroform	Cumene	Ethylbenzene	m, p-Xylene	o-Xylene	Naphthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	Sec-Butylbenzene	Tert-Butylbenzene	Tetrachloroethene	Toluene		
UST-1	UD-W-T1N	Northern Excavation Sidewall	7.5	10/11/2016	1610176	398	<21.4	<53.4	1.07	<0.0193	0.311	0.229	<0.0193	<0.0193	<0.0193	<0.0193	0.127	<0.029	<0.0193	<0.0193	<0.0290	<0.0193	0.224	0.279	<0.0193	0.0305	<0.0193	<0.0193	
	UD-W-T1W	Western Excavation Sidewall	8			<6.55	<24.1	<60.3	5.08	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.105	<0.0393	<0.0262	<0.0262	<0.0393	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262	<0.0262
	UD-W-T1S	Southern Excavation Sidewall	10	10/14/2016	1610259	1,410 D	<21.0	122	2.24	<0.0183	4.54 D	2.23 D	<0.0183	<0.0183	<0.0183	<0.0183	0.857	0.279	<0.0183	<0.0183	<0.0274	<0.0183	1.56	<0.0183	<0.0183	<0.0183	<0.0183	<0.0183	
	UD-B2	Bottom of Excavation	20	10/24/2016	1610353	<3.03	<23.4	<58.4	1.68	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	0.0179	<0.0486	0.0248	0.0152	<0.0121	<0.0182	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	
UST-2	UD-W-T2N	Northern Excavation Sidewall	5	10/11/2016	1610176	<5.14	<22.0	<55.0	5.45	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	<0.0822	<0.0308	<0.0205	<0.0205	<0.0308	<0.0205	<0.0205	<0.0205	<0.0205	<0.0205	0.0559	<0.0205	
	UD-W-T2S	Southern Excavation Sidewall	6			<5.11	<21.4	<53.5	6.11	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0817	<0.0307	<0.0204	<0.0204	<0.0307	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	0.0454	<0.0204
	UD-W-T2E	Eastern Excavation Sidewall	6.5			<5.09	<22.5	<56.2	3.74	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0815	<0.0305	<0.0204	<0.0204	<0.0305	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204
	UD2-B2	Bottom of Excavation	16	10/24/2016	1610353	<5.52	<23.0	<57.4	1.65	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	0.0363 B	<0.0883	<0.0331	<0.0221	<0.0221	<0.0331	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221		
MTCA Method A Criteria for Unrestricted Land Use					30 ⁽³⁾	2,000	2,000	250	**	**	**	**	**	0.03	**	**	6	9	5	**	**	**	**	**	**	0.05	7		

Notes:

⁽¹⁾ Approximate feet below ground surface.⁽²⁾ VOCs = volatile organic compounds; only compounds that were detected above laboratory detection limits are shown.⁽³⁾ Criteria is based on benzene being present. Benzene was historically detected onsite.

** No MTCA Method A cleanup criteria is established for this analyte.

Bold text indicates a detected analyte.

Shaded text indicates concentration exceeds state cleanup criterion.

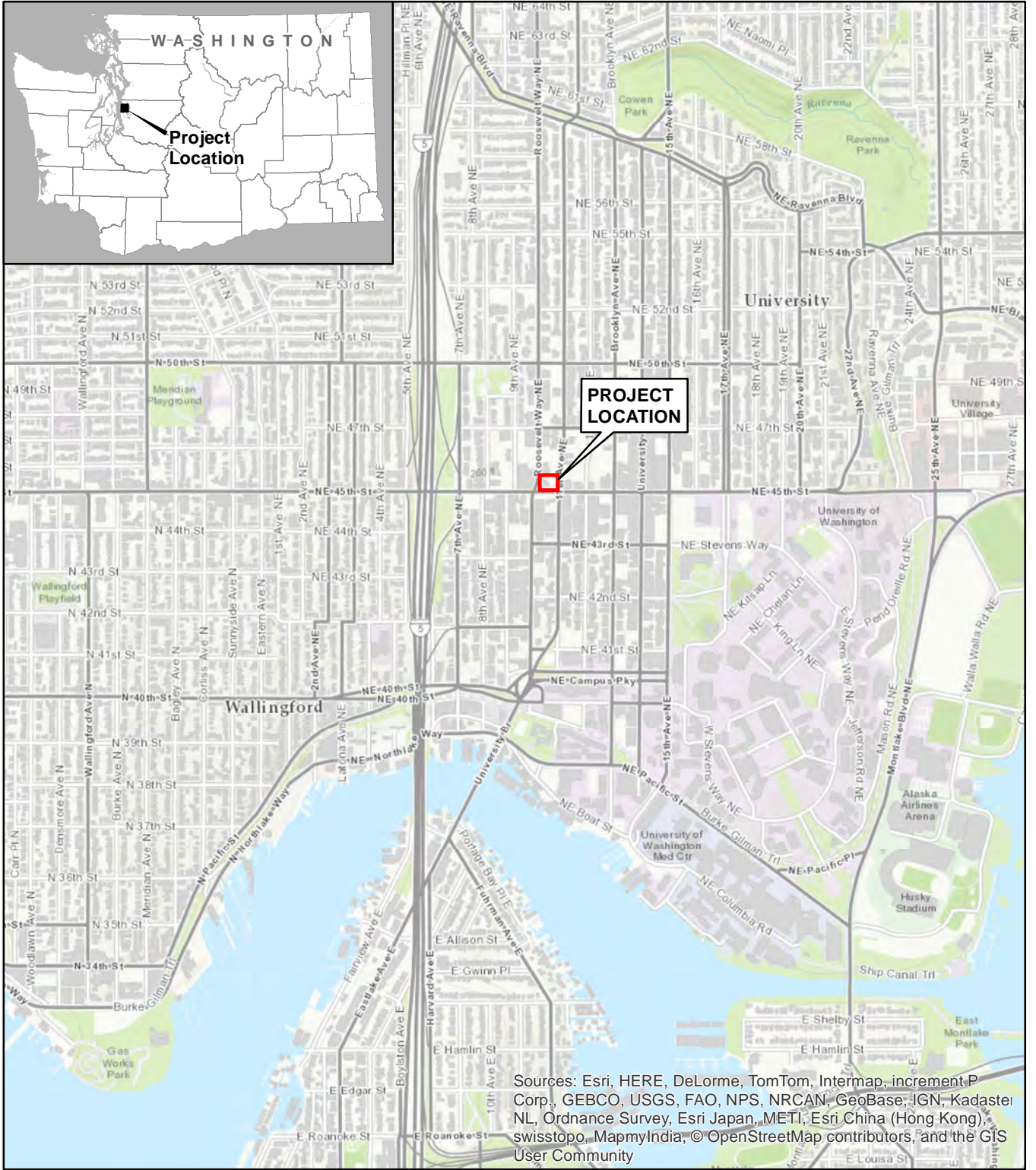
Results are reported in milligrams per kilogram (mg/kg).

< = analyte not detected above indicated laboratory detection limit.

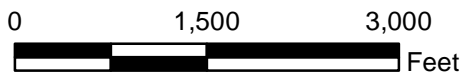
B = analyte detected in associated method blank

D = dilution was required

MTCA = Washington Model Toxics Control Act



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Sound Transit - Former Key Bank Site
1000 NE 45th Street
Seattle, Washington

VICINITY MAP

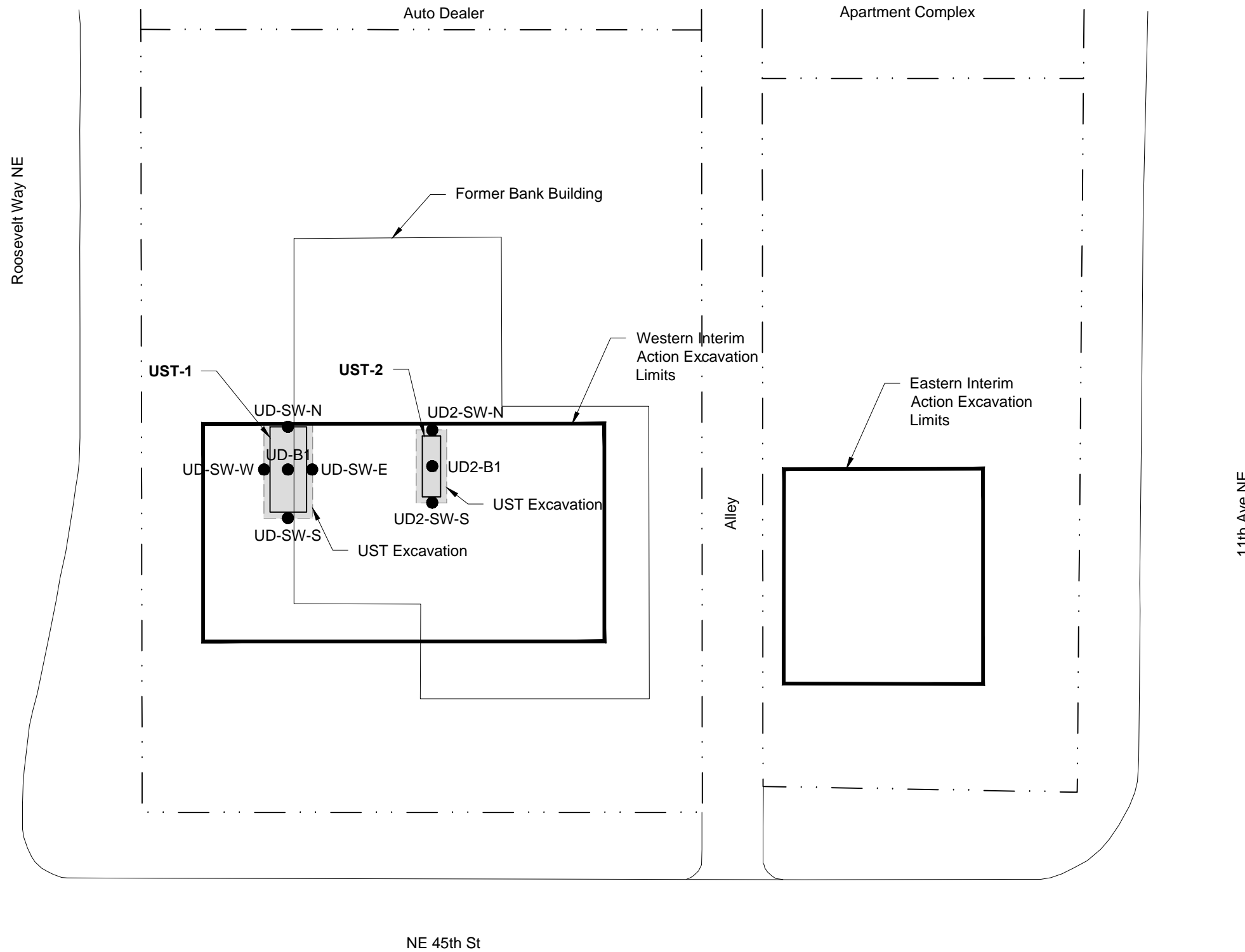
December 2016

21-1-16700-123

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 1

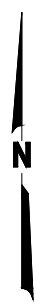
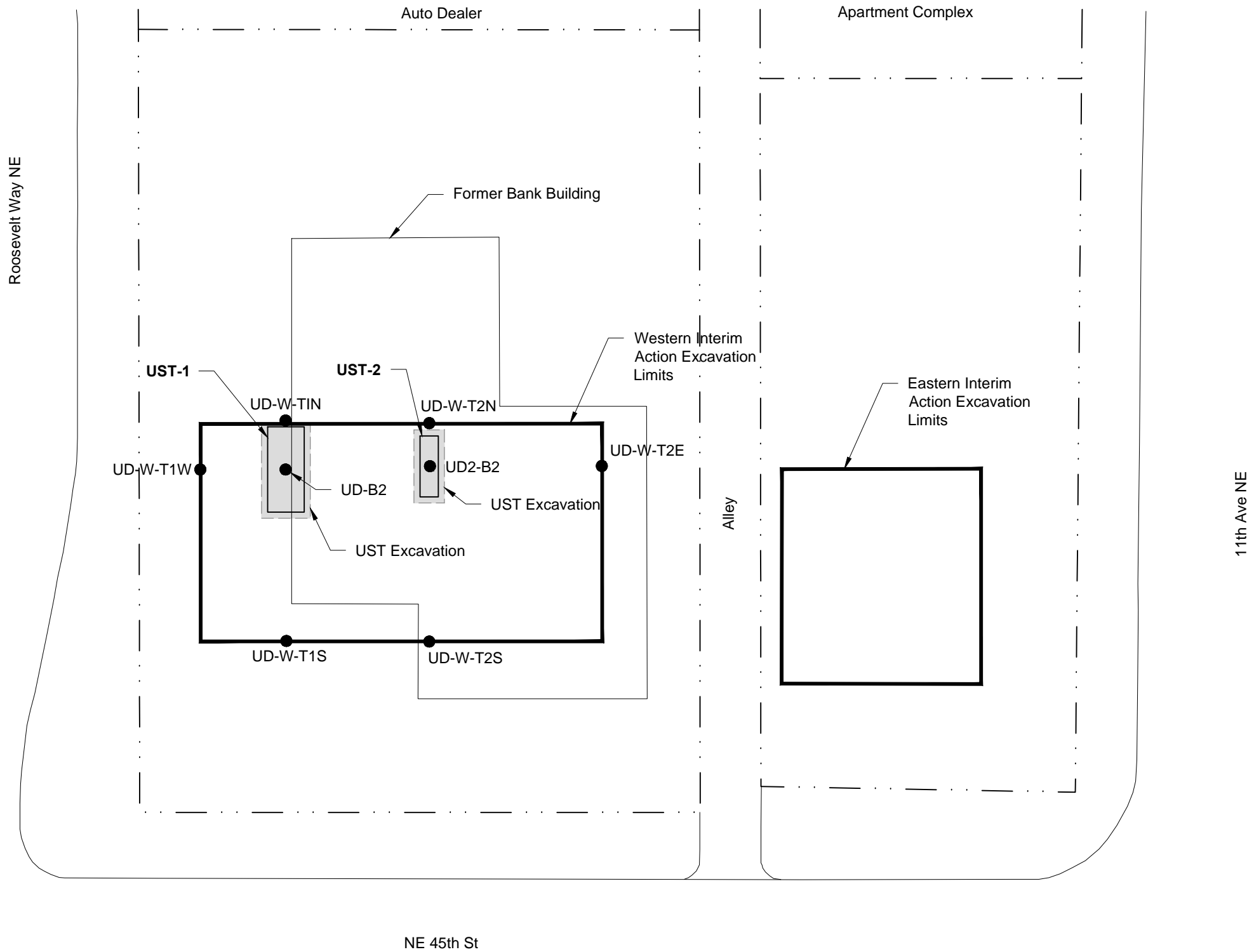
Filename: J:\21116700-123\21-1-16700-123 1000 NE 45th FIG 2.dwg Layout: Sheet 1 Landscape Date: 12-16-2016 Login: BDD



- LEGEND**
- UD-1 ● Sample Designation and Approximate Location
 - ▭ UST Excavation Area
 - - - - - Property Line

Sound Transit Former Key Bank Site 1000 NE 45th St Seattle, Washington	
SITE DETAIL MAP AND TANK REMOVAL SOIL SAMPLING LOCATIONS	
December 2016	21-1-16700-123
SHANNON & WILSON, INC. <small>Geotechnical and Environmental Consultants</small>	FIG. 2

Filename: J:\21116700-123\21-1-16700-123 1000 NE 45th FIG 3.dwg Layout: FIG. 3 Date: 12-16-2016 Login: BDD



- LEGEND**
- UD-1 ● Sample Designation and Approximate Location
 - ▭ UST Excavation Area
 - · - · - Property Line

Sound Transit Former Key Bank Site 1000 NE 45th St Seattle, Washington	
EXCAVATION LIMITS SOIL SAMPLING LOCATIONS	
December 2016	21-1-16700-123
SHANNON & WILSON, INC. <small>Geotechnical and Environmental Consultants</small>	FIG. 3

APPENDIX A

**UST-1 – ANALYTICAL LABORATORY REPORT AND SITE CHECK/
SITE ASSESSMENT CHECKLIST**



Shannon & Wilson

Agnes Tirao
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: Sound Transit / Key Bank

Lab ID: 1609081

September 14, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 6 sample(s) on 9/6/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director



Date: 09/14/2016

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab Order: 1609081

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609081-001	UD-SW-E	09/06/2016 10:33 AM	09/06/2016 4:30 PM
1609081-002	UD-SW-W	09/06/2016 10:30 AM	09/06/2016 4:30 PM
1609081-003	UD-SW-N	09/06/2016 10:39 AM	09/06/2016 4:30 PM
1609081-004	UD-SW-S	09/06/2016 10:36 AM	09/06/2016 4:30 PM
1609081-005	UD-B1	09/06/2016 10:45 AM	09/06/2016 4:30 PM
1609081-006	Trip Blank	08/29/2016 3:56 PM	09/06/2016 4:30 PM

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:33:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-001

Matrix: Soil

Client Sample ID: UD-SW-E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14732

Analyst: WC

Diesel (Fuel Oil)	ND	21.3		mg/Kg-dry	1	9/7/2016 10:08:00 PM
Heavy Oil	ND	53.2		mg/Kg-dry	1	9/7/2016 10:08:00 PM
Surr: 2-Fluorobiphenyl	92.7	50-150		%Rec	1	9/7/2016 10:08:00 PM
Surr: o-Terphenyl	91.9	50-150		%Rec	1	9/7/2016 10:08:00 PM

Gasoline by NWTPH-Gx

Batch ID: 14755

Analyst: NG

Gasoline	4,340	613	D	mg/Kg-dry	100	9/13/2016 2:57:04 PM
Surr: Toluene-d8	99.6	65-135	D	%Rec	100	9/13/2016 2:57:04 PM
Surr: 4-Bromofluorobenzene	100	65-135	D	%Rec	100	9/13/2016 2:57:04 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0735		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chloromethane	ND	0.0735		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Vinyl chloride	ND	0.00245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Bromomethane	ND	0.110		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Trichlorofluoromethane (CFC-11)	ND	0.0613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chloroethane	ND	0.0735		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1-Dichloroethene	ND	0.0613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Methylene chloride	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
trans-1,2-Dichloroethene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Methyl tert-butyl ether (MTBE)	ND	0.0613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1-Dichloroethane	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
2,2-Dichloropropane	ND	0.0613	Q	mg/Kg-dry	1	9/9/2016 5:18:23 PM
cis-1,2-Dichloroethene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chloroform	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1,1-Trichloroethane (TCA)	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1-Dichloropropene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Carbon tetrachloride	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2-Dichloroethane (EDC)	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Benzene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Trichloroethene (TCE)	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2-Dichloropropane	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Bromodichloromethane	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Dibromomethane	ND	0.0490		mg/Kg-dry	1	9/9/2016 5:18:23 PM
cis-1,3-Dichloropropene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Toluene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
trans-1,3-Dichloropropylene	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:33:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-001

Matrix: Soil

Client Sample ID: UD-SW-E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

1,1,2-Trichloroethane	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,3-Dichloropropane	ND	0.0613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Tetrachloroethene (PCE)	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Dibromochloromethane	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2-Dibromoethane (EDB)	ND	0.00613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Chlorobenzene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1,1,2-Tetrachloroethane	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Ethylbenzene	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
m,p-Xylene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
o-Xylene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Styrene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Isopropylbenzene	1.16	0.0981		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Bromoform	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,1,2,2-Tetrachloroethane	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
n-Propylbenzene	1.37	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Bromobenzene	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,3,5-Trimethylbenzene	0.600	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
2-Chlorotoluene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
4-Chlorotoluene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
tert-Butylbenzene	0.214	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2,3-Trichloropropane	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2,4-Trichlorobenzene	ND	0.0613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
sec-Butylbenzene	3.70	0.245	D	mg/Kg-dry	10	9/12/2016 2:08:55 PM
4-Isopropyltoluene	3.08	0.245	D	mg/Kg-dry	10	9/12/2016 2:08:55 PM
1,3-Dichlorobenzene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,4-Dichlorobenzene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
n-Butylbenzene	5.87	0.245	D	mg/Kg-dry	10	9/12/2016 2:08:55 PM
1,2-Dichlorobenzene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2-Dibromo-3-chloropropane	ND	0.613		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2,4-Trimethylbenzene	0.946	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Hexachlorobutadiene	ND	0.123		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Naphthalene	ND	0.0368		mg/Kg-dry	1	9/9/2016 5:18:23 PM
1,2,3-Trichlorobenzene	ND	0.0245		mg/Kg-dry	1	9/9/2016 5:18:23 PM
Surr: Dibromofluoromethane	94.2	56.5-129		%Rec	1	9/9/2016 5:18:23 PM
Surr: Toluene-d8	103	64.3-131	D	%Rec	10	9/12/2016 2:08:55 PM
Surr: 1-Bromo-4-fluorobenzene	99.5	63.1-141	D	%Rec	10	9/12/2016 2:08:55 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:33:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-001

Matrix: Soil

Client Sample ID: UD-SW-E

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14743 Analyst: TN

Lead	2.83	0.188		mg/Kg-dry	1	9/8/2016 1:44:51 PM
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Sample Moisture (Percent Moisture)

Batch ID: R31613 Analyst: CG

Percent Moisture	17.7	0.500		wt%	1	9/8/2016 12:55:34 PM
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Client: Shannon & Wilson

Collection Date: 9/6/2016 10:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-002

Matrix: Soil

Client Sample ID: UD-SW-W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14732

Analyst: WC

Diesel (Fuel Oil)	ND	22.7		mg/Kg-dry	1	9/7/2016 10:39:00 PM
Heavy Oil	ND	56.8		mg/Kg-dry	1	9/7/2016 10:39:00 PM
Surr: 2-Fluorobiphenyl	95.8	50-150		%Rec	1	9/7/2016 10:39:00 PM
Surr: o-Terphenyl	95.8	50-150		%Rec	1	9/7/2016 10:39:00 PM

Gasoline by NWTPH-Gx

Batch ID: 14755

Analyst: NG

Gasoline	50.9	5.57		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Surr: Toluene-d8	96.6	65-135		%Rec	1	9/9/2016 3:45:40 AM
Surr: 4-Bromofluorobenzene	104	65-135		%Rec	1	9/9/2016 3:45:40 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0669		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Chloromethane	ND	0.0669		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Vinyl chloride	ND	0.00223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Bromomethane	ND	0.100		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Trichlorofluoromethane (CFC-11)	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Chloroethane	ND	0.0669		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1-Dichloroethene	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Methylene chloride	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
trans-1,2-Dichloroethene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Methyl tert-butyl ether (MTBE)	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1-Dichloroethane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
2,2-Dichloropropane	ND	0.0557	Q	mg/Kg-dry	1	9/9/2016 3:45:40 AM
cis-1,2-Dichloroethene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Chloroform	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1,1-Trichloroethane (TCA)	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1-Dichloropropene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Carbon tetrachloride	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dichloroethane (EDC)	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Benzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Trichloroethene (TCE)	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dichloropropane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Bromodichloromethane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Dibromomethane	ND	0.0446		mg/Kg-dry	1	9/9/2016 3:45:40 AM
cis-1,3-Dichloropropene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Toluene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
trans-1,3-Dichloropropylene	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-002

Matrix: Soil

Client Sample ID: UD-SW-W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

1,1,2-Trichloroethane	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,3-Dichloropropane	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Tetrachloroethene (PCE)	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Dibromochloromethane	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dibromoethane (EDB)	ND	0.00557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Chlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1,1,2-Tetrachloroethane	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Ethylbenzene	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
m,p-Xylene	0.0223	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
o-Xylene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Styrene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Isopropylbenzene	ND	0.0892		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Bromoform	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,1,2,2-Tetrachloroethane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
n-Propylbenzene	0.0463	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Bromobenzene	ND	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,3,5-Trimethylbenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
2-Chlorotoluene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
4-Chlorotoluene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
tert-Butylbenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,3-Trichloropropane	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,4-Trichlorobenzene	ND	0.0557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
sec-Butylbenzene	0.0362	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
4-Isopropyltoluene	0.0407	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,3-Dichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,4-Dichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
n-Butylbenzene	0.0797	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2-Dibromo-3-chloropropane	ND	0.557		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,4-Trimethylbenzene	0.246	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Hexachlorobutadiene	ND	0.111		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Naphthalene	0.0368	0.0334		mg/Kg-dry	1	9/9/2016 3:45:40 AM
1,2,3-Trichlorobenzene	ND	0.0223		mg/Kg-dry	1	9/9/2016 3:45:40 AM
Surr: Dibromofluoromethane	94.6	56.5-129		%Rec	1	9/9/2016 3:45:40 AM
Surr: Toluene-d8	98.0	64.3-131		%Rec	1	9/9/2016 3:45:40 AM
Surr: 1-Bromo-4-fluorobenzene	105	63.1-141		%Rec	1	9/9/2016 3:45:40 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-002

Matrix: Soil

Client Sample ID: UD-SW-W

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14743 Analyst: TN

Lead	5.90	0.177		mg/Kg-dry	1	9/8/2016 1:48:24 PM
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Sample Moisture (Percent Moisture)

Batch ID: R31613 Analyst: CG

Percent Moisture	17.0	0.500		wt%	1	9/8/2016 12:55:34 PM
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Client: Shannon & Wilson

Collection Date: 9/6/2016 10:39:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-003

Matrix: Soil

Client Sample ID: UD-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14732

Analyst: WC

Diesel (Fuel Oil)	ND	20.8		mg/Kg-dry	1	9/7/2016 11:10:00 PM
Heavy Oil	ND	52.1		mg/Kg-dry	1	9/7/2016 11:10:00 PM
Surr: 2-Fluorobiphenyl	87.3	50-150		%Rec	1	9/7/2016 11:10:00 PM
Surr: o-Terphenyl	90.7	50-150		%Rec	1	9/7/2016 11:10:00 PM

Gasoline by NWTPH-Gx

Batch ID: 14755

Analyst: NG

Gasoline	192	43.7	D	mg/Kg-dry	10	9/14/2016 1:24:55 PM
Surr: Toluene-d8	98.0	65-135	D	%Rec	10	9/14/2016 1:24:55 PM
Surr: 4-Bromofluorobenzene	102	65-135	D	%Rec	10	9/14/2016 1:24:55 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0525		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Chloromethane	ND	0.0525		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Vinyl chloride	ND	0.00175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromomethane	ND	0.0787		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Trichlorofluoromethane (CFC-11)	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Chloroethane	ND	0.0525		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1-Dichloroethene	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Methylene chloride	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
trans-1,2-Dichloroethene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Methyl tert-butyl ether (MTBE)	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1-Dichloroethane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
2,2-Dichloropropane	ND	0.0437	Q	mg/Kg-dry	1	9/9/2016 5:47:45 PM
cis-1,2-Dichloroethene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Chloroform	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1,1-Trichloroethane (TCA)	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1-Dichloropropene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Carbon tetrachloride	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dichloroethane (EDC)	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Benzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Trichloroethene (TCE)	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dichloropropane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromodichloromethane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Dibromomethane	ND	0.0350		mg/Kg-dry	1	9/9/2016 5:47:45 PM
cis-1,3-Dichloropropene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Toluene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
trans-1,3-Dichloropropylene	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:39:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-003

Matrix: Soil

Client Sample ID: UD-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

1,1,2-Trichloroethane	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,3-Dichloropropane	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Tetrachloroethene (PCE)	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Dibromochloromethane	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dibromoethane (EDB)	ND	0.00437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Chlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1,1,2-Tetrachloroethane	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Ethylbenzene	0.114	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
m,p-Xylene	0.240	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
o-Xylene	0.0192	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Styrene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Isopropylbenzene	ND	0.0699		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromoform	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,1,2,2-Tetrachloroethane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
n-Propylbenzene	0.0892	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Bromobenzene	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,3,5-Trimethylbenzene	0.114	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
2-Chlorotoluene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
4-Chlorotoluene	0.0192	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
tert-Butylbenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,3-Trichloropropane	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,4-Trichlorobenzene	ND	0.0437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
sec-Butylbenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
4-Isopropyltoluene	0.0691	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,3-Dichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,4-Dichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
n-Butylbenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2-Dibromo-3-chloropropane	ND	0.437		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,4-Trimethylbenzene	0.584	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Hexachlorobutadiene	ND	0.0874		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Naphthalene	ND	0.0262		mg/Kg-dry	1	9/9/2016 5:47:45 PM
1,2,3-Trichlorobenzene	ND	0.0175		mg/Kg-dry	1	9/9/2016 5:47:45 PM
Surr: Dibromofluoromethane	92.3	56.5-129		%Rec	1	9/9/2016 5:47:45 PM
Surr: Toluene-d8	103	64.3-131		%Rec	1	9/9/2016 5:47:45 PM
Surr: 1-Bromo-4-fluorobenzene	104	63.1-141		%Rec	1	9/9/2016 5:47:45 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:39:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-003

Matrix: Soil

Client Sample ID: UD-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14743 Analyst: TN

Lead	25.3	0.192		mg/Kg-dry	1	9/8/2016 1:51:56 PM
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Sample Moisture (Percent Moisture)

Batch ID: R31613 Analyst: CG

Percent Moisture	19.2	0.500		wt%	1	9/8/2016 12:55:34 PM
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Client: Shannon & Wilson

Collection Date: 9/6/2016 10:36:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-004

Matrix: Soil

Client Sample ID: UD-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14732

Analyst: WC

Diesel (Fuel Oil)	ND	23.1		mg/Kg-dry	1	9/8/2016 12:43:00 AM
Heavy Oil	ND	57.7		mg/Kg-dry	1	9/8/2016 12:43:00 AM
Surr: 2-Fluorobiphenyl	113	50-150		%Rec	1	9/8/2016 12:43:00 AM
Surr: o-Terphenyl	110	50-150		%Rec	1	9/8/2016 12:43:00 AM

Gasoline by NWTPH-Gx

Batch ID: 14755

Analyst: NG

Gasoline	28.4	5.33		mg/Kg-dry	1	9/9/2016 4:14:57 AM
Surr: Toluene-d8	95.8	65-135		%Rec	1	9/9/2016 4:14:57 AM
Surr: 4-Bromofluorobenzene	101	65-135		%Rec	1	9/9/2016 4:14:57 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0639		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chloromethane	ND	0.0639		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Vinyl chloride	ND	0.00213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Bromomethane	ND	0.0959		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Trichlorofluoromethane (CFC-11)	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chloroethane	ND	0.0639		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1-Dichloroethene	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Methylene chloride	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
trans-1,2-Dichloroethene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Methyl tert-butyl ether (MTBE)	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1-Dichloroethane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
2,2-Dichloropropane	ND	0.0533	Q	mg/Kg-dry	1	9/9/2016 3:50:23 PM
cis-1,2-Dichloroethene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chloroform	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1,1-Trichloroethane (TCA)	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1-Dichloropropene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Carbon tetrachloride	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dichloroethane (EDC)	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Benzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Trichloroethene (TCE)	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dichloropropane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Bromodichloromethane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Dibromomethane	ND	0.0426		mg/Kg-dry	1	9/9/2016 3:50:23 PM
cis-1,3-Dichloropropene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Toluene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
trans-1,3-Dichloropropylene	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:36:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-004

Matrix: Soil

Client Sample ID: UD-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

1,1,2-Trichloroethane	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,3-Dichloropropane	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Tetrachloroethene (PCE)	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Dibromochloromethane	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dibromoethane (EDB)	ND	0.00533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Chlorobenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1,1,2-Tetrachloroethane	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Ethylbenzene	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
m,p-Xylene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
o-Xylene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Styrene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Isopropylbenzene	ND	0.0852		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Bromoform	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,1,2,2-Tetrachloroethane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
n-Propylbenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Bromobenzene	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,3,5-Trimethylbenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
2-Chlorotoluene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
4-Chlorotoluene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
tert-Butylbenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2,3-Trichloropropane	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2,4-Trichlorobenzene	ND	0.0533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
sec-Butylbenzene	0.0389	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
4-Isopropyltoluene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,3-Dichlorobenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,4-Dichlorobenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
n-Butylbenzene	0.0309	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dichlorobenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2-Dibromo-3-chloropropane	ND	0.533		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2,4-Trimethylbenzene	0.0304	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Hexachlorobutadiene	ND	0.107		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Naphthalene	ND	0.0320		mg/Kg-dry	1	9/9/2016 3:50:23 PM
1,2,3-Trichlorobenzene	ND	0.0213		mg/Kg-dry	1	9/9/2016 3:50:23 PM
Surr: Dibromofluoromethane	98.3	56.5-129		%Rec	1	9/9/2016 3:50:23 PM
Surr: Toluene-d8	97.5	64.3-131		%Rec	1	9/9/2016 3:50:23 PM
Surr: 1-Bromo-4-fluorobenzene	102	63.1-141		%Rec	1	9/9/2016 3:50:23 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:36:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-004

Matrix: Soil

Client Sample ID: UD-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14743 Analyst: TN

Lead	3.40	0.182		mg/Kg-dry	1	9/8/2016 1:55:29 PM
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Sample Moisture (Percent Moisture)

Batch ID: R31613 Analyst: CG

Percent Moisture	15.6	0.500		wt%	1	9/8/2016 12:55:34 PM
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Client: Shannon & Wilson

Collection Date: 9/6/2016 10:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-005

Matrix: Soil

Client Sample ID: UD-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14732

Analyst: WC

Diesel (Fuel Oil)	ND	23.0		mg/Kg-dry	1	9/8/2016 1:14:00 AM
Heavy Oil	ND	57.6		mg/Kg-dry	1	9/8/2016 1:14:00 AM
Surr: 2-Fluorobiphenyl	105	50-150		%Rec	1	9/8/2016 1:14:00 AM
Surr: o-Terphenyl	105	50-150		%Rec	1	9/8/2016 1:14:00 AM

Gasoline by NWTPH-Gx

Batch ID: 14755

Analyst: NG

Gasoline	5,390	510	D	mg/Kg-dry	100	9/13/2016 3:26:34 PM
Surr: Toluene-d8	101	65-135	D	%Rec	100	9/13/2016 3:26:34 PM
Surr: 4-Bromofluorobenzene	103	65-135	D	%Rec	100	9/13/2016 3:26:34 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0612		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chloromethane	ND	0.0612		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Vinyl chloride	ND	0.00204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Bromomethane	ND	0.0918		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Trichlorofluoromethane (CFC-11)	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chloroethane	ND	0.0612		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1-Dichloroethene	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Methylene chloride	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
trans-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Methyl tert-butyl ether (MTBE)	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1-Dichloroethane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
2,2-Dichloropropane	ND	0.0510	Q	mg/Kg-dry	1	9/9/2016 6:17:01 PM
cis-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chloroform	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1,1-Trichloroethane (TCA)	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1-Dichloropropene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Carbon tetrachloride	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dichloroethane (EDC)	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Benzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Trichloroethene (TCE)	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dichloropropane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Bromodichloromethane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Dibromomethane	ND	0.0408		mg/Kg-dry	1	9/9/2016 6:17:01 PM
cis-1,3-Dichloropropene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Toluene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
trans-1,3-Dichloropropylene	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-005

Matrix: Soil

Client Sample ID: UD-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14755

Analyst: NG

1,1,2-Trichloroethane	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,3-Dichloropropane	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Tetrachloroethene (PCE)	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Dibromochloromethane	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dibromoethane (EDB)	ND	0.00510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Chlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1,1,2-Tetrachloroethane	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Ethylbenzene	3.03	0.306	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
m,p-Xylene	3.52	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
o-Xylene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Styrene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Isopropylbenzene	3.98	0.816	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
Bromoform	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,1,2,2-Tetrachloroethane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
n-Propylbenzene	8.73	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
Bromobenzene	ND	0.0306		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,3,5-Trimethylbenzene	0.980	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
2-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
4-Chlorotoluene	0.205	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
tert-Butylbenzene	0.251	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2,3-Trichloropropane	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2,4-Trichlorobenzene	ND	0.0510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
sec-Butylbenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
4-Isopropyltoluene	5.14	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
1,3-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,4-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
n-Butylbenzene	11.2	0.204	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
1,2-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2-Dibromo-3-chloropropane	ND	0.510		mg/Kg-dry	1	9/9/2016 6:17:01 PM
1,2,4-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Hexachlorobutadiene	ND	0.102		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Naphthalene	6.66	0.306	D	mg/Kg-dry	10	9/12/2016 3:10:39 PM
1,2,3-Trichlorobenzene	ND	0.0204		mg/Kg-dry	1	9/9/2016 6:17:01 PM
Surr: Dibromofluoromethane	93.3	56.5-129	D	%Rec	10	9/12/2016 3:10:39 PM
Surr: Toluene-d8	105	64.3-131	D	%Rec	10	9/12/2016 3:10:39 PM
Surr: 1-Bromo-4-fluorobenzene	102	63.1-141	D	%Rec	10	9/12/2016 3:10:39 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/6/2016 10:45:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609081-005

Matrix: Soil

Client Sample ID: UD-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14743 Analyst: TN

Lead	2.50	0.182		mg/Kg-dry	1	9/8/2016 1:59:01 PM
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Sample Moisture (Percent Moisture)

Batch ID: R31613 Analyst: CG

Percent Moisture	14.1	0.500		wt%	1	9/8/2016 12:55:34 PM
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Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID MB-14743	SampType: MBLK	Units: mg/Kg			Prep Date: 9/8/2016	RunNo: 31615					
Client ID: MBLKS	Batch ID: 14743				Analysis Date: 9/8/2016	SeqNo: 597086					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.152

Sample ID LCS-14743	SampType: LCS	Units: mg/Kg			Prep Date: 9/8/2016	RunNo: 31615					
Client ID: LCSS	Batch ID: 14743				Analysis Date: 9/8/2016	SeqNo: 597087					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 21.5 0.159 19.84 0 109 80 120

Sample ID 1609082-001ADUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 9/8/2016	RunNo: 31615					
Client ID: BATCH	Batch ID: 14743				Analysis Date: 9/8/2016	SeqNo: 597089					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 2.79 0.181 2.849 2.14 20

Sample ID 1609082-001AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 9/8/2016	RunNo: 31615					
Client ID: BATCH	Batch ID: 14743				Analysis Date: 9/8/2016	SeqNo: 597091					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 23.7 0.188 23.45 2.849 89.0 75 125

Sample ID 1609082-001AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 9/8/2016	RunNo: 31615					
Client ID: BATCH	Batch ID: 14743				Analysis Date: 9/8/2016	SeqNo: 597092					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 25.2 0.191 23.81 2.849 94.0 75 125 23.73 6.15 20

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-14732	SampType: MBLK	Units: mg/Kg			Prep Date: 9/7/2016	RunNo: 31589					
Client ID: MBLKS	Batch ID: 14732				Analysis Date: 9/7/2016	SeqNo: 596553					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	19.8		20.00		98.8	50	150				
Surr: o-Terphenyl	19.1		20.00		95.7	50	150				

Sample ID LCS-14732	SampType: LCS	Units: mg/Kg			Prep Date: 9/7/2016	RunNo: 31589					
Client ID: LCSS	Batch ID: 14732				Analysis Date: 9/7/2016	SeqNo: 596551					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	413	20.0	500.0	0	82.6	65	135				
Surr: 2-Fluorobiphenyl	20.0		20.00		99.9	50	150				
Surr: o-Terphenyl	19.1		20.00		95.6	50	150				

Sample ID LCSD-14732	SampType: LCSD	Units: mg/Kg			Prep Date: 9/7/2016	RunNo: 31589					
Client ID: LCSS02	Batch ID: 14732				Analysis Date: 9/7/2016	SeqNo: 596552					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	420	20.0	500.0	0	84.0	65	135	413.1	1.64	30	
Surr: 2-Fluorobiphenyl	20.2		20.00		101	50	150		0		
Surr: o-Terphenyl	19.3		20.00		96.7	50	150		0		

Sample ID 1609082-001ADUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 9/7/2016	RunNo: 31589					
Client ID: BATCH	Batch ID: 14732				Analysis Date: 9/7/2016	SeqNo: 596740					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	22.9						0		30	
Heavy Oil	ND	57.3						0		30	
Surr: 2-Fluorobiphenyl	22.9		22.93		99.8	50	150		0		
Surr: o-Terphenyl	22.8		22.93		99.6	50	150		0		

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID 1609082-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/7/2016	RunNo: 31589							
Client ID: BATCH	Batch ID: 14732	Analysis Date: 9/7/2016	SeqNo: 596740								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID 1609077-002ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/7/2016	RunNo: 31589							
Client ID: BATCH	Batch ID: 14732	Analysis Date: 9/8/2016	SeqNo: 596732								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	21.5						0		30	
Heavy Oil	ND	53.8						0		30	
Surr: 2-Fluorobiphenyl	24.2		21.52		112	50	150		0		
Surr: o-Terphenyl	23.3		21.52		108	50	150		0		

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID LCS-14755	SampType: LCS	Units: mg/Kg				Prep Date: 9/8/2016	RunNo: 31642				
Client ID: LCSS	Batch ID: 14755					Analysis Date: 9/8/2016	SeqNo: 597561				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	24.5	5.00	25.00	0	98.2	65	135				
Surr: Toluene-d8	1.25		1.250		100	65	135				
Surr: 4-Bromofluorobenzene	1.26		1.250		101	65	135				

Sample ID MB-14755	SampType: MBLK	Units: mg/Kg				Prep Date: 9/8/2016	RunNo: 31642				
Client ID: MBLKS	Batch ID: 14755					Analysis Date: 9/9/2016	SeqNo: 597562				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.18		1.250		94.2	65	135				

Sample ID 1609077-002BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 9/8/2016	RunNo: 31642				
Client ID: BATCH	Batch ID: 14755					Analysis Date: 9/9/2016	SeqNo: 597547				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.66						0		30	
Surr: Toluene-d8	1.36		1.416		95.7	65	135		0		
Surr: 4-Bromofluorobenzene	1.36		1.416		95.8	65	135		0		

Sample ID 1609084-001BMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 9/8/2016	RunNo: 31642				
Client ID: BATCH	Batch ID: 14755					Analysis Date: 9/9/2016	SeqNo: 597555				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	31.7	6.65	33.24	0.9161	92.7	65	135				
Surr: Toluene-d8	1.64		1.662		98.8	65	135				
Surr: 4-Bromofluorobenzene	1.67		1.662		100	65	135				

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID 1609084-001BMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 9/8/2016	RunNo: 31642				
Client ID: BATCH	Batch ID: 14755					Analysis Date: 9/9/2016	SeqNo: 597556				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	31.8	6.65	33.24	0.9161	92.8	65	135	31.74	0.105	30	
Surr: Toluene-d8	1.60		1.662		96.5	65	135		0		
Surr: 4-Bromofluorobenzene	1.71		1.662		103	65	135		0		

Sample ID 1609084-005BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 9/8/2016	RunNo: 31642				
Client ID: BATCH	Batch ID: 14755					Analysis Date: 9/9/2016	SeqNo: 598056				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	4.93						0		30	
Surr: Toluene-d8	1.21		1.231		98.6	65	135		0		
Surr: 4-Bromofluorobenzene	1.20		1.231		97.8	65	135		0		

Sample ID CCV-D-14755	SampType: CCV	Units: mg/Kg				Prep Date: 9/13/2016	RunNo: 31642				
Client ID: CCV	Batch ID: 14755					Analysis Date: 9/13/2016	SeqNo: 598996				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	471	5.00	500.0	0	94.3	80	120				
Surr: Toluene-d8	24.9		25.00		99.6	65	135				
Surr: 4-Bromofluorobenzene	24.8		25.00		99.2	65	135				

Sample ID CCV-E-14755	SampType: CCV	Units: mg/Kg				Prep Date: 9/14/2016	RunNo: 31642				
Client ID: CCV	Batch ID: R31642					Analysis Date: 9/14/2016	SeqNo: 599395				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	403	5.00	500.0	0	80.5	80	120				
Surr: Toluene-d8	25.1		25.00		101	65	135				
Surr: 4-Bromofluorobenzene	25.0		25.00		100	65	135				

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14755	SampType: LCS	Units: mg/Kg	Prep Date: 9/8/2016	RunNo: 31641
Client ID: LCSS	Batch ID: 14755		Analysis Date: 9/8/2016	SeqNo: 597530

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.842	0.0600	1.000	0	84.2	34.5	141				
Chloromethane	0.872	0.0600	1.000	0	87.2	38.8	132				
Vinyl chloride	0.861	0.00200	1.000	0	86.1	44	142				
Bromomethane	0.909	0.0900	1.000	0	90.9	40.9	157				
Trichlorofluoromethane (CFC-11)	0.858	0.0500	1.000	0	85.8	42.9	147				
Chloroethane	0.850	0.0600	1.000	0	85.0	37.1	144				
1,1-Dichloroethene	0.967	0.0500	1.000	0	96.7	49.7	142				
Methylene chloride	0.946	0.0200	1.000	0	94.6	46.3	140				
trans-1,2-Dichloroethene	1.05	0.0200	1.000	0	105	68	130				
Methyl tert-butyl ether (MTBE)	0.986	0.0500	1.000	0	98.6	59.1	138				
1,1-Dichloroethane	0.942	0.0200	1.000	0	94.2	61.9	137				
2,2-Dichloropropane	0.979	0.0500	1.000	0	97.9	28.1	149				Q
cis-1,2-Dichloroethene	1.01	0.0200	1.000	0	101	71.3	135				
Chloroform	0.994	0.0200	1.000	0	99.4	67.5	129				
1,1,1-Trichloroethane (TCA)	0.975	0.0200	1.000	0	97.5	69	132				
1,1-Dichloropropene	1.03	0.0200	1.000	0	103	72.7	131				
Carbon tetrachloride	1.03	0.0200	1.000	0	103	63.4	137				
1,2-Dichloroethane (EDC)	0.964	0.0300	1.000	0	96.4	61.9	136				
Benzene	0.991	0.0200	1.000	0	99.0	64.3	133				
Trichloroethene (TCE)	1.04	0.0200	1.000	0	104	65.5	137				
1,2-Dichloropropane	0.990	0.0200	1.000	0	99.0	63.2	142				
Bromodichloromethane	1.04	0.0200	1.000	0	104	73.2	131				
Dibromomethane	1.03	0.0400	1.000	0	103	70	130				
cis-1,3-Dichloropropene	1.03	0.0200	1.000	0	103	59.1	143				
Toluene	0.985	0.0200	1.000	0	98.5	67.3	138				
trans-1,3-Dichloropropylene	1.05	0.0300	1.000	0	105	49.2	149				
1,1,2-Trichloroethane	0.994	0.0300	1.000	0	99.4	74.5	129				
1,3-Dichloropropane	0.982	0.0500	1.000	0	98.2	70	130				
Tetrachloroethene (PCE)	1.01	0.0200	1.000	0	101	52.7	150				
Dibromochloromethane	1.06	0.0300	1.000	0	106	70.6	144				
1,2-Dibromoethane (EDB)	0.961	0.00500	1.000	0	96.1	70	130				

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-14755	SampType:	LCS	Units:	mg/Kg	Prep Date:	9/8/2016	RunNo:	31641		
Client ID:	LCSS	Batch ID:	14755	Analysis Date:	9/8/2016	SeqNo:	597530				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.00	0.0200	1.000	0	100	76.1	123				
1,1,1,2-Tetrachloroethane	1.09	0.0300	1.000	0	109	65.9	141				
Ethylbenzene	0.996	0.0300	1.000	0	99.6	74	129				
m,p-Xylene	2.07	0.0200	2.000	0	104	70	124				
o-Xylene	0.982	0.0200	1.000	0	98.2	72.7	124				
Styrene	0.972	0.0200	1.000	0	97.2	76.8	130				
Isopropylbenzene	1.07	0.0800	1.000	0	107	70	130				
Bromoform	1.07	0.0200	1.000	0	107	67	154				
1,1,2,2-Tetrachloroethane	0.961	0.0200	1.000	0	96.1	60	130				
n-Propylbenzene	0.970	0.0200	1.000	0	97.0	74.8	125				
Bromobenzene	1.02	0.0300	1.000	0	102	49.2	144				
1,3,5-Trimethylbenzene	0.972	0.0200	1.000	0	97.2	74.6	123				
2-Chlorotoluene	0.967	0.0200	1.000	0	96.7	76.7	129				
4-Chlorotoluene	0.972	0.0200	1.000	0	97.2	77.5	125				
tert-Butylbenzene	0.973	0.0200	1.000	0	97.3	66.2	130				
1,2,3-Trichloropropane	0.944	0.0200	1.000	0	94.4	67.9	136				
1,2,4-Trichlorobenzene	1.07	0.0500	1.000	0	107	62.6	143				
sec-Butylbenzene	0.970	0.0200	1.000	0	97.0	75.6	133				
4-Isopropyltoluene	0.976	0.0200	1.000	0	97.6	76.8	131				
1,3-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	128				
1,4-Dichlorobenzene	0.978	0.0200	1.000	0	97.9	72.6	126				
n-Butylbenzene	1.04	0.0200	1.000	0	104	65.3	136				
1,2-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	126				
1,2-Dibromo-3-chloropropane	1.07	0.500	1.000	0	107	61.2	139				
1,2,4-Trimethylbenzene	0.982	0.0200	1.000	0	98.2	77.5	129				
Hexachlorobutadiene	1.06	0.100	1.000	0	106	42	151				
Naphthalene	1.11	0.0300	1.000	0	111	62.3	134				
1,2,3-Trichlorobenzene	1.09	0.0200	1.000	0	109	54.8	143				
Surr: Dibromofluoromethane	1.23		1.250		98.6	56.5	129				
Surr: Toluene-d8	1.21		1.250		96.4	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.27		1.250		102	63.1	141				

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14755	SampType: LCS	Units: mg/Kg	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: LCSS	Batch ID: 14755		Analysis Date: 9/8/2016	SeqNo: 597530							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-14755	SampType: MBLK	Units: mg/Kg	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: MBLKS	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597531							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									Q
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14755	SampType: MBLK	Units: mg/Kg	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: MBLKS	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597531							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14755	SampType: MBLK	Units: mg/Kg	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: MBLKS	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597531							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	0.992		1.250		79.3	56.5	129				
Surr: Toluene-d8	1.21		1.250		97.0	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.19		1.250		95.5	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609077-002BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: BATCH	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597516							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0680						0		30	
Chloromethane	ND	0.0680						0		30	
Vinyl chloride	ND	0.00227						0		30	
Bromomethane	ND	0.102						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0566						0		30	
Chloroethane	ND	0.0680						0		30	
1,1-Dichloroethene	ND	0.0566						0		30	
Methylene chloride	ND	0.0227						0		30	
trans-1,2-Dichloroethene	ND	0.0227						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0566						0		30	
1,1-Dichloroethane	ND	0.0227						0		30	
2,2-Dichloropropane	ND	0.0566						0		30	Q
cis-1,2-Dichloroethene	ND	0.0227						0		30	
Chloroform	ND	0.0227						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0227						0		30	
1,1-Dichloropropene	ND	0.0227						0		30	
Carbon tetrachloride	ND	0.0227						0		30	



Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609077-002BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: BATCH	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597516							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	ND	0.0340						0		30	
Benzene	ND	0.0227						0		30	
Trichloroethene (TCE)	ND	0.0227						0		30	
1,2-Dichloropropane	ND	0.0227						0		30	
Bromodichloromethane	ND	0.0227						0		30	
Dibromomethane	ND	0.0453						0		30	
cis-1,3-Dichloropropene	ND	0.0227						0		30	
Toluene	ND	0.0227						0		30	
trans-1,3-Dichloropropylene	ND	0.0340						0		30	
1,1,2-Trichloroethane	ND	0.0340						0		30	
1,3-Dichloropropane	ND	0.0566						0		30	
Tetrachloroethene (PCE)	ND	0.0227						0		30	
Dibromochloromethane	ND	0.0340						0		30	
1,2-Dibromoethane (EDB)	ND	0.00566						0		30	
Chlorobenzene	ND	0.0227						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0340						0		30	
Ethylbenzene	ND	0.0340						0		30	
m,p-Xylene	ND	0.0227						0		30	
o-Xylene	ND	0.0227						0		30	
Styrene	ND	0.0227						0		30	
Isopropylbenzene	ND	0.0906						0		30	
Bromoform	ND	0.0227						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0227						0		30	
n-Propylbenzene	ND	0.0227						0		30	
Bromobenzene	ND	0.0340						0		30	
1,3,5-Trimethylbenzene	ND	0.0227						0		30	
2-Chlorotoluene	ND	0.0227						0		30	
4-Chlorotoluene	ND	0.0227						0		30	
tert-Butylbenzene	ND	0.0227						0		30	
1,2,3-Trichloropropane	ND	0.0227						0		30	
1,2,4-Trichlorobenzene	ND	0.0566						0		30	

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609077-002BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: BATCH	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597516							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

sec-Butylbenzene	ND	0.0227						0		30	
4-Isopropyltoluene	ND	0.0227						0		30	
1,3-Dichlorobenzene	ND	0.0227						0		30	
1,4-Dichlorobenzene	ND	0.0227						0		30	
n-Butylbenzene	ND	0.0227						0		30	
1,2-Dichlorobenzene	ND	0.0227						0		30	
1,2-Dibromo-3-chloropropane	ND	0.566						0		30	
1,2,4-Trimethylbenzene	ND	0.0227						0		30	
Hexachlorobutadiene	ND	0.113						0		30	
Naphthalene	ND	0.0340						0		30	
1,2,3-Trichlorobenzene	ND	0.0227						0		30	
Surr: Dibromofluoromethane	1.35		1.416		95.4	56.5	129		0		
Surr: Toluene-d8	1.37		1.416		96.8	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.38		1.416		97.2	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609081-002BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: UD-SW-W	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597520							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	1.20	0.0669	1.115	0	107	43.5	121				
Chloromethane	1.10	0.0669	1.115	0	98.8	45	130				
Vinyl chloride	1.09	0.00223	1.115	0	98.2	51.2	146				
Bromomethane	1.10	0.100	1.115	0	98.7	21.3	120				
Trichlorofluoromethane (CFC-11)	1.15	0.0557	1.115	0	103	35	131				
Chloroethane	1.13	0.0669	1.115	0	102	43.8	117				
1,1-Dichloroethene	1.18	0.0557	1.115	0	106	61.9	141				
Methylene chloride	1.11	0.0223	1.115	0	99.7	54.7	142				
trans-1,2-Dichloroethene	1.19	0.0223	1.115	0	107	52	136				
Methyl tert-butyl ether (MTBE)	1.12	0.0557	1.115	0	100	54.4	132				



Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1609081-002BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641
Client ID: UD-SW-W	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597520

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	1.13	0.0223	1.115	0	101	51.8	141				
2,2-Dichloropropane	0.876	0.0557	1.115	0	78.5	36	123				Q
cis-1,2-Dichloroethene	1.14	0.0223	1.115	0	102	58.6	136				
Chloroform	1.14	0.0223	1.115	0.009477	101	53.2	129				
1,1,1-Trichloroethane (TCA)	1.11	0.0223	1.115	0	99.7	58.3	145				
1,1-Dichloropropene	1.20	0.0223	1.115	0	108	55.1	138				
Carbon tetrachloride	1.18	0.0223	1.115	0	106	53.3	144				
1,2-Dichloroethane (EDC)	1.07	0.0334	1.115	0	95.8	51.3	139				
Benzene	1.13	0.0223	1.115	0	101	63.5	133				
Trichloroethene (TCE)	1.17	0.0223	1.115	0	105	68.6	132				
1,2-Dichloropropane	1.12	0.0223	1.115	0	100	59	136				
Bromodichloromethane	1.12	0.0223	1.115	0	100	50.7	141				
Dibromomethane	1.16	0.0446	1.115	0	104	50.6	137				
cis-1,3-Dichloropropene	1.10	0.0223	1.115	0	98.9	50.4	138				
Toluene	1.15	0.0223	1.115	0	103	63.4	132				
trans-1,3-Dichloropropylene	1.09	0.0334	1.115	0	97.5	44.1	147				
1,1,2-Trichloroethane	1.14	0.0334	1.115	0	102	51.6	137				
1,3-Dichloropropane	1.12	0.0557	1.115	0	100	53.1	134				
Tetrachloroethene (PCE)	1.16	0.0223	1.115	0	104	35.6	158				
Dibromochloromethane	1.13	0.0334	1.115	0	102	55.3	140				
1,2-Dibromoethane (EDB)	1.09	0.00557	1.115	0	97.8	50.4	136				
Chlorobenzene	1.13	0.0223	1.115	0	101	60	133				
1,1,1,2-Tetrachloroethane	1.17	0.0334	1.115	0	105	53.1	142				
Ethylbenzene	1.15	0.0334	1.115	0.01784	101	54.5	134				
m,p-Xylene	2.39	0.0223	2.230	0.02230	106	53.1	132				
o-Xylene	1.14	0.0223	1.115	0	103	53.3	139				
Styrene	1.14	0.0223	1.115	0	103	51.1	132				
Isopropylbenzene	1.28	0.0892	1.115	0.02286	113	58.9	138				
Bromoform	1.15	0.0223	1.115	0	103	57.9	130				
1,1,1,2,2-Tetrachloroethane	1.23	0.0223	1.115	0	111	51.9	131				
n-Propylbenzene	1.20	0.0223	1.115	0.04627	103	53.6	140				

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609081-002BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641
Client ID: UD-SW-W	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597520

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	1.19	0.0334	1.115	0	107	54.2	140				
1,3,5-Trimethylbenzene	1.17	0.0223	1.115	0.01115	104	51.8	136				
2-Chlorotoluene	1.14	0.0223	1.115	0	102	51.6	136				
4-Chlorotoluene	1.17	0.0223	1.115	0	105	50.1	139				
tert-Butylbenzene	1.19	0.0223	1.115	0	107	50.5	135				
1,2,3-Trichloropropane	1.06	0.0223	1.115	0	95.4	50.5	131				
1,2,4-Trichlorobenzene	1.25	0.0557	1.115	0	112	50.8	130				
sec-Butylbenzene	1.23	0.0223	1.115	0.03623	107	52.6	141				
4-Isopropyltoluene	1.26	0.0223	1.115	0.04069	109	52.9	134				
1,3-Dichlorobenzene	1.14	0.0223	1.115	0	102	52.6	131				
1,4-Dichlorobenzene	1.10	0.0223	1.115	0	98.4	52.9	129				
n-Butylbenzene	1.33	0.0223	1.115	0.07972	112	52.6	130				
1,2-Dichlorobenzene	1.15	0.0223	1.115	0	103	55.8	129				
1,2-Dibromo-3-chloropropane	1.09	0.557	1.115	0	97.9	40.5	131				
1,2,4-Trimethylbenzene	1.46	0.0223	1.115	0.2464	109	50.6	137				
Hexachlorobutadiene	1.28	0.111	1.115	0	115	40.6	158				
Naphthalene	1.32	0.0334	1.115	0.03679	115	52.3	124				
1,2,3-Trichlorobenzene	1.21	0.0223	1.115	0	109	54.4	124				
Surr: Dibromofluoromethane	1.41		1.394		101	56.5	129				
Surr: Toluene-d8	1.39		1.394		99.7	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.46		1.394		105	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609081-002BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641
Client ID: UD-SW-W	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597521

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.13	0.0669	1.115	0	101	43.5	121	1.197	5.85	30	
Chloromethane	1.08	0.0669	1.115	0	96.9	45	130	1.102	1.99	30	
Vinyl chloride	1.06	0.00223	1.115	0	95.1	51.2	146	1.095	3.15	30	

Work Order: 1609081
 CLIENT: Shannon & Wilson
 Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1609081-002BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641
Client ID: UD-SW-W	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597521

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	1.09	0.100	1.115	0	98.0	21.3	120	1.100	0.661	30	
Trichlorofluoromethane (CFC-11)	1.36	0.0557	1.115	0	122	35	131	1.154	16.1	30	
Chloroethane	1.10	0.0669	1.115	0	99.1	43.8	117	1.134	2.64	30	
1,1-Dichloroethene	1.16	0.0557	1.115	0	104	61.9	141	1.185	1.71	30	
Methylene chloride	1.08	0.0223	1.115	0	97.2	54.7	142	1.112	2.54	30	
trans-1,2-Dichloroethene	1.16	0.0223	1.115	0	104	52	136	1.193	2.70	30	
Methyl tert-butyl ether (MTBE)	1.09	0.0557	1.115	0	97.8	54.4	132	1.117	2.42	30	
1,1-Dichloroethane	1.11	0.0223	1.115	0	99.5	51.8	141	1.131	1.89	30	
2,2-Dichloropropane	0.866	0.0557	1.115	0	77.6	36	123	0.8758	1.15	30	Q
cis-1,2-Dichloroethene	1.10	0.0223	1.115	0	99.0	58.6	136	1.142	3.38	30	
Chloroform	1.10	0.0223	1.115	0.009477	98.1	53.2	129	1.140	3.28	30	
1,1,1-Trichloroethane (TCA)	1.09	0.0223	1.115	0	97.8	58.3	145	1.112	1.87	30	
1,1-Dichloropropene	1.14	0.0223	1.115	0	103	55.1	138	1.201	4.80	30	
Carbon tetrachloride	1.26	0.0223	1.115	0	113	53.3	144	1.178	6.94	30	
1,2-Dichloroethane (EDC)	1.06	0.0334	1.115	0	94.8	51.3	139	1.069	1.05	30	
Benzene	1.09	0.0223	1.115	0	97.4	63.5	133	1.131	3.97	30	
Trichloroethene (TCE)	1.13	0.0223	1.115	0	102	68.6	132	1.172	3.34	30	
1,2-Dichloropropane	1.07	0.0223	1.115	0	96.1	59	136	1.115	3.98	30	
Bromodichloromethane	1.12	0.0223	1.115	0	100	50.7	141	1.119	0.249	30	
Dibromomethane	1.13	0.0446	1.115	0	101	50.6	137	1.162	3.22	30	
cis-1,3-Dichloropropene	1.11	0.0223	1.115	0	99.8	50.4	138	1.103	0.905	30	
Toluene	1.12	0.0223	1.115	0	100	63.4	132	1.148	2.66	30	
trans-1,3-Dichloropropylene	1.14	0.0334	1.115	0	103	44.1	147	1.088	5.09	30	
1,1,2-Trichloroethane	1.11	0.0334	1.115	0	99.8	51.6	137	1.142	2.52	30	
1,3-Dichloropropane	1.09	0.0557	1.115	0	97.5	53.1	134	1.118	2.83	30	
Tetrachloroethene (PCE)	1.13	0.0223	1.115	0	101	35.6	158	1.164	3.16	30	
Dibromochloromethane	1.15	0.0334	1.115	0	103	55.3	140	1.132	1.32	30	
1,2-Dibromoethane (EDB)	1.06	0.00557	1.115	0	94.9	50.4	136	1.090	2.96	30	
Chlorobenzene	1.10	0.0223	1.115	0	99.1	60	133	1.129	2.15	30	
1,1,1,2-Tetrachloroethane	1.16	0.0334	1.115	0	104	53.1	142	1.171	1.10	30	
Ethylbenzene	1.11	0.0334	1.115	0.01784	98.1	54.5	134	1.148	3.21	30	

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1609081-002BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641
Client ID: UD-SW-W	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 597521

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	2.31	0.0223	2.230	0.02230	102	53.1	132	2.393	3.73	30	
o-Xylene	1.12	0.0223	1.115	0	100	53.3	139	1.144	2.32	30	
Styrene	1.12	0.0223	1.115	0	100	51.1	132	1.144	2.37	30	
Isopropylbenzene	1.24	0.0892	1.115	0.02286	109	58.9	138	1.285	3.58	30	
Bromoform	1.16	0.0223	1.115	0	104	57.9	130	1.146	1.45	30	
1,1,2,2-Tetrachloroethane	1.21	0.0223	1.115	0	108	51.9	131	1.233	2.24	30	
n-Propylbenzene	1.16	0.0223	1.115	0.04627	99.5	53.6	140	1.197	3.51	30	
Bromobenzene	1.17	0.0334	1.115	0	105	54.2	140	1.194	1.74	30	
1,3,5-Trimethylbenzene	1.13	0.0223	1.115	0.01115	101	51.8	136	1.171	3.34	30	
2-Chlorotoluene	1.11	0.0223	1.115	0	99.8	51.6	136	1.142	2.52	30	
4-Chlorotoluene	1.13	0.0223	1.115	0	102	50.1	139	1.168	3.00	30	
tert-Butylbenzene	1.15	0.0223	1.115	0	103	50.5	135	1.190	3.33	30	
1,2,3-Trichloropropane	1.04	0.0223	1.115	0	93.5	50.5	131	1.064	1.96	30	
1,2,4-Trichlorobenzene	1.23	0.0557	1.115	0	110	50.8	130	1.251	1.66	30	
sec-Butylbenzene	1.18	0.0223	1.115	0.03623	103	52.6	141	1.231	4.26	30	
4-Isopropyltoluene	1.21	0.0223	1.115	0.04069	105	52.9	134	1.258	3.70	30	
1,3-Dichlorobenzene	1.13	0.0223	1.115	0	101	52.6	131	1.137	0.788	30	
1,4-Dichlorobenzene	1.09	0.0223	1.115	0	97.6	52.9	129	1.098	0.867	30	
n-Butylbenzene	1.30	0.0223	1.115	0.07972	109	52.6	130	1.326	2.04	30	
1,2-Dichlorobenzene	1.13	0.0223	1.115	0	102	55.8	129	1.154	1.75	30	
1,2-Dibromo-3-chloropropane	1.12	0.557	1.115	0	101	40.5	131	1.092	2.82	30	
1,2,4-Trimethylbenzene	1.41	0.0223	1.115	0.2464	104	50.6	137	1.463	3.69	30	
Hexachlorobutadiene	1.25	0.111	1.115	0	112	40.6	158	1.283	2.82	30	
Naphthalene	1.34	0.0334	1.115	0.03679	116	52.3	124	1.322	0.965	30	
1,2,3-Trichlorobenzene	1.21	0.0223	1.115	0	108	54.4	124	1.214	0.552	30	
Surr: Dibromofluoromethane	1.42		1.394		102	56.5	129		0		
Surr: Toluene-d8	1.39		1.394		100	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.49		1.394		107	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609084-005BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: BATCH	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 598028							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0591						0		30	
Chloromethane	ND	0.0591						0		30	
Vinyl chloride	ND	0.00197						0		30	
Bromomethane	ND	0.0887						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0493						0		30	
Chloroethane	ND	0.0591						0		30	
1,1-Dichloroethene	ND	0.0493						0		30	
Methylene chloride	ND	0.0197						0		30	
trans-1,2-Dichloroethene	ND	0.0197						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0493						0		30	
1,1-Dichloroethane	ND	0.0197						0		30	
2,2-Dichloropropane	ND	0.0493						0		30	Q
cis-1,2-Dichloroethene	ND	0.0197						0		30	
Chloroform	ND	0.0197						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0197						0		30	
1,1-Dichloropropene	ND	0.0197						0		30	
Carbon tetrachloride	ND	0.0197						0		30	
1,2-Dichloroethane (EDC)	ND	0.0296						0		30	
Benzene	ND	0.0197						0		30	
Trichloroethene (TCE)	ND	0.0197						0		30	
1,2-Dichloropropane	ND	0.0197						0		30	
Bromodichloromethane	ND	0.0197						0		30	
Dibromomethane	ND	0.0394						0		30	
cis-1,3-Dichloropropene	ND	0.0197						0		30	
Toluene	ND	0.0197						0		30	
trans-1,3-Dichloropropylene	ND	0.0296						0		30	
1,1,2-Trichloroethane	ND	0.0296						0		30	
1,3-Dichloropropane	ND	0.0493						0		30	
Tetrachloroethene (PCE)	ND	0.0197						0		30	
Dibromochloromethane	ND	0.0296						0		30	
1,2-Dibromoethane (EDB)	ND	0.00493						0		30	



Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609084-005BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: BATCH	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 598028							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chlorobenzene	ND	0.0197						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0296						0		30	
Ethylbenzene	ND	0.0296						0		30	
m,p-Xylene	ND	0.0197						0		30	
o-Xylene	ND	0.0197						0		30	
Styrene	ND	0.0197						0		30	
Isopropylbenzene	ND	0.0788						0		30	
Bromoform	ND	0.0197						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0197						0		30	
n-Propylbenzene	ND	0.0197						0		30	
Bromobenzene	ND	0.0296						0		30	
1,3,5-Trimethylbenzene	ND	0.0197						0		30	
2-Chlorotoluene	ND	0.0197						0		30	
4-Chlorotoluene	ND	0.0197						0		30	
tert-Butylbenzene	ND	0.0197						0		30	
1,2,3-Trichloropropane	ND	0.0197						0		30	
1,2,4-Trichlorobenzene	ND	0.0493						0		30	
sec-Butylbenzene	ND	0.0197						0		30	
4-Isopropyltoluene	ND	0.0197						0		30	
1,3-Dichlorobenzene	ND	0.0197						0		30	
1,4-Dichlorobenzene	ND	0.0197						0		30	
n-Butylbenzene	ND	0.0197						0		30	
1,2-Dichlorobenzene	ND	0.0197						0		30	
1,2-Dibromo-3-chloropropane	ND	0.493						0		30	
1,2,4-Trimethylbenzene	ND	0.0197						0		30	
Hexachlorobutadiene	ND	0.0985						0		30	
Naphthalene	ND	0.0296						0		30	
1,2,3-Trichlorobenzene	ND	0.0197						0		30	
Surr: Dibromofluoromethane	1.19		1.231		96.4	56.5	129		0		
Surr: Toluene-d8	1.21		1.231		98.3	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.22		1.231		99.2	63.1	141		0		

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609084-005BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/8/2016	RunNo: 31641							
Client ID: BATCH	Batch ID: 14755		Analysis Date: 9/9/2016	SeqNo: 598028							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID CCV-A-14755	SampType: CCV	Units: µg/L	Prep Date: 9/12/2016	RunNo: 31703							
Client ID: CCV	Batch ID: 14755		Analysis Date: 9/12/2016	SeqNo: 598808							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	20.4	0.0300	20.00	0	102	80	120				
m,p-Xylene	41.2	0.0200	40.00	0	103	80	120				
o-Xylene	20.4	0.0200	20.00	0	102	80	120				
Isopropylbenzene	20.6	0.0800	20.00	0	103	80	120				
n-Propylbenzene	20.8	0.0200	20.00	0	104	80	120				
sec-Butylbenzene	21.1	0.0200	20.00	0	105	80	120				
4-Isopropyltoluene	21.7	0.0200	20.00	0	108	80	120				
n-Butylbenzene	21.8	0.0200	20.00	0	109	80	120				
Naphthalene	18.3	0.0300	20.00	0	91.6	80	120				
Surr: Dibromofluoromethane	23.2		25.00		93.0	63.7	129				
Surr: Toluene-d8	25.0		25.00		100	62.4	141				
Surr: 1-Bromo-4-fluorobenzene	26.5		25.00		106	63.1	141				

Work Order: 1609081
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID	1609084-001ADUP	SampType:	DUP	Units:	wt%	Prep Date:	9/8/2016	RunNo:	31613		
Client ID:	BATCH	Batch ID:	R31613			Analysis Date:	9/8/2016	SeqNo:	597020		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	4.48	0.500						3.704	18.9	20	

Client Name: **SW**
 Logged by: **Erica Silva**

Work Order Number: **1609081**
 Date Received: **9/6/2016 4:30:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes No Not Required
 6. Was an attempt made to cool the samples? Yes No NA
 7. Were all items received at a temperature of >0°C to 10.0°C* Yes No NA
 8. Sample(s) in proper container(s)? Yes No
 9. Sufficient sample volume for indicated test(s)? Yes No
 10. Are samples properly preserved? Yes No
 11. Was preservative added to bottles? Yes No NA
 12. Is there headspace in the VOA vials? Yes No NA
 13. Did all samples containers arrive in good condition(unbroken)? Yes No
 14. Does paperwork match bottle labels? Yes No
 15. Are matrices correctly identified on Chain of Custody? Yes No
 16. Is it clear what analyses were requested? Yes No
 17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	6.1
Sample	4.0
Temp Blank	5.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

VI. CHECKLIST

**The site assessor must check each of the following items and include it in the report.
Sections referenced below can be found in the Ecology publication
*Guidance for Site Checks and Site Assessments for Underground Storage Tanks.***

	YES	NO
1. The location of the UST site is shown on a vicinity map.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. A brief summary of information obtained during the site inspection is provided (Section 3.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. A summary of UST system data is provided (Section 3.1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. The soils characteristics at the UST site are described. (Section 5.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Is there any apparent groundwater in the tank excavation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. A brief description of the surrounding land use is provided. (Section 3.1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. The following items are provided in one or more sketches:		
• Location and ID number for all field samples collected	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• If applicable, groundwater samples are distinguished from soil samples	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Location of samples collected from stockpiled excavated soil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Tank and piping locations and limits of excavation pit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Adjacent structures and streets	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Approximate locations of any on-site and nearby utilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Any factors that may have compromised the quality of the data or validity of the results are described.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

VII. REQUIRED SIGNATURES

Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through -395.

Shoshana K. Howard, PE

Shoshana K Howard

11-2-16

Print or Type Name

Signature of Certified Site Assessor

Date

APPENDIX B

UST-1 – CONTRACTOR-PROVIDED DOCUMENTATION



CONSTRUCTION, inc

13036 BEVERLY PARK ROAD
MUKILTEO, WA 98275
(425) 265-7211 FAX (425) 265-7215

LETTER OF TRANSMITTAL

To: Sound Transit
401 South Jackson Street
Seattle, WA 98104

From: Mike Pellitteri
Date: 10/10/16
Ph: (425) 265-7211 Office
FAX: (425) 265-7215

Attn: Alex Kwok

Project Owner: Sound Transit
Contract Name: N105: Northgate Link Extension: Advanced Demolition and Site Prep, Northgate & UDS Staging
Contract No.: RTA/CN 0107-15
Sub/Supplier:: Pellco Construction, Inc.

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop Drawings Product Data Samples Plans Specifications
 Copy of Letter Change Order **SUBMITTAL 026500-004.001**

Item #	Copies	Spec Section & Paragraph	Description	Pages
1	1	026500 1.03D	Submittal 026500-004.001 UST Closure Report Backup Information for UDS 1, Anticipated UST at Key Bank.	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> For Approval | <input type="checkbox"/> No Exceptions Taken | <input type="checkbox"/> Resubmit _____ copies for approval |
| <input type="checkbox"/> For Your Use | <input type="checkbox"/> Make Corrections Noted | <input type="checkbox"/> Submit _____ copies for distribution |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> Revise and Resubmit | <input type="checkbox"/> Return _____ corrected prints |
| <input checked="" type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected | |

REMARKS:

Sincerely,
Mike Pellitteri

CC: File

Signed: Mike Pellitteri

Received:

Pellco Construction
13036 Beverly Park Road
Mukilteo, WA 9827

October 5, 2016

**RE: UST Closure Report Back-up Submittal
UDS-1 Anticipated Underground Storage Tank
Northgate Link Extension Advanced Demolition and Site Prep
Sound Transit Contract No.: N105**

Dear Mr. Gordon:

Attached to this memo is the UST Closure Report back-up documentation required by section 02 65 00 1.03D of the Contract Documents for the **anticipated** underground storage tank (UST) at the University District jobsite.

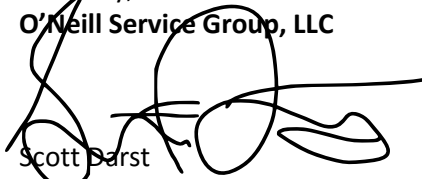
Section 02 65 00 1.06 goes into further detail regarding the specific documents, letters, and certifications that are required to be provided.

02 65 00 1.06

- A. "Provide the following information to allow the Resident Engineer to prepare a UST Closure Report."
- N/A
- B. "A letter signed by responsible company official certifying the decommissioning services were performed in accordance with the applicable regulations and the terms and conditions of these Specifications."
- Attachment B.1 – UST Decommissioner's Report
- C. "UST removal checklist, notifications, sample chains of custody, analytical test results, and other relevant documentation to the Resident Engineer."
- UST removal checklist and confirmation sampling was performed by Shannon and Wilson
- Attachment C.1 – 30-Day Notice
- D. "Copies of tank-contents analyses and waste analyses or waste profile sheets."
- There were no contents to analyze.
- E. "Copies of certifications of final disposal signed by the responsible disposal facility official."
- Attachment E.1 – UST Destruction Certification
- F. "Information on who transported and accepted wastes encountered, including copies of manifests, waste profile sheets, land disposal restriction, notification and certification forms, disposal ticket and receipts, certificates of disposal, and other pertinent documentation."
- Attachment F.1 – Marine Vacuum Bill of Lading
- Manifests, land disposal restriction, notification and certification forms, certificates of disposal are not required for the disposal of this UST.
- G. "Scaled one-line drawings showing tank locations, limits of excavation, limits of contamination, and underground utilities within 50 feet."
- A drawing is included in the UST Decommissioner's report (Attachment B.1)
- H. "Documentation prepared for Ecology and the local fire department, including permits, notices and closure checklists."
- Attachment H.1 – UST Triple-Rinse Certification
- Attachment H.2 – Marine Chemist Certification for Inerting the UST
- Attachment H.3 – Fire Marshal Permit

Please let me know if you have any questions.

Sincerely,
O'Neill Service Group, LLC

A handwritten signature in black ink, appearing to read 'Scott Barst', written over the company name.

Scott Barst
Project Manager

**Attachment B.1
UST Decommissioner's Report**



GALLOWAY ENVIRONMENTAL, INC

3102-220th PL SE
Sammamish, WA 98075-9540
Gary@GallowayEnvironmental.com

(425) 688-8852

September 20, 2016

Eric Laumbattus
Environmental Project Manager
O'Neill Service Group
17619 NE 67th Court, suite 100
Redmond, Washington 98052
Emailed to: Ericl@oneillsg.com

SUBJECT: SOUND TRANSIT BROOKLYN STATION AREA
UNDERGROUND STORAGE TANK DECOMMISSIONING REPORT, 1000 NE
45TH STREET, SEATTLE, WASHINGTON 98103

Dear Mr. Laumbattus:

This letter report presents Galloway Environmental, Inc.'s ("GEI's") findings regarding the removal of one 3,000 gallon underground storage tank ("UST") at 1000 NE 45th Street in Seattle, Washington (47.6616N & -122.34592W — See Figure 1 for location). The Washington Department of Ecology (WDOE) lists the Site as Facility ID 8342 and Site ID 619989.

Reportedly, the tank was used to store gasoline fuel for retail service station sales; however its age is unknown. The on-site field portion of these services was performed on September 6, 2016.

PROJECT SUMMARY

During planned re-development of the Site, Sound Transit hired Pellco Construction to assist in the removal of one 3,000 gallon underground storage tank (UST) at this Site. The O'Neill Service Group was asked to coordinate the removal of the tank. O'Neill contracted GEI to oversee the tank decommissioning and provide this report. Sound Transit's environmental consultant (Shannon & Wilson) was asked to perform the necessary Environmental Site Checklist and Assessment for the decommissioning. The attached figures show the approximate location of the UST (See Figures 1 and 2).

Tank decommissioning services were performed (or supported) by the following (See Attachments A — Photos; and B — Permits, manifests, etc.)

1. MARVAC provided the following decommissioning services:
 - Pumped the tank of residual liquids (Gasoline fuel and water),
 - Triple-rinsed the tank prior to decommissioning, and
 - Properly disposed of the liquids and recycled the tank
2. The owner's contractor (Pellco) performed the excavating and tank removal services
3. Sound Testing, Inc. provided a marine chemist to inspect the tank, inert the tank, and measure oxygen levels, carbon monoxide levels, and total hydrocarbon concentrations prior to certifying that the UST site was safe for removal and transport to an offsite location.

4. Randy Devitt (*Seattle Fire Department Inspector*) inspected the site conditions and approved the tank's removal.
5. GEI oversaw the tank's decommissioning — Washington State UST Decommissioner Supervisor – Certificate No. 0878867-U2

UST REMOVAL AND OBSERVATIONS

UST Removal

Following Marvac's pumping and rinsing of the tank, Sound Testing: 1) Inerted the tank with carbon dioxide, 2) Measured the residual oxygen levels in the tank and petroleum vapor concentrations in the tank, and 3) Verified that the tank was safe to remove from belowground and transport it to an offsite location.

Pellco removed the tank and loaded it directly onto Marvac's truck and Marvac delivered the tank to its facility in South Seattle to process the tank prior to its delivery to the Seattle Iron & Metals Recycling facility in Seattle, Washington.

No information regarding the age of the UST was available to GEI.

Condition of the UST

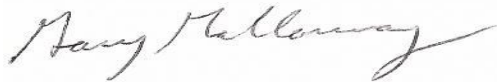
The top of the tank was estimated to be approximately three feet below the ground surface in the approximate location as shown in Figure 2. The tank was six feet in diameter by 14 feet long with a capacity of approximately 3,000 gallons. The tank was in good condition — the tank had evidence of corrosion on its sidewalls, but no holes were observed in the tank (*See photos*). Marvac told GEI that the tank was nearly empty of all liquids prior to the pumping and rinsing of the tank. The tank's fill port, fuel line, and vent pipes were not present in the excavation.

CONCLUSIONS

Based on these field observations, the tank was properly decommissioned.

Should you have any questions regarding this report or if you would like to discuss our findings, please contact me at the addresses listed at the top of this letter.

Respectfully Submitted,
GALLOWAY ENVIRONMENTAL, INC.



Gary L. Galloway, LHG, CHMM, REA
President

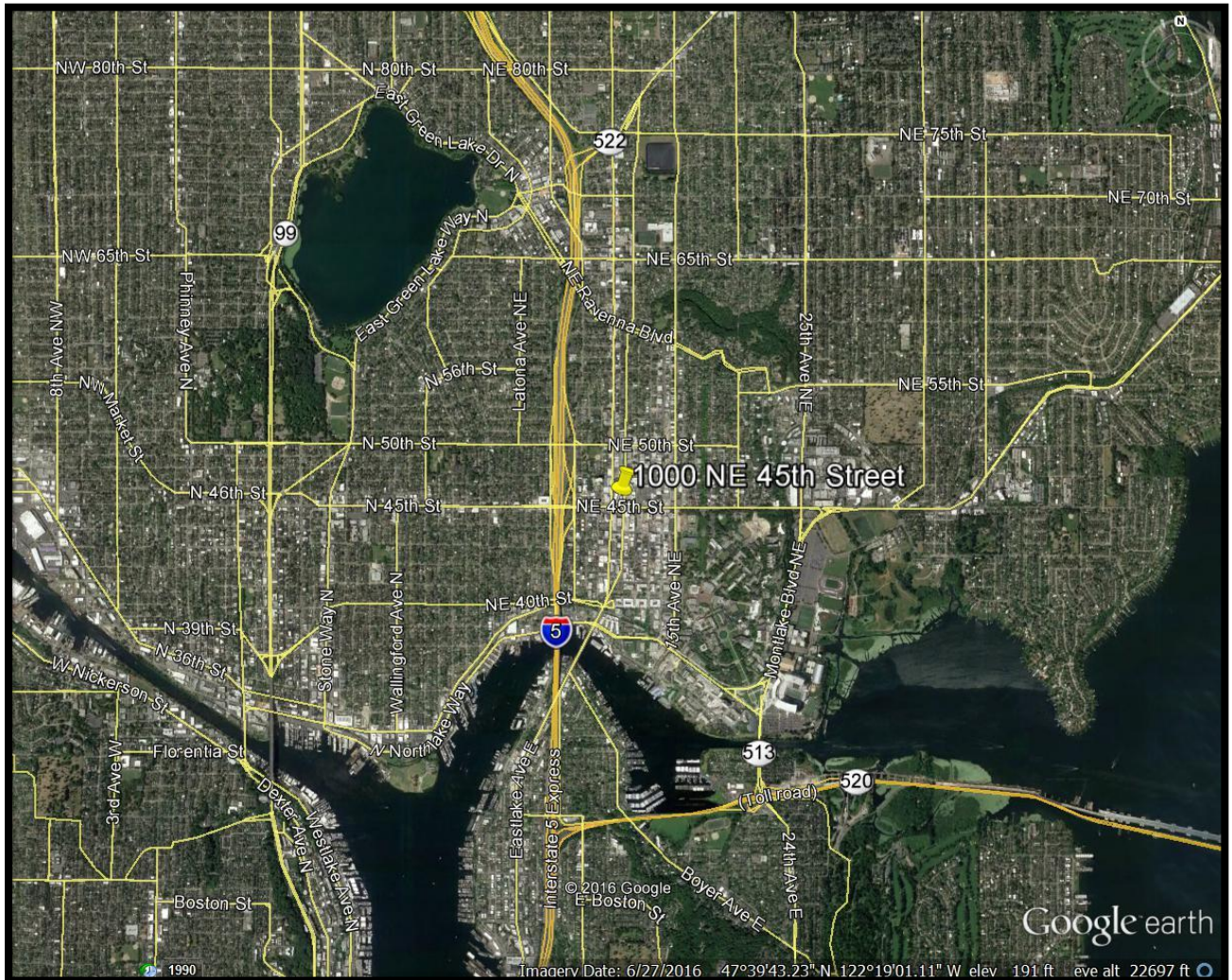


FIGURE 1 — SITE LOCATION,
Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington
Source: Google Maps 2016, GEI Project # 36021

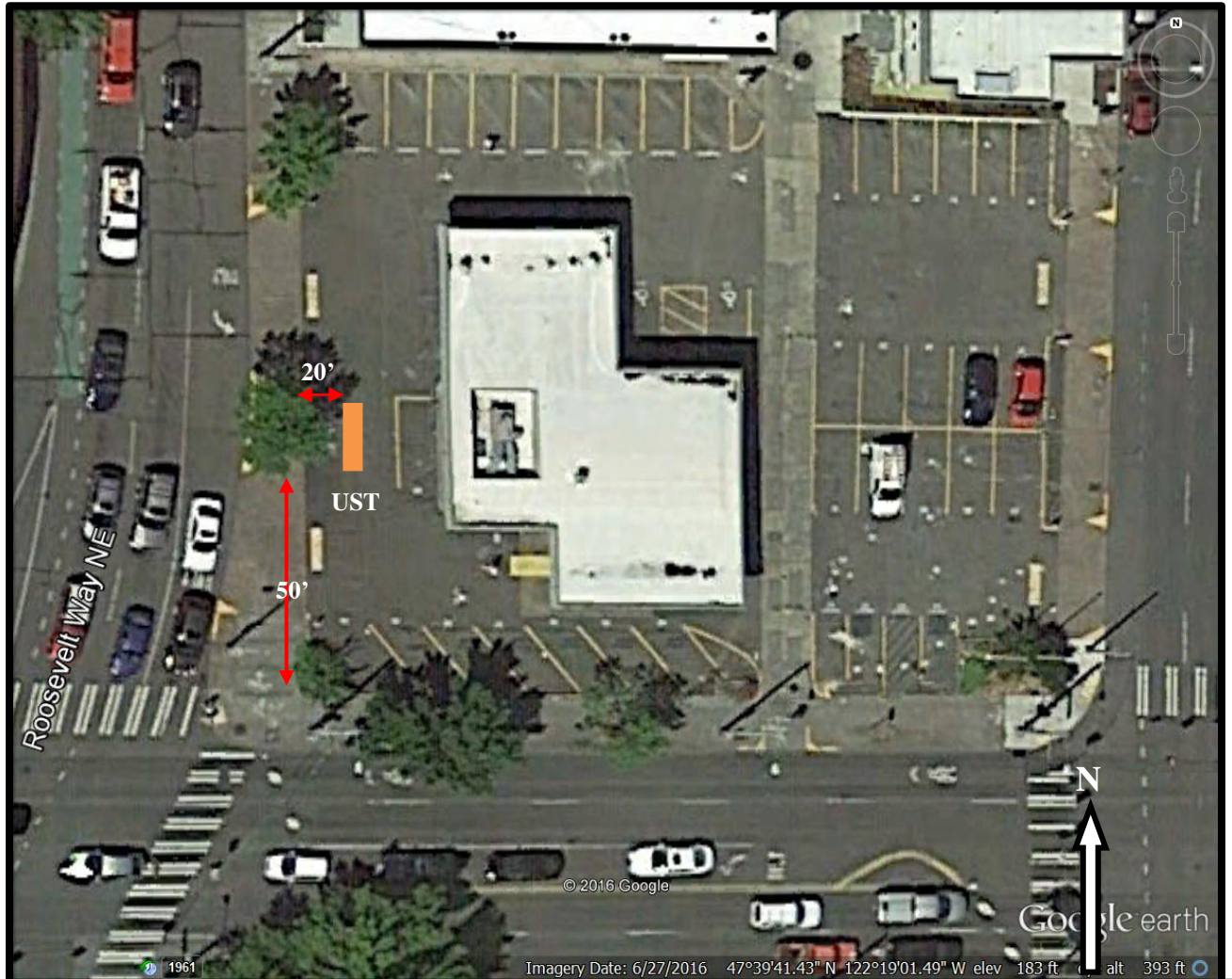


FIGURE 2 — SITE PLAN MAP

Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington
Source: Google Maps 2016, GEI Project # 36021

ATTACHMENTS A

PHOTOS

Site Photos



ATTACHMENTS B

PERMITS, MANIFESTS, ETC.

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 14' L 6' Dia.

Last Contents Gas olene

Tank Location: 1000 NE 45th Seattle

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: Sound Transit
401 S. Jackson St.
Seattle 98101

Contractor: Pellico Construction
13036 Beverly Park Road
Mukilteo WA 98275

M.V.S. Representative: [Signature]

Date: 9 2 16

Notes:

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116

(206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGINC.COM

MARINE CHEMIST CERTIFICATE

SERIAL N° 46771

MARINE VACUUM

SEPTEMBER 10, 2010

Survey Requested by

Vessel Owner or Agent

SEATTLE

Date

VST

VST

1000 NE 45th ST

Specific Location of Vessel

GASOLINE X3

O2 = 20.9%

9:00 AM

Last Three (3) Loadings

Tests Performed

Time Survey Completed

3,000 g VST

INERT WITH CO2

O2 < 6%

MAY BE SAFELY EXCAVATED

MAY BE SAFELY TRANSPORTED

KEEP ALL HOLES/VENTS PLUGGED TO PREVENT CO2 FROM LEAKING FROM TANK.

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [Signature] Name [Name] Company [Company] Date [Date]

Signed [Signature] Marine Chemist Certificate No. [Number]

POSTING

Your
Seattle
Fire Department

TUE 09/06/16
8711 SK
0930-0945

RECEIVED
SEP 02 2016
PERMIT SECTION



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Commercial Tank Removal/Decommissioning

Permit Fee: \$218.00

Date Issued: 9-6-16

Tank(s) must be removed from site on the same day as permit is issued!

TO BE COMPLETED BY PERMIT APPLICANT

FIRM NAME	Galloway Environmental, Inc.				
MAILING ADDRESS	3102 220 th PL SE				SUITE
CITY	Sammamish	STATE	Washington	ZIP	98075
JOBSITE ADDRESS	1000 NE 45 th St., Seattle, 98103				
CONTACT PERSON	Gary Galloway		PHONE NUMBER (425) 688-8852		
Number of Tank(s):	1	Tank Size(s):	3,000 gallon	<input type="checkbox"/>	Aboveground tank
Product(s) Previously Contained:	Unknown petroleum		<input type="checkbox"/>	XXXX Underground tank	
<input checked="" type="checkbox"/> X	Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)				
<input type="checkbox"/>	Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)				
Hot work being conducted:	<input checked="" type="checkbox"/> X	No	<input type="checkbox"/>	Yes (If yes, a separate hot work permit is required)	

Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office – Permits
220 Third Ave S, 2nd Floor
Seattle, WA 98104-2608

To pay with a Visa or Master Card: Fax or email this application
THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT
Tel: (206) 386-1450 / Fax: (206) 386-1348
E-mail: permits@seattle.gov

Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.
TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION
NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!

Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)

FMO USE:	APPROVED BY:
Check No.: 7838090216	Inspector: S. MARROV'S
Receipt No.: 5-265075	Name of Marine Chemist: AMY SLY
Application ID#: 106461	Date: 9-6-16
	SFD ID# 1372
	Certificate # 706

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

STORAGE TANK

CERTIFICATE OF DESTRUCTION

DATE: September 9, 2016

TANK OWNER: Sound Transit

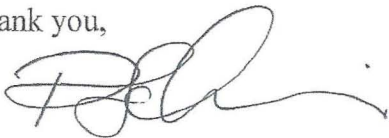
TANK LOCATION: 1000 NE 45TH ST, SEATTLE

TANK DESCRIPTION: 3000 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE OR DIESEL

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,



Marine Vacuum Service, Inc.

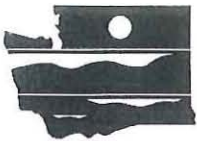
DBE # D4M0002341

SDVO

EPA # WAD980974521

A MINORITY BUSINESS ENTERPRISE ID # M4M002341

Attachment C.1
30-day Notice



DEPARTMENT OF
ECOLOGY
State of Washington

UNDERGROUND STORAGE TANK (UST)

30-DAY NOTICE

(See back of form for instructions)

NW

FOR OFFICE USE ONLY

Site ID # _____

FS ID # _____

RECEIVED

JUN 29 2016

Department of Ecology
Toxics Cleanup Program

Please the appropriate box: Intent to Install Intent to Close

HQ (360)407-7170 / Central (509)575-2490 / Eastern (509)329-3400 / Northwest (425)649-7000 / Southwest (360)407-6300

SITE INFORMATION

OWNER INFORMATION

(this form will be returned to this address)

Unlisted
Tag or UBI number
N105
Site Name
NE 45th and Roosevelt Way
Site Physical Address
Seattle 98104
City Zip Code
Site Phone Number

Sound Transit
UST Owner/Operator
410 S Jackson St
Mailing Address/PO Box
Seattle, WA 98014
City Zip Code
206-398-5000
Owner/Operator Phone Number
Owner/Operator Email Address

TANK INFORMATION

Tank ID	Substance Stored	Capacity	Date Project is Expected to Begin	Comments:
West-UST1	Unknown	NA	8/1/16	
West-UST2	Unknown	NA	8/1/16	
East-UST1	Unknown	NA	8/1/16	

1) SERVICE PROVIDER INFORMATION - check the appropriate boxes

PLEASE NOTE: INDIVIDUALS PERFORMING UST SERVICES MUST BE ICC CERTIFIED OR HAVE PASSED ANOTHER QUALIFYING EXAM APPROVED BY THE DEPARTMENT OF ECOLOGY.

Installer Decommissioner Site Assessor

O'Neill Service Group
Service Provider Company Name
Eric Laumbattus
Certified Service Provider Name
8226147
ICC Certification #

Eric Laumbattus
Contact Person
(360)770-5261
Contact Phone Number
eric@oneillsg.com
Contact Email Address

2) SERVICE PROVIDER INFORMATION (REQUIRED IF USING MORE THAN ONE PROVIDER) - check the appropriate boxes

Installer Decommissioner Site Assessor

Galloway Environmental
Service Provider Company Name
Gary Galloway
Certified Service Provider Name
0878867-u7
ICC Certification #

Gary Galloway
Contact Person
4256888852
Contact Phone Number
galloway@comcast.net
Contact Email Address



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000

711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Dear owner, operator or interested party:

This packet summarizes requirements in the underground storage tank (UST) regulations (Chapter 173-360 WAC) for permanent closure of regulated USTs. It also includes forms that must be used to complete this process. These requirements do not apply to tanks that are exempt from these regulations.

At-a-Glance Summary of Permanent Closure Requirements:

- At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to the Department of Ecology (Ecology).
- Decommissioning and site assessment activities must be performed by International Code Council (ICC)-certified UST service providers.
- Within 30 days of completing permanent closure activities, submit a Permanent Closure Notice signed by the ICC-certified UST Decommissioner.
- If **no** contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 30 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site assessment report completed by the Site Assessor
- If contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 90 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site characterization report completed by the Site Assessor

Detailed Look at Permanent Closure:

Ecology must be notified 30 days in advance

At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to Ecology. This form, which includes service provider and owner information, provides the UST inspector advance notice so that he or she may visit the project site while decommissioning work is being conducted. If the exact date of closure is unknown when the 30-Day Notice is submitted, be sure to contact the Ecology inspector at least three business days prior to the project start date. **It is your responsibility to contact other local authorities, including the fire marshal, for any additional policies and/or permits.**

During the 30-day notice period, the contents of the tank may be pumped from the tank and recycled or disposed of as dangerous wastes.

ICC-certified service providers must be used



Service providers performing permanent closure activities must carry proof they are certified by the International Code Council (ICC) as an UST Decommissioner and Site Assessor.

Conducting tank closures is dangerous work and should not be completed by unqualified or inexperienced persons. Failure to follow proper procedures may result in fire, explosion, and other hazards to human health or the environment.

Permanent closure procedures

Permanent closure includes “removal”, “closure-in-place”, or “change-in-service” (i.e. changing the product stored in a tank from a regulated substance to an unregulated substance). These projects may begin 30 days **after** Ecology date stamps the 30-Day Notice and must be completed **within** 90 days after this date.

To begin the process, the ICC-certified Decommissioner will empty and clean tanks of all liquids and accumulated sludges. The tank must be properly inerted of flammable vapors, as directed by the International Fire Code. The Decommissioner must ensure the tank atmosphere and excavation area is regularly monitored for flammable or vapor concentrations until the tank is removed from both the excavation and the site. Piping, except any vent lines, shall be drained of product and be either capped or removed from the ground.

Tanks may then either be removed from the ground or filled with a solid inert material, such as CDF, a controlled density fill. Although the UST regulations allow for tanks to be closed in place, Ecology strongly recommends tanks be removed for the following reasons:

- (1) it allows for the soil conditions to be observed,
- (2) it is easier to collect soil samples needed for the site assessment (described below), and
- (3) it may make any future property transactions less complicated, as potential buyers may not want to buy a property with a buried tank on it.

If a tank will be closed-in-place, first check with the local jurisdiction and fire marshal to ensure they will allow tanks to be closed using this method.

Once a tank is removed or filled with an inert material, the UST Decommissioner is required to fill out a Permanent Closure Notice that must also be signed by the owner or operator. This notice shall be submitted to Ecology **within 30 days after tank closure** activities are completed. If the site has a facility compliance tag, the tag must also be returned to Ecology at this time.

All permanent closures require a site assessment be conducted

A site assessment is an investigation to determine if the UST system released regulated product into the soil or groundwater. It must be performed in accordance with Ecology’s *Guidance for Site Checks and Site Assessments for USTs* and completed by an ICC-certified Site Assessor or a Washington-registered Professional Engineer (or P.E.) who is competent, by means of examination, experience, or education, to perform site assessments. The guidance provides information on sampling procedures, the number and locations of samples to be obtained, required laboratory analyses, and reporting requirements.

A Site Check/Site Assessment Checklist must be completed by the Site Assessor and submitted to Ecology **within thirty (30) days of completion of the site assessment**. A site assessment report must be submitted to Ecology within 30 days after tank closure if no confirmed contamination is discovered. If the UST

system has caused a release to the environment, then, instead, a site characterization report shall be submitted within 90 days of tank closure.

Releases discovered during tank closure must be reported to Ecology

When contaminated soil, groundwater, or free liquid- or vapor-phase petroleum products are discovered during tank removal, site assessment, or by any other means, the owner/operator is responsible for reporting this information to Ecology within twenty-four (24) hours of discovery. The Decommissioner or Site Assessor must report confirmed releases to the owner/operator immediately and to Ecology within 72 hours after discovering the condition.

Soil contaminated by petroleum and/or hazardous substances must be remediated under the Model Toxics Control Act, which describes the process for cleaning up contaminated sites. Contaminated soil must be disposed of at a permitted facility that accepts dangerous waste. If it is to be "landfarmed" on or offsite, be sure your local jurisdiction allows this and that you understand all the requirements for this remediation method.

Record Keeping

The results of a site assessment must be submitted to Ecology and maintained by the owner for at least five years after completion of tank permanent closure. However, Ecology recommends records be maintained indefinitely by the owner. Proof of a "clean closure" is very important regarding any future property transfers or related business transactions, such as obtaining loans or insurance.

Further questions or reporting a release? Please contact your regional office below.

Regional Office

Central (509) 575-2490

Eastern (509) 329-3400

HQ (360) 407-7170

Northwest (425) 649-7000

Southwest (360) 407-6300

Counties Served

Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima

Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman

Federal facilities in Western Washington

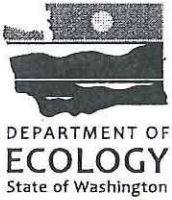
Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom

Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at:
www.ecy.wa.gov/programs/tcp/ust-lust/people.html

To find electronic versions of this letter and the enclosed forms, please visit:
<http://www.ecy.wa.gov/programs/tcp/ust-lust/2011/03-out-of-svc.html>.

If you need this document in a format for the visually impaired, called the Toxics Cleanup Program at 360- 407-7071. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



PERMANENT CLOSURE NOTICE FOR UNDERGROUND STORAGE TANKS

UST ID #: _____

County: _____

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

I. UST FACILITY			II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #:			Owner/Operator Name:			
UST ID #:			Business Name:			
Site Name:			Address:			
Site Address:			City:		State:	Zip:
City:			Phone:			
Phone:			Email:			
III. CERTIFIED UST DECOMMISSIONER						
Company Name:			Service Provider Name:			
Address:			Certification Type:			
City:		State:	Zip:	Cert. No.:		Exp. Date:
Provider Phone:			Provider Email:			
<i>Provider Signature:</i>			<i>Date:</i>			
IV. TANK INFORMATION						
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	CLOSURE METHOD			CLOSURE DATE
			removal	closed-in-place	change-in-service	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. REQUIRED SIGNATURE						
<i>Signature acknowledges UST(s) comply with UST regulation WAC 173-360-380 Permanent Closure Requirements.</i>						
Date	Signature of Tank Owner/Operator or Authorized Representative			Print or Type Name		

PERMANENT CLOSURE NOTICE
FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This form must be completed and submitted **within thirty days of completing** permanent closure activities to the following address:

Dept. of Ecology
UST Section
PO Box 47655
Olympia, WA 98504-7655

- I./II. UST Facility and Owner/Operator:** Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number. If all tanks at the site are permanently closed, the facility compliance tag must be returned with this notice.
- III. UST Decommissioner:** It is the responsibility of the ICC-certified Decommissioner to follow proper tank closure procedures in accordance with WAC 173-360-375. The Decommissioner signature certifies these procedures were followed.
- IV. Tank Information:** Use the same Tank IDs that are listed on the facility's Business License. List the last substance stored in each tank, the tank sizes, the method by which the tank is being closed, and the date closure activities were conducted. All closure methods require a site assessment be conducted in accordance with Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*.
- V. Required Signature:** The owner and/or operator's signature is required. Also, the owner and/or operator is responsible for reporting confirmed releases to Ecology within 24 hours.

All confirmed releases must be reported to Ecology by the owner immediately and by service providers within 72 hours of the discovery of the condition. If the owner or operator is not immediately available, the report should be made directly to Ecology.

Be sure to contact your local fire marshal and other local jurisdictions. They may have other codes and regulations that apply to a permanent tank closure.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office

Counties Served

Central (509) 575-2490

Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima

Eastern (509) 329-3400

Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman

HQ (360) 407-7170

Federal facilities in Western Washington

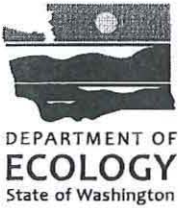
Northwest (425) 649-7000

Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom

Southwest (360) 407-6300

Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at:
www.ecy.wa.gov/programs/tcp/ust-lust/people.html



SITE CHECK/SITE ASSESSMENT CHECKLIST FOR UNDERGROUND STORAGE TANKS

UST ID #: _____

County: _____

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

I. UST FACILITY		II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #:		Owner/Operator Name:			
UST ID #:		Business Name:			
Site Name:		Address:			
Site Address:		City:	State:	Zip:	
City:		Phone:			
Phone:		Email:			
III. CERTIFIED SITE ASSESSOR					
Service Provider Name:			Company Name:		
Cell Phone:	Email:	Address:			
Certification #:	Exp. Date:	City:	State:	Zip:	
IV. TANK INFORMATION					
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	DATE SITE CHECK OR ASSESSMENT CONDUCTED		
V. REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT (check one)					
<input type="checkbox"/> Release investigation following permanent UST system closure (i.e. tank removal or closure-in-place).					
<input type="checkbox"/> Release investigation following a failed tank and/or line tightness test.					
<input type="checkbox"/> Release investigation following discovery of contaminated soil and/or groundwater.					
<input type="checkbox"/> Release investigation directed by Ecology to determine if the UST system is the source of offsite impacts.					
<input type="checkbox"/> UST system is undergoing a "change-in-service", which is changing from storing a regulated substance (e.g. gasoline) to storing a non-regulated substance (e.g. water).					
<input type="checkbox"/> Directed by Ecology for UST system permanently closed or abandoned before 12/22/1988.					
<input type="checkbox"/> Other (describe):					

VI. CHECKLIST

The site assessor must check each of the following items and include it in the report.
Sections referenced below can be found in the Ecology publication
Guidance for Site Checks and Site Assessments for Underground Storage Tanks.

		YES	NO
1. The location of the UST site is shown on a vicinity map.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A brief summary of information obtained during the site inspection is provided (Section 3.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. A summary of UST system data is provided (Section 3.1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The soils characteristics at the UST site are described. (Section 5.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there any apparent groundwater in the tank excavation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. A brief description of the surrounding land use is provided. (Section 3.1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The following items are provided in one or more sketches:			
• Location and ID number for all field samples collected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• If applicable, groundwater samples are distinguished from soil samples	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Location of samples collected from stockpiled excavated soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Tank and piping locations and limits of excavation pit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Adjacent structures and streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Approximate locations of any on-site and nearby utilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Any factors that may have compromised the quality of the data or validity of the results are described.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VII. REQUIRED SIGNATURES

Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through -395.

Print or Type Name

Signature of Certified Site Assessor

Date

SITE CHECK/SITE ASSESSMENT CHECKLIST

FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This checklist must accompany the results of a Site Check Report, which is performed if a release of petroleum or other regulated substance is suspected. It is also required to accompany a Site Assessment Report, which is required following the permanent closure or "change-in-service" of an underground storage tank system. This form is required to be filled out whether or not contamination is found. This checklist is to be completed by the Site Assessor and submitted **within thirty days of completing** these activities to the following address:

Dept. of Ecology
UST Section
PO Box 47655
Olympia, WA 98504-7655

- I./II. **UST Facility and Owner/Operator Information:** Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number.
- III. **Service Provider Information:** It is the responsibility of the ICC-certified Site Assessor to ensure that sampling and documentation procedures are completed in accordance with Ecology's *Guidance for Site Checks and Site Assessment for Underground Storage Tanks*.
- IV. **Tank Information:** Use the same Tank identification numbers listed on the facility's Business License which is based on the most recent UST Addendum on file with Ecology. List the last substance stored in each tank, the tank sizes and the date the site check or site assessment was completed.
- V. **Required Signature:** The Site Assessor signature certifies these procedures were followed.

All confirmed releases must be reported to Ecology by the owner within 24 hours and by service providers within 72 hours of discovery. A Site Characterization Report must be submitted to Ecology within 90 days after confirming a release.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office

Central (509) 575-2490

Eastern (509) 329-3400

HQ (360) 407-7170

Northwest (425) 649-7000

Southwest (360) 407-6300

Counties Served

Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima

Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman

Federal facilities in Western Washington

Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom

Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at:

www.ecy.wa.gov/programs/tcp/ust-lust/people.html

Attachment E.1
UST Destruction Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

STORAGE TANK

CERTIFICATE OF DESTRUCTION

DATE: September 9, 2016

TANK OWNER: Sound Transit

TANK LOCATION: 1000 NE 45TH ST, SEATTLE

TANK DESCRIPTION: 3000 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE OR DIESEL

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,



Marine Vacuum Service, Inc.

DBE # D4M0002341

SDVO

EPA # WAD980974521

A MINORITY BUSINESS ENTERPRISE ID # M4M002341

Attachment F.1
Marine Vacuum
Bill of Lading

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper No. 027649

Carrier No. _____

Date 9 2 16

MARINE VACUUM SERVICE, INC

Page _____ of _____

(Name of carrier)

(SCAC)

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO: **MARINE VACUUM SERVICE INC**
Consignee
Street **1516 S. GRAHAM ST**
City **SEATTLE** State **WA** Zip Code **98108**

FROM: Shipper **ONEILL ENVIRO**
Street **N.E 45 AND ROOSEVELT**
City **Seattle** State **WA** Zip Code _____
24 hr. Emergency Contact Tel. No. **800-540-7491**

Route _____ Vehicle Number _____

No. of Units & Container Type	HM	BASIC DESCRIPTION UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
1 IT		WAST WATER NON REGULATED BY DOT	30	Gals		

PLACARDS TENDERED: YES NO

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____."
(2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
(3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of Item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Signature _____

REMIT C.O.D. TO: ADDRESS _____

COD Amt: \$ _____

C.O.D. FEE: PREPAID COLLECT \$ _____

TOTAL CHARGES \$ _____

FREIGHT CHARGES: FREIGHT PREPAID except when box at right is checked Check box if charges are to be collect

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

SHIPPER PER Eve Lambeth 9 2 16
CARRIER **MARINE VACUUM SERVICE, INC.**
PER [Signature]
DATE 9 2 16

4

Your
Seattle
Fire Department

TUE 09/06/16
SAM SK
0930-0945

RECEIVED
SEP 02 2016
PERMIT SECTION



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Commercial Tank Removal/Decommissioning

Permit Fee: \$218.00

Date Issued: 9-6-16

Tank(s) must be removed from site on the same day as permit is issued!

TO BE COMPLETED BY PERMIT APPLICANT

FIRM NAME	Galloway Environmental, Inc.		
MAILING ADDRESS	3102 220 th PL SE	SUITE	
CITY	Sammamish	STATE	Washington ZIP 98075
JOBSITE ADDRESS	1000 NE 45 th St., Seattle, 98103		
CONTACT PERSON	Gary Galloway	PHONE NUMBER	(425) 688-8852
Number of Tank(s):	1	Tank Size(s):	3,000 gallon <input type="checkbox"/> Aboveground tank
Product(s) Previously Contained:	Unknown petroleum		<input type="checkbox"/> XXXX Underground tank
<input checked="" type="checkbox"/> X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)			
<input type="checkbox"/> Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)			
Hot work being conducted:	<input checked="" type="checkbox"/> X No	<input type="checkbox"/> Yes	(If yes, a separate hot work permit is required)

Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office - Permits
220 Third Ave S, 2nd Floor
Seattle, WA 98104-2608

To pay with a Visa or Master Card: Fax or email this application
THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT
Tel: (206) 386-1450 / Fax: (206) 386-1348
E-mail: permits@seattle.gov

Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.
TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION
NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!

Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)

FMO USE:	APPROVED BY:
Check No.: 7838090216	Inspector: S. MARON'S SFD ID# 1372
Receipt No.: 5-265075	Name of Marine Chemist: AMY SLY Certificate # 706
Application ID#: 106461	Date: 9-6-16

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 14' L 6' Dia.

Last Contents Gas olene

Tank Location: 1000 NE 45th Seattle

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: Sound Transit
401 S. Jackson St.
Seattle 98101

Contractor: Pelles Construction
13036 Beverly Park Road
Mukilteo WA 98275

M.V.S. Representative: 

Date: 9 2 16

Notes:

DBE # D4M1302341

EPA # WAD980974521

A MINORITY BUSINESS ENTERPRISE ID # D4M1302341

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116

(206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGINC.COM

MARINE CHEMIST CERTIFICATE

SERIAL No 46771

MARINE VACUUM

SEPTEMBER 6, 2016

Survey Requested by

Vessel Owner or Agent

SEATTLE

Date

VST

VST

1000 NE 45th ST

Specific Location of Vessel

GASOLINE X3

O2 = 20.9%

9:00 AM

Last Three (3) Loadings

Tests Performed

Time Survey Completed

3,000g VST

INERT WITH CO2

O2 < 6%

MAY BE SAFELY EXCAVATED

MAY BE SAFELY TRANSPORTED

KEEP ALL HAES/VENTS PLUGGED TO PREVENT CO2 FROM LEAKING FROM TANK.

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [Signature] Name [Name] Company [Company] Date 9/6/16

Signed [Signature] Marine Chemist [Name] Certificate No. N-704

POSTING

Attachment H.1
UST Triple-Rinse Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 14' L 6' Dia.

Last Contents Gas olene

Tank Location: 1000 NE 45th Seattle

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: Sound Transit
401 S. Jackson St.
Seattle 98101

Contractor: Pellets Construction
13036 Beverly Park Road
Mukilteo WA 98275

M.V.S. Representative: [Signature]

Date: 9 2 16

Notes:

DBE # D4M1302341

EPA # WAD980974521

A MINORITY BUSINESS ENTERPRISE ID # D4M1302341

Attachment H.2
Marine Chemist Certification
for Inerting the UST

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116

(206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGINC.COM

MARINE CHEMIST CERTIFICATE

SERIAL No 46771

MARINE VACUUM

SEPTEMBER 4, 2016

Survey Requested by

Vessel Owner or Agent

SEATTLE

Date

VST

VST

1000 NE 45th ST

Vessel

Type of Vessel

Specific Location of Vessel

GASOLINE X3

O₂ = 20.9%

9:00 AM

Last Three (3) Loadings

Tests Performed

Time Survey Completed

3,000 g VST

INERT WITH CO₂

O₂ < 6%

MAY BE SAFELY EXCAVATED

MAY BE SAFELY TRANSPORTED

KEEP ALL HAES/VENTS PLUGGED TO PREVENT CO₂ FROM LEAKING FROM TANK.

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed [Signature] Date 9/4/16

Signed [Signature] Certificate No. N-704

POSTING

Attachment H.3
Fire Marshal Permit

Your
Seattle
Fire Department

TUE 09/06/16
SAM SK
0930-0945

RECEIVED
SEP 02 2016
PERMIT SECTION



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Commercial Tank Removal/Decommissioning

Permit Fee: \$218.00

Date Issued: 9-6-16

Tank(s) must be removed from site on the same day as permit is issued!

TO BE COMPLETED BY PERMIT APPLICANT

FIRM NAME	Galloway Environmental, Inc.				
MAILING ADDRESS	3102 220 th PL SE	SUITE			
CITY	Sammamish	STATE	Washington	ZIP	98075
JOBSITE ADDRESS	1000 NE 45 th St., Seattle, 98103				
CONTACT PERSON	Gary Galloway	PHONE NUMBER	(425) 688-8852		
Number of Tank(s):	1	Tank Size(s):	3,000 gallon	<input type="checkbox"/>	Aboveground tank
Product(s) Previously Contained:	Unknown petroleum	<input type="checkbox"/>	XXXX Underground tank		
<input checked="" type="checkbox"/> X	Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)				
<input type="checkbox"/>	Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)				
Hot work being conducted:	<input checked="" type="checkbox"/> X	No	<input type="checkbox"/>	Yes (If yes, a separate hot work permit is required)	

Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office – Permits
220 Third Ave S, 2nd Floor
Seattle, WA 98104-2608

To pay with a Visa or Master Card: Fax or email this application
THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT
Tel: (206) 386-1450 / Fax: (206) 386-1348
E-mail: permits@seattle.gov

Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.

TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION

NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!

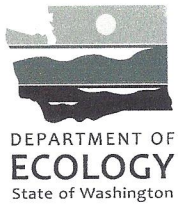
Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)

FMO USE:	APPROVED BY:
Check No.: 1838090216	Inspector: S. MAROV'S SFD ID# 1372
Receipt No.: 5-265075	Name of Marine Chemist: AMY SLY Certificate # 706
Application ID#: 106461	Date: 9-6-16

COMMERCIAL TANK REMOVAL/DECOMMISSIONING PERMIT CONDITIONS

1. Two (2) portable fire extinguishers each having a minimum rating of 40 BC shall be on site within 50 feet of the operation. Fire extinguishers shall be inspected, approved and certified annually.
2. Rope or ribbon barricades located at least 10 feet from the tank shall surround every outdoor storage tank removal or decommissioning operation or the operation shall be enclosed in a fenced yard.
3. "No Smoking" signs shall be posted in readily visible locations.
4. No hot work is allowed on a tank system prior to issuance of this permit and the tank is certified "Safe for Hot Work" by a Certified Marine Chemist. Hot work means any activities involving riveting, welding, burning, brazing, soldering, heating, chopping, grinding, ripping, drilling, cutting with a chop saw or "Sawzall", abrasive blasting, use of powder-actuated tools or similar spark-producing operations, crushing or mechanically shearing to facilitate opening for cleaning, disposal, scrapping for recycling purposes.
5. A separate temporary Seattle Fire Department permit (Code 4913) or a validation number assigned in conjunction with an annual hot work permit (Code 4911 or 4912) is required prior to any hot work operations.
6. Permits may cover multiple tanks located at the same address. If additional tanks are to be removed or abandoned at later dates, separate permits shall be obtained. Each address location requires a separate permit application regardless of whether multiple address locations are physically next to one another.
7. Additional fees will be charged if inspectors are required to work other than normal business hours. (Normal business hours are Monday through Friday, 8:00 a.m. to 4:30 p.m.)
8. No excavation of an underground tank is permitted prior to inspection by the Seattle Fire Marshal's Office.
Exception: Removal of the top layer of asphalt or concrete only with no removal of dirt, pea gravel or soil over the underground storage tank. Further excavation may be allowed by a Seattle Fire Department Special Hazards Unit Inspector prior to the initial inspection depending on conditions and if the tank has been inerted by a Marine Chemist who is present on site. The name of the inspector and the time permission was given shall be made available at time of inspection.
9. Prior to inspection, to ensure tanks and connected piping are completely free of all flammable or combustible liquids, a receipt or certificate must be on site indicating the tanks have been pumped and rinsed by an approved company. Product and rinse water must be disposed of in an approved manner.
10. For tanks being decommissioned in place that previously contained Class I liquids, a Certified Marine Chemist certificate must be issued and available on site for inspection certifying that the tank has been properly inerted prior to filling.
11. No tank shall be filled prior to an inspection by the Seattle Fire Marshal's Office.
12. Tanks being decommissioned in place must be filled with a lean concrete mixture. Filling with foam is prohibited.
13. A Marine Chemist's certificate verifying the tank has been properly inerted or is otherwise certified "Safe for Hot Work" shall be issued and available on site for inspection for each underground and aboveground tank being removed regardless of the product previously contained.
14. If tanks are being removed, the tanks' atmosphere must be inert using one of the following approved methods:
 - Dry ice (pellets or chunks of solid CO₂). Minimum 40 lbs per 1000 gallons of tank capacity is recommended.
 - Compressed CO₂ gas in cylinders (Note: This method may only be performed by a Certified Marine Chemist).
 - Purging with air (gas-freeing) using Venturi tube apparatus, with proper bonding and grounding and after the tank has been pumped and rinsed by an approved company.
15. A maximum reading of less than 6% of oxygen must be obtained prior to the removal of the tanks if CO₂ or another inert gas, as approved by the Marine Chemist, is used to inert the tank or, a reading of 0% LEL must be obtained prior to removal of the tank if the air-purging (Venturi air moving devices) method is used.
16. All local, state and federal regulations for confined space entry shall be complied with prior to entering an underground storage tank.
17. Tanks with baffles to prevent movement of liquid must be certified gas-freed or inerted by a Certified Marine Chemist or a Petroleum Industry Safety Engineer regularly engaged in that business prior to removal.
18. Tanks being removed must be removed from the site and relocated to a remote, approved facility on the same day that the permit is issued.
19. During the hot work operations, digging, excavating, hauling or transport of petroleum storage tanks that have not been cleaned and gas-freed, tanks must be inerted to less than 6% oxygen. All openings are to be cap closed and secured except for one 1/8" hole drilled through a cap. These tanks are to be sprayed painted with "INERTED, DO NOT ENTER" or "INERTED WITH CO₂, NOT SAFE FOR WORKERS".



PERMANENT CLOSURE NOTICE FOR UNDERGROUND STORAGE TANKS

UST ID #: West-UST1

County: King

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

I. UST FACILITY			II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #: 8342			Owner/Operator Name: Sound Transit			
UST ID #: West-UST1			Business Name: Sound Transit			
Site Name: UDS			Address: 401 S Jackson St			
Site Address: NE 45th St and Roosevelt Way			City: Seattle	State: WA	Zip: 98104	
City: Seattle, Washington			Phone: 206-398-5000			
Phone:			Email:			
III. CERTIFIED UST DECOMMISSIONER						
Company Name: Galloway Environmental, Inc			Service Provider Name: Gary Galloway			
Address: 3102 220th Pl SE			Certification Type: ICC			
City: Sammamish		State: WA	Zip: 98075	Cert. No.: 32000831	Exp. Date: 6/4/2017	
Provider Phone: 425-688-8852			Provider Email: gary@gallowayenvironmental.com			
Provider Signature: <i>Gary Galloway</i>			Date: <i>11/1/16</i>			
IV. TANK INFORMATION						
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	CLOSURE METHOD			CLOSURE DATE
			removal	closed-in-place	change-in-service	
West-UST1	3,000	Gasoline	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9/6/2016
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. REQUIRED SIGNATURE						
<i>Signature acknowledges UST(s) comply with UST regulation WAC 173-360-380 Permanent Closure Requirements.</i>						
Date	Signature of Tank Owner/Operator or Authorized Representative			Print or Type Name		

APPENDIX C

**UST-2 – ANALYTICAL LABORATORY REPORT AND SITE CHECK/
SITE ASSESSMENT CHECKLIST**



Fremont
Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Agnes Tirao
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: Sound Transit / Key Bank

Lab ID: 1609155

September 20, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 4 sample(s) on 9/13/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Gasoline by NWTPH-Gx

Sample Moisture (Percent Moisture)

Total Metals by EPA Method 6020

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

DoD/ELAP Certification #L2371, ISO/ICC 17025:2005
ORELAP Certification: WA 100009-007 (NELAP Recognized)

Original

www.fremontanalytical.com



Date: 09/20/2016

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab Order: 1609155

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609155-001	UD2-SW-N	09/13/2016 10:15 AM	09/13/2016 4:15 PM
1609155-002	UD2-SW-S	09/13/2016 10:18 AM	09/13/2016 4:15 PM
1609155-003	UD2-B1	09/13/2016 10:21 AM	09/13/2016 4:15 PM
1609155-004	Trip Blank	09/12/2016 3:06 PM	09/13/2016 4:15 PM

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-001

Matrix: Soil

Client Sample ID: UD2-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14820

Analyst: WC

Diesel (Fuel Oil)	ND	23.4		mg/Kg-dry	1	9/15/2016 4:36:00 AM
Heavy Oil	ND	58.5		mg/Kg-dry	1	9/15/2016 4:36:00 AM
Surr: 2-Fluorobiphenyl	78.1	50-150		%Rec	1	9/15/2016 4:36:00 AM
Surr: o-Terphenyl	76.8	50-150		%Rec	1	9/15/2016 4:36:00 AM

Gasoline by NWTPH-Gx

Batch ID: 14821

Analyst: NG

Gasoline	ND	4.78		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Surr: Toluene-d8	99.0	65-135		%Rec	1	9/15/2016 3:46:46 PM
Surr: 4-Bromofluorobenzene	101	65-135		%Rec	1	9/15/2016 3:46:46 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14821

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0574	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chloromethane	ND	0.0574	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Vinyl chloride	ND	0.00191	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
Bromomethane	ND	0.0861		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Trichlorofluoromethane (CFC-11)	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chloroethane	ND	0.0574	Q	mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1-Dichloroethene	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Methylene chloride	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
trans-1,2-Dichloroethene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Methyl tert-butyl ether (MTBE)	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1-Dichloroethane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
2,2-Dichloropropane	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
cis-1,2-Dichloroethene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chloroform	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1,1-Trichloroethane (TCA)	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1-Dichloropropene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Carbon tetrachloride	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dichloroethane (EDC)	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Benzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Trichloroethene (TCE)	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dichloropropane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Bromodichloromethane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Dibromomethane	ND	0.0383		mg/Kg-dry	1	9/15/2016 3:46:46 PM
cis-1,3-Dichloropropene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Toluene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
trans-1,3-Dichloropropylene	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-001

Matrix: Soil

Client Sample ID: UD2-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14821

Analyst: NG

1,1,2-Trichloroethane	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,3-Dichloropropane	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Tetrachloroethene (PCE)	0.140	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Dibromochloromethane	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dibromoethane (EDB)	ND	0.00478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Chlorobenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1,1,2-Tetrachloroethane	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Ethylbenzene	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
m,p-Xylene	0.0330	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
o-Xylene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Styrene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Isopropylbenzene	ND	0.0765		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Bromoform	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,1,2,2-Tetrachloroethane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
n-Propylbenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Bromobenzene	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,3,5-Trimethylbenzene	0.0191	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
2-Chlorotoluene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
4-Chlorotoluene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
tert-Butylbenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2,3-Trichloropropane	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2,4-Trichlorobenzene	ND	0.0478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
sec-Butylbenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
4-Isopropyltoluene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,3-Dichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,4-Dichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
n-Butylbenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2-Dibromo-3-chloropropane	ND	0.478		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2,4-Trimethylbenzene	0.0306	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Hexachlorobutadiene	ND	0.0956		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Naphthalene	ND	0.0287		mg/Kg-dry	1	9/15/2016 3:46:46 PM
1,2,3-Trichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/15/2016 3:46:46 PM
Surr: Dibromofluoromethane	96.7	56.5-129		%Rec	1	9/15/2016 3:46:46 PM
Surr: Toluene-d8	96.2	64.3-131		%Rec	1	9/15/2016 3:46:46 PM
Surr: 1-Bromo-4-fluorobenzene	102	63.1-141		%Rec	1	9/15/2016 3:46:46 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:15:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-001

Matrix: Soil

Client Sample ID: UD2-SW-N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14856 Analyst: TN

Lead	19.7	0.188		mg/Kg-dry	1	9/19/2016 3:37:48 PM
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Sample Moisture (Percent Moisture)

Batch ID: R31720 Analyst: ME

Percent Moisture	17.6	0.500		wt%	1	9/14/2016 8:53:21 AM
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Client: Shannon & Wilson

Collection Date: 9/13/2016 10:18:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-002

Matrix: Soil

Client Sample ID: UD2-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14820

Analyst: WC

Diesel (Fuel Oil)	ND	22.5		mg/Kg-dry	1	9/15/2016 5:07:00 AM
Heavy Oil	169	56.3		mg/Kg-dry	1	9/15/2016 5:07:00 AM
Surr: 2-Fluorobiphenyl	101	50-150		%Rec	1	9/15/2016 5:07:00 AM
Surr: o-Terphenyl	93.6	50-150		%Rec	1	9/15/2016 5:07:00 AM

Gasoline by NWTPH-Gx

Batch ID: 14821

Analyst: NG

Gasoline	2,780	524	D	mg/Kg-dry	100	9/19/2016 11:39:18 AM
Surr: Toluene-d8	96.7	65-135	D	%Rec	100	9/19/2016 11:39:18 AM
Surr: 4-Bromofluorobenzene	101	65-135	D	%Rec	100	9/19/2016 11:39:18 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14821

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0629	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chloromethane	ND	0.0629	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Vinyl chloride	ND	0.00210	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
Bromomethane	ND	0.0943		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Trichlorofluoromethane (CFC-11)	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chloroethane	ND	0.0629	Q	mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1-Dichloroethene	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Methylene chloride	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
trans-1,2-Dichloroethene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Methyl tert-butyl ether (MTBE)	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1-Dichloroethane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
2,2-Dichloropropane	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
cis-1,2-Dichloroethene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chloroform	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1,1-Trichloroethane (TCA)	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1-Dichloropropene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Carbon tetrachloride	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dichloroethane (EDC)	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Benzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Trichloroethene (TCE)	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dichloropropane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Bromodichloromethane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Dibromomethane	ND	0.0419		mg/Kg-dry	1	9/15/2016 4:16:15 PM
cis-1,3-Dichloropropene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Toluene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
trans-1,3-Dichloropropylene	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:18:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-002

Matrix: Soil

Client Sample ID: UD2-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14821

Analyst: NG

1,1,2-Trichloroethane	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,3-Dichloropropane	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Tetrachloroethene (PCE)	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Dibromochloromethane	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dibromoethane (EDB)	ND	0.00524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Chlorobenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1,1,2-Tetrachloroethane	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Ethylbenzene	0.700	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
m,p-Xylene	1.73	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
o-Xylene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Styrene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Isopropylbenzene	1.55	0.0838		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Bromoform	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,1,2,2-Tetrachloroethane	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
n-Propylbenzene	2.14	0.210	D	mg/Kg-dry	10	9/19/2016 12:08:32 PM
Bromobenzene	ND	0.0314		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,3,5-Trimethylbenzene	8.35	0.210	D	mg/Kg-dry	10	9/19/2016 12:08:32 PM
2-Chlorotoluene	0.0529	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
4-Chlorotoluene	1.12	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
tert-Butylbenzene	0.171	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2,3-Trichloropropane	0.0445	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2,4-Trichlorobenzene	ND	0.0524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
sec-Butylbenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
4-Isopropyltoluene	4.01	0.210	D	mg/Kg-dry	10	9/19/2016 12:08:32 PM
1,3-Dichlorobenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,4-Dichlorobenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
n-Butylbenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dichlorobenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2-Dibromo-3-chloropropane	ND	0.524		mg/Kg-dry	1	9/15/2016 4:16:15 PM
1,2,4-Trimethylbenzene	15.7	0.210	D	mg/Kg-dry	10	9/19/2016 12:08:32 PM
Hexachlorobutadiene	ND	0.105		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Naphthalene	3.29	0.314	D	mg/Kg-dry	10	9/19/2016 12:08:32 PM
1,2,3-Trichlorobenzene	ND	0.0210		mg/Kg-dry	1	9/15/2016 4:16:15 PM
Surr: Dibromofluoromethane	98.4	56.5-129		%Rec	1	9/15/2016 4:16:15 PM
Surr: Toluene-d8	114	64.3-131		%Rec	1	9/15/2016 4:16:15 PM
Surr: 1-Bromo-4-fluorobenzene	103	63.1-141	D	%Rec	10	9/19/2016 12:08:32 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:18:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-002

Matrix: Soil

Client Sample ID: UD2-SW-S

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14856

Analyst: TN

Lead

19.3

0.182

mg/Kg-dry

1

9/19/2016 3:59:05 PM

Sample Moisture (Percent Moisture)

Batch ID: R31720

Analyst: ME

Percent Moisture

14.0

0.500

wt%

1

9/14/2016 8:53:21 AM



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:21:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-003

Matrix: Soil

Client Sample ID: UD2-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 14820

Analyst: WC

Diesel (Fuel Oil)	ND	23.5		mg/Kg-dry	1	9/15/2016 5:38:00 AM
Heavy Oil	ND	58.8		mg/Kg-dry	1	9/15/2016 5:38:00 AM
Surr: 2-Fluorobiphenyl	80.0	50-150		%Rec	1	9/15/2016 5:38:00 AM
Surr: o-Terphenyl	79.9	50-150		%Rec	1	9/15/2016 5:38:00 AM

Gasoline by NWTPH-Gx

Batch ID: 14821

Analyst: NG

Gasoline	23.1	4.93		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Surr: Toluene-d8	95.8	65-135		%Rec	1	9/15/2016 2:47:58 PM
Surr: 4-Bromofluorobenzene	105	65-135		%Rec	1	9/15/2016 2:47:58 PM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14821

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.0591	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chloromethane	ND	0.0591	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
Vinyl chloride	ND	0.00197	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
Bromomethane	ND	0.0887		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Trichlorofluoromethane (CFC-11)	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chloroethane	ND	0.0591	Q	mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1-Dichloroethene	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Methylene chloride	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
trans-1,2-Dichloroethene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Methyl tert-butyl ether (MTBE)	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1-Dichloroethane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
2,2-Dichloropropane	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
cis-1,2-Dichloroethene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chloroform	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1,1-Trichloroethane (TCA)	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1-Dichloropropene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Carbon tetrachloride	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dichloroethane (EDC)	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Benzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Trichloroethene (TCE)	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dichloropropane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Bromodichloromethane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Dibromomethane	ND	0.0394		mg/Kg-dry	1	9/15/2016 2:47:58 PM
cis-1,3-Dichloropropene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Toluene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
trans-1,3-Dichloropropylene	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:21:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-003

Matrix: Soil

Client Sample ID: UD2-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14821

Analyst: NG

1,1,2-Trichloroethane	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,3-Dichloropropane	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Tetrachloroethene (PCE)	0.0635	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Dibromochloromethane	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dibromoethane (EDB)	ND	0.00493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Chlorobenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1,1,2-Tetrachloroethane	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Ethylbenzene	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
m,p-Xylene	0.0537	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
o-Xylene	0.0246	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Styrene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Isopropylbenzene	ND	0.0788		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Bromoform	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,1,2,2-Tetrachloroethane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
n-Propylbenzene	0.0256	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Bromobenzene	ND	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,3,5-Trimethylbenzene	0.145	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
2-Chlorotoluene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
4-Chlorotoluene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
tert-Butylbenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2,3-Trichloropropane	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2,4-Trichlorobenzene	ND	0.0493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
sec-Butylbenzene	0.0222	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
4-Isopropyltoluene	0.0502	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,3-Dichlorobenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,4-Dichlorobenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
n-Butylbenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dichlorobenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2-Dibromo-3-chloropropane	ND	0.493		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2,4-Trimethylbenzene	0.313	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Hexachlorobutadiene	ND	0.0985		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Naphthalene	0.0980	0.0296		mg/Kg-dry	1	9/15/2016 2:47:58 PM
1,2,3-Trichlorobenzene	ND	0.0197		mg/Kg-dry	1	9/15/2016 2:47:58 PM
Surr: Dibromofluoromethane	98.4	56.5-129		%Rec	1	9/15/2016 2:47:58 PM
Surr: Toluene-d8	96.4	64.3-131		%Rec	1	9/15/2016 2:47:58 PM
Surr: 1-Bromo-4-fluorobenzene	105	63.1-141		%Rec	1	9/15/2016 2:47:58 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 9/13/2016 10:21:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1609155-003

Matrix: Soil

Client Sample ID: UD2-B1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 14856

Analyst: TN

Lead

19.9

0.196

mg/Kg-dry

1

9/19/2016 4:02:37 PM

Sample Moisture (Percent Moisture)

Batch ID: R31720

Analyst: ME

Percent Moisture

18.9

0.500

wt%

1

9/14/2016 8:53:21 AM



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID 1609155-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/19/2016	RunNo: 31839							
Client ID: UD2-SW-N	Batch ID: 14856	Analysis Date: 9/19/2016	SeqNo: 601506								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	33.9	0.194						19.71	52.9	20	R

NOTES:

R - High RPD observed. The method is in control as indicated by the LCS.

Sample ID 1609155-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/19/2016	RunNo: 31839							
Client ID: UD2-SW-N	Batch ID: 14856	Analysis Date: 9/19/2016	SeqNo: 601508								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	41.3	0.188	23.52	19.71	91.7	75	125				

Sample ID 1609155-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/19/2016	RunNo: 31839							
Client ID: UD2-SW-N	Batch ID: 14856	Analysis Date: 9/19/2016	SeqNo: 601509								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	41.2	0.190	23.70	19.71	90.6	75	125	41.27	0.246	20	

Sample ID MB-14856	SampType: MBLK	Units: mg/Kg	Prep Date: 9/19/2016	RunNo: 31839							
Client ID: MBLKS	Batch ID: 14856	Analysis Date: 9/19/2016	SeqNo: 601517								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.147									

Sample ID LCS-14856	SampType: LCS	Units: mg/Kg	Prep Date: 9/19/2016	RunNo: 31839							
Client ID: LCSS	Batch ID: 14856	Analysis Date: 9/19/2016	SeqNo: 601518								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	19.0	0.152	18.94	0	100	80	120				



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-14820	SampType: MBLK	Units: mg/Kg				Prep Date: 9/14/2016	RunNo: 31742				
Client ID: MBLKS	Batch ID: 14820					Analysis Date: 9/14/2016	SeqNo: 599541				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.2		20.00		91.1	50	150				
Surr: o-Terphenyl	17.3		20.00		86.4	50	150				

Sample ID LCS-14820	SampType: LCS	Units: mg/Kg				Prep Date: 9/14/2016	RunNo: 31742				
Client ID: LCSS	Batch ID: 14820					Analysis Date: 9/14/2016	SeqNo: 599540				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	438	20.0	500.0	0	87.6	65	135				
Surr: 2-Fluorobiphenyl	19.4		20.00		96.9	50	150				
Surr: o-Terphenyl	18.3		20.00		91.7	50	150				

Sample ID 1609161-001ADUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 9/14/2016	RunNo: 31742				
Client ID: BATCH	Batch ID: 14820					Analysis Date: 9/14/2016	SeqNo: 599527				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.2						0		30	
Heavy Oil	ND	50.4						0		30	
Surr: 2-Fluorobiphenyl	20.5		20.15		102	50	150		0		
Surr: o-Terphenyl	19.9		20.15		98.6	50	150		0		

Sample ID 1609161-002AMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 9/14/2016	RunNo: 31742				
Client ID: BATCH	Batch ID: 14820					Analysis Date: 9/15/2016	SeqNo: 599529				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	420	20.8	520.0	0	80.7	65	135				
Surr: 2-Fluorobiphenyl	22.1		20.80		106	50	150				
Surr: o-Terphenyl	20.6		20.80		99.1	50	150				



Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID 1609161-002AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 9/14/2016	RunNo: 31742					
Client ID: BATCH	Batch ID: 14820				Analysis Date: 9/15/2016	SeqNo: 599529					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID 1609161-002AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 9/14/2016	RunNo: 31742					
Client ID: BATCH	Batch ID: 14820				Analysis Date: 9/15/2016	SeqNo: 599530					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	585	20.7	517.0	0	113	65	135	419.6	33.0	30	R
Surr: 2-Fluorobiphenyl	28.5		20.68		138	50	150		0		
Surr: o-Terphenyl	26.9		20.68		130	50	150		0		

NOTES:

R - High RPD observed, spike recoveries are within range.



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID LCS-14821	SampType: LCS	Units: mg/Kg				Prep Date: 9/14/2016	RunNo: 31758				
Client ID: LCSS	Batch ID: 14821					Analysis Date: 9/15/2016	SeqNo: 600251				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	20.8	5.00	25.00	0	83.1	65	135				
Surr: Toluene-d8	1.24		1.250		99.0	65	135				
Surr: 4-Bromofluorobenzene	1.27		1.250		101	65	135				

Sample ID MB-14821	SampType: MBLK	Units: mg/Kg				Prep Date: 9/14/2016	RunNo: 31758				
Client ID: MBLKS	Batch ID: 14821					Analysis Date: 9/15/2016	SeqNo: 600252				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.22		1.250		97.2	65	135				
Surr: 4-Bromofluorobenzene	1.23		1.250		98.2	65	135				

Sample ID 1609155-001BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 9/14/2016	RunNo: 31758				
Client ID: UD2-SW-N	Batch ID: 14821					Analysis Date: 9/15/2016	SeqNo: 600243				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	4.78						0		30	
Surr: Toluene-d8	1.16		1.195		96.9	65	135		0		
Surr: 4-Bromofluorobenzene	1.22		1.195		102	65	135		0		

Sample ID 1609155-003BMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 9/14/2016	RunNo: 31758				
Client ID: UD2-B1	Batch ID: 14821					Analysis Date: 9/15/2016	SeqNo: 600246				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	46.8	4.93	24.63	23.07	96.2	65	135				
Surr: Toluene-d8	1.19		1.232		96.7	65	135				
Surr: 4-Bromofluorobenzene	1.30		1.232		105	65	135				



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID 1609155-003BMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 9/14/2016	RunNo: 31758					
Client ID: UD2-B1	Batch ID: 14821				Analysis Date: 9/15/2016	SeqNo: 600247					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	47.5	4.93	24.63	23.07	99.0	65	135	46.77	1.46	30	
Surr: Toluene-d8	1.17		1.232		95.2	65	135		0		
Surr: 4-Bromofluorobenzene	1.27		1.232		103	65	135		0		

Sample ID CCV-C-14821	SampType: CCV	Units: mg/Kg			Prep Date: 9/19/2016	RunNo: 31758					
Client ID: CCV	Batch ID: 14821				Analysis Date: 9/19/2016	SeqNo: 601991					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	532	5.00	500.0	0	106	80	120				
Surr: Toluene-d8	24.9		25.00		99.6	65	135				
Surr: 4-Bromofluorobenzene	24.8		25.00		99.4	65	135				



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-14821	SampType:	LCS	Units:	µg/L	Prep Date:	9/14/2016	RunNo:	31757		
Client ID:	LCSS	Batch ID:	14821	Analysis Date:	9/15/2016	SeqNo:	599839				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.608	0.0600	1.000	0	60.8	34.5	141				Q
Chloromethane	0.794	0.0600	1.000	0	79.4	38.8	132				Q
Vinyl chloride	0.790	0.00200	1.000	0	79.0	44	142				Q
Bromomethane	0.961	0.0900	1.000	0	96.1	40.9	157				
Trichlorofluoromethane (CFC-11)	1.07	0.0500	1.000	0	107	42.9	147				
Chloroethane	0.865	0.0600	1.000	0	86.5	37.1	144				Q
1,1-Dichloroethene	0.970	0.0500	1.000	0	97.0	49.7	142				
Methylene chloride	0.948	0.0200	1.000	0	94.8	46.3	140				
trans-1,2-Dichloroethene	1.04	0.0200	1.000	0	104	68	130				
Methyl tert-butyl ether (MTBE)	1.07	0.0500	1.000	0	107	59.1	138				
1,1-Dichloroethane	0.917	0.0200	1.000	0	91.7	61.9	137				
2,2-Dichloropropane	1.30	0.0500	1.000	0	130	28.1	149				
cis-1,2-Dichloroethene	1.01	0.0200	1.000	0	101	71.3	135				
Chloroform	0.988	0.0200	1.000	0	98.8	67.5	129				
1,1,1-Trichloroethane (TCA)	1.00	0.0200	1.000	0	100	69	132				
1,1-Dichloropropene	1.04	0.0200	1.000	0	104	72.7	131				
Carbon tetrachloride	1.11	0.0200	1.000	0	111	63.4	137				
1,2-Dichloroethane (EDC)	0.996	0.0300	1.000	0	99.6	61.9	136				
Benzene	0.984	0.0200	1.000	0	98.4	64.3	133				
Trichloroethene (TCE)	1.03	0.0200	1.000	0	103	65.5	137				
1,2-Dichloropropane	1.01	0.0200	1.000	0	101	63.2	142				
Bromodichloromethane	1.09	0.0200	1.000	0	109	73.2	131				
Dibromomethane	1.11	0.0400	1.000	0	111	70	130				
cis-1,3-Dichloropropene	1.14	0.0200	1.000	0	114	59.1	143				
Toluene	1.02	0.0200	1.000	0	102	67.3	138				
trans-1,3-Dichloropropylene	1.20	0.0300	1.000	0	120	49.2	149				
1,1,2-Trichloroethane	1.07	0.0300	1.000	0	107	74.5	129				
1,3-Dichloropropane	1.05	0.0500	1.000	0	105	70	130				
Tetrachloroethene (PCE)	1.04	0.0200	1.000	0	104	52.7	150				
Dibromochloromethane	1.17	0.0300	1.000	0	117	70.6	144				
1,2-Dibromoethane (EDB)	1.04	0.00500	1.000	0	104	70	130				

Original



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14821	SampType: LCS	Units: µg/L	Prep Date: 9/14/2016	RunNo: 31757
Client ID: LCSS	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 599839

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.01	0.0200	1.000	0	101	76.1	123				
1,1,1,2-Tetrachloroethane	1.13	0.0300	1.000	0	113	65.9	141				
Ethylbenzene	0.991	0.0300	1.000	0	99.0	74	129				
m,p-Xylene	2.09	0.0200	2.000	0	104	70	124				
o-Xylene	1.00	0.0200	1.000	0	100	72.7	124				
Styrene	1.02	0.0200	1.000	0	102	76.8	130				
Isopropylbenzene	1.09	0.0800	1.000	0	109	70	130				
Bromoform	1.20	0.0200	1.000	0	120	67	154				
1,1,2,2-Tetrachloroethane	1.06	0.0200	1.000	0	106	60	130				
n-Propylbenzene	1.00	0.0200	1.000	0	100	74.8	125				
Bromobenzene	1.09	0.0300	1.000	0	109	49.2	144				
1,3,5-Trimethylbenzene	1.02	0.0200	1.000	0	102	74.6	123				
2-Chlorotoluene	1.01	0.0200	1.000	0	101	76.7	129				
4-Chlorotoluene	1.03	0.0200	1.000	0	103	77.5	125				
tert-Butylbenzene	1.02	0.0200	1.000	0	102	66.2	130				
1,2,3-Trichloropropane	1.08	0.0200	1.000	0	108	67.9	136				
1,2,4-Trichlorobenzene	1.08	0.0500	1.000	0	108	62.6	143				
sec-Butylbenzene	1.02	0.0200	1.000	0	102	75.6	133				
4-Isopropyltoluene	1.04	0.0200	1.000	0	104	76.8	131				
1,3-Dichlorobenzene	1.02	0.0200	1.000	0	102	72.8	128				
1,4-Dichlorobenzene	0.994	0.0200	1.000	0	99.4	72.6	126				
n-Butylbenzene	1.05	0.0200	1.000	0	105	65.3	136				
1,2-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	126				
1,2-Dibromo-3-chloropropane	1.20	0.500	1.000	0	120	61.2	139				
1,2,4-Trimethylbenzene	1.03	0.0200	1.000	0	103	77.5	129				
Hexachlorobutadiene	1.06	0.100	1.000	0	106	42	151				
Naphthalene	1.16	0.0300	1.000	0	116	62.3	134				
1,2,3-Trichlorobenzene	1.08	0.0200	1.000	0	108	54.8	143				
Surr: Dibromofluoromethane	1.28		1.250		103	56.5	129				
Surr: Toluene-d8	1.25		1.250		100	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.34		1.250		107	63.1	141				



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CLIENT: Shannon & Wilson
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QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14821	SampType: LCS	Units: µg/L	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: LCSS	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 599839							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-14821	SampType: MBLK	Units: mg/Kg	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: MBLKS	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 599840							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									Q
Vinyl chloride	ND	0.00200									Q
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									Q
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									



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QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14821	SampType: MBLK	Units: mg/Kg	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: MBLKS	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 599840							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									



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Sample ID MB-14821	SampType: MBLK	Units: mg/Kg	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: MBLKS	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 599840							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.19		1.250		95.5	56.5	129				
Surr: Toluene-d8	1.23		1.250		98.2	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.25		1.250		99.6	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609155-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: UD2-SW-N	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600225							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0574						0		30	Q
Chloromethane	ND	0.0574						0		30	Q
Vinyl chloride	ND	0.00191						0		30	Q
Bromomethane	ND	0.0861						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0478						0		30	
Chloroethane	ND	0.0574						0		30	Q
1,1-Dichloroethene	ND	0.0478						0		30	
Methylene chloride	ND	0.0191						0		30	
trans-1,2-Dichloroethene	ND	0.0191						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0478						0		30	
1,1-Dichloroethane	ND	0.0191						0		30	
2,2-Dichloropropane	ND	0.0478						0		30	
cis-1,2-Dichloroethene	ND	0.0191						0		30	
Chloroform	ND	0.0191						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0191						0		30	
1,1-Dichloropropene	ND	0.0191						0		30	
Carbon tetrachloride	ND	0.0191						0		30	



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Sample ID 1609155-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: UD2-SW-N	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600225							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dichloroethane (EDC)	ND	0.0287						0		30	
Benzene	ND	0.0191						0		30	
Trichloroethene (TCE)	ND	0.0191						0		30	
1,2-Dichloropropane	ND	0.0191						0		30	
Bromodichloromethane	ND	0.0191						0		30	
Dibromomethane	ND	0.0383						0		30	
cis-1,3-Dichloropropene	ND	0.0191						0		30	
Toluene	ND	0.0191						0		30	
trans-1,3-Dichloropropylene	ND	0.0287						0		30	
1,1,2-Trichloroethane	ND	0.0287						0		30	
1,3-Dichloropropane	ND	0.0478						0		30	
Tetrachloroethene (PCE)	0.140	0.0191						0.1401	0.342	30	
Dibromochloromethane	ND	0.0287						0		30	
1,2-Dibromoethane (EDB)	ND	0.00478						0		30	
Chlorobenzene	ND	0.0191						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0287						0		30	
Ethylbenzene	ND	0.0287						0		30	
m,p-Xylene	0.0392	0.0191						0.03299	17.2	30	
o-Xylene	ND	0.0191						0		30	
Styrene	ND	0.0191						0		30	
Isopropylbenzene	ND	0.0765						0		30	
Bromoform	ND	0.0191						0		30	
1,1,1,2,2-Tetrachloroethane	ND	0.0191						0		30	
n-Propylbenzene	ND	0.0191						0		30	
Bromobenzene	ND	0.0287						0		30	
1,3,5-Trimethylbenzene	0.0263	0.0191						0.01913	31.6	30	
2-Chlorotoluene	ND	0.0191						0		30	
4-Chlorotoluene	ND	0.0191						0		30	
tert-Butylbenzene	ND	0.0191						0		30	
1,2,3-Trichloropropane	ND	0.0191						0		30	
1,2,4-Trichlorobenzene	ND	0.0478						0		30	



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Sample ID 1609155-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: UD2-SW-N	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600225							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

sec-Butylbenzene	ND	0.0191						0		30	
4-Isopropyltoluene	ND	0.0191						0		30	
1,3-Dichlorobenzene	ND	0.0191						0		30	
1,4-Dichlorobenzene	ND	0.0191						0		30	
n-Butylbenzene	ND	0.0191						0		30	
1,2-Dichlorobenzene	ND	0.0191						0		30	
1,2-Dibromo-3-chloropropane	ND	0.478						0		30	
1,2,4-Trimethylbenzene	0.0435	0.0191						0.03060	34.8	30	
Hexachlorobutadiene	ND	0.0956						0		30	
Naphthalene	ND	0.0287						0		30	
1,2,3-Trichlorobenzene	ND	0.0191						0		30	
Surr: Dibromofluoromethane	1.17		1.195		97.5	56.5	129		0		
Surr: Toluene-d8	1.18		1.195		98.4	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.24		1.195		103	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609172-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: BATCH	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600238							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.778	0.0610	1.017	0.04069	72.5	43.5	121				Q
Chloromethane	0.815	0.0610	1.017	0	80.2	45	130				Q
Vinyl chloride	0.887	0.00203	1.017	0	87.2	51.2	146				Q
Bromomethane	0.952	0.0916	1.017	0	93.6	21.3	120				
Trichlorofluoromethane (CFC-11)	1.23	0.0509	1.017	0	121	35	131				
Chloroethane	0.877	0.0610	1.017	0	86.3	43.8	117				Q
1,1-Dichloroethene	1.07	0.0509	1.017	0	105	61.9	141				
Methylene chloride	0.977	0.0203	1.017	0	96.1	54.7	142				
trans-1,2-Dichloroethene	1.08	0.0203	1.017	0	106	52	136				
Methyl tert-butyl ether (MTBE)	1.11	0.0509	1.017	0	109	54.4	132				



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Sample ID 1609172-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: BATCH	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600238							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	0.964	0.0203	1.017	0	94.8	51.8	141				
2,2-Dichloropropane	0.614	0.0509	1.017	0	60.4	36	123				
cis-1,2-Dichloroethene	1.03	0.0203	1.017	0	101	58.6	136				
Chloroform	1.05	0.0203	1.017	0.01526	101	53.2	129				
1,1,1-Trichloroethane (TCA)	1.08	0.0203	1.017	0.08139	98.4	58.3	145				
1,1-Dichloropropene	1.10	0.0203	1.017	0	108	55.1	138				
Carbon tetrachloride	1.11	0.0203	1.017	0	109	53.3	144				
1,2-Dichloroethane (EDC)	1.01	0.0305	1.017	0	99.7	51.3	139				
Benzene	1.01	0.0203	1.017	0	99.6	63.5	133				
Trichloroethene (TCE)	1.09	0.0203	1.017	0.02035	105	68.6	132				
1,2-Dichloropropane	1.03	0.0203	1.017	0	102	59	136				
Bromodichloromethane	1.11	0.0203	1.017	0.02035	107	50.7	141				
Dibromomethane	1.13	0.0407	1.017	0	111	50.6	137				
cis-1,3-Dichloropropene	1.03	0.0203	1.017	0	101	50.4	138				
Toluene	0.996	0.0203	1.017	0	97.9	63.4	132				
trans-1,3-Dichloropropylene	1.04	0.0305	1.017	0	102	44.1	147				
1,1,2-Trichloroethane	1.12	0.0305	1.017	0.1577	94.8	51.6	137				
1,3-Dichloropropane	1.05	0.0509	1.017	0	103	53.1	134				
Tetrachloroethene (PCE)	5.76	0.0203	1.017	15.97	-1,000	35.6	158				S
Dibromochloromethane	1.12	0.0305	1.017	0	110	55.3	140				
1,2-Dibromoethane (EDB)	1.04	0.00509	1.017	0	102	50.4	136				
Chlorobenzene	1.03	0.0203	1.017	0	102	60	133				
1,1,1,2-Tetrachloroethane	1.13	0.0305	1.017	0	111	53.1	142				
Ethylbenzene	1.03	0.0305	1.017	0.02543	99.0	54.5	134				
m,p-Xylene	2.14	0.0203	2.035	0	105	53.1	132				
o-Xylene	1.04	0.0203	1.017	0.04578	97.9	53.3	139				
Styrene	1.05	0.0203	1.017	0	103	51.1	132				
Isopropylbenzene	1.14	0.0814	1.017	0.02543	110	58.9	138				
Bromoform	1.17	0.0203	1.017	0	115	57.9	130				
1,1,1,2,2-Tetrachloroethane	1.08	0.0203	1.017	0	107	51.9	131				
n-Propylbenzene	1.03	0.0203	1.017	0.05087	96.1	53.6	140				



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Sample ID 1609172-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: BATCH	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600238							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Bromobenzene	1.12	0.0305	1.017	0	111	54.2	140				
1,3,5-Trimethylbenzene	1.04	0.0203	1.017	0.06104	95.8	51.8	136				
2-Chlorotoluene	1.04	0.0203	1.017	0.03052	99.5	51.6	136				
4-Chlorotoluene	1.05	0.0203	1.017	0.04069	99.3	50.1	139				
tert-Butylbenzene	1.07	0.0203	1.017	0.06104	99.6	50.5	135				
1,2,3-Trichloropropane	1.05	0.0203	1.017	0	103	50.5	131				
1,2,4-Trichlorobenzene	1.09	0.0509	1.017	0	107	50.8	130				
sec-Butylbenzene	1.05	0.0203	1.017	0.07121	96.7	52.6	141				
4-Isopropyltoluene	1.05	0.0203	1.017	0.07121	96.5	52.9	134				
1,3-Dichlorobenzene	1.02	0.0203	1.017	0	100	52.6	131				
1,4-Dichlorobenzene	0.995	0.0203	1.017	0	97.8	52.9	129				
n-Butylbenzene	1.04	0.0203	1.017	0	102	52.6	130				
1,2-Dichlorobenzene	1.03	0.0203	1.017	0	101	55.8	129				
1,2-Dibromo-3-chloropropane	1.22	0.509	1.017	0	120	40.5	131				
1,2,4-Trimethylbenzene	1.05	0.0203	1.017	0.07121	96.3	50.6	137				
Hexachlorobutadiene	1.05	0.102	1.017	0	103	40.6	158				
Naphthalene	1.24	0.0305	1.017	0.08647	114	52.3	124				
1,2,3-Trichlorobenzene	1.10	0.0203	1.017	0	108	54.4	124				
Surr: Dibromofluoromethane	1.31		1.272		103	56.5	129				
Surr: Toluene-d8	1.19		1.272		93.6	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.37		1.272		107	63.1	141				

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1609172-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: BATCH	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600239							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.781	0.0610	1.017	0.04069	72.8	43.5	121	0.7783	0.326	30	Q
Chloromethane	0.862	0.0610	1.017	0	84.8	45	130	0.8154	5.58	30	Q



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Sample ID 1609172-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757
Client ID: BATCH	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600239

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	0.902	0.00203	1.017	0	88.7	51.2	146	0.8871	1.71	30	Q
Bromomethane	0.959	0.0916	1.017	0	94.3	21.3	120	0.9522	0.692	30	
Trichlorofluoromethane (CFC-11)	1.16	0.0509	1.017	0	114	35	131	1.232	6.43	30	
Chloroethane	0.891	0.0610	1.017	0	87.6	43.8	117	0.8774	1.55	30	Q
1,1-Dichloroethene	1.10	0.0509	1.017	0	108	61.9	141	1.071	2.25	30	
Methylene chloride	1.01	0.0203	1.017	0	99.1	54.7	142	0.9771	3.08	30	
trans-1,2-Dichloroethene	1.08	0.0203	1.017	0	106	52	136	1.077	0.424	30	
Methyl tert-butyl ether (MTBE)	1.10	0.0509	1.017	0	108	54.4	132	1.112	0.873	30	
1,1-Dichloroethane	0.964	0.0203	1.017	0	94.8	51.8	141	0.9644	0.0528	30	
2,2-Dichloropropane	0.616	0.0509	1.017	0	60.6	36	123	0.6140	0.331	30	
cis-1,2-Dichloroethene	1.05	0.0203	1.017	0	103	58.6	136	1.030	1.67	30	
Chloroform	1.05	0.0203	1.017	0.01526	102	53.2	129	1.046	0.582	30	
1,1,1-Trichloroethane (TCA)	1.08	0.0203	1.017	0.08139	97.9	58.3	145	1.082	0.471	30	
1,1-Dichloropropene	1.09	0.0203	1.017	0	107	55.1	138	1.099	0.790	30	
Carbon tetrachloride	1.23	0.0203	1.017	0	121	53.3	144	1.110	10.1	30	
1,2-Dichloroethane (EDC)	1.02	0.0305	1.017	0	100	51.3	139	1.014	0.600	30	
Benzene	1.02	0.0203	1.017	0	100	63.5	133	1.013	0.751	30	
Trichloroethene (TCE)	1.09	0.0203	1.017	0.02035	105	68.6	132	1.089	0.187	30	
1,2-Dichloropropane	1.05	0.0203	1.017	0	103	59	136	1.033	1.22	30	
Bromodichloromethane	1.12	0.0203	1.017	0.02035	108	50.7	141	1.107	1.05	30	
Dibromomethane	1.14	0.0407	1.017	0	112	50.6	137	1.132	0.269	30	
cis-1,3-Dichloropropene	1.04	0.0203	1.017	0	102	50.4	138	1.032	0.737	30	
Toluene	1.01	0.0203	1.017	0	99.3	63.4	132	0.9960	1.37	30	
trans-1,3-Dichloropropylene	1.05	0.0305	1.017	0	103	44.1	147	1.039	1.02	30	
1,1,2-Trichloroethane	1.15	0.0305	1.017	0.1577	97.2	51.6	137	1.122	2.15	30	
1,3-Dichloropropane	1.07	0.0509	1.017	0	106	53.1	134	1.052	2.11	30	
Tetrachloroethene (PCE)	6.59	0.0203	1.017	15.97	-923	35.6	158	5.763	13.4	30	S
Dibromochloromethane	1.13	0.0305	1.017	0	111	55.3	140	1.124	0.542	30	
1,2-Dibromoethane (EDB)	1.08	0.00509	1.017	0	106	50.4	136	1.042	3.22	30	
Chlorobenzene	1.04	0.0203	1.017	0	102	60	133	1.035	0.0983	30	
1,1,1,2-Tetrachloroethane	1.12	0.0305	1.017	0	110	53.1	142	1.129	0.723	30	



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1609172-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757
Client ID: BATCH	Batch ID: 14821		Analysis Date: 9/15/2016	SeqNo: 600239

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	1.02	0.0305	1.017	0.02543	97.7	54.5	134	1.033	1.29	30	
m,p-Xylene	2.13	0.0203	2.035	0	105	53.1	132	2.139	0.357	30	
o-Xylene	1.03	0.0203	1.017	0.04578	97.2	53.3	139	1.041	0.637	30	
Styrene	1.04	0.0203	1.017	0	102	51.1	132	1.049	0.779	30	
Isopropylbenzene	1.15	0.0814	1.017	0.02543	110	58.9	138	1.142	0.400	30	
Bromoform	1.15	0.0203	1.017	0	113	57.9	130	1.174	1.70	30	
1,1,2,2-Tetrachloroethane	1.07	0.0203	1.017	0	105	51.9	131	1.084	1.66	30	
n-Propylbenzene	1.03	0.0203	1.017	0.05087	96.3	53.6	140	1.028	0.198	30	
Bromobenzene	1.10	0.0305	1.017	0	108	54.2	140	1.124	2.15	30	
1,3,5-Trimethylbenzene	1.04	0.0203	1.017	0.06104	95.8	51.8	136	1.035	0	30	
2-Chlorotoluene	1.04	0.0203	1.017	0.03052	99.1	51.6	136	1.042	0.342	30	
4-Chlorotoluene	1.04	0.0203	1.017	0.04069	98.4	50.1	139	1.050	0.875	30	
tert-Butylbenzene	1.07	0.0203	1.017	0.06104	98.9	50.5	135	1.074	0.665	30	
1,2,3-Trichloropropane	1.01	0.0203	1.017	0	99.5	50.5	131	1.047	3.36	30	
1,2,4-Trichlorobenzene	1.11	0.0509	1.017	0	109	50.8	130	1.090	1.67	30	
sec-Butylbenzene	1.05	0.0203	1.017	0.07121	96.0	52.6	141	1.055	0.726	30	
4-Isopropyltoluene	1.03	0.0203	1.017	0.07121	94.3	52.9	134	1.053	2.15	30	
1,3-Dichlorobenzene	1.03	0.0203	1.017	0	101	52.6	131	1.020	1.14	30	
1,4-Dichlorobenzene	1.00	0.0203	1.017	0	98.3	52.9	129	0.9949	0.459	30	
n-Butylbenzene	1.04	0.0203	1.017	0	102	52.6	130	1.036	0.343	30	
1,2-Dichlorobenzene	1.03	0.0203	1.017	0	101	55.8	129	1.030	0.148	30	
1,2-Dibromo-3-chloropropane	1.27	0.509	1.017	0	124	40.5	131	1.221	3.64	30	
1,2,4-Trimethylbenzene	1.03	0.0203	1.017	0.07121	94.0	50.6	137	1.050	2.20	30	
Hexachlorobutadiene	1.06	0.102	1.017	0	104	40.6	158	1.051	1.11	30	
Naphthalene	1.26	0.0305	1.017	0.08647	115	52.3	124	1.242	1.26	30	
1,2,3-Trichlorobenzene	1.13	0.0203	1.017	0	111	54.4	124	1.100	2.51	30	
Surr: Dibromofluoromethane	1.32		1.272		104	56.5	129		0		
Surr: Toluene-d8	1.20		1.272		94.3	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.35		1.272		106	63.1	141		0		



Date: 9/20/2016

Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609172-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/14/2016	RunNo: 31757							
Client ID: BATCH	Batch ID: 14821	Analysis Date: 9/15/2016	SeqNo: 600239								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.
 Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID CCV-D-14821	SampType: CCV	Units: µg/L	Prep Date: 9/19/2016	RunNo: 31757							
Client ID: CCV	Batch ID: 14821	Analysis Date: 9/19/2016	SeqNo: 601994								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Propylbenzene	21.3	0.0200	20.00	0	107	80	120				
1,3,5-Trimethylbenzene	21.0	0.0200	20.00	0	105	80	120				
4-Isopropyltoluene	21.8	0.0200	20.00	0	109	80	120				
1,2,4-Trimethylbenzene	21.0	0.0200	20.00	0	105	80	120				
Naphthalene	19.9	0.0300	20.00	0	99.7	80	120				
Surr: Dibromofluoromethane	25.9		25.00		103	63.7	129				
Surr: Toluene-d8	26.1		25.00		104	62.4	141				
Surr: 1-Bromo-4-fluorobenzene	25.5		25.00		102	63.1	141				



Work Order: 1609155
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID 1609152-001ADUP	SampType: DUP	Units: wt%	Prep Date: 9/14/2016	RunNo: 31720							
Client ID: BATCH	Batch ID: R31720		Analysis Date: 9/14/2016	SeqNo: 599124							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	13.2	0.500						11.08	17.8	20	

Client Name: **SW**

Work Order Number: **1609155**

Logged by: **Erica Silva**

Date Received: **9/13/2016 4:15:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°C* Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

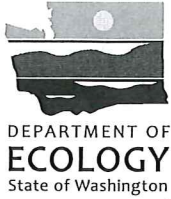
Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	8.6
Sample	4.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



SITE CHECK/SITE ASSESSMENT CHECKLIST FOR UNDERGROUND STORAGE TANKS

UST ID #: Unknown

County: King

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

I. UST FACILITY		II. OWNER/OPERATOR INFORMATION	
Facility Compliance Tag #:	Facility Site ID <u>8342</u> Cleanup Site ID <u>12019</u>	Owner/Operator Name:	<u>Sound Transit</u>
UST ID #:	<u>Unknown</u>	Business Name:	<u>Sound Transit</u>
Site Name:	<u>Sound Transit NE 45th St</u>	Address:	<u>401 S Jackson Street</u>
Site Address:	<u>1000 NE 45th St</u>	City:	<u>Seattle</u> State: <u>WA</u> Zip: <u>98104</u>
City:	<u>Seattle</u>	Phone:	<u>206-398-5227</u>
Phone:	<u> </u>	Email:	<u>mark.menard@soundtransit.org</u>
III. CERTIFIED SITE ASSESSOR			
Service Provider Name:		Company Name:	
<u>Shoshana Howard, PE</u>		<u>Shannon & Wilson, Inc</u>	
Cell Phone:	Email:	Address:	
<u>(206) 695-6811</u>	<u>SKH@shanwil.com</u>	<u>400 N 34th Street</u>	
Certification #:	Exp. Date:	City:	State: Zip:
<u>53203 (PE)</u>	<u>5-15-18</u>	<u>Seattle</u>	<u>WA</u> <u>98103</u>
IV. TANK INFORMATION			
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	DATE SITE CHECK OR ASSESSMENT CONDUCTED
<u>UST - 2</u>	<u>~ 500 gal</u>	<u>gasoline</u>	<u>9-13-16</u>
V. REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT (check one)			
<input checked="" type="checkbox"/> Release investigation following permanent UST system closure (i.e. tank removal or closure-in-place). <input type="checkbox"/> Release investigation following a failed tank and/or line tightness test. <input type="checkbox"/> Release investigation following discovery of contaminated soil and/or groundwater. <input type="checkbox"/> Release investigation directed by Ecology to determine if the UST system is the source of offsite impacts. <input type="checkbox"/> UST system is undergoing a "change-in-service", which is changing from storing a regulated substance (e.g. gasoline) to storing a non-regulated substance (e.g. water). <input type="checkbox"/> Directed by Ecology for UST system permanently closed or abandoned before 12/22/1988. <input type="checkbox"/> Other (describe):			

VI. CHECKLIST

**The site assessor must check each of the following items and include it in the report.
Sections referenced below can be found in the Ecology publication
*Guidance for Site Checks and Site Assessments for Underground Storage Tanks.***

		YES	NO
1. The location of the UST site is shown on a vicinity map.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. A brief summary of information obtained during the site inspection is provided (Section 3.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. A summary of UST system data is provided (Section 3.1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. The soils characteristics at the UST site are described. (Section 5.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5. Is there any apparent groundwater in the tank excavation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6. A brief description of the surrounding land use is provided. (Section 3.1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7. The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. The following items are provided in one or more sketches:			
• Location and ID number for all field samples collected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• If applicable, groundwater samples are distinguished from soil samples	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>NA</i>
• Location of samples collected from stockpiled excavated soil	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>NA</i>
• Tank and piping locations and limits of excavation pit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Adjacent structures and streets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
• Approximate locations of any on-site and nearby utilities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>NA</i>
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11. Any factors that may have compromised the quality of the data or validity of the results are described. <i>NA</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

VII. REQUIRED SIGNATURES

Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through -395.

Shoshana K. Howard, PE

Shoshana K Howard

11-2-16

Print or Type Name

Signature of Certified Site Assessor

Date

APPENDIX D

UST-2 – CONTRACTOR-PROVIDED DOCUMENTATION



CONSTRUCTION, inc

13036 BEVERLY PARK ROAD
MUKILTEO, WA 98275
(425) 265-7211 FAX (425) 265-7215

LETTER OF TRANSMITTAL

To: Sound Transit
401 South Jackson Street
Seattle, WA 98104

From: Mike Pellitteri
Date: 10/11/16
Ph: (425) 265-7211 Office
FAX: (425) 265-7215

Attn: Alex Kwok

Project Owner: Sound Transit
Contract Name: N105: Northgate Link Extension: Advanced Demolition and Site Prep, Northgate & UDS Staging
Contract No.: RTA/CN 0107-15
Sub/Supplier:: Pellco Construction, Inc.

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop Drawings Product Data Samples Plans Specifications
 Copy of Letter Change Order **SUBMITTAL 026500-006.001**

Item #	Copies	Spec Section & Paragraph	Description	Pages
1	1	026500 1.03D	Submittal 026500-006.001 UST Closure Report Backup Information for Un-anticipated UST at Key Bank Site.	

THESE ARE TRANSMITTED as checked below:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> For Approval | <input type="checkbox"/> No Exceptions Taken | <input type="checkbox"/> Resubmit _____ copies for approval |
| <input type="checkbox"/> For Your Use | <input type="checkbox"/> Make Corrections Noted | <input type="checkbox"/> Submit _____ copies for distribution |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> Revise and Resubmit | <input type="checkbox"/> Return _____ corrected prints |
| <input checked="" type="checkbox"/> For review and comment | <input type="checkbox"/> Rejected | |

REMARKS:

Sincerely,
Mike Pellitteri

CC: File

Signed: Mike Pellitteri

Received:

Pellco Construction
13036 Beverly Park Road
Mukilteo, WA 9827

October 5, 2016

**RE: UST Closure Report Back-up Submittal
UDS Unanticipated Underground Storage Tank (UDS-2) (PSA 08.02)
Northgate Link Extension Advanced Demolition and Site Prep
Sound Transit Contract No.: N105**

Dear Mr. Gordon:

Attached to this memo is the UST Closure Report back-up documentation required by section 02 65 00 1.03D of the Contract Documents for the unanticipated underground storage tank (UST) was discovered at the University District jobsite on September 1, 2016.

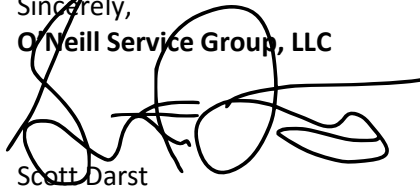
Section 02 65 00 1.06 goes into further detail regarding the specific documents, letters, and certifications that are required to be provided.

02 65 00 1.06

- A. "Provide the following information to allow the Resident Engineer to prepare a UST Closure Report."
- N/A
- B. "A letter signed by responsible company official certifying the decommissioning services were performed in accordance with the applicable regulations and the terms and conditions of these Specifications."
- Attachment B.1 – UST Decommissioner's Report
- C. "UST removal checklist, notifications, sample chains of custody, analytical test results, and other relevant documentation to the Resident Engineer."
- UST removal checklist and confirmation sampling was performed by Shannon and Wilson
- Attachment C.1 – 30-Day Notice
- Attachment C.2 – Stockpile Soil Samples and Chains of Custody
- D. "Copies of tank-contents analyses and waste analyses or waste profile sheets."
- Attachment D.1 – UST contents sample analysis and chain of custody
- E. "Copies of certifications of final disposal signed by the responsible disposal facility official."
- Attachment E.1 – UST Destruction Certification
- F. "Information on who transported and accepted wastes encountered, including copies of manifests, waste profile sheets, land disposal restriction, notification and certification forms, disposal ticket and receipts, certificates of disposal, and other pertinent documentation."
- Attachment F.1 – Marine Vacuum Bill of Lading
Manifests, land disposal restriction, notification and certification forms, certificates of disposal are not required for the disposal of this UST.
- G. "Scaled one-line drawings showing tank locations, limits of excavation, limits of contamination, and underground utilities within 50 feet."
- A drawing is included in the UST Decommissioner's report (Attachment B.1)
- H. "Documentation prepared for Ecology and the local fire department, including permits, notices and closure checklists."
- Attachment H.1 – UST Triple-Rinse Certification
- Attachment H.2 – Marine Chemist Certification for Inerting the UST
- Attachment H.3 – Fire Marshal Permit

Please let me know if you have any questions.

Sincerely,
O'Neill Service Group, LLC

A handwritten signature in black ink, appearing to read 'Scott Darst', written over the company name.

Scott Darst
Project Manager

Attachment B.1
UST Decommissioner's Report



GALLOWAY ENVIRONMENTAL, INC

3102-220th PL SE
Sammamish, WA 98075-9540
Gary@GallowayEnvironmental.com

(425) 688-8852

September 21, 2016

Eric Laumbattus
Environmental Project Manager
O'Neill Service Group
17619 NE 67th Court, suite 100
Redmond, Washington 98052
Emailed to: Ericl@oneillsg.com

SUBJECT: SOUND TRANSIT BROOKLYN STATION AREA
UNDERGROUND STORAGE TANK DECOMMISSIONING REPORT, 1000 NE
45TH STREET, SEATTLE, WASHINGTON 98103

Dear Mr. Laumbattus:

This letter report presents Galloway Environmental, Inc.'s ("GEI's") findings regarding the removal of one 500 gallon underground storage tank ("UST") at 1000 NE 45th Street in Seattle, Washington (47.6616N & -122.34592W — *See Figures 1 and 2 for location*). The Washington Department of Ecology (WDOE) lists the Site as Facility ID 8342 and Site ID 619989.

Reportedly, the tank was used to store gasoline fuel for retail service station sales; however its age is unknown. The on-site field portion of these services was performed on September 13, 2016.

PROJECT SUMMARY

During planned re-development of the Site, Sound Transit hired Pellco Construction to assist in the removal of one 500 gallon underground storage tank (UST) at this Site. The O'Neill Service Group was asked to coordinate the removal of the tank. O'Neill contracted GEI to oversee the tank decommissioning and provide this report. Sound Transit's environmental consultant (Shannon & Wilson) was asked to perform the necessary Environmental Site Checklist and Assessment for the decommissioning.

Tank decommissioning services were performed (or supported) by the following (See Attachments A — Photos; and B — Permits, manifests, etc.)

1. MARVAC provided the following decommissioning services:
 - Pumped the tank of residual liquids (Gasoline fuel and water),
 - Triple-rinsed the tank prior to decommissioning, and
 - Properly disposed of the liquids and recycled the tank
2. The owner's contractor (Pellco) performed the excavating and tank removal services.
3. Sound Testing, Inc. provided a marine chemist to inspect the tank, inert or vapor free the tank, and measure oxygen levels and total hydrocarbon concentrations prior to certifying that the UST site was safe for removal and transport to an offsite location.
4. Randy Devitt (*Seattle Fire Department Inspector*) inspected the site conditions and approved the tank's removal.

5. GEI oversaw the tank's decommissioning — Washington State UST Decommissioner Supervisor – Certificate No. 0878867-U2

UST REMOVAL AND OBSERVATIONS

UST Removal

Following Marvac's pumping and rinsing of the tank, Sound Testing: 1) Inspected the tank and decided that the tank was "vapor-free" of petroleum compounds and did not need to be inerted prior to its removal, 2) Measured the residual oxygen levels in the tank and petroleum vapor concentrations in the tank, and 3) Verified that the tank was safe to remove from belowground and transport it to an offsite location.

Pellco removed the tank and loaded it directly onto Marvac's truck and Marvac delivered the tank to its facility in South Seattle to process the tank prior to its delivery to the Seattle Iron & Metals Recycling facility in Seattle, Washington.

No information regarding the age of the UST was available to GEI.

Condition of the UST

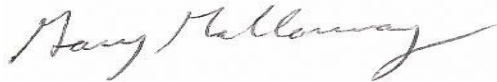
The top of the tank was estimated to be approximately three feet below the ground surface in the approximate location as shown in Figure 2. The tank was three feet in diameter by 10 feet long with a capacity of approximately 500 gallons. The tank was in poor condition — the tank had evidence of corrosion and pinholes on its sidewalls and tank ends (*See photos*). Marvac told GEI that the tank was nearly empty of all liquids prior to the pumping and rinsing of the tank. The tank's fill port, fuel line, and vent pipes were not present in the excavation.

CONCLUSIONS

Based on these field observations, the tank was properly decommissioned.

Should you have any questions regarding this report or if you would like to discuss our findings, please contact me at the addresses listed at the top of this letter.

Respectfully Submitted,
GALLOWAY ENVIRONMENTAL, INC.



Gary L. Galloway, LHG, CHMM, REA
President

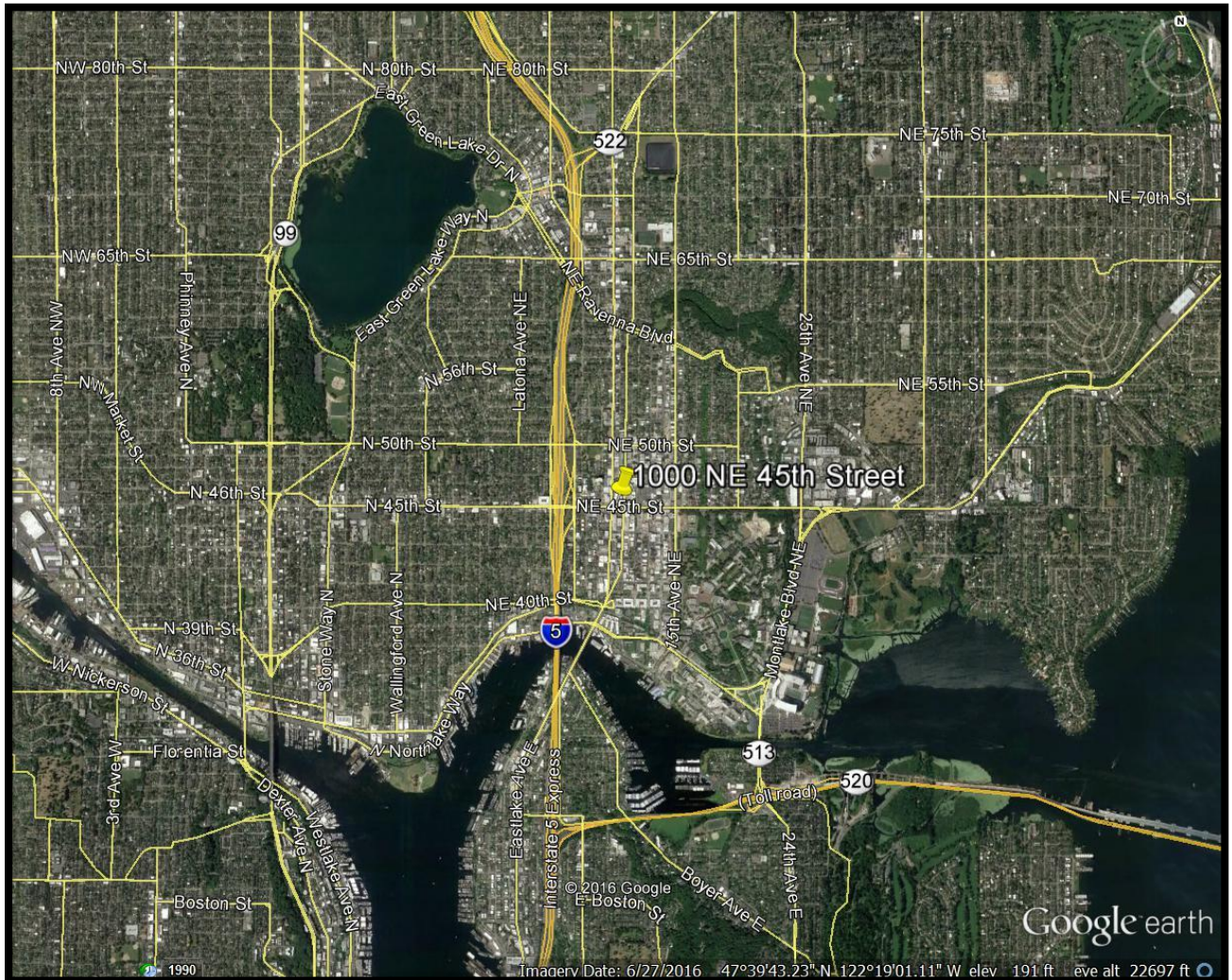


FIGURE 1 — SITE LOCATION,
Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington
Source: Google Maps 2016, GEI Project # 36021

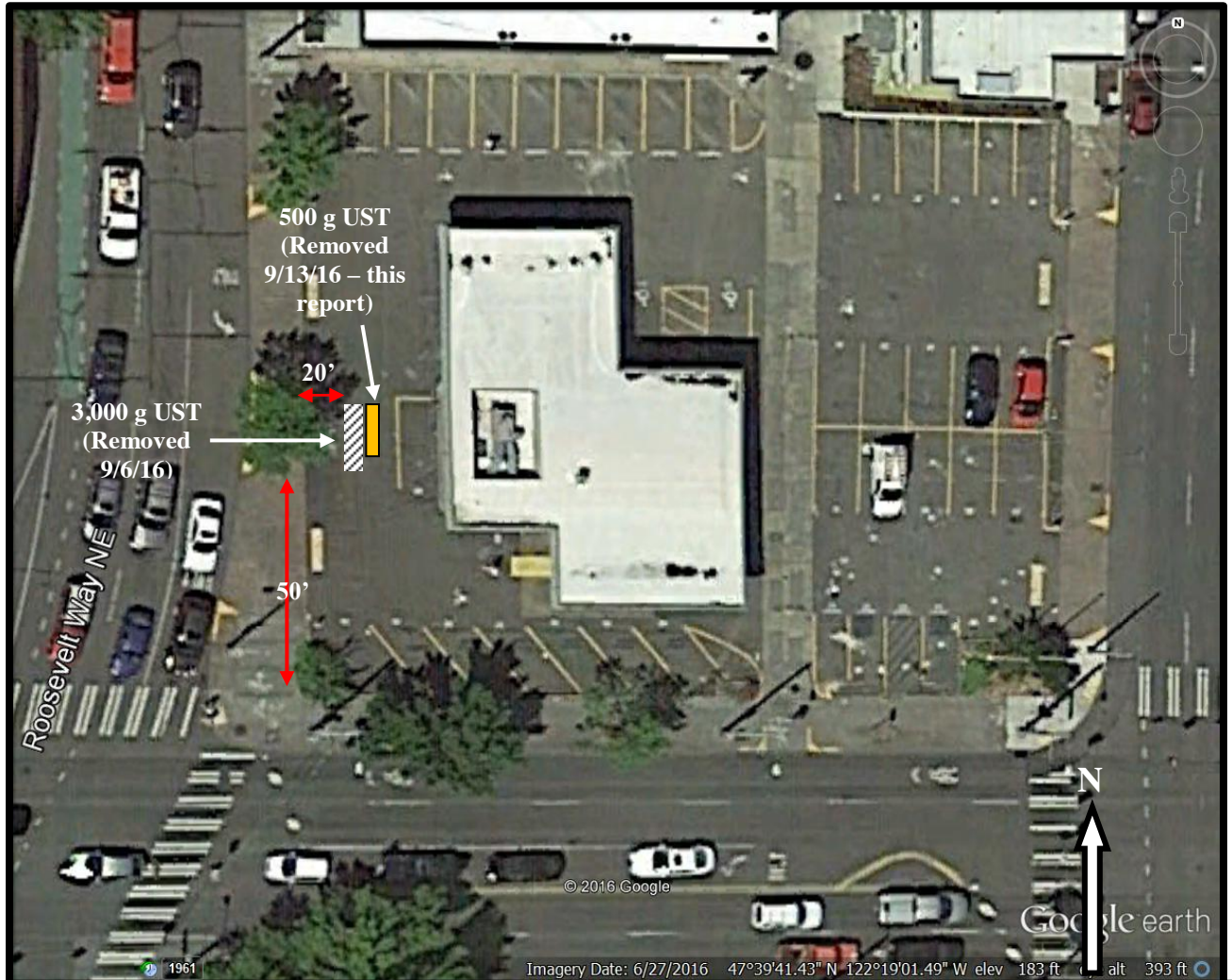


FIGURE 2 — SITE PLAN MAP

Sound Transit Brooklyn Station Area Project — UST Decommissioning, Seattle, Washington
Source: Google Maps 2016, GEI Project # 36021

ATTACHMENTS A

PHOTOS

Site Photos



ATTACHMENTS B

PERMITS, MANIFESTS, ETC.

Your
Seattle
Fire Department

TUE 09/13/16
10 AM JR

RECEIVED
SEP 12 2016
PERMIT SECTION



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Commercial Tank Removal/Decommissioning

Permit Fee: \$218.00

Date Issued: 9/13/16

Tank(s) must be removed from site on the same day as permit is issued!

TO BE COMPLETED BY PERMIT APPLICANT

FIRM NAME	Galloway Environmental, Inc.		
MAILING ADDRESS	3102 220 th PL SE	SUITE	
CITY	Sammamish	STATE	Washington ZIP 98075
JOBSITE ADDRESS	1000 NE 45 th St., Seattle, 98103		
CONTACT PERSON	Gary Galloway	PHONE NUMBER	(425) 688-8852
Number of Tank(s):	1	Tank Size(s):	500 gallon <input type="checkbox"/> Aboveground tank
Product(s) Previously Contained:	Unknown petroleum		<input type="checkbox"/> XXXX Underground tank
<input type="checkbox"/> X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)			
<input type="checkbox"/> Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)			
Hot work being conducted:	<input type="checkbox"/> X No	<input type="checkbox"/> Yes	(If yes, a separate hot work permit is required)

Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office – Permits
220 Third Ave S, 2nd Floor
Seattle, WA 98104-2608

To pay with a Visa or Master Card: Fax or email this application
THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT
Tel: (206) 386-1450 / Fax: (206) 386-1348
E-mail: permits@seattle.gov

**Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.
TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION
NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!**

Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)

FMO USE:	APPROVED BY:
Check No.: 7894091216	Inspector: R. Devitt SFD ID# 1321
Receipt No.: 5-265902	Name of Marine Chemist: Den Sly Certificate # 46783
Application ID#: 106554	Date: 9/13/16

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116

(206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGINC.COM

MARINE CHEMIST CERTIFICATE

SERIAL No 46783

Survey Requested by GARY GALLOWAY	Vessel Owner or Agent —	Date SEPT 13 2016
Vessel PLEASE SEE BELOW	Type of Vessel STEEL UNDERGROUND TK	Specific Location of Vessel 1000 NE 45TH
Last Three (3) Loadings GASOLINE	Tests Performed O₂ LEL VISUAL	Time Survey Completed 8:20 AM

A 1,000 - GAL STEEL CYLINDRICAL UNDER-GROUND STORAGE TANK

— FREE OF COMBUSTIBLE GAS AND PRODUCT RESIDUE

— MAY BE SAFELY EXCAVATED AND TRANSPORTED ON PUBLIC HIGHWAYS

— NOT REQUIRED: FURTHER CLEANING OR INERT GAS

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed _____ Name _____ Company _____ Date _____ Signed **Don Sly** Marine Chemist Certificate No. **No 598**

POSTING

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 500 gallons

Last Contents: Gasoline

Tank Location: 1000 NE 45th St
Seattle, WA

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: Sound Transit

Contractor: Oniell Environmental

M.V.S. Representative: Tom Clark

Date: 09.12.2016

Notes:

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

STORAGE TANK

CERTIFICATE OF DESTRUCTION

DATE: SEPTEMBER 15, 2016

TANK OWNER: SOUND TRANSIT

TANK LOCATION: 1000 NE 45TH ST, SEATTLE WA

TANK DESCRIPTION: 500 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,



Marine Vacuum Service, Inc.

DBE # D4M0002341

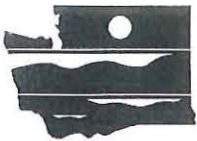
SDVO

EPA # WAD980974521

A MINORITY BUSINESS ENTERPRISE ID # M4M002341

Attachment C.1

30-Day Notice



DEPARTMENT OF
ECOLOGY
State of Washington

UNDERGROUND STORAGE TANK (UST)

30-DAY NOTICE

(See back of form for instructions)

NW

FOR OFFICE USE ONLY

Site ID # _____

FS ID # _____

RECEIVED

JUN 29 2016

Department of Ecology
Toxics Cleanup Program

Please the appropriate box: Intent to Install Intent to Close

HQ (360)407-7170 / Central (509)575-2490 / Eastern (509)329-3400 / Northwest (425)649-7000 / Southwest (360)407-6300

SITE INFORMATION

OWNER INFORMATION

(this form will be returned to this address)

Unlisted
Tag or UBI number
N105
Site Name
NE 45th and Roosevelt Way
Site Physical Address
Seattle 98104
City Zip Code
Site Phone Number

Sound Transit
UST Owner/Operator
410 S Jackson St
Mailing Address/PO Box
Seattle, WA 98014
City Zip Code
206-398-5000
Owner/Operator Phone Number
Owner/Operator Email Address

TANK INFORMATION

Tank ID	Substance Stored	Capacity	Date Project is Expected to Begin	Comments:
West-UST1	Unknown	NA	8/1/16	
West-UST2	Unknown	NA	8/1/16	
East-UST1	Unknown	NA	8/1/16	

1) SERVICE PROVIDER INFORMATION - check the appropriate boxes

PLEASE NOTE: INDIVIDUALS PERFORMING UST SERVICES MUST BE ICC CERTIFIED OR HAVE PASSED ANOTHER QUALIFYING EXAM APPROVED BY THE DEPARTMENT OF ECOLOGY.

Installer Decommissioner Site Assessor

O'Neill Service Group
Service Provider Company Name
Eric Laumbattus
Certified Service Provider Name
8226147
ICC Certification #

Eric Laumbattus
Contact Person
(360)770-5261
Contact Phone Number
eric@oneillsg.com
Contact Email Address

2) SERVICE PROVIDER INFORMATION (REQUIRED IF USING MORE THAN ONE PROVIDER) - check the appropriate boxes

Installer Decommissioner Site Assessor

Galloway Environmental
Service Provider Company Name
Gary Galloway
Certified Service Provider Name
0878867-u7
ICC Certification #

Gary Galloway
Contact Person
4256888852
Contact Phone Number
galloway@comcast.net
Contact Email Address



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000

711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Dear owner, operator or interested party:

This packet summarizes requirements in the underground storage tank (UST) regulations (Chapter 173-360 WAC) for permanent closure of regulated USTs. It also includes forms that must be used to complete this process. These requirements do not apply to tanks that are exempt from these regulations.

At-a-Glance Summary of Permanent Closure Requirements:

- At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to the Department of Ecology (Ecology).
- Decommissioning and site assessment activities must be performed by International Code Council (ICC)-certified UST service providers.
- Within 30 days of completing permanent closure activities, submit a Permanent Closure Notice signed by the ICC-certified UST Decommissioner.
- If **no** contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 30 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site assessment report completed by the Site Assessor
- If contamination is confirmed during permanent closure activities, submit the following documents to Ecology within 90 days of completing permanent closure activities.
 - A Site Check/Site Assessment Checklist signed by the ICC-certified UST Site Assessor
 - A site characterization report completed by the Site Assessor

Detailed Look at Permanent Closure:

Ecology must be notified 30 days in advance

At least 30 days prior to beginning permanent closure activities, a 30-Day Notice must be submitted to Ecology. This form, which includes service provider and owner information, provides the UST inspector advance notice so that he or she may visit the project site while decommissioning work is being conducted. If the exact date of closure is unknown when the 30-Day Notice is submitted, be sure to contact the Ecology inspector at least three business days prior to the project start date. **It is your responsibility to contact other local authorities, including the fire marshal, for any additional policies and/or permits.**

During the 30-day notice period, the contents of the tank may be pumped from the tank and recycled or disposed of as dangerous wastes.

ICC-certified service providers must be used



Service providers performing permanent closure activities must carry proof they are certified by the International Code Council (ICC) as an UST Decommissioner and Site Assessor.

Conducting tank closures is dangerous work and should not be completed by unqualified or inexperienced persons. Failure to follow proper procedures may result in fire, explosion, and other hazards to human health or the environment.

Permanent closure procedures

Permanent closure includes “removal”, “closure-in-place”, or “change-in-service” (i.e. changing the product stored in a tank from a regulated substance to an unregulated substance). These projects may begin 30 days **after** Ecology date stamps the 30-Day Notice and must be completed **within** 90 days after this date.

To begin the process, the ICC-certified Decommissioner will empty and clean tanks of all liquids and accumulated sludges. The tank must be properly inerted of flammable vapors, as directed by the International Fire Code. The Decommissioner must ensure the tank atmosphere and excavation area is regularly monitored for flammable or vapor concentrations until the tank is removed from both the excavation and the site. Piping, except any vent lines, shall be drained of product and be either capped or removed from the ground.

Tanks may then either be removed from the ground or filled with a solid inert material, such as CDF, a controlled density fill. Although the UST regulations allow for tanks to be closed in place, Ecology strongly recommends tanks be removed for the following reasons:

- (1) it allows for the soil conditions to be observed,
- (2) it is easier to collect soil samples needed for the site assessment (described below), and
- (3) it may make any future property transactions less complicated, as potential buyers may not want to buy a property with a buried tank on it.

If a tank will be closed-in-place, first check with the local jurisdiction and fire marshal to ensure they will allow tanks to be closed using this method.

Once a tank is removed or filled with an inert material, the UST Decommissioner is required to fill out a Permanent Closure Notice that must also be signed by the owner or operator. This notice shall be submitted to Ecology **within 30 days after tank closure** activities are completed. If the site has a facility compliance tag, the tag must also be returned to Ecology at this time.

All permanent closures require a site assessment be conducted

A site assessment is an investigation to determine if the UST system released regulated product into the soil or groundwater. It must be performed in accordance with Ecology’s *Guidance for Site Checks and Site Assessments for USTs* and completed by an ICC-certified Site Assessor or a Washington-registered Professional Engineer (or P.E.) who is competent, by means of examination, experience, or education, to perform site assessments. The guidance provides information on sampling procedures, the number and locations of samples to be obtained, required laboratory analyses, and reporting requirements.

A Site Check/Site Assessment Checklist must be completed by the Site Assessor and submitted to Ecology **within thirty (30) days of completion of the site assessment**. A site assessment report must be submitted to Ecology within 30 days after tank closure if no confirmed contamination is discovered. If the UST

system has caused a release to the environment, then, instead, a site characterization report shall be submitted within 90 days of tank closure.

Releases discovered during tank closure must be reported to Ecology

When contaminated soil, groundwater, or free liquid- or vapor-phase petroleum products are discovered during tank removal, site assessment, or by any other means, the owner/operator is responsible for reporting this information to Ecology within twenty-four (24) hours of discovery. The Decommissioner or Site Assessor must report confirmed releases to the owner/operator immediately and to Ecology within 72 hours after discovering the condition.

Soil contaminated by petroleum and/or hazardous substances must be remediated under the Model Toxics Control Act, which describes the process for cleaning up contaminated sites. Contaminated soil must be disposed of at a permitted facility that accepts dangerous waste. If it is to be "landfarmed" on or offsite, be sure your local jurisdiction allows this and that you understand all the requirements for this remediation method.

Record Keeping

The results of a site assessment must be submitted to Ecology and maintained by the owner for at least five years after completion of tank permanent closure. However, Ecology recommends records be maintained indefinitely by the owner. Proof of a "clean closure" is very important regarding any future property transfers or related business transactions, such as obtaining loans or insurance.

Further questions or reporting a release? Please contact your regional office below.

Regional Office

Central (509) 575-2490

Eastern (509) 329-3400

HQ (360) 407-7170

Northwest (425) 649-7000

Southwest (360) 407-6300

Counties Served

Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima

Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman

Federal facilities in Western Washington

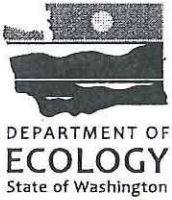
Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom

Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at:
www.ecy.wa.gov/programs/tcp/ust-lust/people.html

To find electronic versions of this letter and the enclosed forms, please visit:
<http://www.ecy.wa.gov/programs/tcp/ust-lust/2011/03-out-of-svc.html>.

If you need this document in a format for the visually impaired, called the Toxics Cleanup Program at 360- 407-7071. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.



PERMANENT CLOSURE NOTICE FOR UNDERGROUND STORAGE TANKS

UST ID #: _____

County: _____

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

I. UST FACILITY			II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #:			Owner/Operator Name:			
UST ID #:			Business Name:			
Site Name:			Address:			
Site Address:			City:	State:	Zip:	
City:			Phone:			
Phone:			Email:			
III. CERTIFIED UST DECOMMISSIONER						
Company Name:			Service Provider Name:			
Address:			Certification Type:			
City:	State:	Zip:	Cert. No.:	Exp. Date:		
Provider Phone:			Provider Email:			
<i>Provider Signature:</i>			<i>Date:</i>			
IV. TANK INFORMATION						
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	CLOSURE METHOD			CLOSURE DATE
			removal	closed-in-place	change-in-service	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. REQUIRED SIGNATURE						
<i>Signature acknowledges UST(s) comply with UST regulation WAC 173-360-380 Permanent Closure Requirements.</i>						
Date	Signature of Tank Owner/Operator or Authorized Representative			Print or Type Name		

PERMANENT CLOSURE NOTICE
FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This form must be completed and submitted **within thirty days of completing** permanent closure activities to the following address:

Dept. of Ecology
UST Section
PO Box 47655
Olympia, WA 98504-7655

- I./II. UST Facility and Owner/Operator:** Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number. If all tanks at the site are permanently closed, the facility compliance tag must be returned with this notice.
- III. UST Decommissioner:** It is the responsibility of the ICC-certified Decommissioner to follow proper tank closure procedures in accordance with WAC 173-360-375. The Decommissioner signature certifies these procedures were followed.
- IV. Tank Information:** Use the same Tank IDs that are listed on the facility's Business License. List the last substance stored in each tank, the tank sizes, the method by which the tank is being closed, and the date closure activities were conducted. All closure methods require a site assessment be conducted in accordance with Ecology's *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*.
- V. Required Signature:** The owner and/or operator's signature is required. Also, the owner and/or operator is responsible for reporting confirmed releases to Ecology within 24 hours.

All confirmed releases must be reported to Ecology by the owner immediately and by service providers within 72 hours of the discovery of the condition. If the owner or operator is not immediately available, the report should be made directly to Ecology.

Be sure to contact your local fire marshal and other local jurisdictions. They may have other codes and regulations that apply to a permanent tank closure.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at:
www.ecy.wa.gov/programs/tcp/ust-lust/people.html



SITE CHECK/SITE ASSESSMENT CHECKLIST FOR UNDERGROUND STORAGE TANKS

UST ID #: _____

County: _____

This checklist certifies that site check or site assessment activities were performed in accordance with Chapter 173-360 WAC. Instructions are found on the last page.

I. UST FACILITY		II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #:		Owner/Operator Name:			
UST ID #:		Business Name:			
Site Name:		Address:			
Site Address:		City:	State:	Zip:	
City:		Phone:			
Phone:		Email:			
III. CERTIFIED SITE ASSESSOR					
Service Provider Name:			Company Name:		
Cell Phone:		Email:		Address:	
Certification #:		Exp. Date:		City:	State: Zip:
IV. TANK INFORMATION					
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	DATE SITE CHECK OR ASSESSMENT CONDUCTED		
V. REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT (check one)					
<input type="checkbox"/> Release investigation following permanent UST system closure (i.e. tank removal or closure-in-place).					
<input type="checkbox"/> Release investigation following a failed tank and/or line tightness test.					
<input type="checkbox"/> Release investigation following discovery of contaminated soil and/or groundwater.					
<input type="checkbox"/> Release investigation directed by Ecology to determine if the UST system is the source of offsite impacts.					
<input type="checkbox"/> UST system is undergoing a "change-in-service", which is changing from storing a regulated substance (e.g. gasoline) to storing a non-regulated substance (e.g. water).					
<input type="checkbox"/> Directed by Ecology for UST system permanently closed or abandoned before 12/22/1988.					
<input type="checkbox"/> Other (describe):					

VI. CHECKLIST

The site assessor must check each of the following items and include it in the report.
Sections referenced below can be found in the Ecology publication
Guidance for Site Checks and Site Assessments for Underground Storage Tanks.

		YES	NO
1. The location of the UST site is shown on a vicinity map.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A brief summary of information obtained during the site inspection is provided (Section 3.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. A summary of UST system data is provided (Section 3.1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The soils characteristics at the UST site are described. (Section 5.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there any apparent groundwater in the tank excavation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. A brief description of the surrounding land use is provided. (Section 3.1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The name and address of the laboratory used to perform analyses is provided. The methods used to collect and analyze the samples, including the number and types of samples collected, are also documented in the report. The data from the laboratory is appended to the report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The following items are provided in one or more sketches:			
• Location and ID number for all field samples collected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• If applicable, groundwater samples are distinguished from soil samples	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Location of samples collected from stockpiled excavated soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Tank and piping locations and limits of excavation pit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Adjacent structures and streets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Approximate locations of any on-site and nearby utilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. If sampling procedures are different from those specified in the guidance, has justification for using these alternative sampling procedures been provided? (Section 3.4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method, and detection limit for that method. Any sample exceeding MTCA Method A cleanup standards are highlighted or bolded.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Any factors that may have compromised the quality of the data or validity of the results are described.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred. The requirements for reporting confirmed releases can be found in WAC 173-360-372.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VII. REQUIRED SIGNATURES

Signature acknowledges the Site Check or Site Assessment complies with UST regulations WAC 173-360-360 through -395.

Print or Type Name

Signature of Certified Site Assessor

Date

SITE CHECK/SITE ASSESSMENT CHECKLIST

FOR UNDERGROUND STORAGE TANKS

INSTRUCTIONS

This checklist must accompany the results of a Site Check Report, which is performed if a release of petroleum or other regulated substance is suspected. It is also required to accompany a Site Assessment Report, which is required following the permanent closure or "change-in-service" of an underground storage tank system. This form is required to be filled out whether or not contamination is found. This checklist is to be completed by the Site Assessor and submitted **within thirty days of completing** these activities to the following address:

Dept. of Ecology
UST Section
PO Box 47655
Olympia, WA 98504-7655

- I./II. **UST Facility and Owner/Operator Information:** Fill out these sections completely. If you do not know your UST ID number, include the facility compliance tag number.
- III. **Service Provider Information:** It is the responsibility of the ICC-certified Site Assessor to ensure that sampling and documentation procedures are completed in accordance with Ecology's *Guidance for Site Checks and Site Assessment for Underground Storage Tanks*.
- IV. **Tank Information:** Use the same Tank identification numbers listed on the facility's Business License which is based on the most recent UST Addendum on file with Ecology. List the last substance stored in each tank, the tank sizes and the date the site check or site assessment was completed.
- V. **Required Signature:** The Site Assessor signature certifies these procedures were followed.

All confirmed releases must be reported to Ecology by the owner within 24 hours and by service providers within 72 hours of discovery. A Site Characterization Report must be submitted to Ecology within 90 days after confirming a release.

Further questions? Please contact your regional office below and ask for a tank inspector to assist you.

Regional Office	Counties Served
Central (509) 575-2490	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima
Eastern (509) 329-3400	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman
HQ (360) 407-7170	Federal facilities in Western Washington
Northwest (425) 649-7000	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom
Southwest (360) 407-6300	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum

or find a complete list of UST inspectors at:
www.ecy.wa.gov/programs/tcp/ust-lust/people.html

Attachment C.2
Stockpile Soil Samples and
Chains of Custody



O'Neill Service Group

Eric Laumbattus
17619 NE 67th Court, Suite 100
Redmond, WA 98052

RE: N105-Pellco UDS Unanticipated

Lab ID: 1609119

September 12, 2016

Attention Eric Laumbattus:

Fremont Analytical, Inc. received 3 sample(s) on 9/9/2016 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director



Date: 09/12/2016

CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated
Lab Order: 1609119

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609119-001	TANKEAST-160909-1	09/09/2016 1:10 PM	09/09/2016 3:50 PM
1609119-002	TANKWEST-160909-1	09/09/2016 1:15 PM	09/09/2016 3:50 PM
1609119-003	STOCK-160909-1	09/09/2016 1:20 PM	09/09/2016 3:50 PM

CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: O'Neill Service Group

Collection Date: 9/9/2016 1:10:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-001

Matrix: Soil

Client Sample ID: TANKEAST-160909-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14766

Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0658		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chloromethane	ND	0.0658		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Vinyl chloride	ND	0.00219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromomethane	ND	0.0987		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Trichlorofluoromethane (CFC-11)	ND	0.0548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chloroethane	ND	0.0658		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1-Dichloroethene	ND	0.0548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Methylene chloride	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
trans-1,2-Dichloroethene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Methyl tert-butyl ether (MTBE)	ND	0.0548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1-Dichloroethane	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
2,2-Dichloropropane	ND	0.0548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
cis-1,2-Dichloroethene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chloroform	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1,1-Trichloroethane (TCA)	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1-Dichloropropene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Carbon tetrachloride	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dichloroethane (EDC)	ND	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Benzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Trichloroethene (TCE)	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dichloropropane	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromodichloromethane	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Dibromomethane	ND	0.0439		mg/Kg-dry	1	9/12/2016 11:08:26 AM
cis-1,3-Dichloropropene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Toluene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
trans-1,3-Dichloropropylene	ND	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1,2-Trichloroethane	ND	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,3-Dichloropropane	ND	0.0548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Tetrachloroethene (PCE)	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Dibromochloromethane	ND	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dibromoethane (EDB)	ND	0.00548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Chlorobenzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,1,1,2-Tetrachloroethane	ND	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Ethylbenzene	0.127	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
m,p-Xylene	0.226	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
o-Xylene	0.108	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Styrene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Isopropylbenzene	0.144	0.0877		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromoform	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM



Client: O'Neill Service Group

Collection Date: 9/9/2016 1:10:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-001

Matrix: Soil

Client Sample ID: TANKEAST-160909-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14766

Analyst: EM

1,1,2,2-Tetrachloroethane	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
n-Propylbenzene	0.264	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Bromobenzene	ND	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,3,5-Trimethylbenzene	0.630	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
2-Chlorotoluene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
4-Chlorotoluene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
tert-Butylbenzene	0.0230	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2,3-Trichloropropane	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2,4-Trichlorobenzene	ND	0.0548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
sec-Butylbenzene	0.220	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
4-Isopropyltoluene	0.481	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,3-Dichlorobenzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,4-Dichlorobenzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
n-Butylbenzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dichlorobenzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2-Dibromo-3-chloropropane	ND	0.548		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2,4-Trimethylbenzene	1.77	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Hexachlorobutadiene	ND	0.110		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Naphthalene	0.377	0.0329		mg/Kg-dry	1	9/12/2016 11:08:26 AM
1,2,3-Trichlorobenzene	ND	0.0219		mg/Kg-dry	1	9/12/2016 11:08:26 AM
Surr: Dibromofluoromethane	98.9	56.5-129		%Rec	1	9/12/2016 11:08:26 AM
Surr: Toluene-d8	98.6	64.3-131		%Rec	1	9/12/2016 11:08:26 AM
Surr: 1-Bromo-4-fluorobenzene	107	63.1-141		%Rec	1	9/12/2016 11:08:26 AM

Sample Moisture (Percent Moisture)

Batch ID: R31668

Analyst: BB

Percent Moisture	14.6	0.500		wt%	1	9/12/2016 9:24:51 AM
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Client: O'Neill Service Group

Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-002

Matrix: Soil

Client Sample ID: TANKWEST-160909-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14766

Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0572		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Chloromethane	ND	0.0572		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Vinyl chloride	ND	0.00191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Bromomethane	ND	0.0858		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Trichlorofluoromethane (CFC-11)	ND	0.0476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Chloroethane	ND	0.0572		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,1-Dichloroethene	ND	0.0476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Methylene chloride	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
trans-1,2-Dichloroethene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Methyl tert-butyl ether (MTBE)	ND	0.0476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,1-Dichloroethane	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
2,2-Dichloropropane	ND	0.0476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
cis-1,2-Dichloroethene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Chloroform	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,1,1-Trichloroethane (TCA)	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,1-Dichloropropene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Carbon tetrachloride	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2-Dichloroethane (EDC)	ND	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Benzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Trichloroethene (TCE)	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2-Dichloropropane	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Bromodichloromethane	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Dibromomethane	ND	0.0381		mg/Kg-dry	1	9/12/2016 11:37:56 AM
cis-1,3-Dichloropropene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Toluene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
trans-1,3-Dichloropropylene	ND	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,1,2-Trichloroethane	ND	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,3-Dichloropropane	ND	0.0476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Tetrachloroethene (PCE)	0.0958	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Dibromochloromethane	ND	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2-Dibromoethane (EDB)	ND	0.00476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Chlorobenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,1,1,2-Tetrachloroethane	ND	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Ethylbenzene	0.0581	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
m,p-Xylene	0.0981	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
o-Xylene	0.0229	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Styrene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Isopropylbenzene	0.0781	0.0762		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Bromoform	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM



Client: O'Neill Service Group

Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco UDS Unanticipated

Lab ID: 1609119-002

Matrix: Soil

Client Sample ID: TANKWEST-160909-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14766

Analyst: EM

1,1,2,2-Tetrachloroethane	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
n-Propylbenzene	0.128	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Bromobenzene	ND	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,3,5-Trimethylbenzene	0.273	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
2-Chlorotoluene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
4-Chlorotoluene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
tert-Butylbenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2,3-Trichloropropane	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2,4-Trichlorobenzene	ND	0.0476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
sec-Butylbenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
4-Isopropyltoluene	0.144	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,3-Dichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,4-Dichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
n-Butylbenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2-Dichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2-Dibromo-3-chloropropane	ND	0.476		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2,4-Trimethylbenzene	0.612	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Hexachlorobutadiene	ND	0.0953		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Naphthalene	0.189	0.0286		mg/Kg-dry	1	9/12/2016 11:37:56 AM
1,2,3-Trichlorobenzene	ND	0.0191		mg/Kg-dry	1	9/12/2016 11:37:56 AM
Surr: Dibromofluoromethane	100	56.5-129		%Rec	1	9/12/2016 11:37:56 AM
Surr: Toluene-d8	99.0	64.3-131		%Rec	1	9/12/2016 11:37:56 AM
Surr: 1-Bromo-4-fluorobenzene	104	63.1-141		%Rec	1	9/12/2016 11:37:56 AM

Sample Moisture (Percent Moisture)

Batch ID: R31668

Analyst: BB

Percent Moisture	9.82	0.500		wt%	1	9/12/2016 9:24:51 AM
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Client: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated
Lab ID: 1609119-003
Client Sample ID: STOCK-160909-1

Collection Date: 9/9/2016 1:20:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14766

Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0626		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chloromethane	ND	0.0626		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Vinyl chloride	ND	0.00209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromomethane	ND	0.0940		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Trichlorofluoromethane (CFC-11)	ND	0.0522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chloroethane	ND	0.0626		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1-Dichloroethene	ND	0.0522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Methylene chloride	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
trans-1,2-Dichloroethene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Methyl tert-butyl ether (MTBE)	ND	0.0522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1-Dichloroethane	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
2,2-Dichloropropane	ND	0.0522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
cis-1,2-Dichloroethene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chloroform	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1,1-Trichloroethane (TCA)	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1-Dichloropropene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Carbon tetrachloride	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dichloroethane (EDC)	ND	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Benzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Trichloroethene (TCE)	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dichloropropane	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromodichloromethane	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Dibromomethane	ND	0.0418		mg/Kg-dry	1	9/12/2016 12:07:14 PM
cis-1,3-Dichloropropene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Toluene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
trans-1,3-Dichloropropylene	ND	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1,2-Trichloroethane	ND	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,3-Dichloropropane	ND	0.0522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Tetrachloroethene (PCE)	0.0626	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Dibromochloromethane	ND	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dibromoethane (EDB)	ND	0.00522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Chlorobenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,1,1,2-Tetrachloroethane	ND	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Ethylbenzene	0.397	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
m,p-Xylene	0.807	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
o-Xylene	0.0219	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Styrene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Isopropylbenzene	0.717	0.0835		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromoform	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM



Client: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated
Lab ID: 1609119-003
Client Sample ID: STOCK-160909-1

Collection Date: 9/9/2016 1:20:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14766

Analyst: EM

1,1,2,2-Tetrachloroethane	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
n-Propylbenzene	1.06	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Bromobenzene	ND	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,3,5-Trimethylbenzene	3.40	0.209	D	mg/Kg-dry	10	9/12/2016 3:03:33 PM
2-Chlorotoluene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
4-Chlorotoluene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
tert-Butylbenzene	0.0731	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2,3-Trichloropropane	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2,4-Trichlorobenzene	ND	0.0522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
sec-Butylbenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
4-Isopropyltoluene	1.36	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,3-Dichlorobenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,4-Dichlorobenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
n-Butylbenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dichlorobenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2-Dibromo-3-chloropropane	ND	0.522		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2,4-Trimethylbenzene	7.10	0.209	D	mg/Kg-dry	10	9/12/2016 3:03:33 PM
Hexachlorobutadiene	ND	0.104		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Naphthalene	1.20	0.0313		mg/Kg-dry	1	9/12/2016 12:07:14 PM
1,2,3-Trichlorobenzene	ND	0.0209		mg/Kg-dry	1	9/12/2016 12:07:14 PM
Surr: Dibromofluoromethane	98.5	56.5-129		%Rec	1	9/12/2016 12:07:14 PM
Surr: Toluene-d8	107	64.3-131		%Rec	1	9/12/2016 12:07:14 PM
Surr: 1-Bromo-4-fluorobenzene	98.8	63.1-141		%Rec	1	9/12/2016 12:07:14 PM

Sample Moisture (Percent Moisture)

Batch ID: R31668

Analyst: BB

Percent Moisture	11.3	0.500		wt%	1	9/12/2016 9:24:51 AM
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Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609119-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/9/2016	RunNo: 31677
Client ID: TANKEAST-160909-1	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598349

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.541	0.0658	1.097	0	49.3	43.5	121				
Chloromethane	0.732	0.0658	1.097	0	66.7	45	130				
Vinyl chloride	0.773	0.00219	1.097	0	70.5	51.2	146				
Bromomethane	0.740	0.0987	1.097	0	67.4	21.3	120				
Trichlorofluoromethane (CFC-11)	0.930	0.0548	1.097	0	84.8	35	131				
Chloroethane	0.897	0.0658	1.097	0	81.8	43.8	117				
1,1-Dichloroethene	1.00	0.0548	1.097	0	91.5	61.9	141				
Methylene chloride	0.943	0.0219	1.097	0.006581	85.4	54.7	142				
trans-1,2-Dichloroethene	1.03	0.0219	1.097	0	93.7	52	136				
Methyl tert-butyl ether (MTBE)	1.08	0.0548	1.097	0	98.6	54.4	132				
1,1-Dichloroethane	1.01	0.0219	1.097	0	91.9	51.8	141				
2,2-Dichloropropane	0.140	0.0548	1.097	0	12.7	36	123				S
cis-1,2-Dichloroethene	0.981	0.0219	1.097	0	89.4	58.6	136				
Chloroform	0.992	0.0219	1.097	0	90.4	53.2	129				
1,1,1-Trichloroethane (TCA)	1.02	0.0219	1.097	0	92.6	58.3	145				
1,1-Dichloropropene	1.02	0.0219	1.097	0	93.4	55.1	138				
Carbon tetrachloride	1.19	0.0219	1.097	0	108	53.3	144				
1,2-Dichloroethane (EDC)	0.977	0.0329	1.097	0	89.0	51.3	139				
Benzene	0.966	0.0219	1.097	0	88.1	63.5	133				
Trichloroethene (TCE)	1.02	0.0219	1.097	0	92.7	68.6	132				
1,2-Dichloropropane	1.00	0.0219	1.097	0	91.3	59	136				
Bromodichloromethane	1.06	0.0219	1.097	0	96.8	50.7	141				
Dibromomethane	1.06	0.0439	1.097	0	97.1	50.6	137				
cis-1,3-Dichloropropene	0.866	0.0219	1.097	0	79.0	50.4	138				
Toluene	1.03	0.0219	1.097	0.02029	91.7	63.4	132				
trans-1,3-Dichloropropylene	0.923	0.0329	1.097	0	84.1	44.1	147				
1,1,2-Trichloroethane	1.07	0.0329	1.097	0	97.3	51.6	137				
1,3-Dichloropropane	1.03	0.0548	1.097	0	94.2	53.1	134				
Tetrachloroethene (PCE)	1.01	0.0219	1.097	0.01919	90.5	35.6	158				
Dibromochloromethane	1.08	0.0329	1.097	0	98.8	55.3	140				
1,2-Dibromoethane (EDB)	1.01	0.00548	1.097	0	92.3	50.4	136				



Date: 9/12/2016

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609119-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: TANKEAST-160909-1	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598349							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chlorobenzene	0.970	0.0219	1.097	0	88.4	60	133				
1,1,1,2-Tetrachloroethane	1.08	0.0329	1.097	0	98.5	53.1	142				
Ethylbenzene	1.10	0.0329	1.097	0.1267	89.1	54.5	134				
m,p-Xylene	2.24	0.0219	2.194	0.2265	91.8	53.1	132				
o-Xylene	1.10	0.0219	1.097	0.1080	90.4	53.3	139				
Styrene	1.01	0.0219	1.097	0	91.8	51.1	132				
Isopropylbenzene	1.24	0.0877	1.097	0.1437	100	58.9	138				
Bromoform	1.10	0.0219	1.097	0	100	57.9	130				
1,1,1,2,2-Tetrachloroethane	2.64	0.0219	1.097	0	241	51.9	131				S
n-Propylbenzene	1.25	0.0219	1.097	0.2643	90.0	53.6	140				
Bromobenzene	1.06	0.0329	1.097	0	96.3	54.2	140				
1,3,5-Trimethylbenzene	1.65	0.0219	1.097	0.6301	92.7	51.8	136				
2-Chlorotoluene	0.987	0.0219	1.097	0	89.9	51.6	136				
4-Chlorotoluene	1.09	0.0219	1.097	0	99.0	50.1	139				
tert-Butylbenzene	1.04	0.0219	1.097	0.02303	93.1	50.5	135				
1,2,3-Trichloropropane	0.927	0.0219	1.097	0	84.5	50.5	131				
1,2,4-Trichlorobenzene	1.12	0.0548	1.097	0	102	50.8	130				
sec-Butylbenzene	1.24	0.0219	1.097	0.2199	92.8	52.6	141				
4-Isopropyltoluene	1.53	0.0219	1.097	0.4815	95.8	52.9	134				
1,3-Dichlorobenzene	1.01	0.0219	1.097	0	91.7	52.6	131				
1,4-Dichlorobenzene	0.968	0.0219	1.097	0	88.3	52.9	129				
n-Butylbenzene	1.70	0.0219	1.097	0	155	52.6	130				S
1,2-Dichlorobenzene	1.03	0.0219	1.097	0	93.7	55.8	129				
1,2-Dibromo-3-chloropropane	1.65	0.548	1.097	0	151	40.5	131				S
1,2,4-Trimethylbenzene	2.90	0.0219	1.097	1.770	103	50.6	137				
Hexachlorobutadiene	1.16	0.110	1.097	0	105	40.6	158				
Naphthalene	1.73	0.0329	1.097	0.3773	123	52.3	124				
1,2,3-Trichlorobenzene	1.14	0.0219	1.097	0	104	54.4	124				
Surr: Dibromofluoromethane	1.40		1.371		102	56.5	129				
Surr: Toluene-d8	1.40		1.371		102	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.46		1.371		107	63.1	141				

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609119-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: TANKEAST-160909-1	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598349							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

S - Outlying QC recoveries were observed. The method is in control as indicated by the LCS.

Sample ID 1609119-001BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: TANKEAST-160909-1	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598350							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.516	0.0658	1.097	0	47.0	43.5	121	0.5413	4.77	30	
Chloromethane	0.722	0.0658	1.097	0	65.8	45	130	0.7321	1.36	30	
Vinyl chloride	0.770	0.00219	1.097	0	70.2	51.2	146	0.7732	0.355	30	
Bromomethane	0.744	0.0987	1.097	0	67.8	21.3	120	0.7398	0.518	30	
Trichlorofluoromethane (CFC-11)	0.883	0.0548	1.097	0	80.5	35	131	0.9301	5.20	30	
Chloroethane	0.877	0.0658	1.097	0	79.9	43.8	117	0.8972	2.29	30	
1,1-Dichloroethene	0.988	0.0548	1.097	0	90.0	61.9	141	1.004	1.65	30	
Methylene chloride	0.959	0.0219	1.097	0.006581	86.8	54.7	142	0.9432	1.61	30	
trans-1,2-Dichloroethene	1.01	0.0219	1.097	0	91.6	52	136	1.028	2.21	30	
Methyl tert-butyl ether (MTBE)	1.07	0.0548	1.097	0	97.9	54.4	132	1.082	0.763	30	
1,1-Dichloroethane	1.00	0.0219	1.097	0	91.5	51.8	141	1.008	0.436	30	
2,2-Dichloropropane	0.128	0.0548	1.097	0	11.7	36	123	0.1398	8.59	30	S
cis-1,2-Dichloroethene	0.980	0.0219	1.097	0	89.3	58.6	136	0.9811	0.112	30	
Chloroform	0.985	0.0219	1.097	0	89.8	53.2	129	0.9920	0.721	30	
1,1,1-Trichloroethane (TCA)	1.01	0.0219	1.097	0	92.2	58.3	145	1.016	0.433	30	
1,1-Dichloropropene	1.02	0.0219	1.097	0	92.9	55.1	138	1.025	0.590	30	
Carbon tetrachloride	1.18	0.0219	1.097	0	108	53.3	144	1.189	0.694	30	
1,2-Dichloroethane (EDC)	0.958	0.0329	1.097	0	87.3	51.3	139	0.9767	1.93	30	
Benzene	0.957	0.0219	1.097	0	87.3	63.5	133	0.9663	0.912	30	
Trichloroethene (TCE)	1.01	0.0219	1.097	0	91.6	68.6	132	1.017	1.14	30	
1,2-Dichloropropane	0.985	0.0219	1.097	0	89.8	59	136	1.002	1.66	30	
Bromodichloromethane	1.06	0.0219	1.097	0	97.0	50.7	141	1.062	0.258	30	
Dibromomethane	1.08	0.0439	1.097	0	98.1	50.6	137	1.065	1.02	30	
cis-1,3-Dichloropropene	0.842	0.0219	1.097	0	76.7	50.4	138	0.8665	2.89	30	

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609119-001BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/9/2016	RunNo: 31677
Client ID: TANKEAST-160909-1	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598350

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	1.03	0.0219	1.097	0.02029	92.1	63.4	132	1.027	0.373	30	
trans-1,3-Dichloropropylene	0.880	0.0329	1.097	0	80.2	44.1	147	0.9229	4.74	30	
1,1,2-Trichloroethane	1.08	0.0329	1.097	0	98.3	51.6	137	1.067	1.07	30	
1,3-Dichloropropane	1.03	0.0548	1.097	0	94.3	53.1	134	1.033	0.106	30	
Tetrachloroethene (PCE)	1.03	0.0219	1.097	0.01919	92.5	35.6	158	1.012	2.14	30	
Dibromochloromethane	1.10	0.0329	1.097	0	100	55.3	140	1.084	1.36	30	
1,2-Dibromoethane (EDB)	1.02	0.00548	1.097	0	92.6	50.4	136	1.012	0.324	30	
Chlorobenzene	0.990	0.0219	1.097	0	90.3	60	133	0.9701	2.07	30	
1,1,1,2-Tetrachloroethane	1.10	0.0329	1.097	0	101	53.1	142	1.080	2.16	30	
Ethylbenzene	1.12	0.0329	1.097	0.1267	90.8	54.5	134	1.104	1.63	30	
m,p-Xylene	2.29	0.0219	2.194	0.2265	94.2	53.1	132	2.241	2.27	30	
o-Xylene	1.11	0.0219	1.097	0.1080	91.2	53.3	139	1.100	0.795	30	
Styrene	1.02	0.0219	1.097	0	93.2	51.1	132	1.007	1.51	30	
Isopropylbenzene	1.27	0.0877	1.097	0.1437	103	58.9	138	1.240	2.36	30	
Bromoform	1.14	0.0219	1.097	0	104	57.9	130	1.097	3.54	30	
1,1,2,2-Tetrachloroethane	2.90	0.0219	1.097	0	264	51.9	131	2.645	9.24	30	S
n-Propylbenzene	1.29	0.0219	1.097	0.2643	93.4	53.6	140	1.251	2.98	30	
Bromobenzene	1.09	0.0329	1.097	0	99.5	54.2	140	1.056	3.32	30	
1,3,5-Trimethylbenzene	1.71	0.0219	1.097	0.6301	98.7	51.8	136	1.647	3.92	30	
2-Chlorotoluene	0.999	0.0219	1.097	0	91.0	51.6	136	0.9866	1.22	30	
4-Chlorotoluene	1.10	0.0219	1.097	0	101	50.1	139	1.086	1.60	30	
tert-Butylbenzene	1.06	0.0219	1.097	0.02303	94.6	50.5	135	1.044	1.62	30	
1,2,3-Trichloropropane	0.883	0.0219	1.097	0	80.5	50.5	131	0.9268	4.79	30	
1,2,4-Trichlorobenzene	1.15	0.0548	1.097	0	105	50.8	130	1.124	2.74	30	
sec-Butylbenzene	1.28	0.0219	1.097	0.2199	96.2	52.6	141	1.238	2.97	30	
4-Isopropyltoluene	1.59	0.0219	1.097	0.4815	101	52.9	134	1.533	3.55	30	
1,3-Dichlorobenzene	1.02	0.0219	1.097	0	92.9	52.6	131	1.006	1.35	30	
1,4-Dichlorobenzene	0.995	0.0219	1.097	0	90.7	52.9	129	0.9685	2.68	30	
n-Butylbenzene	1.75	0.0219	1.097	0	160	52.6	130	1.697	3.21	30	S
1,2-Dichlorobenzene	1.04	0.0219	1.097	0	95.1	55.8	129	1.028	1.54	30	
1,2-Dibromo-3-chloropropane	1.70	0.548	1.097	0	155	40.5	131	1.652	2.88	30	S

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1609119-001BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: TANKEAST-160909-1	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598350							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	2.99	0.0219	1.097	1.770	112	50.6	137	2.896	3.33	30	
Hexachlorobutadiene	1.22	0.110	1.097	0	111	40.6	158	1.157	4.99	30	
Naphthalene	1.77	0.0329	1.097	0.3773	127	52.3	124	1.729	2.13	30	S
1,2,3-Trichlorobenzene	1.19	0.0219	1.097	0	108	54.4	124	1.142	3.81	30	
Surr: Dibromofluoromethane	1.42		1.371		104	56.5	129		0		
Surr: Toluene-d8	1.40		1.371		102	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.47		1.371		108	63.1	141		0		

NOTES:

S - Outlying QC recoveries were observed. The method is in control as indicated by the LCS.

Sample ID LCS-14766	SampType: LCS	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: LCSS	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598354							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	1.30	0.0600	1.000	0	130	34.5	141				
Chloromethane	1.07	0.0600	1.000	0	107	38.8	132				
Vinyl chloride	1.07	0.00200	1.000	0	107	44	142				
Bromomethane	0.992	0.0900	1.000	0	99.2	40.9	157				
Trichlorofluoromethane (CFC-11)	0.917	0.0500	1.000	0	91.7	42.9	147				
Chloroethane	0.960	0.0600	1.000	0	96.0	37.1	144				
1,1-Dichloroethene	1.15	0.0500	1.000	0	115	49.7	142				
Methylene chloride	0.978	0.0200	1.000	0	97.8	46.3	140				
trans-1,2-Dichloroethene	1.12	0.0200	1.000	0	112	68	130				
Methyl tert-butyl ether (MTBE)	1.08	0.0500	1.000	0	108	59.1	138				
1,1-Dichloroethane	1.04	0.0200	1.000	0	104	61.9	137				
2,2-Dichloropropane	1.26	0.0500	1.000	0	126	28.1	149				
cis-1,2-Dichloroethene	1.06	0.0200	1.000	0	106	71.3	135				
Chloroform	1.04	0.0200	1.000	0	104	67.5	129				
1,1,1-Trichloroethane (TCA)	1.11	0.0200	1.000	0	111	69	132				
1,1-Dichloropropene	1.15	0.0200	1.000	0	115	72.7	131				
Carbon tetrachloride	1.16	0.0200	1.000	0	116	63.4	137				

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-14766	SampType:	LCS	Units:	mg/Kg	Prep Date:	9/9/2016	RunNo:	31677		
Client ID:	LCSS	Batch ID:	14766	Analysis Date:	9/12/2016	SeqNo:	598354				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	0.989	0.0300	1.000	0	98.9	61.9	136				
Benzene	1.01	0.0200	1.000	0	101	64.3	133				
Trichloroethene (TCE)	1.10	0.0200	1.000	0	110	65.5	137				
1,2-Dichloropropane	1.03	0.0200	1.000	0	103	63.2	142				
Bromodichloromethane	1.11	0.0200	1.000	0	111	73.2	131				
Dibromomethane	1.10	0.0400	1.000	0	110	70	130				
cis-1,3-Dichloropropene	1.19	0.0200	1.000	0	119	59.1	143				
Toluene	1.03	0.0200	1.000	0	103	67.3	138				
trans-1,3-Dichloropropylene	1.24	0.0300	1.000	0	124	49.2	149				
1,1,2-Trichloroethane	1.01	0.0300	1.000	0	101	74.5	129				
1,3-Dichloropropane	1.02	0.0500	1.000	0	102	70	130				
Tetrachloroethene (PCE)	1.07	0.0200	1.000	0	107	52.7	150				
Dibromochloromethane	1.10	0.0300	1.000	0	110	70.6	144				
1,2-Dibromoethane (EDB)	1.01	0.00500	1.000	0	101	70	130				
Chlorobenzene	1.02	0.0200	1.000	0	102	76.1	123				
1,1,1,2-Tetrachloroethane	1.12	0.0300	1.000	0	112	65.9	141				
Ethylbenzene	1.03	0.0300	1.000	0	103	74	129				
m,p-Xylene	2.14	0.0200	2.000	0	107	70	124				
o-Xylene	1.03	0.0200	1.000	0	103	72.7	124				
Styrene	1.03	0.0200	1.000	0	103	76.8	130				
Isopropylbenzene	1.14	0.0800	1.000	0	114	70	130				
Bromoform	1.15	0.0200	1.000	0	115	67	154				
1,1,2,2-Tetrachloroethane	1.00	0.0200	1.000	0	100	60	130				
n-Propylbenzene	1.04	0.0200	1.000	0	104	74.8	125				
Bromobenzene	1.08	0.0300	1.000	0	108	49.2	144				
1,3,5-Trimethylbenzene	1.04	0.0200	1.000	0	104	74.6	123				
2-Chlorotoluene	1.02	0.0200	1.000	0	102	76.7	129				
4-Chlorotoluene	1.04	0.0200	1.000	0	104	77.5	125				
tert-Butylbenzene	1.05	0.0200	1.000	0	105	66.2	130				
1,2,3-Trichloropropane	1.03	0.0200	1.000	0	103	67.9	136				
1,2,4-Trichlorobenzene	1.16	0.0500	1.000	0	116	62.6	143				

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14766	SampType: LCS	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: LCSS	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598354							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

sec-Butylbenzene	1.06	0.0200	1.000	0	106	75.6	133				
4-Isopropyltoluene	1.07	0.0200	1.000	0	107	76.8	131				
1,3-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	128				
1,4-Dichlorobenzene	0.996	0.0200	1.000	0	99.6	72.6	126				
n-Butylbenzene	1.11	0.0200	1.000	0	111	65.3	136				
1,2-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	126				
1,2-Dibromo-3-chloropropane	1.20	0.500	1.000	0	120	61.2	139				
1,2,4-Trimethylbenzene	1.04	0.0200	1.000	0	104	77.5	129				
Hexachlorobutadiene	1.13	0.100	1.000	0	113	42	151				
Naphthalene	1.19	0.0300	1.000	0	119	62.3	134				
1,2,3-Trichlorobenzene	1.10	0.0200	1.000	0	110	54.8	143				
Surr: Dibromofluoromethane	1.30		1.250		104	56.5	129				
Surr: Toluene-d8	1.24		1.250		99.1	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.32		1.250		105	63.1	141				

Sample ID MB-14766	SampType: MBLK	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: MBLKS	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598353							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0600									
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14766	SampType: MBLK	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31677
Client ID: MBLKS	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598353

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									

Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14766	SampType: MBLK	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31677							
Client ID: MBLKS	Batch ID: 14766		Analysis Date: 9/12/2016	SeqNo: 598353							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.20		1.250		96.3	56.5	129				
Surr: Toluene-d8	1.25		1.250		100	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.27		1.250		102	63.1	141				



Work Order: 1609119
CLIENT: O'Neill Service Group
Project: N105-Pellco UDS Unanticipated

QC SUMMARY REPORT

Sample Moisture (Percent Moisture)

Sample ID 1609115-001ADUP	SampType: DUP	Units: wt%	Prep Date: 9/12/2016	RunNo: 31668							
Client ID: BATCH	Batch ID: R31668	Analysis Date: 9/12/2016	SeqNo: 597947								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	13.8	0.500						13.89	0.810	20	

Client Name: **ONEILL**

 Work Order Number: **1609119**

 Logged by: **Clare Griggs**

 Date Received: **9/9/2016 3:50:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
- Samples received straight from field.**
7. Were all items received at a temperature of >0°C to 10.0°C* Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	26.1
Sample	27.0

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont Analytical

Chain of Custody Record and Laboratory Services Agreement

3600 Fremont Ave N. Tel: 206-352-3790
Seattle, WA 98103 Fax: 206-352-7178

Date: 9/9/16

Laboratory Project No (internal): 1009119
Page: 1 of: 1

Page 22 of 22

Client: OSG
Address: _____
City, State, Zip: _____
Telephone: _____ Fax: _____

Project Name: N105-Bellco UDS Unanticipated
Project No: 1754 Collected by: (Signature)
Location: _____
Report To (PM): _____
PM Email: _____

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytes													Comments						
				VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SUM)	PCBs (EPA 8082 / 608)	Metals (EPA 8210 / 2008)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)							
1 TANK EAST-160909-1	9/9	1310	S	X																			
2 TANK WEST-160909-1	"	1315	S	X																			
3 STOCK-160909-1	"	1320	S	X																		No metals	
4																							
5																							
6																							
7																							
8																							
9																							
10																							

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite Turn-around times for samples received after 4:00pm will begin on the following business day.

Sample Disposal: Return to Client Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished Date/Time Received Date/Time
 x Eric Lambeth 9/9/16 @ 1550 x (Signature) 9/9/16 1350 15:50
 Relinquished Date/Time Received Date/Time
 x _____ _____ x _____ _____

TAT → SameDay NextDay* 2 Day 3 Day STD

*Please coordinate with the lab in advance

Attachment D.1
UST Contents Sample Analysis and
Chains of Custody



O'Neill Service Group

Eric Laumbattus
17619 NE 67th Court, Suite 100
Redmond, WA 98052

RE: N105-Pellco

Lab ID: 1609114

September 12, 2016

Attention Eric Laumbattus:

Fremont Analytical, Inc. received 2 sample(s) on 9/9/2016 for the analyses presented in the following report.

Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

CLIENT: O'Neill Service Group
Project: N105-Pellco
Lab Order: 1609114

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1609114-001	UDS-Unknown-1	09/09/2016 1:15 PM	09/09/2016 1:39 PM
1609114-002	Trip Blank	09/09/2016 12:15 PM	09/09/2016 1:37 PM

CLIENT: O'Neill Service Group

Project: N105-Pellco

WorkOrder Narrative:

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: O'Neill Service Group

Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco

Lab ID: 1609114-001

Matrix: Wipe

Client Sample ID: UDS-Unknown-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14764

Analyst: NG

Dichlorodifluoromethane (CFC-12)	ND	0.00150	Q	µg/wipe	1	9/9/2016 3:43:42 PM
Chloromethane	0.00338	0.00150		µg/wipe	1	9/9/2016 3:43:42 PM
Vinyl chloride	ND	0.0000500		µg/wipe	1	9/9/2016 3:43:42 PM
Bromomethane	ND	0.00225	Q	µg/wipe	1	9/9/2016 3:43:42 PM
Trichlorofluoromethane (CFC-11)	ND	0.00125		µg/wipe	1	9/9/2016 3:43:42 PM
Chloroethane	ND	0.00150		µg/wipe	1	9/9/2016 3:43:42 PM
1,1-Dichloroethene	ND	0.00125		µg/wipe	1	9/9/2016 3:43:42 PM
Methylene chloride	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
trans-1,2-Dichloroethene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Methyl tert-butyl ether (MTBE)	ND	0.00125		µg/wipe	1	9/9/2016 3:43:42 PM
1,1-Dichloroethane	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
2,2-Dichloropropane	ND	0.00125		µg/wipe	1	9/9/2016 3:43:42 PM
cis-1,2-Dichloroethene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Chloroform	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,1,1-Trichloroethane (TCA)	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,1-Dichloropropene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Carbon tetrachloride	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,2-Dichloroethane (EDC)	ND	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
Benzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Trichloroethene (TCE)	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,2-Dichloropropane	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Bromodichloromethane	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Dibromomethane	ND	0.00100		µg/wipe	1	9/9/2016 3:43:42 PM
cis-1,3-Dichloropropene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Toluene	0.00565	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
trans-1,3-Dichloropropylene	ND	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
1,1,2-Trichloroethane	ND	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
1,3-Dichloropropane	ND	0.00125		µg/wipe	1	9/9/2016 3:43:42 PM
Tetrachloroethene (PCE)	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Dibromochloromethane	ND	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
1,2-Dibromoethane (EDB)	ND	0.000125		µg/wipe	1	9/9/2016 3:43:42 PM
Chlorobenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,1,1,2-Tetrachloroethane	ND	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
Ethylbenzene	0.00385	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
m,p-Xylene	0.0155	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
o-Xylene	0.00640	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Styrene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Isopropylbenzene	0.00203	0.00200		µg/wipe	1	9/9/2016 3:43:42 PM
Bromoform	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM



Client: O'Neill Service Group

Collection Date: 9/9/2016 1:15:00 PM

Project: N105-Pellco

Lab ID: 1609114-001

Matrix: Wipe

Client Sample ID: UDS-Unknown-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 14764

Analyst: NG

1,1,2,2-Tetrachloroethane	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
n-Propylbenzene	0.00345	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Bromobenzene	ND	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
1,3,5-Trimethylbenzene	0.00772	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
2-Chlorotoluene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
4-Chlorotoluene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
tert-Butylbenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,2,3-Trichloropropane	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,2,4-Trichlorobenzene	ND	0.00125		µg/wipe	1	9/9/2016 3:43:42 PM
sec-Butylbenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
4-Isopropyltoluene	0.00203	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,3-Dichlorobenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,4-Dichlorobenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
n-Butylbenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,2-Dichlorobenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
1,2-Dibromo-3-chloropropane	ND	0.0125		µg/wipe	1	9/9/2016 3:43:42 PM
1,2,4-Trimethylbenzene	0.0218	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Hexachlorobutadiene	ND	0.00250		µg/wipe	1	9/9/2016 3:43:42 PM
Naphthalene	0.0101	0.000750		µg/wipe	1	9/9/2016 3:43:42 PM
1,2,3-Trichlorobenzene	ND	0.000500		µg/wipe	1	9/9/2016 3:43:42 PM
Surr: Dibromofluoromethane	91.7	56.5-129		%Rec	1	9/9/2016 3:43:42 PM
Surr: Toluene-d8	101	64.3-131		%Rec	1	9/9/2016 3:43:42 PM
Surr: 1-Bromo-4-fluorobenzene	103	63.1-141		%Rec	1	9/9/2016 3:43:42 PM

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Work Order: 1609114
CLIENT: O'Neill Service Group
Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-14764	SampType:	LCS	Units:	mg/Kg	Prep Date:	9/9/2016	RunNo:	31661		
Client ID:	LCSS	Batch ID:	14764	Analysis Date:	9/9/2016	SeqNo:	598116				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.322	0.0600	1.000	0	32.2	34.5	141				SQ
Chloromethane	0.852	0.0600	1.000	0	85.2	38.8	132				
Vinyl chloride	0.768	0.00200	1.000	0	76.8	44	142				
Bromomethane	0.607	0.0900	1.000	0	60.7	40.9	157				Q
Trichlorofluoromethane (CFC-11)	0.533	0.0500	1.000	0	53.3	42.9	147				
Chloroethane	0.441	0.0600	1.000	0	44.1	37.1	144				
1,1-Dichloroethene	0.684	0.0500	1.000	0	68.4	49.7	142				
Methylene chloride	0.686	0.0200	1.000	0	68.6	46.3	140				
trans-1,2-Dichloroethene	0.842	0.0200	1.000	0	84.2	68	130				
Methyl tert-butyl ether (MTBE)	0.876	0.0500	1.000	0	87.6	59.1	138				
1,1-Dichloroethane	0.688	0.0200	1.000	0	68.8	61.9	137				
2,2-Dichloropropane	1.35	0.0500	1.000	0	135	28.1	149				
cis-1,2-Dichloroethene	0.908	0.0200	1.000	0	90.8	71.3	135				
Chloroform	0.865	0.0200	1.000	0	86.5	67.5	129				
1,1,1-Trichloroethane (TCA)	0.848	0.0200	1.000	0	84.9	69	132				
1,1-Dichloropropene	0.895	0.0200	1.000	0	89.5	72.7	131				
Carbon tetrachloride	0.796	0.0200	1.000	0	79.6	63.4	137				
1,2-Dichloroethane (EDC)	0.859	0.0300	1.000	0	85.9	61.9	136				
Benzene	0.922	0.0200	1.000	0	92.2	64.3	133				
Trichloroethene (TCE)	0.889	0.0200	1.000	0	88.9	65.5	137				
1,2-Dichloropropane	0.868	0.0200	1.000	0	86.8	63.2	142				
Bromodichloromethane	0.790	0.0200	1.000	0	79.0	73.2	131				
Dibromomethane	0.811	0.0400	1.000	0	81.1	70	130				
cis-1,3-Dichloropropene	0.882	0.0200	1.000	0	88.2	59.1	143				
Toluene	0.872	0.0200	1.000	0	87.2	67.3	138				
trans-1,3-Dichloropropylene	0.854	0.0300	1.000	0	85.4	49.2	149				
1,1,2-Trichloroethane	0.830	0.0300	1.000	0	83.0	74.5	129				
1,3-Dichloropropane	0.830	0.0500	1.000	0	83.0	70	130				
Tetrachloroethene (PCE)	0.887	0.0200	1.000	0	88.7	52.7	150				
Dibromochloromethane	0.763	0.0300	1.000	0	76.2	70.6	144				
1,2-Dibromoethane (EDB)	0.814	0.00500	1.000	0	81.4	70	130				

Work Order: 1609114
 CLIENT: O'Neill Service Group
 Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-14764	SampType:	LCS	Units:	mg/Kg	Prep Date:	9/9/2016	RunNo:	31661		
Client ID:	LCSS	Batch ID:	14764	Analysis Date:	9/9/2016	SeqNo:	598116				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	0.899	0.0200	1.000	0	89.9	76.1	123				
1,1,1,2-Tetrachloroethane	0.865	0.0300	1.000	0	86.5	65.9	141				
Ethylbenzene	0.919	0.0300	1.000	0	91.9	74	129				
m,p-Xylene	1.77	0.0200	2.000	0	88.5	70	124				
o-Xylene	0.868	0.0200	1.000	0	86.8	72.7	124				
Styrene	0.860	0.0200	1.000	0	86.1	76.8	130				
Isopropylbenzene	0.885	0.0800	1.000	0	88.4	70	130				
Bromoform	0.762	0.0200	1.000	0	76.2	67	154				
1,1,2,2-Tetrachloroethane	0.755	0.0200	1.000	0	75.4	60	130				
n-Propylbenzene	0.892	0.0200	1.000	0	89.2	74.8	125				
Bromobenzene	0.858	0.0300	1.000	0	85.8	49.2	144				
1,3,5-Trimethylbenzene	0.888	0.0200	1.000	0	88.8	74.6	123				
2-Chlorotoluene	0.858	0.0200	1.000	0	85.8	76.7	129				
4-Chlorotoluene	0.863	0.0200	1.000	0	86.3	77.5	125				
tert-Butylbenzene	0.882	0.0200	1.000	0	88.2	66.2	130				
1,2,3-Trichloropropane	0.780	0.0200	1.000	0	78.0	67.9	136				
1,2,4-Trichlorobenzene	1.10	0.0500	1.000	0	110	62.6	143				
sec-Butylbenzene	0.891	0.0200	1.000	0	89.1	75.6	133				
4-Isopropyltoluene	0.921	0.0200	1.000	0	92.1	76.8	131				
1,3-Dichlorobenzene	0.940	0.0200	1.000	0	94.0	72.8	128				
1,4-Dichlorobenzene	0.926	0.0200	1.000	0	92.6	72.6	126				
n-Butylbenzene	1.07	0.0200	1.000	0	107	65.3	136				
1,2-Dichlorobenzene	0.926	0.0200	1.000	0	92.6	72.8	126				
1,2-Dibromo-3-chloropropane	0.810	0.500	1.000	0	81.0	61.2	139				
1,2,4-Trimethylbenzene	0.890	0.0200	1.000	0	89.0	77.5	129				
Hexachlorobutadiene	1.07	0.100	1.000	0	107	42	151				
Naphthalene	1.04	0.0300	1.000	0	104	62.3	134				
1,2,3-Trichlorobenzene	1.01	0.0200	1.000	0	101	54.8	143				
Surr: Dibromofluoromethane	1.16		1.250		93.0	56.5	129				
Surr: Toluene-d8	1.26		1.250		101	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.21		1.250		96.6	63.1	141				

Work Order: 1609114
CLIENT: O'Neill Service Group
Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-14764	SampType: LCS	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31661							
Client ID: LCSS	Batch ID: 14764		Analysis Date: 9/9/2016	SeqNo: 598116							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

- S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.
- Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID LCSD-14764	SampType: LCSD	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31661							
Client ID: LCSS02	Batch ID: 14764		Analysis Date: 9/9/2016	SeqNo: 598117							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.394	0.0600	1.000	0	39.4	34.5	141	0.3215	20.1	20	RQ
Chloromethane	1.08	0.0600	1.000	0	108	38.8	132	0.8520	23.7	20	R
Vinyl chloride	0.960	0.00200	1.000	0	96.0	44	142	0.7675	22.2	20	R
Bromomethane	0.693	0.0900	1.000	0	69.3	40.9	157	0.6070	13.2	20	Q
Trichlorofluoromethane (CFC-11)	0.517	0.0500	1.000	0	51.6	42.9	147	0.5330	3.14	20	
Chloroethane	0.503	0.0600	1.000	0	50.3	37.1	144	0.4405	13.2	20	
1,1-Dichloroethene	0.747	0.0500	1.000	0	74.7	49.7	142	0.6840	8.81	20	
Methylene chloride	0.854	0.0200	1.000	0	85.4	57.6	135	0.6860	21.9	20	R
trans-1,2-Dichloroethene	0.989	0.0200	1.000	0	98.9	68	130	0.8415	16.1	20	
Methyl tert-butyl ether (MTBE)	1.10	0.0500	1.000	0	110	59.1	138	0.8765	22.6	20	R
1,1-Dichloroethane	0.792	0.0200	1.000	0	79.2	61.9	137	0.6885	13.9	20	
2,2-Dichloropropane	1.36	0.0500	1.000	0	136	28.1	149	1.350	0.775	20	
cis-1,2-Dichloroethene	0.959	0.0200	1.000	0	95.9	71.6	123	0.9075	5.47	20	
Chloroform	0.917	0.0200	1.000	0	91.7	67.5	129	0.8650	5.84	20	
1,1,1-Trichloroethane (TCA)	0.898	0.0200	1.000	0	89.8	69	132	0.8485	5.61	20	
1,1-Dichloropropene	0.944	0.0200	1.000	0	94.4	72.7	131	0.8950	5.33	20	
Carbon tetrachloride	0.860	0.0200	1.000	0	86.1	63.4	137	0.7955	7.85	20	
1,2-Dichloroethane (EDC)	0.908	0.0300	1.000	0	90.8	61.9	136	0.8590	5.49	20	
Benzene	0.983	0.0200	1.000	0	98.2	74.6	124	0.9225	6.30	20	
Trichloroethene (TCE)	0.946	0.0200	1.000	0	94.6	65.5	137	0.8890	6.21	20	
1,2-Dichloropropane	0.946	0.0200	1.000	0	94.6	63.2	142	0.8675	8.71	20	
Bromodichloromethane	0.872	0.0200	1.000	0	87.2	73.2	131	0.7895	9.87	20	
Dibromomethane	0.902	0.0400	1.000	0	90.2	70	130	0.8105	10.6	20	

Work Order: 1609114
 CLIENT: O'Neill Service Group
 Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCSD-14764	SampType:	LCSD	Units:	mg/Kg	Prep Date:	9/9/2016	RunNo:	31661		
Client ID:	LCSS02	Batch ID:	14764	Analysis Date:	9/9/2016	SeqNo:	598117				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	0.967	0.0200	1.000	0	96.7	59.1	143	0.8820	9.19	20	
Toluene	0.952	0.0200	1.000	0	95.2	67.3	138	0.8720	8.77	20	
trans-1,3-Dichloropropylene	0.957	0.0300	1.000	0	95.7	49.2	149	0.8540	11.4	20	
1,1,2-Trichloroethane	0.930	0.0300	1.000	0	93.0	74.5	129	0.8295	11.5	20	
1,3-Dichloropropane	0.928	0.0500	1.000	0	92.8	70	130	0.8305	11.0	20	
Tetrachloroethene (PCE)	0.981	0.0200	1.000	0	98.1	52.7	150	0.8870	10.1	20	
Dibromochloromethane	0.863	0.0300	1.000	0	86.3	70.6	144	0.7625	12.4	20	
1,2-Dibromoethane (EDB)	0.928	0.00500	1.000	0	92.8	70	130	0.8145	13.0	20	
Chlorobenzene	1.01	0.0200	1.000	0	101	76.1	123	0.8990	11.4	20	
1,1,1,2-Tetrachloroethane	0.975	0.0300	1.000	0	97.5	65.9	141	0.8650	12.0	20	
Ethylbenzene	1.01	0.0300	1.000	0	101	74	129	0.9190	9.24	20	
m,p-Xylene	2.03	0.0200	2.000	0	102	70	124	1.770	13.8	20	
o-Xylene	1.01	0.0200	1.000	0	101	72.7	124	0.8680	15.4	20	
Styrene	1.01	0.0200	1.000	0	101	76.8	130	0.8605	16.1	20	
Isopropylbenzene	1.03	0.0800	1.000	0	103	70	130	0.8845	15.2	20	
Bromoform	0.924	0.0200	1.000	0	92.4	67	154	0.7615	19.3	20	
1,1,2,2-Tetrachloroethane	0.945	0.0200	1.000	0	94.5	60	130	0.7545	22.4	20	R
n-Propylbenzene	1.04	0.0200	1.000	0	104	74.8	125	0.8915	14.9	20	
Bromobenzene	1.01	0.0300	1.000	0	101	49.2	144	0.8575	16.1	20	
1,3,5-Trimethylbenzene	1.03	0.0200	1.000	0	103	74.6	123	0.8875	14.8	20	
2-Chlorotoluene	1.01	0.0200	1.000	0	101	76.7	129	0.8575	16.5	20	
4-Chlorotoluene	1.02	0.0200	1.000	0	102	77.5	125	0.8630	16.3	20	
tert-Butylbenzene	1.02	0.0200	1.000	0	102	66.2	130	0.8820	14.4	20	
1,2,3-Trichloropropane	0.951	0.0200	1.000	0	95.1	67.9	136	0.7795	19.8	20	
1,2,4-Trichlorobenzene	1.20	0.0500	1.000	0	120	62.6	143	1.102	8.72	20	
sec-Butylbenzene	1.04	0.0200	1.000	0	104	75.6	133	0.8910	15.2	20	
4-Isopropyltoluene	1.05	0.0200	1.000	0	105	76.8	131	0.9210	13.2	20	
1,3-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	128	0.9405	9.52	20	
1,4-Dichlorobenzene	1.01	0.0200	1.000	0	101	72.6	126	0.9255	8.29	20	
n-Butylbenzene	1.12	0.0200	1.000	0	112	65.3	136	1.074	4.60	20	
1,2-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.8	126	0.9255	10.4	20	

Work Order: 1609114
CLIENT: O'Neill Service Group
Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCSD-14764	SampType: LCSD	Units: mg/Kg				Prep Date: 9/9/2016	RunNo: 31661				
Client ID: LCSS02	Batch ID: 14764					Analysis Date: 9/9/2016	SeqNo: 598117				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	0.920	0.500	1.000	0	92.0	61.2	139	0.8100	12.7	20	
1,2,4-Trimethylbenzene	1.03	0.0200	1.000	0	103	77.5	129	0.8895	14.9	20	
Hexachlorobutadiene	1.14	0.100	1.000	0	114	42	151	1.068	6.26	20	
Naphthalene	1.16	0.0300	1.000	0	116	62.3	134	1.038	11.4	20	
1,2,3-Trichlorobenzene	1.14	0.0200	1.000	0	114	54.8	143	1.008	12.2	20	
Surr: Dibromofluoromethane	1.10		1.250		88.3	56.5	129		0		
Surr: Toluene-d8	1.27		1.250		101	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.27		1.250		102	63.1	141		0		

NOTES:

R - High RPD observed, spike recoveries are within range.

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-14764	SampType: MBLK	Units: mg/Kg				Prep Date: 9/9/2016	RunNo: 31661				
Client ID: MBLKS	Batch ID: 14764					Analysis Date: 9/9/2016	SeqNo: 598118				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									Q
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									

Work Order: 1609114
CLIENT: O'Neill Service Group
Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14764	SampType: MBLK	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31661							
Client ID: MBLKS	Batch ID: 14764		Analysis Date: 9/9/2016	SeqNo: 598118							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									

Work Order: 1609114
CLIENT: O'Neill Service Group
Project: N105-Pellco

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-14764	SampType: MBLK	Units: mg/Kg	Prep Date: 9/9/2016	RunNo: 31661							
Client ID: MBLKS	Batch ID: 14764		Analysis Date: 9/9/2016	SeqNo: 598118							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.09		1.250		86.9	56.5	129				
Surr: Toluene-d8	1.20		1.250		95.9	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.20		1.250		96.2	63.1	141				

NOTES:

Q - Indicates an analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client Name: **ONEILL**

Work Order Number: **1609114**

Logged by: **Clare Griggs**

Date Received: **9/9/2016 1:37:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
- Sample received straight from field.**
7. Were all items received at a temperature of >0°C to 10.0°C* Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont

Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record and Laboratory Services Agreement

Date: 9/9/16

Laboratory Project No (internal): 1609114

Page: 1 of 1

Page 15 of 15

Client: OSG
Address:
City, State, Zip:
Telephone: Fax:

Project Name: N105 - Pellco
Project No: 1754
Location:
Report To (PM):
PM Email:

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytical Parameters													Comments													
				VOCs (EPA 8260 / 624)	GV/8TEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) Dissolved (D)	Anions (IC)***	EDB (801.1)														
1 UDS-Unknown - I	9/9	1315	WP	<input checked="" type="checkbox"/>																								Wipe		
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite
Sample Disposal: Return to Client Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

Special Remarks: Prelim by 4pm

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished Date/Time Received Date/Time
x Eric Lombardi 9/9/16 @ 1339 x [Signature] 9/9/16 13:37

TAT -> (SameDay) NextDay^ 2 Day 3 Day STD
*Please coordinate with the lab in advance

Attachment E.1
UST Destruction Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

STORAGE TANK

CERTIFICATE OF DESTRUCTION

DATE: SEPTEMBER 15, 2016

TANK OWNER: SOUND TRANSIT

TANK LOCATION: 1000 NE 45TH ST, SEATTLE WA

TANK DESCRIPTION: 500 GALLON TANK

LAST CONTENTS HELD IN TANKS: GASOLINE

Marine Vacuum Service, Inc certifies that the tank mentioned above was pumped of all liquid materials and washed clean with a high-pressure washer and soap solution. The tank and contents therein have been disposed of according to all Local, State and Federal Regulations.

Thank you,



Marine Vacuum Service, Inc.

DBE # D4M0002341

SDVO

EPA # WAD980974521

A MINORITY BUSINESS ENTERPRISE ID # M4M002341

Attachment F.1
Marine Vacuum
Bill of Lading

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper No. 027791

Carrier No. _____

Date 9-13-16

MARINE VACUUM SERVICE, INC

Page 1 of 1

(Name of carrier)

(SCAC)

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO: MARINE VACUUM SERVICE INC
Consignee: _____
Street: 1516 S. GRAHAM ST
City: SEATTLE **State:** WA **Zip Code:** 98108

FROM: PELLCO Constr
Shipper: _____
Street: 1000 NE 45th St NE
City: Seattle **State:** WA **Zip Code:** _____
24 hr. Emergency Contact Tel. No.: 800-540-7491

Route _____ Vehicle Number _____

No. of Units & Container Type	HM	BASIC DESCRIPTION UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
<u>1 VST</u>		<u>1 VST 500 gal Tank Empty</u>				

PLACARDS TENDERED: YES NO

Note - (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____."
 (2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
 (3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(e) of item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

REMIT C.O.D. TO: ADDRESS _____
COD Amt: \$ _____
Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

C.O.D. FEE: PREPAID COLLECT \$ _____
TOTAL CHARGES \$ _____
FREIGHT CHARGES \$ _____
FREIGHT PREPAID except when box at right is checked Check box if charges are to be collect

 Signature (Signature of Consignor)

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER Pellco Constr CARRIER MARINE VACUUM SERVICE, INC.
 PER [Signature] PER [Signature]
 DATE 9-13-16

Attachment H.1
UST Triple-Rinse Certification

Marine Vacuum Service, Inc.

GENERAL CONTRACTOR
CONTRACTORS LICENSE # MARINVS097JA

P.O. Box 24263 Seattle, Washington 98124

Telephone (206) 762-0240

FAX (206) 763-8084

1-800-540-7491

AST/UST STORAGE TANK PUMP & RINSE CERTIFICATE

Tank Size: 500 gallons

Last Contents: Gasoline

Tank Location: 1000 NE 45th St
Seattle, WA

Marine Vacuum Service, Inc. certifies that the above mentioned tank(s) have been triple rinsed in accordance with the industry standard as outlined in 40 CFR PART 280.70, WAC 173-360-380(I), API 1604, API 2015 and that all residual product and rinsate has been disposed of in accordance with Federal, State and Local regulations. Tanks listed above are **NOT GAS FREE** or **NOT SAFE FOR HOT WORK**

Tank Owner: Sound Transit

Contractor: Oniell Environmental

M.V.S. Representative: Tom Chubb

Date: 09.12.2016

Notes:

Attachment H.2
Marine Chemist Certification for
Inerting the UST

SOUND TESTING, INC.

P.O. BOX 16204 SEATTLE, WA 98116

(206) 932-0206 FAX (206) 937-3848

WWW.SOUNDTESTINGINC.COM

MARINE CHEMIST CERTIFICATE

SERIAL No 46783

Survey Requested by GARY GALLOWAY	Vessel Owner or Agent —	Date SEPT 13 2016
Vessel PLEASE SEE BELOW	Type of Vessel STEEL UNDERGROUND TK	Specific Location of Vessel 1000 NE 45TH
Last Three (3) Loadings GASOLINE	Tests Performed O₂ LEL VISUAL	Time Survey Completed 8:20 AM

A 1,000 - GAL STEEL CYLINDRICAL UNDER-GROUND STORAGE TANK

— FREE OF COMBUSTIBLE GAS AND PRODUCT RESIDUE

— MAY BE SAFELY EXCAVATED AND TRANSPORTED ON PUBLIC HIGHWAYS

— NOT REQUIRED: FURTHER CLEANING OR INERT GAS

In the event of changes adversely affecting conditions in the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Marine Chemist.

Qualifications: Manipulation of valves or devices tending to alter conditions in pipe lines or tanks noted above, unless specifically approved in this certificate, will require re-inspection and a new Certificate for spaces so affected. All piping, heating coils, pumps and floating roof gaskets attached to or contained within spaces listed above shall be considered "NOT SAFE" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS

(These detail the minimum conditions for Safe Entry and Hot Work.) The Marine Chemist may request additional measures if workplace conditions so dictate.

ATMOSPHERE SAFE FOR WORKERS means that in a space (a) the oxygen content is between 19.5% and 22% by volume, and (b) combustible gas is less than 10% of the Lower Explosive Limit, and (c) airborne toxic materials are within permissible concentrations as listed in OSHA's Subpart Z or in ACGIH's current list of Threshold Limit Values.

SAFE FOR HOT WORK means that (a) oxygen within the space is less than 22% by volume; and (b) the combustible gas is less than 10% of the Lower Explosive Limit; and (c) cargo residues within the space will not combust during hot work; and (d) pipes that can deliver hazardous materials to the workspace have been separated, blanked, or locked out, and nearby hazardous spaces have been evaluated and noted on the certificate.

NOT SAFE FOR HOT WORK: In the compartment or space so designated, hot work is not permitted.

"The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued."

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed _____ Name _____ Company _____ Date _____ Signed **Don Sly** Marine Chemist Certificate No. **No 598**

POSTING

Attachment H.3
Fire Marshal Permit

Your
Seattle
Fire Department

TUE 09/13/16
10 AM JR

RECEIVED
SEP 12 2016
PERMIT SECTION



APPLICATION FOR TEMPORARY PERMIT

Code 7908

Commercial Tank Removal/Decommissioning

Permit Fee: \$218.00

Date Issued: 9/13/16

Tank(s) must be removed from site on the same day as permit is issued!

TO BE COMPLETED BY PERMIT APPLICANT

FIRM NAME	Galloway Environmental, Inc.		
MAILING ADDRESS	3102 220 th PL SE	SUITE	
CITY	Sammamish	STATE	Washington ZIP 98075
JOBSITE ADDRESS	1000 NE 45 th St., Seattle, 98103		
CONTACT PERSON	Gary Galloway	PHONE NUMBER	(425) 688-8852
Number of Tank(s):	1	Tank Size(s):	500 gallon <input type="checkbox"/> Aboveground tank
Product(s) Previously Contained:	Unknown petroleum	<input type="checkbox"/> XXXX Underground tank	
<input type="checkbox"/> X Removal (Marine Chemist inspection and certificate required for all tanks regardless of size or contents)			
<input type="checkbox"/> Abandonment-in-Place (Marine Chemist certificate required for tanks previously containing Class I flammable liquids and/or unknowns)			
Hot work being conducted:	<input type="checkbox"/> X No	<input type="checkbox"/> Yes (If yes, a separate hot work permit is required)	

Permit applications may be submitted in person weekdays from 8:00 a.m. to 4:30 p.m., or mailed to:

Seattle Fire Department
Fire Marshal's Office – Permits
220 Third Ave S, 2nd Floor
Seattle, WA 98104-2608

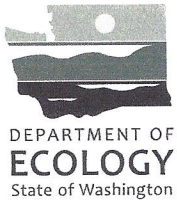
To pay with a Visa or Master Card: Fax or email this application
THEN CALL US TO CONFIRM RECEIPT AND MAKE PAYMENT
Tel: (206) 386-1450 / Fax: (206) 386-1348
E-mail: permits@seattle.gov

Call 386-1450, at least 24 hours prior to needed inspection time to arrange for an appointment.
TANKS MAY BE REMOVED/DECOMMISSIONED ONLY AFTER FIRE DEPARTMENT INSPECTION
NO HOT WORK IS ALLOWED ON A TANK SYSTEM PRIOR TO ISSUANCE OF THIS FIRE DEPARTMENT PERMIT!

Permission is hereby granted to remove or decommission the tank(s) identified in this permit in accordance with the attached conditions, all noted special conditions, and all applicable provisions of the Seattle Fire Code, federal, state and local regulations. **THIS PERMIT IS NULL AND VOID IF PERMIT CONDITIONS ARE NOT ATTACHED**

Special permit conditions: Tank removal/decommissioning must be performed, or directly supervised, by an ICC certified individual (WAC 173-360-600)

FMO USE:	APPROVED BY:
Check No.: 7894091216	Inspector: R. Devitt SFD ID# 1321
Receipt No.: 5-265902	Name of Marine Chemist: Den Sly Certificate # 46783
Application ID#: 106554	Date: 9/13/16



PERMANENT CLOSURE NOTICE FOR UNDERGROUND STORAGE TANKS

UST ID #: West-UST2

County: King

This notice certifies that permanent closure activities were performed and conducted in accordance with Chapter 173-360 WAC. Instructions are found on the back page.

I. UST FACILITY			II. OWNER/OPERATOR INFORMATION			
Facility Compliance Tag #: 8342			Owner/Operator Name: Sound Transit			
UST ID #: West-UST2			Business Name: Sound Transit			
Site Name: UDS			Address: 401 S Jackson St			
Site Address: NE 45th St and Roosevelt Way			City: Seattle	State: WA	Zip: 98104	
City: Seattle, Washington			Phone: 206-398-5000			
Phone:			Email:			
III. CERTIFIED UST DECOMMISSIONER						
Company Name: Galloway Environmental, Inc Service Provider Name: Gary Galloway						
Address: 3102 220th Pl SE			Certification Type: ICC			
City: Sammamish	State: WA	Zip: 98075	Cert. No.: 32000831	Exp. Date: 6/4/2017		
Provider Phone: 425-688-8852			Provider Email: gary@gallowayenvironmental.com			
Provider Signature: <i>Gary Galloway</i>			Date: <i>11/1/16</i>			
IV. TANK INFORMATION						
TANK ID	TANK CAPACITY	LAST SUBSTANCE STORED	CLOSURE METHOD			CLOSURE DATE
			removal	closed-in-place	change-in-service	
West-UST2	500	Gasoline	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9/13/2016
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
V. REQUIRED SIGNATURE						
<i>Signature acknowledges UST(s) comply with UST regulation WAC 173-360-380 Permanent Closure Requirements.</i>						
Date	Signature of Tank Owner/Operator or Authorized Representative			Print or Type Name		

APPENDIX E

EXCAVATION LIMIT – ANALYTICAL LABORATORY REPORTS



Shannon & Wilson

Agnes Tirao
400 N. 34th Street, Suite 100
Seattle, WA 98103

RE: Sound Transit / Key Bank
Work Order Number: 1610176

October 18, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 6 sample(s) on 10/11/2016 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director



Date: 10/18/2016

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank
Work Order: 1610176

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1610176-001	UD-W-T1N	10/11/2016 8:05 AM	10/11/2016 4:34 PM
1610176-002	UD-W-T1W	10/11/2016 9:45 AM	10/11/2016 4:34 PM
1610176-003	UD-W-T2N	10/11/2016 8:15 AM	10/11/2016 4:34 PM
1610176-004	UD-W-T2S	10/11/2016 9:35 AM	10/11/2016 4:34 PM
1610176-005	UD-W-T2E	10/11/2016 8:20 AM	10/11/2016 4:34 PM
1610176-006	Trip Blank	10/06/2016 12:49 PM	10/11/2016 4:34 PM

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-001
Client Sample ID: UD-W-T1N

Collection Date: 10/11/2016 8:05:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15112 Analyst: WC

Diesel (Fuel Oil)	ND	21.4		mg/Kg-dry	1	10/12/2016 8:23:00 PM
Heavy Oil	ND	53.4		mg/Kg-dry	1	10/12/2016 8:23:00 PM
Surr: 2-Fluorobiphenyl	94.3	50-150		%Rec	1	10/12/2016 8:23:00 PM
Surr: o-Terphenyl	90.5	50-150		%Rec	1	10/12/2016 8:23:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15125 Analyst: EM

Gasoline	398	48.4	D	mg/Kg-dry	10	10/17/2016 11:37:27 AM
Surr: Toluene-d8	113	65-135		%Rec	1	10/14/2016 9:27:52 AM
Surr: 4-Bromofluorobenzene	105	65-135		%Rec	1	10/14/2016 9:27:52 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0580	Q	mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chloromethane	ND	0.0580		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Vinyl chloride	ND	0.00193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromomethane	ND	0.0870		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Trichlorofluoromethane (CFC-11)	ND	0.0484	Q	mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chloroethane	ND	0.0580	Q	mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1-Dichloroethene	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Methylene chloride	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
trans-1,2-Dichloroethene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Methyl tert-butyl ether (MTBE)	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1-Dichloroethane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
2,2-Dichloropropane	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
cis-1,2-Dichloroethene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chloroform	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1,1-Trichloroethane (TCA)	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1-Dichloropropene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Carbon tetrachloride	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dichloroethane (EDC)	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Benzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Trichloroethene (TCE)	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dichloropropane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromodichloromethane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Dibromomethane	ND	0.0387		mg/Kg-dry	1	10/14/2016 9:27:52 AM
cis-1,3-Dichloropropene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Toluene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
trans-1,3-Dichloropropylene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-001
Client Sample ID: UD-W-T1N

Collection Date: 10/11/2016 8:05:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

1,1,2-Trichloroethane	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,3-Dichloropropane	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Tetrachloroethene (PCE)	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Dibromochloromethane	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dibromoethane (EDB)	ND	0.00484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Chlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1,1,2-Tetrachloroethane	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Ethylbenzene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
m,p-Xylene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
o-Xylene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Styrene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Isopropylbenzene	0.127	0.0774		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromoform	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,1,2,2-Tetrachloroethane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
n-Propylbenzene	0.224	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Bromobenzene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,3,5-Trimethylbenzene	0.229	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
2-Chlorotoluene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
4-Chlorotoluene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
tert-Butylbenzene	0.0305	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,3-Trichloropropane	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,4-Trichlorobenzene	ND	0.0484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
sec-Butylbenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
4-Isopropyltoluene	0.279	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,3-Dichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,4-Dichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
n-Butylbenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2-Dibromo-3-chloropropane	ND	0.484		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,4-Trimethylbenzene	0.311	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Hexachlorobutadiene	ND	0.0967		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Naphthalene	ND	0.0290		mg/Kg-dry	1	10/14/2016 9:27:52 AM
1,2,3-Trichlorobenzene	ND	0.0193		mg/Kg-dry	1	10/14/2016 9:27:52 AM
Surr: Dibromofluoromethane	92.1	56.5-129		%Rec	1	10/14/2016 9:27:52 AM
Surr: Toluene-d8	118	64.3-131		%Rec	1	10/14/2016 9:27:52 AM
Surr: 1-Bromo-4-fluorobenzene	97.8	63.1-141		%Rec	1	10/14/2016 9:27:52 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson

Collection Date: 10/11/2016 8:05:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610176-001

Matrix: Soil

Client Sample ID: UD-W-T1N

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020

Batch ID: 15122 Analyst: TN

Lead	1.07	0.173		mg/Kg-dry	1	10/14/2016 3:48:46 PM
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Sample Moisture (Percent Moisture)

Batch ID: R32275 Analyst: BB

Percent Moisture	10.6	0.500		wt%	1	10/12/2016 2:44:20 PM
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Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-002
Client Sample ID: UD-W-T1W

Collection Date: 10/11/2016 9:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15112 Analyst: WC

Diesel (Fuel Oil)	ND	24.1		mg/Kg-dry	1	10/12/2016 9:57:00 PM
Heavy Oil	ND	60.3		mg/Kg-dry	1	10/12/2016 9:57:00 PM
Surr: 2-Fluorobiphenyl	99.4	50-150		%Rec	1	10/12/2016 9:57:00 PM
Surr: o-Terphenyl	98.4	50-150		%Rec	1	10/12/2016 9:57:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15125 Analyst: EM

Gasoline	ND	6.55		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Surr: Toluene-d8	101	65-135		%Rec	1	10/14/2016 10:26:40 AM
Surr: 4-Bromofluorobenzene	102	65-135		%Rec	1	10/14/2016 10:26:40 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0786	Q	mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chloromethane	ND	0.0786		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Vinyl chloride	ND	0.00262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromomethane	ND	0.118		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Trichlorofluoromethane (CFC-11)	ND	0.0655	Q	mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chloroethane	ND	0.0786	Q	mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1-Dichloroethene	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Methylene chloride	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
trans-1,2-Dichloroethene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Methyl tert-butyl ether (MTBE)	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1-Dichloroethane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
2,2-Dichloropropane	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
cis-1,2-Dichloroethene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chloroform	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1,1-Trichloroethane (TCA)	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1-Dichloropropene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Carbon tetrachloride	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dichloroethane (EDC)	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Benzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Trichloroethene (TCE)	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dichloropropane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromodichloromethane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Dibromomethane	ND	0.0524		mg/Kg-dry	1	10/14/2016 10:26:40 AM
cis-1,3-Dichloropropene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Toluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
trans-1,3-Dichloropropylene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-002
Client Sample ID: UD-W-T1W

Collection Date: 10/11/2016 9:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

1,1,2-Trichloroethane	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,3-Dichloropropane	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Tetrachloroethene (PCE)	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Dibromochloromethane	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dibromoethane (EDB)	ND	0.00655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Chlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1,1,2-Tetrachloroethane	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Ethylbenzene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
m,p-Xylene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
o-Xylene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Styrene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Isopropylbenzene	ND	0.105		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromoform	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,1,2,2-Tetrachloroethane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
n-Propylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Bromobenzene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,3,5-Trimethylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
2-Chlorotoluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
4-Chlorotoluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
tert-Butylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,3-Trichloropropane	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,4-Trichlorobenzene	ND	0.0655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
sec-Butylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
4-Isopropyltoluene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,3-Dichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,4-Dichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
n-Butylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2-Dibromo-3-chloropropane	ND	0.655		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,4-Trimethylbenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Hexachlorobutadiene	ND	0.131		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Naphthalene	ND	0.0393		mg/Kg-dry	1	10/14/2016 10:26:40 AM
1,2,3-Trichlorobenzene	ND	0.0262		mg/Kg-dry	1	10/14/2016 10:26:40 AM
Surr: Dibromofluoromethane	91.3	56.5-129		%Rec	1	10/14/2016 10:26:40 AM
Surr: Toluene-d8	104	64.3-131		%Rec	1	10/14/2016 10:26:40 AM
Surr: 1-Bromo-4-fluorobenzene	101	63.1-141		%Rec	1	10/14/2016 10:26:40 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-002
Client Sample ID: UD-W-T1W

Collection Date: 10/11/2016 9:45:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020</u>				Batch ID: 15122		Analyst: TN
Lead	5.08	0.196		mg/Kg-dry	1	10/14/2016 4:17:07 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R32275		Analyst: BB
Percent Moisture	19.5	0.500		wt%	1	10/12/2016 2:44:20 PM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-003
Client Sample ID: UD-W-T2N

Collection Date: 10/11/2016 8:15:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15112 Analyst: WC

Diesel (Fuel Oil)	ND	22.0		mg/Kg-dry	1	10/12/2016 10:28:00 PM
Heavy Oil	ND	55.0		mg/Kg-dry	1	10/12/2016 10:28:00 PM
Surr: 2-Fluorobiphenyl	87.6	50-150		%Rec	1	10/12/2016 10:28:00 PM
Surr: o-Terphenyl	86.7	50-150		%Rec	1	10/12/2016 10:28:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15125 Analyst: EM

Gasoline	ND	5.14		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Surr: Toluene-d8	102	65-135		%Rec	1	10/14/2016 10:56:00 AM
Surr: 4-Bromofluorobenzene	99.1	65-135		%Rec	1	10/14/2016 10:56:00 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0616	Q	mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chloromethane	ND	0.0616		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Vinyl chloride	ND	0.00205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Bromomethane	ND	0.0925		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Trichlorofluoromethane (CFC-11)	ND	0.0514	Q	mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chloroethane	ND	0.0616	Q	mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1-Dichloroethene	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Methylene chloride	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
trans-1,2-Dichloroethene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Methyl tert-butyl ether (MTBE)	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1-Dichloroethane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
2,2-Dichloropropane	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
cis-1,2-Dichloroethene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chloroform	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1,1-Trichloroethane (TCA)	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1-Dichloropropene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Carbon tetrachloride	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dichloroethane (EDC)	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Benzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Trichloroethene (TCE)	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dichloropropane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Bromodichloromethane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Dibromomethane	ND	0.0411		mg/Kg-dry	1	10/14/2016 10:56:00 AM
cis-1,3-Dichloropropene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Toluene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
trans-1,3-Dichloropropylene	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-003
Client Sample ID: UD-W-T2N

Collection Date: 10/11/2016 8:15:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

1,1,2-Trichloroethane	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,3-Dichloropropane	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Tetrachloroethene (PCE)	0.0559	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Dibromochloromethane	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dibromoethane (EDB)	ND	0.00514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Chlorobenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1,1,2-Tetrachloroethane	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Ethylbenzene	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
m,p-Xylene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
o-Xylene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Styrene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Isopropylbenzene	ND	0.0822		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Bromoform	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,1,2,2-Tetrachloroethane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
n-Propylbenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Bromobenzene	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,3,5-Trimethylbenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
2-Chlorotoluene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
4-Chlorotoluene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
tert-Butylbenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2,3-Trichloropropane	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2,4-Trichlorobenzene	ND	0.0514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
sec-Butylbenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
4-Isopropyltoluene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,3-Dichlorobenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,4-Dichlorobenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
n-Butylbenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dichlorobenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2-Dibromo-3-chloropropane	ND	0.514		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2,4-Trimethylbenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Hexachlorobutadiene	ND	0.103		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Naphthalene	ND	0.0308		mg/Kg-dry	1	10/14/2016 10:56:00 AM
1,2,3-Trichlorobenzene	ND	0.0205		mg/Kg-dry	1	10/14/2016 10:56:00 AM
Surr: Dibromofluoromethane	89.6	56.5-129		%Rec	1	10/14/2016 10:56:00 AM
Surr: Toluene-d8	103	64.3-131		%Rec	1	10/14/2016 10:56:00 AM
Surr: 1-Bromo-4-fluorobenzene	98.0	63.1-141		%Rec	1	10/14/2016 10:56:00 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-003
Client Sample ID: UD-W-T2N

Collection Date: 10/11/2016 8:15:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020</u>				Batch ID: 15122		Analyst: TN
Lead	5.45	0.188		mg/Kg-dry	1	10/14/2016 4:20:40 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R32275		Analyst: BB
Percent Moisture	15.6	0.500		wt%	1	10/12/2016 2:44:20 PM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-004
Client Sample ID: UD-W-T2S

Collection Date: 10/11/2016 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15112 Analyst: WC

Diesel (Fuel Oil)	ND	21.4		mg/Kg-dry	1	10/12/2016 10:59:00 PM
Heavy Oil	ND	53.5		mg/Kg-dry	1	10/12/2016 10:59:00 PM
Surr: 2-Fluorobiphenyl	98.7	50-150		%Rec	1	10/12/2016 10:59:00 PM
Surr: o-Terphenyl	96.6	50-150		%Rec	1	10/12/2016 10:59:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15125 Analyst: EM

Gasoline	ND	5.11		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Surr: Toluene-d8	102	65-135		%Rec	1	10/14/2016 11:25:28 AM
Surr: 4-Bromofluorobenzene	99.5	65-135		%Rec	1	10/14/2016 11:25:28 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0613	Q	mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chloromethane	ND	0.0613		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Vinyl chloride	ND	0.00204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Bromomethane	ND	0.0920		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Trichlorofluoromethane (CFC-11)	ND	0.0511	Q	mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chloroethane	ND	0.0613	Q	mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1-Dichloroethene	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Methylene chloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
trans-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Methyl tert-butyl ether (MTBE)	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1-Dichloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
2,2-Dichloropropane	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
cis-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chloroform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1,1-Trichloroethane (TCA)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Carbon tetrachloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dichloroethane (EDC)	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Benzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Trichloroethene (TCE)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Bromodichloromethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Dibromomethane	ND	0.0409		mg/Kg-dry	1	10/14/2016 11:25:28 AM
cis-1,3-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Toluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
trans-1,3-Dichloropropylene	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-004
Client Sample ID: UD-W-T2S

Collection Date: 10/11/2016 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

1,1,2-Trichloroethane	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,3-Dichloropropane	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Tetrachloroethene (PCE)	0.0454	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Dibromochloromethane	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dibromoethane (EDB)	ND	0.00511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Chlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1,1,2-Tetrachloroethane	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Ethylbenzene	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
m,p-Xylene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
o-Xylene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Styrene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Isopropylbenzene	ND	0.0817		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Bromoform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,1,2,2-Tetrachloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
n-Propylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Bromobenzene	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,3,5-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
2-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
4-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
tert-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2,3-Trichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2,4-Trichlorobenzene	ND	0.0511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
sec-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
4-Isopropyltoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,3-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,4-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
n-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2-Dibromo-3-chloropropane	ND	0.511		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2,4-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Hexachlorobutadiene	ND	0.102		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Naphthalene	ND	0.0307		mg/Kg-dry	1	10/14/2016 11:25:28 AM
1,2,3-Trichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:25:28 AM
Surr: Dibromofluoromethane	91.5	56.5-129		%Rec	1	10/14/2016 11:25:28 AM
Surr: Toluene-d8	103	64.3-131		%Rec	1	10/14/2016 11:25:28 AM
Surr: 1-Bromo-4-fluorobenzene	98.4	63.1-141		%Rec	1	10/14/2016 11:25:28 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-004
Client Sample ID: UD-W-T2S

Collection Date: 10/11/2016 9:35:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020</u>				Batch ID: 15122		Analyst: TN
Lead	6.11	0.182		mg/Kg-dry	1	10/14/2016 4:24:12 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R32275		Analyst: BB
Percent Moisture	12.8	0.500		wt%	1	10/12/2016 2:44:20 PM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-005
Client Sample ID: UD-W-T2E

Collection Date: 10/11/2016 8:20:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15112 Analyst: WC

Diesel (Fuel Oil)	ND	22.5		mg/Kg-dry	1	10/12/2016 11:30:00 PM
Heavy Oil	ND	56.2		mg/Kg-dry	1	10/12/2016 11:30:00 PM
Surr: 2-Fluorobiphenyl	98.8	50-150		%Rec	1	10/12/2016 11:30:00 PM
Surr: o-Terphenyl	95.9	50-150		%Rec	1	10/12/2016 11:30:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15125 Analyst: EM

Gasoline	ND	5.09		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Surr: Toluene-d8	101	65-135		%Rec	1	10/14/2016 11:54:58 AM
Surr: 4-Bromofluorobenzene	98.7	65-135		%Rec	1	10/14/2016 11:54:58 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0611	Q	mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chloromethane	ND	0.0611		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Vinyl chloride	ND	0.00204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromomethane	ND	0.0916		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Trichlorofluoromethane (CFC-11)	ND	0.0509	Q	mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chloroethane	ND	0.0611	Q	mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1-Dichloroethene	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Methylene chloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
trans-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Methyl tert-butyl ether (MTBE)	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1-Dichloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
2,2-Dichloropropane	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
cis-1,2-Dichloroethene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chloroform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1,1-Trichloroethane (TCA)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Carbon tetrachloride	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dichloroethane (EDC)	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Benzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Trichloroethene (TCE)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromodichloromethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Dibromomethane	ND	0.0407		mg/Kg-dry	1	10/14/2016 11:54:58 AM
cis-1,3-Dichloropropene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Toluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
trans-1,3-Dichloropropylene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-005
Client Sample ID: UD-W-T2E

Collection Date: 10/11/2016 8:20:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15125 Analyst: EM

1,1,2-Trichloroethane	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,3-Dichloropropane	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Tetrachloroethene (PCE)	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Dibromochloromethane	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dibromoethane (EDB)	ND	0.00509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Chlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1,1,2-Tetrachloroethane	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Ethylbenzene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
m,p-Xylene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
o-Xylene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Styrene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Isopropylbenzene	ND	0.0815		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromoform	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,1,2,2-Tetrachloroethane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
n-Propylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Bromobenzene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,3,5-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
2-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
4-Chlorotoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
tert-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,3-Trichloropropane	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,4-Trichlorobenzene	ND	0.0509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
sec-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
4-Isopropyltoluene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,3-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,4-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
n-Butylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2-Dibromo-3-chloropropane	ND	0.509		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,4-Trimethylbenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Hexachlorobutadiene	ND	0.102		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Naphthalene	ND	0.0305		mg/Kg-dry	1	10/14/2016 11:54:58 AM
1,2,3-Trichlorobenzene	ND	0.0204		mg/Kg-dry	1	10/14/2016 11:54:58 AM
Surr: Dibromofluoromethane	91.0	56.5-129		%Rec	1	10/14/2016 11:54:58 AM
Surr: Toluene-d8	104	64.3-131		%Rec	1	10/14/2016 11:54:58 AM
Surr: 1-Bromo-4-fluorobenzene	97.7	63.1-141		%Rec	1	10/14/2016 11:54:58 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610176-005
Client Sample ID: UD-W-T2E

Collection Date: 10/11/2016 8:20:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Total Metals by EPA Method 6020</u>				Batch ID: 15122		Analyst: TN
Lead	3.74	0.178		mg/Kg-dry	1	10/14/2016 4:27:45 PM
<u>Sample Moisture (Percent Moisture)</u>				Batch ID: R32275		Analyst: BB
Percent Moisture	11.0	0.500		wt%	1	10/12/2016 2:44:20 PM

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-15112	SampType: MBLK	Units: mg/Kg				Prep Date: 10/12/2016	RunNo: 32283				
Client ID: MBLKS	Batch ID: 15112					Analysis Date: 10/12/2016	SeqNo: 610503				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.8		20.00		93.8	50	150				
Surr: o-Terphenyl	18.1		20.00		90.6	50	150				

Sample ID LCS-15112	SampType: LCS	Units: mg/Kg				Prep Date: 10/12/2016	RunNo: 32283				
Client ID: LCSS	Batch ID: 15112					Analysis Date: 10/12/2016	SeqNo: 610502				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	448	20.0	500.0	0	89.5	65	135				
Surr: 2-Fluorobiphenyl	19.8		20.00		98.9	50	150				
Surr: o-Terphenyl	18.9		20.00		94.3	50	150				

Sample ID 1610162-001ADUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 10/12/2016	RunNo: 32283				
Client ID: BATCH	Batch ID: 15112					Analysis Date: 10/12/2016	SeqNo: 610554				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	21.8						0		30	
Heavy Oil	ND	54.6						0		30	
Surr: 2-Fluorobiphenyl	22.6		21.83		104	50	150		0		
Surr: o-Terphenyl	22.0		21.83		101	50	150		0		

Sample ID 1610162-001AMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 10/12/2016	RunNo: 32283				
Client ID: BATCH	Batch ID: 15112					Analysis Date: 10/12/2016	SeqNo: 610555				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	484	22.0	549.1	0	88.2	65	135				
Surr: 2-Fluorobiphenyl	23.7		21.97		108	50	150				
Surr: o-Terphenyl	22.9		21.97		104	50	150				

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID 1610162-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/12/2016	RunNo: 32283							
Client ID: BATCH	Batch ID: 15112	Analysis Date: 10/12/2016	SeqNo: 610555								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID 1610162-001AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/12/2016	RunNo: 32283							
Client ID: BATCH	Batch ID: 15112	Analysis Date: 10/12/2016	SeqNo: 610556								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	479	21.7	541.6	0	88.4	65	135	484.3	1.12	30	
Surr: 2-Fluorobiphenyl	22.3		21.66		103	50	150		0		
Surr: o-Terphenyl	21.5		21.66		99.3	50	150		0		

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID LCS-15125	SampType: LCS	Units: mg/Kg				Prep Date: 10/13/2016	RunNo: 32332				
Client ID: LCSS	Batch ID: 15125					Analysis Date: 10/13/2016	SeqNo: 611652				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	25.3	5.00	25.00	0	101	65	135				
Surr: Toluene-d8	1.27		1.250		102	65	135				
Surr: 4-Bromofluorobenzene	1.29		1.250		103	65	135				

Sample ID MB-15125	SampType: MBLK	Units: mg/Kg				Prep Date: 10/13/2016	RunNo: 32332				
Client ID: MBLKS	Batch ID: 15125					Analysis Date: 10/13/2016	SeqNo: 611653				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.27		1.250		102	65	135				
Surr: 4-Bromofluorobenzene	1.19		1.250		95.1	65	135				

Sample ID 1610176-001BDUP	SampType: DUP	Units: mg/Kg-dry				Prep Date: 10/13/2016	RunNo: 32332				
Client ID: UD-W-T1N	Batch ID: 15125					Analysis Date: 10/14/2016	SeqNo: 611663				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	537	4.84						529.9	1.37	30	E
Surr: Toluene-d8	1.37		1.209		114	65	135		0		
Surr: 4-Bromofluorobenzene	1.33		1.209		110	65	135		0		

Sample ID 1610176-005BMS	SampType: MS	Units: mg/Kg-dry				Prep Date: 10/13/2016	RunNo: 32332				
Client ID: UD-W-T2E	Batch ID: 15125					Analysis Date: 10/14/2016	SeqNo: 611668				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	20.9	5.09	25.46	0	82.3	65	135				
Surr: Toluene-d8	1.29		1.273		101	65	135				
Surr: 4-Bromofluorobenzene	1.27		1.273		100	65	135				

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID 1610176-005BMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 10/13/2016	RunNo: 32332				
Client ID: UD-W-T2E	Batch ID: 15125					Analysis Date: 10/14/2016	SeqNo: 611669				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	22.3	5.09	25.46	0	87.8	65	135	20.94	6.48	30	
Surr: Toluene-d8	1.30		1.273		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.28		1.273		100	65	135		0		

Sample ID CCV-C-15125	SampType: CCV	Units: mg/Kg				Prep Date: 10/17/2016	RunNo: 32332				
Client ID: CCV	Batch ID: 15125					Analysis Date: 10/17/2016	SeqNo: 612071				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	540	5.00	500.0	0	108	80	120				
Surr: Toluene-d8	25.5		25.00		102	65	135				
Surr: 4-Bromofluorobenzene	25.6		25.00		102	65	135				



Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID 1610175-006ADUP	SampType: DUP	Units: wt%	Prep Date: 10/12/2016	RunNo: 32275							
Client ID: BATCH	Batch ID: R32275	Analysis Date: 10/12/2016	SeqNo: 610305								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	16.7	0.500						16.46	1.25	20	

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID MB-15122	SampType: MBLK	Units: mg/Kg			Prep Date: 10/13/2016	RunNo: 32330
Client ID: MBLKS	Batch ID: 15122				Analysis Date: 10/14/2016	SeqNo: 611552
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead ND 0.148

Sample ID LCS-15122	SampType: LCS	Units: mg/Kg			Prep Date: 10/13/2016	RunNo: 32330
Client ID: LCSS	Batch ID: 15122				Analysis Date: 10/14/2016	SeqNo: 611553
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 20.5 0.156 19.53 0 105 80 120

Sample ID 1610176-001ADUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 10/13/2016	RunNo: 32330
Client ID: UD-W-T1N	Batch ID: 15122				Analysis Date: 10/14/2016	SeqNo: 611555
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 1.23 0.179 1.075 13.6 20

Sample ID 1610176-001AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 10/13/2016	RunNo: 32330
Client ID: UD-W-T1N	Batch ID: 15122				Analysis Date: 10/14/2016	SeqNo: 611559
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 22.8 0.179 22.38 1.075 97.1 75 125

Sample ID 1610176-001AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 10/13/2016	RunNo: 32330
Client ID: UD-W-T1N	Batch ID: 15122				Analysis Date: 10/14/2016	SeqNo: 611560
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Lead 22.4 0.176 22.03 1.075 96.6 75 125 22.80 1.96 20

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15125	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/13/2016	RunNo:	32331		
Client ID:	LCSS	Batch ID:	15125	Analysis Date:	10/13/2016	SeqNo:	611627				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.493	0.0600	1.000	0	49.3	34.5	141				Q
Chloromethane	0.902	0.0600	1.000	0	90.2	38.8	132				
Vinyl chloride	0.850	0.00200	1.000	0	85.0	44	142				Q
Bromomethane	0.998	0.0900	1.000	0	99.8	40.9	157				
Trichlorofluoromethane (CFC-11)	0.421	0.0500	1.000	0	42.1	41.7	153				Q
Chloroethane	0.532	0.0600	1.000	0	53.2	37.1	144				Q
1,1-Dichloroethene	0.797	0.0500	1.000	0	79.7	49.7	142				
Methylene chloride	0.957	0.0200	1.000	0	95.7	46.3	140				
trans-1,2-Dichloroethene	0.933	0.0200	1.000	0	93.3	68	130				
Methyl tert-butyl ether (MTBE)	1.06	0.0500	1.000	0	106	59.1	138				
1,1-Dichloroethane	0.830	0.0200	1.000	0	83.0	61.9	137				Q
2,2-Dichloropropane	1.21	0.0500	1.000	0	121	28.1	149				
cis-1,2-Dichloroethene	1.04	0.0200	1.000	0	104	71.3	135				
Chloroform	0.920	0.0200	1.000	0	92.0	67.5	129				
1,1,1-Trichloroethane (TCA)	0.889	0.0200	1.000	0	88.9	69	132				
1,1-Dichloropropene	0.932	0.0200	1.000	0	93.2	72.7	131				
Carbon tetrachloride	0.863	0.0200	1.000	0	86.3	63.4	137				
1,2-Dichloroethane (EDC)	1.03	0.0300	1.000	0	103	61.9	136				
Benzene	0.995	0.0200	1.000	0	99.5	64.3	133				
Trichloroethene (TCE)	0.953	0.0200	1.000	0	95.3	65.5	137				
1,2-Dichloropropane	1.05	0.0200	1.000	0	105	63.2	142				
Bromodichloromethane	0.960	0.0200	1.000	0	96.0	73.2	131				
Dibromomethane	1.04	0.0400	1.000	0	104	70	130				
cis-1,3-Dichloropropene	1.06	0.0200	1.000	0	106	59.1	143				
Toluene	1.06	0.0200	1.000	0	106	67.3	138				
trans-1,3-Dichloropropylene	1.14	0.0300	1.000	0	114	49.2	149				
1,1,2-Trichloroethane	1.07	0.0300	1.000	0	107	74.5	129				
1,3-Dichloropropane	1.09	0.0500	1.000	0	109	70	130				
Tetrachloroethene (PCE)	0.975	0.0200	1.000	0	97.5	52.7	150				
Dibromochloromethane	1.04	0.0300	1.000	0	104	70.6	144				
1,2-Dibromoethane (EDB)	1.16	0.00500	1.000	0	116	70	130				

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15125	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/13/2016	RunNo:	32331		
Client ID:	LCSS	Batch ID:	15125	Analysis Date:	10/13/2016	SeqNo:	611627				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.02	0.0200	1.000	0	102	76.1	123				
1,1,1,2-Tetrachloroethane	1.01	0.0300	1.000	0	101	65.9	141				
Ethylbenzene	0.970	0.0300	1.000	0	97.0	74	129				
m,p-Xylene	1.98	0.0200	2.000	0	98.9	70	124				
o-Xylene	0.980	0.0200	1.000	0	98.0	72.7	124				
Styrene	0.996	0.0200	1.000	0	99.6	76.8	130				
Isopropylbenzene	0.965	0.0800	1.000	0	96.5	70	130				
Bromoform	1.02	0.0200	1.000	0	102	67	154				
1,1,2,2-Tetrachloroethane	0.973	0.0200	1.000	0	97.3	60	130				Q
n-Propylbenzene	0.979	0.0200	1.000	0	97.9	74.8	125				
Bromobenzene	1.02	0.0300	1.000	0	102	49.2	144				
1,3,5-Trimethylbenzene	0.981	0.0200	1.000	0	98.1	74.6	123				
2-Chlorotoluene	0.979	0.0200	1.000	0	97.9	76.7	129				
4-Chlorotoluene	0.961	0.0200	1.000	0	96.1	77.5	125				
tert-Butylbenzene	0.962	0.0200	1.000	0	96.2	66.2	130				
1,2,3-Trichloropropane	1.05	0.0200	1.000	0	105	67.9	136				
1,2,4-Trichlorobenzene	1.00	0.0500	1.000	0	100	62.6	143				
sec-Butylbenzene	0.956	0.0200	1.000	0	95.6	75.6	133				
4-Isopropyltoluene	0.968	0.0200	1.000	0	96.8	76.8	131				
1,3-Dichlorobenzene	1.02	0.0200	1.000	0	102	72.8	128				
1,4-Dichlorobenzene	0.996	0.0200	1.000	0	99.6	72.6	126				
n-Butylbenzene	1.02	0.0200	1.000	0	102	65.3	136				
1,2-Dichlorobenzene	1.00	0.0200	1.000	0	100	72.8	126				
1,2-Dibromo-3-chloropropane	1.06	0.500	1.000	0	106	61.2	139				
1,2,4-Trimethylbenzene	0.982	0.0200	1.000	0	98.2	77.5	129				
Hexachlorobutadiene	1.01	0.100	1.000	0	101	42	151				
Naphthalene	1.08	0.0300	1.000	0	108	62.3	134				
1,2,3-Trichlorobenzene	1.03	0.0200	1.000	0	103	54.8	143				
Surr: Dibromofluoromethane	1.16		1.250		92.4	56.5	129				
Surr: Toluene-d8	1.30		1.250		104	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.29		1.250		103	63.1	141				

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15125	SampType: LCS	Units: mg/Kg	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: LCSS	Batch ID: 15125		Analysis Date: 10/13/2016	SeqNo: 611627							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-15125	SampType: MBLK	Units: mg/Kg	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: MBLKS	Batch ID: 15125		Analysis Date: 10/13/2016	SeqNo: 611628							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									
Vinyl chloride	ND	0.00200									Q
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									Q
Chloroethane	ND	0.0600									Q
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									Q
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	ND	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	MB-15125	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/13/2016	RunNo:	32331		
Client ID:	MBLKS	Batch ID:	15125	Analysis Date:	10/13/2016	SeqNo:	611628				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,2,2-Tetrachloroethane	ND	0.0200									Q
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15125	SampType: MBLK	Units: mg/Kg	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: MBLKS	Batch ID: 15125		Analysis Date: 10/13/2016	SeqNo: 611628							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.11		1.250		89.1	56.5	129				
Surr: Toluene-d8	1.30		1.250		104	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.18		1.250		94.1	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610107-004BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: BATCH	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611604							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.416	0.0513	0.8558	0	48.7	43.5	121				Q
Chloromethane	0.706	0.0513	0.8558	0	82.5	45	130				
Vinyl chloride	0.699	0.00171	0.8558	0	81.7	51.2	146				Q
Bromomethane	0.808	0.0770	0.8558	0	94.4	21.3	120				
Trichlorofluoromethane (CFC-11)	0.457	0.0428	0.8558	0	53.4	35	131				Q
Chloroethane	0.470	0.0513	0.8558	0	54.9	43.8	117				Q
1,1-Dichloroethene	0.728	0.0428	0.8558	0	85.0	61.9	141				
Methylene chloride	0.823	0.0171	0.8558	0.01594	94.3	54.7	142				
trans-1,2-Dichloroethene	0.791	0.0171	0.8558	0	92.5	52	136				
Methyl tert-butyl ether (MTBE)	0.822	0.0428	0.8558	0	96.0	54.4	132				
1,1-Dichloroethane	0.791	0.0171	0.8558	0	92.4	51.8	141				Q
2,2-Dichloropropane	0.689	0.0428	0.8558	0	80.5	36	123				
cis-1,2-Dichloroethene	0.862	0.0171	0.8558	0	101	58.6	136				
Chloroform	0.800	0.0171	0.8558	0	93.4	53.2	129				
1,1,1-Trichloroethane (TCA)	0.752	0.0171	0.8558	0	87.8	58.3	145				
1,1-Dichloropropene	0.774	0.0171	0.8558	0	90.4	55.1	138				
Carbon tetrachloride	0.830	0.0171	0.8558	0	97.0	53.3	144				



Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610107-004BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: BATCH	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611604							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dichloroethane (EDC)	0.821	0.0257	0.8558	0	96.0	51.3	139				
Benzene	0.849	0.0171	0.8558	0	99.2	63.5	133				
Trichloroethene (TCE)	0.799	0.0171	0.8558	0	93.4	68.6	132				
1,2-Dichloropropane	0.866	0.0171	0.8558	0	101	59	136				
Bromodichloromethane	0.781	0.0171	0.8558	0	91.3	50.7	141				
Dibromomethane	0.853	0.0342	0.8558	0	99.7	50.6	137				
cis-1,3-Dichloropropene	0.806	0.0171	0.8558	0	94.2	50.4	138				
Toluene	0.890	0.0171	0.8558	0	104	63.4	132				
trans-1,3-Dichloropropylene	0.838	0.0257	0.8558	0	97.9	44.1	147				
1,1,2-Trichloroethane	0.872	0.0257	0.8558	0	102	51.6	137				
1,3-Dichloropropane	0.874	0.0428	0.8558	0	102	53.1	134				
Tetrachloroethene (PCE)	1.01	0.0171	0.8558	0.1864	96.1	35.6	158				
Dibromochloromethane	0.812	0.0257	0.8558	0	94.9	55.3	140				
1,2-Dibromoethane (EDB)	0.916	0.00428	0.8558	0	107	50.4	136				
Chlorobenzene	0.854	0.0171	0.8558	0	99.8	60	133				
1,1,1,2-Tetrachloroethane	0.816	0.0257	0.8558	0	95.3	53.1	142				
Ethylbenzene	0.812	0.0257	0.8558	0	94.9	54.5	134				
m,p-Xylene	1.64	0.0171	1.712	0	96.1	53.1	132				
o-Xylene	0.823	0.0171	0.8558	0	96.2	53.3	139				
Styrene	0.846	0.0171	0.8558	0	98.9	51.1	132				
Isopropylbenzene	0.814	0.0685	0.8558	0	95.2	58.9	138				
Bromoform	0.771	0.0171	0.8558	0	90.1	57.9	130				
1,1,1,2,2-Tetrachloroethane	0.775	0.0171	0.8558	0	90.5	51.9	131				Q
n-Propylbenzene	0.819	0.0171	0.8558	0	95.7	53.6	140				
Bromobenzene	0.845	0.0257	0.8558	0	98.8	54.2	140				
1,3,5-Trimethylbenzene	0.818	0.0171	0.8558	0	95.6	51.8	136				
2-Chlorotoluene	0.824	0.0171	0.8558	0	96.3	51.6	136				
4-Chlorotoluene	0.813	0.0171	0.8558	0	95.0	50.1	139				
tert-Butylbenzene	0.813	0.0171	0.8558	0	95.0	50.5	135				
1,2,3-Trichloropropane	0.787	0.0171	0.8558	0	92.0	50.5	131				
1,2,4-Trichlorobenzene	0.754	0.0428	0.8558	0	88.1	50.8	130				

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610107-004BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: BATCH	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611604							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

sec-Butylbenzene	0.803	0.0171	0.8558	0	93.9	52.6	141				
4-Isopropyltoluene	0.790	0.0171	0.8558	0	92.3	52.9	134				
1,3-Dichlorobenzene	0.853	0.0171	0.8558	0	99.7	52.6	131				
1,4-Dichlorobenzene	0.832	0.0171	0.8558	0	97.2	52.9	129				
n-Butylbenzene	0.838	0.0171	0.8558	0	97.9	52.6	130				
1,2-Dichlorobenzene	0.828	0.0171	0.8558	0	96.8	55.8	129				
1,2-Dibromo-3-chloropropane	0.735	0.428	0.8558	0	85.9	40.5	131				
1,2,4-Trimethylbenzene	0.817	0.0171	0.8558	0	95.4	50.6	137				
Hexachlorobutadiene	0.826	0.0856	0.8558	0	96.6	40.6	158				
Naphthalene	0.797	0.0257	0.8558	0	93.1	52.3	124				
1,2,3-Trichlorobenzene	0.794	0.0171	0.8558	0	92.8	54.4	124				
Surr: Dibromofluoromethane	1.04		1.070		97.5	56.5	129				
Surr: Toluene-d8	1.11		1.070		104	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.10		1.070		103	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610107-004BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: BATCH	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611605							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.386	0.0513	0.8558	0	45.2	43.5	121	0.4164	7.47	30	Q
Chloromethane	0.670	0.0513	0.8558	0	78.2	45	130	0.7057	5.24	30	
Vinyl chloride	0.655	0.00171	0.8558	0	76.6	51.2	146	0.6995	6.49	30	Q
Bromomethane	0.786	0.0770	0.8558	0	91.8	21.3	120	0.8079	2.78	30	
Trichlorofluoromethane (CFC-11)	0.411	0.0428	0.8558	0	48.0	35	131	0.4574	10.7	30	Q
Chloroethane	0.453	0.0513	0.8558	0	53.0	43.8	117	0.4698	3.54	30	Q
1,1-Dichloroethene	0.692	0.0428	0.8558	0	80.9	61.9	141	0.7275	4.99	30	
Methylene chloride	0.804	0.0171	0.8558	0.01594	92.1	54.7	142	0.8228	2.26	30	
trans-1,2-Dichloroethene	0.766	0.0171	0.8558	0	89.5	52	136	0.7915	3.27	30	
Methyl tert-butyl ether (MTBE)	0.827	0.0428	0.8558	0	96.7	54.4	132	0.8218	0.669	30	

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610107-004BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331
Client ID: BATCH	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611605

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	0.769	0.0171	0.8558	0	89.8	51.8	141	0.7908	2.83	30	Q
2,2-Dichloropropane	0.670	0.0428	0.8558	0	78.3	36	123	0.6888	2.71	30	
cis-1,2-Dichloroethene	0.847	0.0171	0.8558	0	99.0	58.6	136	0.8622	1.74	30	
Chloroform	0.786	0.0171	0.8558	0	91.8	53.2	129	0.7996	1.72	30	
1,1,1-Trichloroethane (TCA)	0.714	0.0171	0.8558	0	83.5	58.3	145	0.7516	5.09	30	
1,1-Dichloropropene	0.748	0.0171	0.8558	0	87.4	55.1	138	0.7739	3.43	30	
Carbon tetrachloride	0.692	0.0171	0.8558	0	80.8	53.3	144	0.8298	18.2	30	
1,2-Dichloroethane (EDC)	0.802	0.0257	0.8558	0	93.7	51.3	139	0.8213	2.43	30	
Benzene	0.821	0.0171	0.8558	0	96.0	63.5	133	0.8494	3.36	30	
Trichloroethene (TCE)	0.767	0.0171	0.8558	0	89.6	68.6	132	0.7989	4.09	30	
1,2-Dichloropropane	0.858	0.0171	0.8558	0	100	59	136	0.8658	0.935	30	
Bromodichloromethane	0.766	0.0171	0.8558	0	89.5	50.7	141	0.7813	1.94	30	
Dibromomethane	0.837	0.0342	0.8558	0	97.7	50.6	137	0.8533	1.98	30	
cis-1,3-Dichloropropene	0.791	0.0171	0.8558	0	92.5	50.4	138	0.8061	1.86	30	
Toluene	0.862	0.0171	0.8558	0	101	63.4	132	0.8896	3.10	30	
trans-1,3-Dichloropropylene	0.833	0.0257	0.8558	0	97.3	44.1	147	0.8378	0.584	30	
1,1,2-Trichloroethane	0.857	0.0257	0.8558	0	100	51.6	137	0.8716	1.66	30	
1,3-Dichloropropane	0.858	0.0428	0.8558	0	100	53.1	134	0.8736	1.82	30	
Tetrachloroethene (PCE)	0.969	0.0171	0.8558	0.1864	91.5	35.6	158	1.009	4.02	30	
Dibromochloromethane	0.792	0.0257	0.8558	0	92.5	55.3	140	0.8124	2.56	30	
1,2-Dibromoethane (EDB)	0.898	0.00428	0.8558	0	105	50.4	136	0.9159	1.99	30	
Chlorobenzene	0.835	0.0171	0.8558	0	97.5	60	133	0.8545	2.35	30	
1,1,1,2-Tetrachloroethane	0.802	0.0257	0.8558	0	93.7	53.1	142	0.8157	1.74	30	
Ethylbenzene	0.789	0.0257	0.8558	0	92.2	54.5	134	0.8119	2.81	30	
m,p-Xylene	1.60	0.0171	1.712	0	93.6	53.1	132	1.645	2.64	30	
o-Xylene	0.811	0.0171	0.8558	0	94.8	53.3	139	0.8231	1.42	30	
Styrene	0.825	0.0171	0.8558	0	96.4	51.1	132	0.8462	2.58	30	
Isopropylbenzene	0.789	0.0685	0.8558	0	92.2	58.9	138	0.8144	3.13	30	
Bromoform	0.744	0.0171	0.8558	0	86.9	57.9	130	0.7713	3.61	30	
1,1,2,2-Tetrachloroethane	0.764	0.0171	0.8558	0	89.3	51.9	131	0.7749	1.42	30	Q
n-Propylbenzene	0.788	0.0171	0.8558	0	92.1	53.6	140	0.8191	3.85	30	

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610107-004BMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 10/13/2016	RunNo: 32331					
Client ID: BATCH	Batch ID: 15125				Analysis Date: 10/14/2016	SeqNo: 611605					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	0.831	0.0257	0.8558	0	97.1	54.2	140	0.8454	1.68	30	
1,3,5-Trimethylbenzene	0.784	0.0171	0.8558	0	91.6	51.8	136	0.8180	4.24	30	
2-Chlorotoluene	0.798	0.0171	0.8558	0	93.2	51.6	136	0.8242	3.28	30	
4-Chlorotoluene	0.781	0.0171	0.8558	0	91.3	50.1	139	0.8133	4.03	30	
tert-Butylbenzene	0.782	0.0171	0.8558	0	91.4	50.5	135	0.8133	3.93	30	
1,2,3-Trichloropropane	0.777	0.0171	0.8558	0	90.8	50.5	131	0.7874	1.27	30	
1,2,4-Trichlorobenzene	0.781	0.0428	0.8558	0	91.2	50.8	130	0.7538	3.53	30	
sec-Butylbenzene	0.768	0.0171	0.8558	0	89.7	52.6	141	0.8034	4.57	30	
4-Isopropyltoluene	0.760	0.0171	0.8558	0	88.8	52.9	134	0.7899	3.92	30	
1,3-Dichlorobenzene	0.860	0.0171	0.8558	0	100	52.6	131	0.8529	0.823	30	
1,4-Dichlorobenzene	0.835	0.0171	0.8558	0	97.6	52.9	129	0.8318	0.383	30	
n-Butylbenzene	0.836	0.0171	0.8558	0	97.7	52.6	130	0.8381	0.251	30	
1,2-Dichlorobenzene	0.846	0.0171	0.8558	0	98.9	55.8	129	0.8281	2.15	30	
1,2-Dibromo-3-chloropropane	0.759	0.428	0.8558	0	88.7	40.5	131	0.7350	3.18	30	
1,2,4-Trimethylbenzene	0.790	0.0171	0.8558	0	92.3	50.6	137	0.8167	3.30	30	
Hexachlorobutadiene	0.810	0.0856	0.8558	0	94.7	40.6	158	0.8264	1.96	30	
Naphthalene	0.838	0.0257	0.8558	0	97.9	52.3	124	0.7966	5.01	30	
1,2,3-Trichlorobenzene	0.818	0.0171	0.8558	0	95.5	54.4	124	0.7941	2.93	30	
Surr: Dibromofluoromethane	1.03		1.070		96.0	56.5	129		0		
Surr: Toluene-d8	1.10		1.070		103	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.10		1.070		102	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610176-001BDUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 10/13/2016	RunNo: 32331					
Client ID: UD-W-T1N	Batch ID: 15125				Analysis Date: 10/14/2016	SeqNo: 611618					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0580						0		30	Q
Chloromethane	ND	0.0580						0		30	
Vinyl chloride	ND	0.00193						0		30	

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610176-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: UD-W-T1N	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611618							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Bromomethane	ND	0.0870						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0484						0		30	Q
Chloroethane	ND	0.0580						0		30	Q
1,1-Dichloroethene	ND	0.0484						0		30	
Methylene chloride	ND	0.0193						0		30	
trans-1,2-Dichloroethene	ND	0.0193						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0484						0		30	
1,1-Dichloroethane	ND	0.0193						0		30	
2,2-Dichloropropane	ND	0.0484						0		30	
cis-1,2-Dichloroethene	ND	0.0193						0		30	
Chloroform	ND	0.0193						0		30	
1,1,1-Trichloroethane (TCA)	ND	0.0193						0		30	
1,1-Dichloropropene	ND	0.0193						0		30	
Carbon tetrachloride	ND	0.0193						0		30	
1,2-Dichloroethane (EDC)	ND	0.0290						0		30	
Benzene	ND	0.0193						0		30	
Trichloroethene (TCE)	ND	0.0193						0		30	
1,2-Dichloropropane	ND	0.0193						0		30	
Bromodichloromethane	ND	0.0193						0		30	
Dibromomethane	ND	0.0387						0		30	
cis-1,3-Dichloropropene	ND	0.0193						0		30	
Toluene	ND	0.0193						0		30	
trans-1,3-Dichloropropylene	ND	0.0290						0		30	
1,1,2-Trichloroethane	ND	0.0290						0		30	
1,3-Dichloropropane	ND	0.0484						0		30	
Tetrachloroethene (PCE)	ND	0.0193						0		30	
Dibromochloromethane	ND	0.0290						0		30	
1,2-Dibromoethane (EDB)	ND	0.00484						0		30	
Chlorobenzene	ND	0.0193						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0290						0		30	
Ethylbenzene	ND	0.0290						0		30	

Work Order: 1610176
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610176-001BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/13/2016	RunNo: 32331							
Client ID: UD-W-T1N	Batch ID: 15125		Analysis Date: 10/14/2016	SeqNo: 611618							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	ND	0.0193						0		30	
o-Xylene	ND	0.0193						0		30	
Styrene	ND	0.0193						0		30	
Isopropylbenzene	0.126	0.0774						0.1266	0.198	30	
Bromoform	ND	0.0193						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0193						0		30	
n-Propylbenzene	0.229	0.0193						0.2242	1.92	30	
Bromobenzene	ND	0.0290						0		30	
1,3,5-Trimethylbenzene	0.231	0.0193						0.2289	0.873	30	
2-Chlorotoluene	ND	0.0193						0		30	
4-Chlorotoluene	ND	0.0193						0		30	
tert-Butylbenzene	0.0317	0.0193						0.03054	3.76	30	
1,2,3-Trichloropropane	ND	0.0193						0		30	
1,2,4-Trichlorobenzene	ND	0.0484						0		30	
sec-Butylbenzene	ND	0.0193						0		30	
4-Isopropyltoluene	0.288	0.0193						0.2790	3.07	30	
1,3-Dichlorobenzene	ND	0.0193						0		30	
1,4-Dichlorobenzene	ND	0.0193						0		30	
n-Butylbenzene	ND	0.0193						0		30	
1,2-Dichlorobenzene	ND	0.0193						0		30	
1,2-Dibromo-3-chloropropane	ND	0.484						0		30	
1,2,4-Trimethylbenzene	0.318	0.0193						0.3108	2.21	30	
Hexachlorobutadiene	ND	0.0967						0		30	
Naphthalene	ND	0.0290						0		30	
1,2,3-Trichlorobenzene	ND	0.0193						0		30	
Surr: Dibromofluoromethane	1.10		1.209		90.6	56.5	129		0		
Surr: Toluene-d8	1.42		1.209		118	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.22		1.209		101	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client Name: **SW**

Work Order Number: **1610176**

Logged by: **Clare Griggs**

Date Received: **10/11/2016 4:34:00 PM**

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°C* Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	4.7
Sample	4.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont

Analytical

3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record and Laboratory Services Agreement

Date: 10-11-16

Laboratory Project No (internal): 161076
Page: 1 of: 1

Client: Shannon & Wilson, Inc
Address: 406 N 34th St, Ste 100
City, State, Zip: Seattle, WA, 98103
Telephone: 206-632-8020 Fax: _____

Project Name: Sound Transit / Key Bank
Project No: 21-1-16700-123 Collected by: SKH
Location: U District
Report To (PM): Agnes Tirao
PM Email: ACT@shanwil.com

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytes													Comments		
				VOCs (EPA 8260 / 624)	SVOCs	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HClD)	Diesel/heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)		Total Lead	
1 UD-W-T1N	10/11/16	0805	Soil	X	X	X	X											X	
2 UD-W-T1S		0815																	SKH
3 UD-W-T1W	10/11/16	0945	Soil	X	X	X	X											X	
4 UD-W-T2N		0815		X	X	X	X											X	
5 UD-W-T2S		0935		X	X	X	X											X	
6 UD-W-T2E		0820		X	X	X	X											X	
7																			
8																			
9																			
10																			

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal: Return to Client Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks: VOCs, GX, DX, Total Lead

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished x Shoshana Howard Date/Time 10-11-16 / 1633 Received x [Signature] Date/Time 10/11/16 1634

Relinquished x _____ Date/Time _____ Received x _____ Date/Time _____

TAT → SameDay^ NextDay^ 2 Day 3 Day (STD)

^Please coordinate with the lab in advance



Shannon & Wilson

Agnes Tirao
400 N. 34th Street, Suite 100
Seattle, WA 98103

**RE: Sound Transit / Key Bank
Work Order Number: 1610259**

Samples UD-E-3N, UD-E-3S,
UD-E-3E, and UD-E-3W are
not discussed within this report.

October 20, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 6 sample(s) on 10/14/2016 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260C***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank
Work Order: 1610259

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1610259-001	UD-E-3N	10/14/2016 12:30 PM	10/14/2016 2:10 PM
1610259-002	UD-E-3S	10/14/2016 12:35 PM	10/14/2016 2:10 PM
1610259-003	UD-E-3E	10/14/2016 12:40 PM	10/14/2016 2:10 PM
1610259-004	UD-E-3W	10/14/2016 12:45 PM	10/14/2016 2:10 PM
1610259-005	UD-W-TIS	10/14/2016 1:00 PM	10/14/2016 2:10 PM
1610259-006	Trip Blank	10/14/2016 12:00 AM	10/14/2016 2:10 PM

Samples UD-E-3N, UD-E-3S,
UD-E-3E, and UD-E-3W are not
discussed within this report.

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-001
Client Sample ID: UD-E-3N

Collection Date: 10/14/2016 12:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162

Analyst: MW

Dichlorodifluoromethane (CFC-12)	ND	0.0561	Q	mg/Kg-dry	1	10/18/2016 11:09:02 PM
Chloromethane	ND	0.0561	Q	mg/Kg-dry	1	10/18/2016 11:09:02 PM
Vinyl chloride	ND	0.00187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Bromomethane	ND	0.0841		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Trichlorofluoromethane (CFC-11)	ND	0.0467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Chloroethane	ND	0.0561		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1-Dichloroethene	ND	0.0467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Methylene chloride	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
trans-1,2-Dichloroethene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1-Dichloroethane	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
2,2-Dichloropropane	ND	0.0467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
cis-1,2-Dichloroethene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Chloroform	0.0408	0.0187	B	mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1,1-Trichloroethane (TCA)	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1-Dichloropropene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Carbon tetrachloride	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2-Dichloroethane (EDC)	ND	0.0280		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Trichloroethene (TCE)	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2-Dichloropropane	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Bromodichloromethane	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Dibromomethane	ND	0.0374		mg/Kg-dry	1	10/18/2016 11:09:02 PM
cis-1,3-Dichloropropene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
trans-1,3-Dichloropropylene	ND	0.0280		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1,2-Trichloroethane	ND	0.0280		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,3-Dichloropropane	ND	0.0467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Tetrachloroethene (PCE)	0.183	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Dibromochloromethane	ND	0.0280		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2-Dibromoethane (EDB)	ND	0.00467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Chlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1,1,2-Tetrachloroethane	ND	0.0280		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Bromoform	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,1,2,2-Tetrachloroethane	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Bromobenzene	ND	0.0280		mg/Kg-dry	1	10/18/2016 11:09:02 PM
2-Chlorotoluene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
4-Chlorotoluene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2,3-Trichloropropane	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2,4-Trichlorobenzene	ND	0.0467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,3-Dichlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,4-Dichlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-001
Client Sample ID: UD-E-3N

Collection Date: 10/14/2016 12:30:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

1,2-Dichlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2-Dibromo-3-chloropropane	ND	0.467		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Hexachloro-1,3-butadiene	ND	0.0934		mg/Kg-dry	1	10/18/2016 11:09:02 PM
1,2,3-Trichlorobenzene	ND	0.0187		mg/Kg-dry	1	10/18/2016 11:09:02 PM
Surr: Dibromofluoromethane	93.1	56.5-129		%Rec	1	10/18/2016 11:09:02 PM
Surr: Toluene-d8	100	64.3-131		%Rec	1	10/18/2016 11:09:02 PM
Surr: 1-Bromo-4-fluorobenzene	97.9	63.1-141		%Rec	1	10/18/2016 11:09:02 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample Moisture (Percent Moisture)

Batch ID: R32336 Analyst: WF

Percent Moisture	11.8	0.500		wt%	1	10/17/2016 9:05:34 AM
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Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-002
Client Sample ID: UD-E-3S

Collection Date: 10/14/2016 12:35:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

Dichlorodifluoromethane (CFC-12)	ND	0.0319	Q	mg/Kg-dry	1	10/18/2016 11:37:45 PM
Chloromethane	ND	0.0319	Q	mg/Kg-dry	1	10/18/2016 11:37:45 PM
Vinyl chloride	ND	0.00106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Bromomethane	ND	0.0478		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Trichlorofluoromethane (CFC-11)	ND	0.0266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Chloroethane	ND	0.0319		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1-Dichloroethene	ND	0.0266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Methylene chloride	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
trans-1,2-Dichloroethene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1-Dichloroethane	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
2,2-Dichloropropane	ND	0.0266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
cis-1,2-Dichloroethene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Chloroform	0.0224	0.0106	B	mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1,1-Trichloroethane (TCA)	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1-Dichloropropene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Carbon tetrachloride	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2-Dichloroethane (EDC)	ND	0.0159		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Trichloroethene (TCE)	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2-Dichloropropane	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Bromodichloromethane	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Dibromomethane	ND	0.0212		mg/Kg-dry	1	10/18/2016 11:37:45 PM
cis-1,3-Dichloropropene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
trans-1,3-Dichloropropylene	ND	0.0159		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1,2-Trichloroethane	ND	0.0159		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,3-Dichloropropane	ND	0.0266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Tetrachloroethene (PCE)	0.293	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Dibromochloromethane	ND	0.0159		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2-Dibromoethane (EDB)	ND	0.00266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Chlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1,1,2-Tetrachloroethane	ND	0.0159		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Bromoform	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,1,2,2-Tetrachloroethane	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Bromobenzene	ND	0.0159		mg/Kg-dry	1	10/18/2016 11:37:45 PM
2-Chlorotoluene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
4-Chlorotoluene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2,3-Trichloropropane	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2,4-Trichlorobenzene	ND	0.0266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,3-Dichlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,4-Dichlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-002
Client Sample ID: UD-E-3S

Collection Date: 10/14/2016 12:35:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

1,2-Dichlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2-Dibromo-3-chloropropane	ND	0.266		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Hexachloro-1,3-butadiene	ND	0.0531		mg/Kg-dry	1	10/18/2016 11:37:45 PM
1,2,3-Trichlorobenzene	ND	0.0106		mg/Kg-dry	1	10/18/2016 11:37:45 PM
Surr: Dibromofluoromethane	94.1	56.5-129		%Rec	1	10/18/2016 11:37:45 PM
Surr: Toluene-d8	96.7	64.3-131		%Rec	1	10/18/2016 11:37:45 PM
Surr: 1-Bromo-4-fluorobenzene	98.6	63.1-141		%Rec	1	10/18/2016 11:37:45 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample Moisture (Percent Moisture)

Batch ID: R32336 Analyst: WF

Percent Moisture	19.9	0.500		wt%	1	10/17/2016 9:05:34 AM
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Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-003
Client Sample ID: UD-E-3E

Collection Date: 10/14/2016 12:40:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Volatile Organic Compounds by EPA Method 8260C</u>						
					Batch ID: 15162	Analyst: MW
Dichlorodifluoromethane (CFC-12)	ND	0.0546	Q	mg/Kg-dry	1	10/19/2016 2:32:42 AM
Chloromethane	ND	0.0546	Q	mg/Kg-dry	1	10/19/2016 2:32:42 AM
Vinyl chloride	ND	0.00182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Bromomethane	ND	0.0818		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Trichlorofluoromethane (CFC-11)	ND	0.0455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Chloroethane	ND	0.0546		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1-Dichloroethene	ND	0.0455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Methylene chloride	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
trans-1,2-Dichloroethene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1-Dichloroethane	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
2,2-Dichloropropane	ND	0.0455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
cis-1,2-Dichloroethene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Chloroform	0.0454	0.0182	B	mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1,1-Trichloroethane (TCA)	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1-Dichloropropene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Carbon tetrachloride	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2-Dichloroethane (EDC)	ND	0.0273		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Trichloroethene (TCE)	0.0986	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2-Dichloropropane	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Bromodichloromethane	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Dibromomethane	ND	0.0364		mg/Kg-dry	1	10/19/2016 2:32:42 AM
cis-1,3-Dichloropropene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
trans-1,3-Dichloropropylene	ND	0.0273		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1,2-Trichloroethane	ND	0.0273		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,3-Dichloropropane	ND	0.0455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Tetrachloroethene (PCE)	2.05	0.182	D	mg/Kg-dry	10	10/19/2016 4:30:59 PM
Dibromochloromethane	ND	0.0273		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2-Dibromoethane (EDB)	ND	0.00455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Chlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1,1,2-Tetrachloroethane	ND	0.0273		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Bromoform	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,1,2,2-Tetrachloroethane	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Bromobenzene	ND	0.0273		mg/Kg-dry	1	10/19/2016 2:32:42 AM
2-Chlorotoluene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
4-Chlorotoluene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2,3-Trichloropropane	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2,4-Trichlorobenzene	ND	0.0455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,3-Dichlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,4-Dichlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-003
Client Sample ID: UD-E-3E

Collection Date: 10/14/2016 12:40:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

1,2-Dichlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2-Dibromo-3-chloropropane	ND	0.455		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Hexachloro-1,3-butadiene	ND	0.0909		mg/Kg-dry	1	10/19/2016 2:32:42 AM
1,2,3-Trichlorobenzene	ND	0.0182		mg/Kg-dry	1	10/19/2016 2:32:42 AM
Surr: Dibromofluoromethane	94.8	56.5-129		%Rec	1	10/19/2016 2:32:42 AM
Surr: Toluene-d8	97.5	64.3-131		%Rec	1	10/19/2016 2:32:42 AM
Surr: 1-Bromo-4-fluorobenzene	99.6	63.1-141		%Rec	1	10/19/2016 2:32:42 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample Moisture (Percent Moisture)

Batch ID: R32336 Analyst: WF

Percent Moisture	12.2	0.500		wt%	1	10/17/2016 9:05:34 AM
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Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-004
Client Sample ID: UD-E-3W

Collection Date: 10/14/2016 12:45:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162

Analyst: MW

Dichlorodifluoromethane (CFC-12)	ND	0.0568	Q	mg/Kg-dry	1	10/19/2016 3:01:48 AM
Chloromethane	ND	0.0568	Q	mg/Kg-dry	1	10/19/2016 3:01:48 AM
Vinyl chloride	ND	0.00189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Bromomethane	ND	0.0852		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Trichlorofluoromethane (CFC-11)	ND	0.0473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Chloroethane	ND	0.0568		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1-Dichloroethene	ND	0.0473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Methylene chloride	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
trans-1,2-Dichloroethene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1-Dichloroethane	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
2,2-Dichloropropane	ND	0.0473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
cis-1,2-Dichloroethene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Chloroform	0.0551	0.0189	B	mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1,1-Trichloroethane (TCA)	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1-Dichloropropene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Carbon tetrachloride	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2-Dichloroethane (EDC)	ND	0.0284		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Trichloroethene (TCE)	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2-Dichloropropane	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Bromodichloromethane	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Dibromomethane	ND	0.0379		mg/Kg-dry	1	10/19/2016 3:01:48 AM
cis-1,3-Dichloropropene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
trans-1,3-Dichloropropylene	ND	0.0284		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1,2-Trichloroethane	ND	0.0284		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,3-Dichloropropane	ND	0.0473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Tetrachloroethene (PCE)	0.428	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Dibromochloromethane	ND	0.0284		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2-Dibromoethane (EDB)	ND	0.00473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Chlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1,1,2-Tetrachloroethane	ND	0.0284		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Bromoform	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,1,2,2-Tetrachloroethane	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Bromobenzene	ND	0.0284		mg/Kg-dry	1	10/19/2016 3:01:48 AM
2-Chlorotoluene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
4-Chlorotoluene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2,3-Trichloropropane	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2,4-Trichlorobenzene	ND	0.0473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,3-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,4-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-004
Client Sample ID: UD-E-3W

Collection Date: 10/14/2016 12:45:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

1,2-Dichlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2-Dibromo-3-chloropropane	ND	0.473		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Hexachloro-1,3-butadiene	ND	0.0946		mg/Kg-dry	1	10/19/2016 3:01:48 AM
1,2,3-Trichlorobenzene	ND	0.0189		mg/Kg-dry	1	10/19/2016 3:01:48 AM
Surr: Dibromofluoromethane	95.3	56.5-129		%Rec	1	10/19/2016 3:01:48 AM
Surr: Toluene-d8	101	64.3-131		%Rec	1	10/19/2016 3:01:48 AM
Surr: 1-Bromo-4-fluorobenzene	99.4	63.1-141		%Rec	1	10/19/2016 3:01:48 AM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample Moisture (Percent Moisture)

Batch ID: R32336 Analyst: WF

Percent Moisture	11.4	0.500		wt%	1	10/17/2016 9:05:34 AM
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Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-005
Client Sample ID: UD-W-TIS

Collection Date: 10/14/2016 1:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15145 Analyst: WC

Diesel (Fuel Oil)	ND	21.0		mg/Kg-dry	1	10/17/2016 10:22:00 PM
Heavy Oil	122	52.4		mg/Kg-dry	1	10/17/2016 10:22:00 PM
Surr: 2-Fluorobiphenyl	101	50-150		%Rec	1	10/17/2016 10:22:00 PM
Surr: o-Terphenyl	98.5	50-150		%Rec	1	10/17/2016 10:22:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15162 Analyst: NG

Gasoline	1,410	228	D	mg/Kg-dry	50	10/20/2016 12:33:47 PM
Surr: Toluene-d8	167	65-135	S	%Rec	1	10/19/2016 3:59:55 AM
Surr: 4-Bromofluorobenzene	98.9	65-135		%Rec	1	10/19/2016 3:59:55 AM

NOTES:

S - Outlying surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

Dichlorodifluoromethane (CFC-12)	ND	0.0548	Q	mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chloromethane	ND	0.0548	Q	mg/Kg-dry	1	10/19/2016 3:59:55 AM
Vinyl chloride	ND	0.00183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Bromomethane	ND	0.0822		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Trichlorofluoromethane (CFC-11)	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chloroethane	ND	0.0548		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1-Dichloroethene	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Methylene chloride	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
trans-1,2-Dichloroethene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Methyl tert-butyl ether (MTBE)	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1-Dichloroethane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
2,2-Dichloropropane	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
cis-1,2-Dichloroethene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chloroform	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1,1-Trichloroethane (TCA)	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1-Dichloropropene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Carbon tetrachloride	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dichloroethane (EDC)	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Benzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Trichloroethene (TCE)	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dichloropropane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Bromodichloromethane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Dibromomethane	ND	0.0365		mg/Kg-dry	1	10/19/2016 3:59:55 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-005
Client Sample ID: UD-W-TIS

Collection Date: 10/14/2016 1:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<u>Volatile Organic Compounds by EPA Method 8260C</u>						
					Batch ID: 15162	Analyst: MW
cis-1,3-Dichloropropene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Toluene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
trans-1,3-Dichloropropylene	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1,2-Trichloroethane	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,3-Dichloropropane	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Tetrachloroethene (PCE)	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Dibromochloromethane	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dibromoethane (EDB)	ND	0.00457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Chlorobenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1,1,2-Tetrachloroethane	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Ethylbenzene	0.279	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
m,p-Xylene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
o-Xylene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Styrene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Isopropylbenzene	0.857	0.0731		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Bromoform	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,1,2,2-Tetrachloroethane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
n-Propylbenzene	1.56	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Bromobenzene	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,3,5-Trimethylbenzene	2.23	0.183	D	mg/Kg-dry	10	10/19/2016 5:00:15 PM
2-Chlorotoluene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
4-Chlorotoluene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
tert-Butylbenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2,3-Trichloropropane	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2,4-Trichlorobenzene	ND	0.0457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
sec-Butylbenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
4-Isopropyltoluene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,3-Dichlorobenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,4-Dichlorobenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
n-Butylbenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dichlorobenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2-Dibromo-3-chloropropane	ND	0.457		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2,4-Trimethylbenzene	4.54	0.183	D	mg/Kg-dry	10	10/19/2016 5:00:15 PM
Hexachlorobutadiene	ND	0.0913		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Naphthalene	ND	0.0274		mg/Kg-dry	1	10/19/2016 3:59:55 AM
1,2,3-Trichlorobenzene	ND	0.0183		mg/Kg-dry	1	10/19/2016 3:59:55 AM
Surr: Dibromofluoromethane	91.4	56.5-129		%Rec	1	10/19/2016 3:59:55 AM
Surr: Toluene-d8	159	64.3-131	S	%Rec	1	10/19/2016 3:59:55 AM
Surr: 1-Bromo-4-fluorobenzene	84.5	63.1-141		%Rec	1	10/19/2016 3:59:55 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610259-005
Client Sample ID: UD-W-TIS

Collection Date: 10/14/2016 1:00:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15162 Analyst: MW

NOTES:

S - Outlying surrogate recovery attributed to TPH interference. The method is in control as indicated by the Method Blank (MB) & Laboratory Control Sample (LCS).
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Total Metals by EPA Method 6020

Batch ID: 15167 Analyst: TN

Lead	2.24	0.184		mg/Kg-dry	1	10/19/2016 4:08:04 PM
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Sample Moisture (Percent Moisture)

Batch ID: R32336 Analyst: WF

Percent Moisture	13.0	0.500		wt%	1	10/17/2016 9:05:34 AM
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Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-15145	SampType: MBLK	Units: mg/Kg	Prep Date: 10/17/2016	RunNo: 32361							
Client ID: MBLKS	Batch ID: 15145		Analysis Date: 10/17/2016	SeqNo: 612184							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	20.5		20.00		102	50	150				
Surr: o-Terphenyl	20.9		20.00		104	50	150				

Sample ID LCS-15145	SampType: LCS	Units: mg/Kg	Prep Date: 10/17/2016	RunNo: 32361							
Client ID: LCSS	Batch ID: 15145		Analysis Date: 10/17/2016	SeqNo: 612183							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	468	20.0	500.0	0	93.6	65	135				
Surr: 2-Fluorobiphenyl	23.4		20.00		117	50	150				
Surr: o-Terphenyl	23.8		20.00		119	50	150				

Sample ID 1610270-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/17/2016	RunNo: 32361							
Client ID: BATCH	Batch ID: 15145		Analysis Date: 10/17/2016	SeqNo: 612263							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	21.2						0		30	
Heavy Oil	ND	53.1						0		30	
Surr: 2-Fluorobiphenyl	20.7		21.25		97.5	50	150		0		
Surr: o-Terphenyl	20.6		21.25		96.8	50	150		0		

Sample ID 1610259-005ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/17/2016	RunNo: 32361							
Client ID: UD-W-TIS	Batch ID: 15145		Analysis Date: 10/17/2016	SeqNo: 612259							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.6						0		30	
Heavy Oil	64.7	51.5						122.2	61.6	30	R
Surr: 2-Fluorobiphenyl	20.6		20.62		99.9	50	150		0		

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID 1610259-005ADUP	SampType: DUP	Units: mg/Kg-dry			Prep Date: 10/17/2016	RunNo: 32361					
Client ID: UD-W-TIS	Batch ID: 15145				Analysis Date: 10/17/2016	SeqNo: 612259					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: o-Terphenyl	20.3		20.62		98.3	50	150			0	
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NOTES:

R - High RPD due to suspected sample inhomogeneity. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID 1610259-005AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 10/17/2016	RunNo: 32361					
Client ID: UD-W-TIS	Batch ID: 15145				Analysis Date: 10/18/2016	SeqNo: 612260					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	508	21.2	531.2	0	95.7	65	135				
Surr: 2-Fluorobiphenyl	23.1		21.25		109	50	150				
Surr: o-Terphenyl	23.2		21.25		109	50	150				

Sample ID 1610259-005AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 10/17/2016	RunNo: 32361					
Client ID: UD-W-TIS	Batch ID: 15145				Analysis Date: 10/18/2016	SeqNo: 612261					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	476	19.6	489.6	0	97.2	65	135	508.1	6.52	30	
Surr: 2-Fluorobiphenyl	21.0		19.58		107	50	150		0		
Surr: o-Terphenyl	21.0		19.58		107	50	150		0		

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID	LCS-15162	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/18/2016	RunNo:	32433		
Client ID:	LCSS	Batch ID:	15162			Analysis Date:	10/18/2016	SeqNo:	613760		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	26.5	5.00	25.00	0	106	65	135				
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.29		1.250		103	65	135				

Sample ID	MB-15162	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/18/2016	RunNo:	32433		
Client ID:	MBLKS	Batch ID:	15162			Analysis Date:	10/18/2016	SeqNo:	613761		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.30		1.250		104	65	135				
Surr: 4-Bromofluorobenzene	1.26		1.250		101	65	135				

Sample ID	1610194-004BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/18/2016	RunNo:	32433		
Client ID:	BATCH	Batch ID:	15162			Analysis Date:	10/18/2016	SeqNo:	613741		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	4.59						0		30	
Surr: Toluene-d8	1.25		1.148		109	65	135		0		
Surr: 4-Bromofluorobenzene	1.22		1.148		106	65	135		0		

Sample ID	1610259-004BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/18/2016	RunNo:	32433		
Client ID:	UD-E-3W	Batch ID:	15162			Analysis Date:	10/19/2016	SeqNo:	613751		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	4.73						0		30	
Surr: Toluene-d8	1.29		1.183		109	65	135		0		
Surr: 4-Bromofluorobenzene	1.18		1.183		99.5	65	135		0		

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID 1610259-003BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32433							
Client ID: UD-E-3E	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613748							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	29.0	4.55	22.73	8.369	90.7	65	135				
Surr: Toluene-d8	1.14		1.137		100	65	135				
Surr: 4-Bromofluorobenzene	1.17		1.137		103	65	135				

Sample ID 1610259-003BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32433							
Client ID: UD-E-3E	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613749							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	30.2	4.55	22.73	8.369	96.0	65	135	28.98	4.07	30	
Surr: Toluene-d8	1.16		1.137		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.17		1.137		103	65	135		0		



Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID 1610194-001ADUP	SampType: DUP	Units: wt%	Prep Date: 10/17/2016	RunNo: 32336							
Client ID: BATCH	Batch ID: R32336	Analysis Date: 10/17/2016	SeqNo: 611704								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	8.78	0.500						8.500	3.27	20	

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID	MB-15167	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/19/2016	RunNo:	32424			
Client ID:	MBLKS	Batch ID:	15167			Analysis Date:	10/19/2016	SeqNo:	613491			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.161

Sample ID	LCS-15167	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/19/2016	RunNo:	32424			
Client ID:	LCSS	Batch ID:	15167			Analysis Date:	10/19/2016	SeqNo:	613492			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 18.5 0.152 18.94 0 97.5 80 120

Sample ID	1610194-001ADUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/19/2016	RunNo:	32424			
Client ID:	BATCH	Batch ID:	15167			Analysis Date:	10/19/2016	SeqNo:	613494			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 32.2 0.171 37.84 16.0 20

Sample ID	1610194-001AMS	SampType:	MS	Units:	mg/Kg-dry	Prep Date:	10/19/2016	RunNo:	32424			
Client ID:	BATCH	Batch ID:	15167			Analysis Date:	10/19/2016	SeqNo:	613498			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 54.0 0.172 21.51 37.84 75.1 75 125

Sample ID	1610194-001AMSD	SampType:	MSD	Units:	mg/Kg-dry	Prep Date:	10/19/2016	RunNo:	32424			
Client ID:	BATCH	Batch ID:	15167			Analysis Date:	10/19/2016	SeqNo:	613499			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 60.3 0.175 21.86 37.84 103 75 125 53.99 11.0 20

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15162	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/18/2016	RunNo:	32422		
Client ID:	LCSS	Batch ID:	15162	Analysis Date:	10/18/2016	SeqNo:	613456				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.544	0.0600	1.000	0	54.4	34.5	141				Q
Chloromethane	0.686	0.0600	1.000	0	68.6	38.8	132				Q
Vinyl chloride	0.715	0.00200	1.000	0	71.5	44	142				
Bromomethane	0.906	0.0900	1.000	0	90.6	40.9	157				
Trichlorofluoromethane (CFC-11)	0.718	0.0500	1.000	0	71.8	41.7	153				
Chloroethane	0.742	0.0600	1.000	0	74.2	37.1	144				
1,1-Dichloroethene	0.785	0.0500	1.000	0	78.5	49.7	142				
Methylene chloride	0.806	0.0200	1.000	0	80.6	46.3	140				
trans-1,2-Dichloroethene	0.807	0.0200	1.000	0	80.7	68	130				
Methyl tert-butyl ether (MTBE)	0.849	0.0500	1.000	0	84.9	59.1	138				
1,1-Dichloroethane	0.874	0.0200	1.000	0	87.4	61.9	137				
2,2-Dichloropropane	1.25	0.0500	1.000	0	125	28.1	149				
cis-1,2-Dichloroethene	0.838	0.0200	1.000	0	83.8	71.3	135				
Chloroform	0.820	0.0200	1.000	0	82.0	67.5	129				B
1,1,1-Trichloroethane (TCA)	0.812	0.0200	1.000	0	81.2	69	132				
1,1-Dichloropropene	0.836	0.0200	1.000	0	83.6	72.7	131				
Carbon tetrachloride	0.844	0.0200	1.000	0	84.4	63.4	137				
1,2-Dichloroethane (EDC)	0.778	0.0300	1.000	0	77.8	61.9	136				
Benzene	0.845	0.0200	1.000	0	84.5	64.3	133				
Trichloroethene (TCE)	0.847	0.0200	1.000	0	84.7	65.5	137				
1,2-Dichloropropane	0.886	0.0200	1.000	0	88.6	63.2	142				
Bromodichloromethane	0.833	0.0200	1.000	0	83.3	73.2	131				
Dibromomethane	0.833	0.0400	1.000	0	83.3	70	130				
cis-1,3-Dichloropropene	0.928	0.0200	1.000	0	92.8	59.1	143				
Toluene	0.858	0.0200	1.000	0	85.8	67.3	138				
trans-1,3-Dichloropropylene	0.916	0.0300	1.000	0	91.6	49.2	149				
1,1,2-Trichloroethane	0.788	0.0300	1.000	0	78.8	74.5	129				
1,3-Dichloropropane	0.778	0.0500	1.000	0	77.8	70	130				
Tetrachloroethene (PCE)	0.818	0.0200	1.000	0	81.8	52.7	150				
Dibromochloromethane	0.814	0.0300	1.000	0	81.4	70.6	144				
1,2-Dibromoethane (EDB)	0.796	0.00500	1.000	0	79.6	70	130				

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Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15162	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/18/2016	RunNo:	32422
Client ID:	LCSS	Batch ID:	15162			Analysis Date:	10/18/2016	SeqNo:	613456

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	0.868	0.0200	1.000	0	86.8	76.1	123				
1,1,1,2-Tetrachloroethane	0.899	0.0300	1.000	0	89.9	65.9	141				
Ethylbenzene	0.852	0.0300	1.000	0	85.2	74	129				
m,p-Xylene	1.72	0.0200	2.000	0	86.1	70	124				
o-Xylene	0.843	0.0200	1.000	0	84.3	72.7	124				
Styrene	0.850	0.0200	1.000	0	85.0	76.8	130				
Isopropylbenzene	0.863	0.0800	1.000	0	86.3	70	130				
Bromoform	0.890	0.0200	1.000	0	89.0	67	154				
1,1,2,2-Tetrachloroethane	0.792	0.0200	1.000	0	79.2	60	130				
n-Propylbenzene	0.863	0.0200	1.000	0	86.3	74.8	125				
Bromobenzene	0.864	0.0300	1.000	0	86.4	49.2	144				
1,3,5-Trimethylbenzene	0.855	0.0200	1.000	0	85.5	74.6	123				
2-Chlorotoluene	0.865	0.0200	1.000	0	86.5	76.7	129				
4-Chlorotoluene	0.850	0.0200	1.000	0	85.0	77.5	125				
tert-Butylbenzene	0.864	0.0200	1.000	0	86.4	66.2	130				
1,2,3-Trichloropropane	0.826	0.0200	1.000	0	82.6	67.9	136				
1,2,4-Trichlorobenzene	0.913	0.0500	1.000	0	91.3	62.6	143				
sec-Butylbenzene	0.863	0.0200	1.000	0	86.3	75.6	133				
4-Isopropyltoluene	0.856	0.0200	1.000	0	85.6	76.8	131				
1,3-Dichlorobenzene	0.906	0.0200	1.000	0	90.6	72.8	128				
1,4-Dichlorobenzene	0.878	0.0200	1.000	0	87.8	72.6	126				
n-Butylbenzene	0.930	0.0200	1.000	0	93.0	65.3	136				
1,2-Dichlorobenzene	0.889	0.0200	1.000	0	88.9	72.8	126				
1,2-Dibromo-3-chloropropane	0.930	0.500	1.000	0	93.0	61.2	139				
1,2,4-Trimethylbenzene	0.860	0.0200	1.000	0	86.0	77.5	129				
Hexachlorobutadiene	0.972	0.100	1.000	0	97.2	42	151				
Naphthalene	0.873	0.0300	1.000	0	87.3	62.3	134				
1,2,3-Trichlorobenzene	0.875	0.0200	1.000	0	87.5	54.8	143				
Surr: Dibromofluoromethane	1.23		1.250		98.2	56.5	129				
Surr: Toluene-d8	1.23		1.250		98.6	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.32		1.250		105	63.1	141				

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QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID LCS-15162	SampType: LCS	Units: mg/Kg	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: LCSS	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613456							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID MB-15162	SampType: MBLK	Units: mg/Kg	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: MBLKS	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613457							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0600									Q
Chloromethane	ND	0.0600									Q
Vinyl chloride	ND	0.00200									
Bromomethane	ND	0.0900									
Trichlorofluoromethane (CFC-11)	ND	0.0500									
Chloroethane	ND	0.0600									
1,1-Dichloroethene	ND	0.0500									
Methylene chloride	ND	0.0200									
trans-1,2-Dichloroethene	ND	0.0200									
Methyl tert-butyl ether (MTBE)	ND	0.0500									
1,1-Dichloroethane	ND	0.0200									
2,2-Dichloropropane	ND	0.0500									
cis-1,2-Dichloroethene	ND	0.0200									
Chloroform	0.0411	0.0200									
1,1,1-Trichloroethane (TCA)	ND	0.0200									
1,1-Dichloropropene	ND	0.0200									
Carbon tetrachloride	ND	0.0200									
1,2-Dichloroethane (EDC)	ND	0.0300									
Benzene	ND	0.0200									
Trichloroethene (TCE)	ND	0.0200									
1,2-Dichloropropane	ND	0.0200									
Bromodichloromethane	ND	0.0200									
Dibromomethane	ND	0.0400									
cis-1,3-Dichloropropene	ND	0.0200									

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Volatile Organic Compounds by EPA Method 8260C

Sample ID: MB-15162	SampType: MBLK	Units: mg/Kg	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: MBLKS	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613457							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,1,2,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									
1,2-Dibromo-3-chloropropane	ND	0.500									

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Sample ID MB-15162	SampType: MBLK	Units: mg/Kg	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: MBLKS	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613457							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.21		1.250		96.9	56.5	129				
Surr: Toluene-d8	1.19		1.250		95.1	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.25		1.250		99.7	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610194-004BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613434							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	0.0551						0		30	Q
Chloromethane	ND	0.0551						0		30	Q
Vinyl chloride	ND	0.00184						0		30	
Bromomethane	ND	0.0827						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0459						0		30	
Chloroethane	ND	0.0551						0		30	
1,1-Dichloroethene	ND	0.0459						0		30	
Methylene chloride	ND	0.0184						0		30	
trans-1,2-Dichloroethene	ND	0.0184						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0459						0		30	
1,1-Dichloroethane	ND	0.0184						0		30	
2,2-Dichloropropane	ND	0.0459						0		30	
cis-1,2-Dichloroethene	ND	0.0184						0		30	
Chloroform	0.0585	0.0184						0.05907	1.03	30	B
1,1,1-Trichloroethane (TCA)	ND	0.0184						0		30	
1,1-Dichloropropene	ND	0.0184						0		30	
Carbon tetrachloride	ND	0.0184						0		30	

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Sample ID: 1610194-004BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613434

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloroethane (EDC)	ND	0.0276						0		30	
Benzene	ND	0.0184						0		30	
Trichloroethene (TCE)	ND	0.0184						0		30	
1,2-Dichloropropane	ND	0.0184						0		30	
Bromodichloromethane	ND	0.0184						0		30	
Dibromomethane	ND	0.0367						0		30	
cis-1,3-Dichloropropene	ND	0.0184						0		30	
Toluene	ND	0.0184						0		30	
trans-1,3-Dichloropropylene	ND	0.0276						0		30	
1,1,2-Trichloroethane	ND	0.0276						0		30	
1,3-Dichloropropane	ND	0.0459						0		30	
Tetrachloroethene (PCE)	ND	0.0184						0		30	
Dibromochloromethane	ND	0.0276						0		30	
1,2-Dibromoethane (EDB)	ND	0.00459						0		30	
Chlorobenzene	ND	0.0184						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0276						0		30	
Ethylbenzene	ND	0.0276						0		30	
m,p-Xylene	0.0276	0.0184						0.02677	3.00	30	
o-Xylene	ND	0.0184						0		30	
Styrene	ND	0.0184						0		30	
Isopropylbenzene	ND	0.0735						0		30	
Bromoform	ND	0.0184						0		30	
1,1,1,2,2-Tetrachloroethane	ND	0.0184						0		30	
n-Propylbenzene	ND	0.0184						0		30	
Bromobenzene	ND	0.0276						0		30	
1,3,5-Trimethylbenzene	ND	0.0184						0		30	
2-Chlorotoluene	ND	0.0184						0		30	
4-Chlorotoluene	ND	0.0184						0		30	
tert-Butylbenzene	ND	0.0184						0		30	
1,2,3-Trichloropropane	ND	0.0184						0		30	
1,2,4-Trichlorobenzene	ND	0.0459						0		30	

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Sample ID 1610194-004BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/18/2016	SeqNo: 613434							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

sec-Butylbenzene	ND	0.0184						0		30	
4-Isopropyltoluene	ND	0.0184						0		30	
1,3-Dichlorobenzene	ND	0.0184						0		30	
1,4-Dichlorobenzene	ND	0.0184						0		30	
n-Butylbenzene	ND	0.0184						0		30	
1,2-Dichlorobenzene	ND	0.0184						0		30	
1,2-Dibromo-3-chloropropane	ND	0.459						0		30	
1,2,4-Trimethylbenzene	ND	0.0184						0		30	
Hexachlorobutadiene	ND	0.0919						0		30	
Naphthalene	ND	0.0276						0		30	
1,2,3-Trichlorobenzene	ND	0.0184						0		30	
Surr: Dibromofluoromethane	1.11		1.148		96.5	56.5	129		0		
Surr: Toluene-d8	1.20		1.148		104	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.19		1.148		104	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610194-009BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422							
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613440							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.508	0.0591	0.9855	0	51.5	43.5	121				Q
Chloromethane	0.809	0.0591	0.9855	0	82.1	45	130				Q
Vinyl chloride	0.824	0.00197	0.9855	0	83.6	51.2	146				
Bromomethane	0.881	0.0887	0.9855	0	89.4	21.3	120				
Trichlorofluoromethane (CFC-11)	0.484	0.0493	0.9855	0	49.1	35	131				
Chloroethane	0.512	0.0591	0.9855	0	52.0	43.8	117				
1,1-Dichloroethene	0.843	0.0493	0.9855	0	85.6	61.9	141				
Methylene chloride	0.988	0.0197	0.9855	0	100	54.7	142				
trans-1,2-Dichloroethene	0.918	0.0197	0.9855	0	93.2	52	136				
Methyl tert-butyl ether (MTBE)	1.04	0.0493	0.9855	0	106	54.4	132				



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Sample ID: 1610194-009BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613440

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	0.941	0.0197	0.9855	0	95.5	51.8	141				
2,2-Dichloropropane	1.05	0.0493	0.9855	0	107	36	123				
cis-1,2-Dichloroethane	1.02	0.0197	0.9855	0	104	58.6	136				
Chloroform	1.01	0.0197	0.9855	0.04945	97.3	53.2	129				B
1,1,1-Trichloroethane (TCA)	0.886	0.0197	0.9855	0	89.9	58.3	145				
1,1-Dichloropropene	0.925	0.0197	0.9855	0	93.9	55.1	138				
Carbon tetrachloride	0.842	0.0197	0.9855	0	85.4	53.3	144				
1,2-Dichloroethane (EDC)	0.956	0.0296	0.9855	0	97.0	51.3	139				
Benzene	0.984	0.0197	0.9855	0	99.8	63.5	133				
Trichloroethene (TCE)	0.946	0.0197	0.9855	0	96.0	68.6	132				
1,2-Dichloropropane	1.05	0.0197	0.9855	0	107	59	136				
Bromodichloromethane	0.927	0.0197	0.9855	0	94.0	50.7	141				
Dibromomethane	0.997	0.0394	0.9855	0	101	50.6	137				
cis-1,3-Dichloropropene	1.00	0.0197	0.9855	0	102	50.4	138				
Toluene	0.989	0.0197	0.9855	0	100	63.4	132				
trans-1,3-Dichloropropylene	1.01	0.0296	0.9855	0	103	44.1	147				
1,1,2-Trichloroethane	0.967	0.0296	0.9855	0	98.1	51.6	137				
1,3-Dichloropropane	0.967	0.0493	0.9855	0	98.2	53.1	134				
Tetrachloroethene (PCE)	0.904	0.0197	0.9855	0	91.7	35.6	158				
Dibromochloromethane	0.908	0.0296	0.9855	0	92.1	55.3	140				
1,2-Dibromoethane (EDB)	1.01	0.00493	0.9855	0	103	50.4	136				
Chlorobenzene	1.00	0.0197	0.9855	0	102	60	133				
1,1,1,2-Tetrachloroethane	0.962	0.0296	0.9855	0	97.6	53.1	142				
Ethylbenzene	0.963	0.0296	0.9855	0	97.7	54.5	134				
m,p-Xylene	1.94	0.0197	1.971	0	98.2	53.1	132				
o-Xylene	0.973	0.0197	0.9855	0	98.7	53.3	139				
Styrene	1.01	0.0197	0.9855	0	102	51.1	132				
Isopropylbenzene	0.973	0.0788	0.9855	0	98.7	58.9	138				
Bromoform	0.917	0.0197	0.9855	0	93.0	57.9	130				
1,1,2,2-Tetrachloroethane	0.915	0.0197	0.9855	0	92.8	51.9	131				
n-Propylbenzene	0.985	0.0197	0.9855	0	100	53.6	140				

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610194-009BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613440

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	1.01	0.0296	0.9855	0	103	54.2	140				
1,3,5-Trimethylbenzene	0.990	0.0197	0.9855	0	100	51.8	136				
2-Chlorotoluene	1.00	0.0197	0.9855	0	101	51.6	136				
4-Chlorotoluene	0.985	0.0197	0.9855	0	99.9	50.1	139				
tert-Butylbenzene	0.984	0.0197	0.9855	0	99.8	50.5	135				
1,2,3-Trichloropropane	0.959	0.0197	0.9855	0	97.3	50.5	131				
1,2,4-Trichlorobenzene	0.917	0.0493	0.9855	0	93.1	50.8	130				
sec-Butylbenzene	0.974	0.0197	0.9855	0	98.8	52.6	141				
4-Isopropyltoluene	0.979	0.0197	0.9855	0	99.4	52.9	134				
1,3-Dichlorobenzene	1.02	0.0197	0.9855	0	103	52.6	131				
1,4-Dichlorobenzene	0.987	0.0197	0.9855	0	100	52.9	129				
n-Butylbenzene	1.02	0.0197	0.9855	0	104	52.6	130				
1,2-Dichlorobenzene	0.992	0.0197	0.9855	0	101	55.8	129				
1,2-Dibromo-3-chloropropane	0.882	0.493	0.9855	0	89.5	40.5	131				
1,2,4-Trimethylbenzene	0.996	0.0197	0.9855	0	101	50.6	137				
Hexachlorobutadiene	1.01	0.0986	0.9855	0	103	40.6	158				
Naphthalene	0.945	0.0296	0.9855	0	95.9	52.3	124				
1,2,3-Trichlorobenzene	0.947	0.0197	0.9855	0	96.1	54.4	124				
Surr: Dibromofluoromethane	1.20		1.232		97.3	56.5	129				
Surr: Toluene-d8	1.22		1.232		99.0	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.30		1.232		106	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610194-009BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613441

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.439	0.0591	0.9855	0	44.5	43.5	121	0.5077	14.6	30	Q
Chloromethane	0.753	0.0591	0.9855	0	76.4	45	130	0.8093	7.22	30	Q
Vinyl chloride	0.763	0.00197	0.9855	0	77.4	51.2	146	0.8239	7.67	30	

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610194-009BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613441

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromomethane	0.847	0.0887	0.9855	0	85.9	21.3	120	0.8811	4.00	30	
Trichlorofluoromethane (CFC-11)	0.458	0.0493	0.9855	0	46.5	35	131	0.4839	5.42	30	
Chloroethane	0.480	0.0591	0.9855	0	48.7	43.8	117	0.5124	6.56	30	
1,1-Dichloroethene	0.797	0.0493	0.9855	0	80.9	61.9	141	0.8435	5.67	30	
Methylene chloride	0.940	0.0197	0.9855	0	95.4	54.7	142	0.9882	5.01	30	
trans-1,2-Dichloroethene	0.885	0.0197	0.9855	0	89.8	52	136	0.9182	3.67	30	
Methyl tert-butyl ether (MTBE)	1.04	0.0493	0.9855	0	105	54.4	132	1.041	0.447	30	
1,1-Dichloroethane	0.918	0.0197	0.9855	0	93.2	51.8	141	0.9408	2.40	30	
2,2-Dichloropropane	1.02	0.0493	0.9855	0	103	36	123	1.052	3.52	30	
cis-1,2-Dichloroethene	0.976	0.0197	0.9855	0	99.0	58.6	136	1.021	4.47	30	
Chloroform	0.971	0.0197	0.9855	0.04945	93.5	53.2	129	1.009	3.85	30	B
1,1,1-Trichloroethane (TCA)	0.866	0.0197	0.9855	0	87.8	58.3	145	0.8862	2.33	30	
1,1-Dichloropropene	0.891	0.0197	0.9855	0	90.4	55.1	138	0.9253	3.76	30	
Carbon tetrachloride	0.817	0.0197	0.9855	0	82.9	53.3	144	0.8416	2.96	30	
1,2-Dichloroethane (EDC)	0.943	0.0296	0.9855	0	95.7	51.3	139	0.9563	1.35	30	
Benzene	0.963	0.0197	0.9855	0	97.7	63.5	133	0.9838	2.13	30	
Trichloroethene (TCE)	0.924	0.0197	0.9855	0	93.8	68.6	132	0.9461	2.35	30	
1,2-Dichloropropane	1.02	0.0197	0.9855	0	103	59	136	1.052	3.35	30	
Bromodichloromethane	0.904	0.0197	0.9855	0	91.7	50.7	141	0.9266	2.48	30	
Dibromomethane	0.957	0.0394	0.9855	0	97.1	50.6	137	0.9968	4.09	30	
cis-1,3-Dichloropropene	0.980	0.0197	0.9855	0	99.5	50.4	138	1.001	2.05	30	
Toluene	0.948	0.0197	0.9855	0	96.2	63.4	132	0.9892	4.25	30	
trans-1,3-Dichloropropylene	0.997	0.0296	0.9855	0	101	44.1	147	1.014	1.63	30	
1,1,2-Trichloroethane	0.943	0.0296	0.9855	0	95.6	51.6	137	0.9669	2.55	30	
1,3-Dichloropropane	0.934	0.0493	0.9855	0	94.7	53.1	134	0.9674	3.56	30	
Tetrachloroethene (PCE)	0.865	0.0197	0.9855	0	87.8	35.6	158	0.9037	4.39	30	
Dibromochloromethane	0.893	0.0296	0.9855	0	90.6	55.3	140	0.9075	1.61	30	
1,2-Dibromoethane (EDB)	0.987	0.00493	0.9855	0	100	50.4	136	1.014	2.70	30	
Chlorobenzene	0.983	0.0197	0.9855	0	99.7	60	133	1.003	2.02	30	
1,1,1,2-Tetrachloroethane	0.932	0.0296	0.9855	0	94.6	53.1	142	0.9623	3.21	30	
Ethylbenzene	0.937	0.0296	0.9855	0	95.1	54.5	134	0.9628	2.70	30	

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610194-009BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: BATCH	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613441

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
m,p-Xylene	1.89	0.0197	1.971	0	96.0	53.1	132	1.936	2.30	30	
o-Xylene	0.958	0.0197	0.9855	0	97.2	53.3	139	0.9727	1.51	30	
Styrene	0.988	0.0197	0.9855	0	100	51.1	132	1.005	1.73	30	
Isopropylbenzene	0.950	0.0788	0.9855	0	96.4	58.9	138	0.9731	2.36	30	
Bromoform	0.907	0.0197	0.9855	0	92.0	57.9	130	0.9168	1.08	30	
1,1,2,2-Tetrachloroethane	0.894	0.0197	0.9855	0	90.7	51.9	131	0.9147	2.28	30	
n-Propylbenzene	0.963	0.0197	0.9855	0	97.7	53.6	140	0.9852	2.28	30	
Bromobenzene	0.996	0.0296	0.9855	0	101	54.2	140	1.012	1.54	30	
1,3,5-Trimethylbenzene	0.965	0.0197	0.9855	0	97.9	51.8	136	0.9897	2.53	30	
2-Chlorotoluene	0.972	0.0197	0.9855	0	98.7	51.6	136	0.9997	2.77	30	
4-Chlorotoluene	0.961	0.0197	0.9855	0	97.5	50.1	139	0.9847	2.41	30	
tert-Butylbenzene	0.959	0.0197	0.9855	0	97.3	50.5	135	0.9839	2.54	30	
1,2,3-Trichloropropane	0.937	0.0197	0.9855	0	95.1	50.5	131	0.9590	2.32	30	
1,2,4-Trichlorobenzene	0.932	0.0493	0.9855	0	94.6	50.8	130	0.9171	1.62	30	
sec-Butylbenzene	0.946	0.0197	0.9855	0	96.0	52.6	141	0.9741	2.95	30	
4-Isopropyltoluene	0.959	0.0197	0.9855	0	97.3	52.9	134	0.9792	2.09	30	
1,3-Dichlorobenzene	1.02	0.0197	0.9855	0	103	52.6	131	1.016	0.0841	30	
1,4-Dichlorobenzene	0.978	0.0197	0.9855	0	99.3	52.9	129	0.9868	0.854	30	
n-Butylbenzene	1.01	0.0197	0.9855	0	102	52.6	130	1.023	1.55	30	
1,2-Dichlorobenzene	0.988	0.0197	0.9855	0	100	55.8	129	0.9917	0.383	30	
1,2-Dibromo-3-chloropropane	0.933	0.493	0.9855	0	94.7	40.5	131	0.8822	5.59	30	
1,2,4-Trimethylbenzene	0.969	0.0197	0.9855	0	98.3	50.6	137	0.9958	2.76	30	
Hexachlorobutadiene	0.978	0.0986	0.9855	0	99.2	40.6	158	1.013	3.54	30	
Naphthalene	0.971	0.0296	0.9855	0	98.5	52.3	124	0.9450	2.72	30	
1,2,3-Trichlorobenzene	0.964	0.0197	0.9855	0	97.8	54.4	124	0.9472	1.72	30	
Surr: Dibromofluoromethane	1.18		1.232		95.6	56.5	129		0		
Surr: Toluene-d8	1.20		1.232		97.5	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.30		1.232		106	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).



Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610259-004BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: UD-E-3W	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613446

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0568						0		30	Q
Chloromethane	ND	0.0568						0		30	Q
Vinyl chloride	ND	0.00189						0		30	
Bromomethane	ND	0.0852						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0473						0		30	
Chloroethane	ND	0.0568						0		30	
1,1-Dichloroethene	ND	0.0473						0		30	
Methylene chloride	ND	0.0189						0		30	
trans-1,2-Dichloroethene	ND	0.0189						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0473						0		30	
1,1-Dichloroethane	ND	0.0189						0		30	
2,2-Dichloropropane	ND	0.0473						0		30	
cis-1,2-Dichloroethene	ND	0.0189						0		30	
Chloroform	0.0561	0.0189						0.05505	1.90	30	B
1,1,1-Trichloroethane (TCA)	ND	0.0189						0		30	
1,1-Dichloropropene	ND	0.0189						0		30	
Carbon tetrachloride	ND	0.0189						0		30	
1,2-Dichloroethane (EDC)	ND	0.0284						0		30	
Benzene	ND	0.0189						0		30	
Trichloroethene (TCE)	ND	0.0189						0		30	
1,2-Dichloropropane	ND	0.0189						0		30	
Bromodichloromethane	ND	0.0189						0		30	
Dibromomethane	ND	0.0379						0		30	
cis-1,3-Dichloropropene	ND	0.0189						0		30	
Toluene	ND	0.0189						0		30	
trans-1,3-Dichloropropylene	ND	0.0284						0		30	
1,1,2-Trichloroethane	ND	0.0284						0		30	
1,3-Dichloropropane	ND	0.0473						0		30	
Tetrachloroethene (PCE)	0.434	0.0189						0.4277	1.56	30	
Dibromochloromethane	ND	0.0284						0		30	
1,2-Dibromoethane (EDB)	ND	0.00473						0		30	

Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610259-004BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/18/2016	RunNo: 32422
Client ID: UD-E-3W	Batch ID: 15162		Analysis Date: 10/19/2016	SeqNo: 613446

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	ND	0.0189						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0284						0		30	
Ethylbenzene	ND	0.0284						0		30	
m,p-Xylene	ND	0.0189						0		30	
o-Xylene	ND	0.0189						0		30	
Styrene	ND	0.0189						0		30	
Isopropylbenzene	ND	0.0757						0		30	
Bromoform	ND	0.0189						0		30	
1,1,2,2-Tetrachloroethane	ND	0.0189						0		30	
n-Propylbenzene	ND	0.0189						0		30	
Bromobenzene	ND	0.0284						0		30	
1,3,5-Trimethylbenzene	ND	0.0189						0		30	
2-Chlorotoluene	ND	0.0189						0		30	
4-Chlorotoluene	ND	0.0189						0		30	
tert-Butylbenzene	ND	0.0189						0		30	
1,2,3-Trichloropropane	ND	0.0189						0		30	
1,2,4-Trichlorobenzene	ND	0.0473						0		30	
sec-Butylbenzene	ND	0.0189						0		30	
4-Isopropyltoluene	ND	0.0189						0		30	
1,3-Dichlorobenzene	ND	0.0189						0		30	
1,4-Dichlorobenzene	ND	0.0189						0		30	
n-Butylbenzene	ND	0.0189						0		30	
1,2-Dichlorobenzene	ND	0.0189						0		30	
1,2-Dibromo-3-chloropropane	ND	0.473						0		30	
1,2,4-Trimethylbenzene	ND	0.0189						0		30	
Hexachlorobutadiene	ND	0.0946						0		30	
Naphthalene	ND	0.0284						0		30	
1,2,3-Trichlorobenzene	ND	0.0189						0		30	
Surr: Dibromofluoromethane	1.10		1.183		93.1	56.5	129		0		
Surr: Toluene-d8	1.20		1.183		102	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.16		1.183		98.4	63.1	141		0		



Work Order: 1610259
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID	1610259-004BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/18/2016	RunNo:	32422		
Client ID:	UD-E-3W	Batch ID:	15162			Analysis Date:	10/19/2016	SeqNo:	613446		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client Name: **SW**

 Work Order Number: **1610259**

 Logged by: **Clare Griggs**

 Date Received: **10/14/2016 2:10:00 PM**
Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°C * Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	7.2
Sample	7.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Shannon & Wilson

Agnes Tirao
400 N. 34th Street, Suite 100
Seattle, WA 98103

**RE: Sound Transit / Key Bank
Work Order Number: 1610353**

October 27, 2016

Attention Agnes Tirao:

Fremont Analytical, Inc. received 3 sample(s) on 10/24/2016 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260C***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike C. Ridgeway", written in a cursive style.

Mike Ridgeway
Laboratory Director

DoD/ELAP Certification #L2371, ISO/IEC 17025:2005
ORELAP Certification: WA 100009-007 (NELAP Recognized)



Date: 10/27/2016

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank
Work Order: 1610353

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1610353-001	UD-B2	10/24/2016 7:30 AM	10/24/2016 11:17 AM
1610353-002	UD2-B2	10/24/2016 7:40 AM	10/24/2016 11:17 AM
1610353-003	Trip Blank	10/20/2016 5:03 PM	10/24/2016 11:17 AM

CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Client: Shannon & Wilson

Collection Date: 10/24/2016 7:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-001

Matrix: Soil

Client Sample ID: UD-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15250

Analyst: WC

Diesel (Fuel Oil)	ND	23.4		mg/Kg-dry	1	10/26/2016 7:28:00 PM
Heavy Oil	ND	58.4		mg/Kg-dry	1	10/26/2016 7:28:00 PM
Surr: 2-Fluorobiphenyl	97.4	50-150		%Rec	1	10/26/2016 7:28:00 PM
Surr: o-Terphenyl	100	50-150		%Rec	1	10/26/2016 7:28:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15222

Analyst: EM

Gasoline	ND	3.03		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Surr: Toluene-d8	99.4	65-135		%Rec	1	10/25/2016 7:42:52 AM
Surr: 4-Bromofluorobenzene	100	65-135		%Rec	1	10/25/2016 7:42:52 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15222

Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0364	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chloromethane	ND	0.0364	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Vinyl chloride	ND	0.00121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromomethane	ND	0.0546		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Trichlorofluoromethane (CFC-11)	ND	0.0303	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chloroethane	ND	0.0364		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1-Dichloroethene	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Methylene chloride	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
trans-1,2-Dichloroethene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Methyl tert-butyl ether (MTBE)	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1-Dichloroethane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
2,2-Dichloropropane	ND	0.0303	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
cis-1,2-Dichloroethene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chloroform	0.0179	0.0121	B	mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1,1-Trichloroethane (TCA)	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1-Dichloropropene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Carbon tetrachloride	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dichloroethane (EDC)	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Benzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Trichloroethene (TCE)	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dichloropropane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromodichloromethane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Dibromomethane	ND	0.0243		mg/Kg-dry	1	10/25/2016 7:42:52 AM
cis-1,3-Dichloropropene	ND	0.0121	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM
Toluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
trans-1,3-Dichloropropylene	ND	0.0182	Q	mg/Kg-dry	1	10/25/2016 7:42:52 AM



Client: Shannon & Wilson

Collection Date: 10/24/2016 7:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-001

Matrix: Soil

Client Sample ID: UD-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15222

Analyst: EM

1,1,2-Trichloroethane	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,3-Dichloropropane	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Tetrachloroethene (PCE)	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Dibromochloromethane	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dibromoethane (EDB)	ND	0.00303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Chlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1,1,2-Tetrachloroethane	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Ethylbenzene	0.0248	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
m,p-Xylene	0.0152	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
o-Xylene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Styrene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Isopropylbenzene	ND	0.0486		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromoform	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,1,2,2-Tetrachloroethane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
n-Propylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Bromobenzene	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,3,5-Trimethylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
2-Chlorotoluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
4-Chlorotoluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
tert-Butylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,3-Trichloropropane	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,4-Trichlorobenzene	ND	0.0303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
sec-Butylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
4-Isopropyltoluene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,3-Dichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,4-Dichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
n-Butylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2-Dibromo-3-chloropropane	ND	0.303		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,4-Trimethylbenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Hexachlorobutadiene	ND	0.0607		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Naphthalene	ND	0.0182		mg/Kg-dry	1	10/25/2016 7:42:52 AM
1,2,3-Trichlorobenzene	ND	0.0121		mg/Kg-dry	1	10/25/2016 7:42:52 AM
Surr: Dibromofluoromethane	96.1	56.5-129		%Rec	1	10/25/2016 7:42:52 AM
Surr: Toluene-d8	108	64.3-131		%Rec	1	10/25/2016 7:42:52 AM
Surr: 1-Bromo-4-fluorobenzene	98.9	63.1-141		%Rec	1	10/25/2016 7:42:52 AM



Client: Shannon & Wilson

Collection Date: 10/24/2016 7:30:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-001

Matrix: Soil

Client Sample ID: UD-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15222

Analyst: EM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Total Metals by EPA Method 6020

Batch ID: 15225

Analyst: TN

Lead	1.68	0.181		mg/Kg-dry	1	10/25/2016 4:05:58 PM
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Sample Moisture (Percent Moisture)

Batch ID: R32564

Analyst: BB

Percent Moisture	17.5	0.500		wt%	1	10/27/2016 10:52:48 AM
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Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610353-002
Client Sample ID: UD2-B2

Collection Date: 10/24/2016 7:40:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Batch ID: 15250 Analyst: WC

Diesel (Fuel Oil)	ND	23.0		mg/Kg-dry	1	10/26/2016 9:35:00 PM
Heavy Oil	ND	57.4		mg/Kg-dry	1	10/26/2016 9:35:00 PM
Surr: 2-Fluorobiphenyl	88.7	50-150		%Rec	1	10/26/2016 9:35:00 PM
Surr: o-Terphenyl	90.5	50-150		%Rec	1	10/26/2016 9:35:00 PM

Gasoline by NWTPH-Gx

Batch ID: 15222 Analyst: EM

Gasoline	ND	5.52		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Surr: Toluene-d8	101	65-135		%Rec	1	10/25/2016 8:12:03 AM
Surr: 4-Bromofluorobenzene	99.1	65-135		%Rec	1	10/25/2016 8:12:03 AM

Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15222 Analyst: EM

Dichlorodifluoromethane (CFC-12)	ND	0.0663	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chloromethane	ND	0.0663	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Vinyl chloride	ND	0.00221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Bromomethane	ND	0.0994		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Trichlorofluoromethane (CFC-11)	ND	0.0552	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chloroethane	ND	0.0663		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1-Dichloroethene	ND	0.0552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Methylene chloride	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
trans-1,2-Dichloroethene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Methyl tert-butyl ether (MTBE)	ND	0.0552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1-Dichloroethane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
2,2-Dichloropropane	ND	0.0552	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
cis-1,2-Dichloroethene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chloroform	0.0363	0.0221	B	mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1,1-Trichloroethane (TCA)	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1-Dichloropropene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Carbon tetrachloride	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dichloroethane (EDC)	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Benzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Trichloroethene (TCE)	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dichloropropane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Bromodichloromethane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Dibromomethane	ND	0.0442		mg/Kg-dry	1	10/25/2016 8:12:03 AM
cis-1,3-Dichloropropene	ND	0.0221	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM
Toluene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
trans-1,3-Dichloropropylene	ND	0.0331	Q	mg/Kg-dry	1	10/25/2016 8:12:03 AM



Client: Shannon & Wilson
Project: Sound Transit / Key Bank
Lab ID: 1610353-002
Client Sample ID: UD2-B2

Collection Date: 10/24/2016 7:40:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15222 Analyst: EM

1,1,2-Trichloroethane	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,3-Dichloropropane	ND	0.0552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Tetrachloroethene (PCE)	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Dibromochloromethane	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dibromoethane (EDB)	ND	0.00552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Chlorobenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1,1,2-Tetrachloroethane	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Ethylbenzene	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
m,p-Xylene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
o-Xylene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Styrene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Isopropylbenzene	ND	0.0883		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Bromoform	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,1,2,2-Tetrachloroethane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
n-Propylbenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Bromobenzene	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,3,5-Trimethylbenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
2-Chlorotoluene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
4-Chlorotoluene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
tert-Butylbenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2,3-Trichloropropane	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2,4-Trichlorobenzene	ND	0.0552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
sec-Butylbenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
4-Isopropyltoluene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,3-Dichlorobenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,4-Dichlorobenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
n-Butylbenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dichlorobenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2-Dibromo-3-chloropropane	ND	0.552		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2,4-Trimethylbenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Hexachlorobutadiene	ND	0.110		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Naphthalene	ND	0.0331		mg/Kg-dry	1	10/25/2016 8:12:03 AM
1,2,3-Trichlorobenzene	ND	0.0221		mg/Kg-dry	1	10/25/2016 8:12:03 AM
Surr: Dibromofluoromethane	95.8	56.5-129		%Rec	1	10/25/2016 8:12:03 AM
Surr: Toluene-d8	106	64.3-131		%Rec	1	10/25/2016 8:12:03 AM
Surr: 1-Bromo-4-fluorobenzene	98.0	63.1-141		%Rec	1	10/25/2016 8:12:03 AM



Client: Shannon & Wilson

Collection Date: 10/24/2016 7:40:00 AM

Project: Sound Transit / Key Bank

Lab ID: 1610353-002

Matrix: Soil

Client Sample ID: UD2-B2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Volatile Organic Compounds by EPA Method 8260C

Batch ID: 15222 Analyst: EM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Total Metals by EPA Method 6020

Batch ID: 15225 Analyst: TN

Lead	1.65	0.181		mg/Kg-dry	1	10/25/2016 4:09:30 PM
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Sample Moisture (Percent Moisture)

Batch ID: R32564 Analyst: BB

Percent Moisture	13.5	0.500		wt%	1	10/27/2016 10:52:48 AM
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Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID MB-15250	SampType: MBLK	Units: mg/Kg	Prep Date: 10/26/2016	RunNo: 32570							
Client ID: MBLKS	Batch ID: 15250		Analysis Date: 10/26/2016	SeqNo: 616780							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	18.5		20.00		92.6	50	150				
Surr: o-Terphenyl	18.7		20.00		93.3	50	150				

Sample ID LCS-15250	SampType: LCS	Units: mg/Kg	Prep Date: 10/26/2016	RunNo: 32570							
Client ID: LCSS	Batch ID: 15250		Analysis Date: 10/26/2016	SeqNo: 616779							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	447	20.0	500.0	0	89.3	65	135				
Surr: 2-Fluorobiphenyl	21.2		20.00		106	50	150				
Surr: o-Terphenyl	21.3		20.00		106	50	150				

Sample ID 1610353-001ADUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/26/2016	RunNo: 32570							
Client ID: UD-B2	Batch ID: 15250		Analysis Date: 10/26/2016	SeqNo: 616749							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	ND	20.7						0		30	
Heavy Oil	ND	51.8						0		30	
Surr: 2-Fluorobiphenyl	19.2		20.73		92.8	50	150		0		
Surr: o-Terphenyl	20.2		20.73		97.6	50	150		0		

Sample ID 1610353-001AMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/26/2016	RunNo: 32570							
Client ID: UD-B2	Batch ID: 15250		Analysis Date: 10/26/2016	SeqNo: 616750							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel (Fuel Oil)	523	23.6	591.2	0	88.5	65	135				
Surr: 2-Fluorobiphenyl	24.0		23.65		101	50	150				
Surr: o-Terphenyl	25.1		23.65		106	50	150				

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID 1610353-001AMS	SampType: MS	Units: mg/Kg-dry			Prep Date: 10/26/2016	RunNo: 32570					
Client ID: UD-B2	Batch ID: 15250				Analysis Date: 10/26/2016	SeqNo: 616750					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID 1610353-001AMSD	SampType: MSD	Units: mg/Kg-dry			Prep Date: 10/26/2016	RunNo: 32570					
Client ID: UD-B2	Batch ID: 15250				Analysis Date: 10/26/2016	SeqNo: 616751					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	487	21.9	548.4	0	88.9	65	135	523.5	7.13	30	
Surr: 2-Fluorobiphenyl	22.6		21.94		103	50	150		0		
Surr: o-Terphenyl	23.4		21.94		107	50	150		0		

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID	LCS-15222	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/24/2016	RunNo:	32546		
Client ID:	LCSS	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616365		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	23.3	5.00	25.00	0	93.1	65	135				
Surr: Toluene-d8	1.28		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.26		1.250		101	65	135				

Sample ID	MB-15222	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/24/2016	RunNo:	32546		
Client ID:	MBLKS	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616366		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.00									
Surr: Toluene-d8	1.29		1.250		103	65	135				
Surr: 4-Bromofluorobenzene	1.23		1.250		98.1	65	135				

Sample ID	1610345-006BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/24/2016	RunNo:	32546		
Client ID:	BATCH	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616345		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	11.1						0		30	
Surr: Toluene-d8	3.03		2.763		110	65	135		0		
Surr: 4-Bromofluorobenzene	2.78		2.763		101	65	135		0		

Sample ID	1610345-022BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/24/2016	RunNo:	32546		
Client ID:	BATCH	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616354		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	5.93						0		30	
Surr: Toluene-d8	1.52		1.483		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.45		1.483		98.1	65	135		0		

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Gasoline by NWTPH-Gx

Sample ID 1610345-019BMS	SampType: MS	Units: mg/Kg-dry		Prep Date: 10/24/2016	RunNo: 32546						
Client ID: BATCH	Batch ID: 15222			Analysis Date: 10/25/2016	SeqNo: 616351						
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	27.5	6.50	32.51	0	84.7	65	135				
Surr: Toluene-d8	1.69		1.626		104	65	135				
Surr: 4-Bromofluorobenzene	1.62		1.626		99.9	65	135				

Sample ID 1610345-019BMSD	SampType: MSD	Units: mg/Kg-dry		Prep Date: 10/24/2016	RunNo: 32546						
Client ID: BATCH	Batch ID: 15222			Analysis Date: 10/25/2016	SeqNo: 616352						
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	30.6	6.50	32.51	0	94.1	65	135	27.54	10.5	30	
Surr: Toluene-d8	1.62		1.626		99.5	65	135		0		
Surr: 4-Bromofluorobenzene	1.67		1.626		103	65	135		0		



Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Sample Moisture (Percent Moisture)

Sample ID 1610395-003ADUP	SampType: DUP	Units: wt%	Prep Date: 10/27/2016	RunNo: 32564							
Client ID: BATCH	Batch ID: R32564		Analysis Date: 10/27/2016	SeqNo: 616606							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	26.5	0.500						26.23	0.880	20	



Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Total Metals by EPA Method 6020

Sample ID	MB-15225	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/25/2016	RunNo:	32525			
Client ID:	MBLKS	Batch ID:	15225			Analysis Date:	10/25/2016	SeqNo:	615808			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead ND 0.146

Sample ID	LCS-15225	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/25/2016	RunNo:	32525			
Client ID:	LCSS	Batch ID:	15225			Analysis Date:	10/25/2016	SeqNo:	615809			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 18.7 0.154 19.23 0 97.3 80 120

Sample ID	1610340-001ADUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/25/2016	RunNo:	32525			
Client ID:	BATCH	Batch ID:	15225			Analysis Date:	10/25/2016	SeqNo:	615813			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 15.6 0.162 14.57 7.02 20

Sample ID	1610340-001AMS	SampType:	MS	Units:	mg/Kg-dry	Prep Date:	10/25/2016	RunNo:	32525			
Client ID:	BATCH	Batch ID:	15225			Analysis Date:	10/25/2016	SeqNo:	615815			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 33.4 0.162 20.29 14.57 93.0 75 125

Sample ID	1610340-001AMSD	SampType:	MSD	Units:	mg/Kg-dry	Prep Date:	10/25/2016	RunNo:	32525			
Client ID:	BATCH	Batch ID:	15225			Analysis Date:	10/25/2016	SeqNo:	615816			
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Lead 33.6 0.162 20.29 14.57 93.7 75 125 33.44 0.403 20

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15222	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/24/2016	RunNo:	32545		
Client ID:	LCSS	Batch ID:	15222	Analysis Date:	10/25/2016	SeqNo:	616341				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.559	0.0600	1.000	0	55.9	34.5	141				Q
Chloromethane	0.711	0.0600	1.000	0	71.1	38.8	132				Q
Vinyl chloride	0.845	0.00200	1.000	0	84.5	44	142				
Bromomethane	1.22	0.0900	1.000	0	122	40.9	157				
Trichlorofluoromethane (CFC-11)	0.798	0.0500	1.000	0	79.8	41.7	153				Q
Chloroethane	0.864	0.0600	1.000	0	86.4	37.1	144				
1,1-Dichloroethene	0.927	0.0500	1.000	0	92.7	49.7	142				
Methylene chloride	0.982	0.0200	1.000	0	98.2	46.3	140				
trans-1,2-Dichloroethene	0.987	0.0200	1.000	0	98.7	68	130				
Methyl tert-butyl ether (MTBE)	1.09	0.0500	1.000	0	109	59.1	138				
1,1-Dichloroethane	1.03	0.0200	1.000	0	103	61.9	137				
2,2-Dichloropropane	0.934	0.0500	1.000	0	93.4	28.1	149				Q
cis-1,2-Dichloroethene	1.03	0.0200	1.000	0	103	71.3	135				
Chloroform	1.02	0.0200	1.000	0	102	67.5	129				B
1,1,1-Trichloroethane (TCA)	0.988	0.0200	1.000	0	98.8	69	132				
1,1-Dichloropropene	0.993	0.0200	1.000	0	99.3	72.7	131				
Carbon tetrachloride	0.984	0.0200	1.000	0	98.4	63.4	137				
1,2-Dichloroethane (EDC)	1.01	0.0300	1.000	0	101	61.9	136				
Benzene	1.06	0.0200	1.000	0	106	64.3	133				
Trichloroethene (TCE)	1.01	0.0200	1.000	0	101	65.5	137				
1,2-Dichloropropane	1.10	0.0200	1.000	0	110	63.2	142				
Bromodichloromethane	1.03	0.0200	1.000	0	103	73.2	131				
Dibromomethane	1.05	0.0400	1.000	0	105	70	130				
cis-1,3-Dichloropropene	1.07	0.0200	1.000	0	107	59.1	143				Q
Toluene	1.10	0.0200	1.000	0	110	67.3	138				
trans-1,3-Dichloropropylene	1.09	0.0300	1.000	0	109	49.2	149				Q
1,1,2-Trichloroethane	1.07	0.0300	1.000	0	107	74.5	129				
1,3-Dichloropropane	1.06	0.0500	1.000	0	106	70	130				
Tetrachloroethene (PCE)	1.01	0.0200	1.000	0	101	52.7	150				
Dibromochloromethane	1.05	0.0300	1.000	0	105	70.6	144				
1,2-Dibromoethane (EDB)	1.07	0.00500	1.000	0	107	70	130				

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15222	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/24/2016	RunNo:	32545
Client ID:	LCSS	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616341

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	1.05	0.0200	1.000	0	105	76.1	123				
1,1,1,2-Tetrachloroethane	1.07	0.0300	1.000	0	107	65.9	141				
Ethylbenzene	1.03	0.0300	1.000	0	103	74	129				
m,p-Xylene	2.06	0.0200	2.000	0	103	70	124				
o-Xylene	1.03	0.0200	1.000	0	103	72.7	124				
Styrene	1.03	0.0200	1.000	0	103	76.8	130				
Isopropylbenzene	1.01	0.0800	1.000	0	101	70	130				
Bromoform	1.07	0.0200	1.000	0	107	67	154				
1,1,2,2-Tetrachloroethane	1.02	0.0200	1.000	0	102	60	130				
n-Propylbenzene	1.01	0.0200	1.000	0	101	74.8	125				
Bromobenzene	1.06	0.0300	1.000	0	106	49.2	144				
1,3,5-Trimethylbenzene	1.01	0.0200	1.000	0	101	74.6	123				
2-Chlorotoluene	1.02	0.0200	1.000	0	102	76.7	129				
4-Chlorotoluene	1.01	0.0200	1.000	0	101	77.5	125				
tert-Butylbenzene	1.01	0.0200	1.000	0	101	66.2	130				
1,2,3-Trichloropropane	0.992	0.0200	1.000	0	99.2	67.9	136				
1,2,4-Trichlorobenzene	1.05	0.0500	1.000	0	105	62.6	143				
sec-Butylbenzene	0.991	0.0200	1.000	0	99.1	75.6	133				
4-Isopropyltoluene	0.985	0.0200	1.000	0	98.5	76.8	131				
1,3-Dichlorobenzene	1.05	0.0200	1.000	0	105	72.8	128				
1,4-Dichlorobenzene	1.03	0.0200	1.000	0	103	72.6	126				
n-Butylbenzene	1.03	0.0200	1.000	0	103	65.3	136				
1,2-Dichlorobenzene	1.07	0.0200	1.000	0	107	72.8	126				
1,2-Dibromo-3-chloropropane	1.15	0.500	1.000	0	115	61.2	139				
1,2,4-Trimethylbenzene	1.01	0.0200	1.000	0	101	77.5	129				
Hexachlorobutadiene	1.05	0.100	1.000	0	105	42	151				
Naphthalene	1.07	0.0300	1.000	0	107	62.3	134				
1,2,3-Trichlorobenzene	1.03	0.0200	1.000	0	103	54.8	143				
Surr: Dibromofluoromethane	1.26		1.250		101	56.5	129				
Surr: Toluene-d8	1.29		1.250		103	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.31		1.250		105	63.1	141				

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	LCS-15222	SampType:	LCS	Units:	mg/Kg	Prep Date:	10/24/2016	RunNo:	32545				
Client ID:	LCSS	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616341				
Analyte		Result		RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).
 Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Sample ID	MB-15222	SampType:	MBLK	Units:	mg/Kg	Prep Date:	10/24/2016	RunNo:	32545				
Client ID:	MBLKS	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616342				
Analyte		Result		RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)		ND		0.0600									Q
Chloromethane		ND		0.0600									Q
Vinyl chloride		ND		0.00200									
Bromomethane		ND		0.0900									
Trichlorofluoromethane (CFC-11)		ND		0.0500									Q
Chloroethane		ND		0.0600									
1,1-Dichloroethene		ND		0.0500									
Methylene chloride		ND		0.0200									
trans-1,2-Dichloroethene		ND		0.0200									
Methyl tert-butyl ether (MTBE)		ND		0.0500									
1,1-Dichloroethane		ND		0.0200									
2,2-Dichloropropane		ND		0.0500									Q
cis-1,2-Dichloroethene		ND		0.0200									
Chloroform		0.0456		0.0200									
1,1,1-Trichloroethane (TCA)		ND		0.0200									
1,1-Dichloropropene		ND		0.0200									
Carbon tetrachloride		ND		0.0200									
1,2-Dichloroethane (EDC)		ND		0.0300									
Benzene		ND		0.0200									
Trichloroethene (TCE)		ND		0.0200									
1,2-Dichloropropane		ND		0.0200									
Bromodichloromethane		ND		0.0200									
Dibromomethane		ND		0.0400									

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: MB-15222	SampType: MBLK	Units: mg/Kg	Prep Date: 10/24/2016	RunNo: 32545
Client ID: MBLKS	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616342

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
cis-1,3-Dichloropropene	ND	0.0200									Q
Toluene	ND	0.0200									
trans-1,3-Dichloropropylene	ND	0.0300									Q
1,1,2-Trichloroethane	ND	0.0300									
1,3-Dichloropropane	ND	0.0500									
Tetrachloroethene (PCE)	ND	0.0200									
Dibromochloromethane	ND	0.0300									
1,2-Dibromoethane (EDB)	ND	0.00500									
Chlorobenzene	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0300									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Styrene	ND	0.0200									
Isopropylbenzene	ND	0.0800									
Bromoform	ND	0.0200									
1,1,1,2-Tetrachloroethane	ND	0.0200									
n-Propylbenzene	ND	0.0200									
Bromobenzene	ND	0.0300									
1,3,5-Trimethylbenzene	ND	0.0200									
2-Chlorotoluene	ND	0.0200									
4-Chlorotoluene	ND	0.0200									
tert-Butylbenzene	ND	0.0200									
1,2,3-Trichloropropane	ND	0.0200									
1,2,4-Trichlorobenzene	ND	0.0500									
sec-Butylbenzene	ND	0.0200									
4-Isopropyltoluene	ND	0.0200									
1,3-Dichlorobenzene	ND	0.0200									
1,4-Dichlorobenzene	ND	0.0200									
n-Butylbenzene	ND	0.0200									
1,2-Dichlorobenzene	ND	0.0200									

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID MB-15222	SampType: MBLK	Units: mg/Kg	Prep Date: 10/24/2016	RunNo: 32545							
Client ID: MBLKS	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616342							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromo-3-chloropropane	ND	0.500									
1,2,4-Trimethylbenzene	ND	0.0200									
Hexachlorobutadiene	ND	0.100									
Naphthalene	ND	0.0300									
1,2,3-Trichlorobenzene	ND	0.0200									
Surr: Dibromofluoromethane	1.23		1.250		98.6	56.5	129				
Surr: Toluene-d8	1.29		1.250		103	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.21		1.250		96.5	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610353-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545							
Client ID: UD-B2	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616335							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	0.284	0.0364	0.6069	0	46.8	43.5	121				Q
Chloromethane	0.463	0.0364	0.6069	0	76.3	45	130				Q
Vinyl chloride	0.517	0.00121	0.6069	0	85.2	51.2	146				
Bromomethane	0.600	0.0546	0.6069	0	98.9	21.3	120				
Trichlorofluoromethane (CFC-11)	0.336	0.0303	0.6069	0	55.3	35	131				Q
Chloroethane	0.319	0.0364	0.6069	0	52.6	43.8	117				
1,1-Dichloroethene	0.571	0.0303	0.6069	0	94.1	61.9	141				
Methylene chloride	0.605	0.0121	0.6069	0.006962	98.6	54.7	142				
trans-1,2-Dichloroethene	0.607	0.0121	0.6069	0	100	52	136				
Methyl tert-butyl ether (MTBE)	0.656	0.0303	0.6069	0	108	54.4	132				
1,1-Dichloroethane	0.616	0.0121	0.6069	0	101	51.8	141				
2,2-Dichloropropane	0.516	0.0303	0.6069	0	85.0	36	123				Q
cis-1,2-Dichloroethene	0.652	0.0121	0.6069	0	107	58.6	136				
Chloroform	0.637	0.0121	0.6069	0.01786	102	53.2	129				B
1,1,1-Trichloroethane (TCA)	0.614	0.0121	0.6069	0	101	58.3	145				
1,1-Dichloropropene	0.634	0.0121	0.6069	0	105	55.1	138				



Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610353-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545
Client ID: UD-B2	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616335

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	0.606	0.0121	0.6069	0	99.9	53.3	144				
1,2-Dichloroethane (EDC)	0.625	0.0182	0.6069	0	103	51.3	139				
Benzene	0.656	0.0121	0.6069	0	108	63.5	133				
Trichloroethene (TCE)	0.643	0.0121	0.6069	0	106	68.6	132				
1,2-Dichloropropane	0.697	0.0121	0.6069	0	115	59	136				
Bromodichloromethane	0.621	0.0121	0.6069	0	102	50.7	141				
Dibromomethane	0.668	0.0243	0.6069	0	110	50.6	137				
cis-1,3-Dichloropropene	0.637	0.0121	0.6069	0	105	50.4	138				Q
Toluene	0.694	0.0121	0.6069	0.003948	114	63.4	132				
trans-1,3-Dichloropropylene	0.655	0.0182	0.6069	0	108	44.1	147				Q
1,1,2-Trichloroethane	0.657	0.0182	0.6069	0	108	51.6	137				
1,3-Dichloropropane	0.676	0.0303	0.6069	0	111	53.1	134				
Tetrachloroethene (PCE)	0.641	0.0121	0.6069	0	106	35.6	158				
Dibromochloromethane	0.622	0.0182	0.6069	0	102	55.3	140				
1,2-Dibromoethane (EDB)	0.675	0.00303	0.6069	0	111	50.4	136				
Chlorobenzene	0.649	0.0121	0.6069	0	107	60	133				
1,1,1,2-Tetrachloroethane	0.621	0.0182	0.6069	0	102	53.1	142				
Ethylbenzene	0.652	0.0182	0.6069	0.02485	103	54.5	134				
m,p-Xylene	1.27	0.0121	1.214	0.01519	103	53.1	132				
o-Xylene	0.630	0.0121	0.6069	0	104	53.3	139				
Styrene	0.638	0.0121	0.6069	0	105	51.1	132				
Isopropylbenzene	0.639	0.0486	0.6069	0.01129	103	58.9	138				
Bromoform	0.581	0.0121	0.6069	0	95.7	57.9	130				
1,1,1,2-Tetrachloroethane	0.586	0.0121	0.6069	0	96.5	51.9	131				
n-Propylbenzene	ND	0.0121	0.6069	0	0	53.6	140				S
Bromobenzene	0.641	0.0182	0.6069	0	106	54.2	140				
1,3,5-Trimethylbenzene	0.640	0.0121	0.6069	0.008317	104	51.8	136				
2-Chlorotoluene	0.634	0.0121	0.6069	0	105	51.6	136				
4-Chlorotoluene	0.628	0.0121	0.6069	0	103	50.1	139				
tert-Butylbenzene	0.643	0.0121	0.6069	0	106	50.5	135				
1,2,3-Trichloropropane	0.585	0.0121	0.6069	0	96.3	50.5	131				

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610353-001BMS	SampType: MS	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545
Client ID: UD-B2	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616335

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	0.597	0.0303	0.6069	0	98.4	50.8	130				
sec-Butylbenzene	0.638	0.0121	0.6069	0	105	52.6	141				
4-Isopropyltoluene	0.627	0.0121	0.6069	0	103	52.9	134				
1,3-Dichlorobenzene	0.657	0.0121	0.6069	0	108	52.6	131				
1,4-Dichlorobenzene	0.634	0.0121	0.6069	0	104	52.9	129				
n-Butylbenzene	0.670	0.0121	0.6069	0.006875	109	52.6	130				
1,2-Dichlorobenzene	0.641	0.0121	0.6069	0	106	55.8	129				
1,2-Dibromo-3-chloropropane	0.577	0.303	0.6069	0	95.1	40.5	131				
1,2,4-Trimethylbenzene	0.634	0.0121	0.6069	0.008741	103	50.6	137				
Hexachlorobutadiene	0.657	0.0607	0.6069	0	108	40.6	158				
Naphthalene	0.615	0.0182	0.6069	0.01341	99.1	52.3	124				
1,2,3-Trichlorobenzene	0.602	0.0121	0.6069	0	99.2	54.4	124				
Surr: Dibromofluoromethane	0.759		0.7587		100	56.5	129				
Surr: Toluene-d8	0.810		0.7587		107	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	0.791		0.7587		104	63.1	141				

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID 1610353-001BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545
Client ID: UD-B2	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616336

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	0.238	0.0364	0.6069	0	39.2	43.5	121	0.2842	17.7	30	SQ
Chloromethane	0.449	0.0364	0.6069	0	74.0	45	130	0.4631	3.08	30	Q
Vinyl chloride	0.481	0.00121	0.6069	0	79.3	51.2	146	0.5173	7.21	30	
Bromomethane	0.596	0.0546	0.6069	0	98.1	21.3	120	0.6002	0.775	30	
Trichlorofluoromethane (CFC-11)	0.306	0.0303	0.6069	0	50.4	35	131	0.3358	9.37	30	Q
Chloroethane	0.311	0.0364	0.6069	0	51.2	43.8	117	0.3191	2.59	30	
1,1-Dichloroethene	0.550	0.0303	0.6069	0	90.6	61.9	141	0.5710	3.79	30	
Methylene chloride	0.595	0.0121	0.6069	0.006962	97.0	54.7	142	0.6053	1.65	30	
trans-1,2-Dichloroethene	0.583	0.0121	0.6069	0	96.1	52	136	0.6070	4.03	30	

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610353-001BMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545
Client ID: UD-B2	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616336

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.649	0.0303	0.6069	0	107	54.4	132	0.6557	0.994	30	
1,1-Dichloroethane	0.590	0.0121	0.6069	0	97.2	51.8	141	0.6157	4.22	30	
2,2-Dichloropropane	0.490	0.0303	0.6069	0	80.8	36	123	0.5157	5.02	30	Q
cis-1,2-Dichloroethene	0.646	0.0121	0.6069	0	106	58.6	136	0.6517	0.836	30	
Chloroform	0.622	0.0121	0.6069	0.01786	99.5	53.2	129	0.6372	2.46	30	B
1,1,1-Trichloroethane (TCA)	0.586	0.0121	0.6069	0	96.6	58.3	145	0.6145	4.70	30	
1,1-Dichloropropene	0.602	0.0121	0.6069	0	99.2	55.1	138	0.6344	5.21	30	
Carbon tetrachloride	0.570	0.0121	0.6069	0	93.9	53.3	144	0.6064	6.21	30	
1,2-Dichloroethane (EDC)	0.606	0.0182	0.6069	0	99.8	51.3	139	0.6245	3.05	30	
Benzene	0.630	0.0121	0.6069	0	104	63.5	133	0.6564	4.06	30	
Trichloroethene (TCE)	0.616	0.0121	0.6069	0	102	68.6	132	0.6427	4.18	30	
1,2-Dichloropropane	0.669	0.0121	0.6069	0	110	59	136	0.6971	4.07	30	
Bromodichloromethane	0.598	0.0121	0.6069	0	98.5	50.7	141	0.6208	3.79	30	
Dibromomethane	0.648	0.0243	0.6069	0	107	50.6	137	0.6682	3.05	30	
cis-1,3-Dichloropropene	0.618	0.0121	0.6069	0	102	50.4	138	0.6373	3.11	30	Q
Toluene	0.662	0.0121	0.6069	0.003948	108	63.4	132	0.6945	4.73	30	
trans-1,3-Dichloropropylene	0.641	0.0182	0.6069	0	106	44.1	147	0.6553	2.18	30	Q
1,1,2-Trichloroethane	0.632	0.0182	0.6069	0	104	51.6	137	0.6566	3.83	30	
1,3-Dichloropropane	0.644	0.0303	0.6069	0	106	53.1	134	0.6764	4.93	30	
Tetrachloroethene (PCE)	0.610	0.0121	0.6069	0	101	35.6	158	0.6414	4.99	30	
Dibromochloromethane	0.599	0.0182	0.6069	0	98.7	55.3	140	0.6217	3.75	30	
1,2-Dibromoethane (EDB)	0.654	0.00303	0.6069	0	108	50.4	136	0.6747	3.05	30	
Chlorobenzene	0.626	0.0121	0.6069	0	103	60	133	0.6489	3.55	30	
1,1,1,2-Tetrachloroethane	0.599	0.0182	0.6069	0	98.7	53.1	142	0.6214	3.62	30	
Ethylbenzene	0.630	0.0182	0.6069	0.02485	99.7	54.5	134	0.6523	3.47	30	
m,p-Xylene	1.22	0.0121	1.214	0.01519	99.4	53.1	132	1.266	3.51	30	
o-Xylene	0.603	0.0121	0.6069	0	99.3	53.3	139	0.6298	4.36	30	
Styrene	0.616	0.0121	0.6069	0	102	51.1	132	0.6380	3.47	30	
Isopropylbenzene	0.609	0.0486	0.6069	0.01129	98.5	58.9	138	0.6391	4.78	30	
Bromoform	0.556	0.0121	0.6069	0	91.5	57.9	130	0.5811	4.50	30	
1,1,2,2-Tetrachloroethane	0.556	0.0121	0.6069	0	91.6	51.9	131	0.5859	5.21	30	

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID	1610353-001BMSD	SampType:	MSD	Units:	mg/Kg-dry	Prep Date:	10/24/2016	RunNo:	32545		
Client ID:	UD-B2	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616336		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
n-Propylbenzene	0.612	0.0121	0.6069	0	101	53.6	140	0	200	30	
Bromobenzene	0.618	0.0182	0.6069	0	102	54.2	140	0.6405	3.60	30	
1,3,5-Trimethylbenzene	0.606	0.0121	0.6069	0.008317	98.5	51.8	136	0.6400	5.47	30	
2-Chlorotoluene	0.609	0.0121	0.6069	0	100	51.6	136	0.6345	4.11	30	
4-Chlorotoluene	0.602	0.0121	0.6069	0	99.2	50.1	139	0.6277	4.16	30	
tert-Butylbenzene	0.627	0.0121	0.6069	0	103	50.5	135	0.6425	2.41	30	
1,2,3-Trichloropropane	0.560	0.0121	0.6069	0	92.3	50.5	131	0.5845	4.27	30	
1,2,4-Trichlorobenzene	0.584	0.0303	0.6069	0	96.2	50.8	130	0.5973	2.32	30	
sec-Butylbenzene	0.623	0.0121	0.6069	0	103	52.6	141	0.6384	2.37	30	
4-Isopropyltoluene	0.618	0.0121	0.6069	0	102	52.9	134	0.6268	1.39	30	
1,3-Dichlorobenzene	0.643	0.0121	0.6069	0	106	52.6	131	0.6568	2.09	30	
1,4-Dichlorobenzene	0.624	0.0121	0.6069	0	103	52.9	129	0.6336	1.48	30	
n-Butylbenzene	0.649	0.0121	0.6069	0.006875	106	52.6	130	0.6705	3.30	30	
1,2-Dichlorobenzene	0.623	0.0121	0.6069	0	103	55.8	129	0.6407	2.76	30	
1,2-Dibromo-3-chloropropane	0.557	0.303	0.6069	0	91.8	40.5	131	0.5770	3.54	30	
1,2,4-Trimethylbenzene	0.626	0.0121	0.6069	0.008741	102	50.6	137	0.6338	1.19	30	
Hexachlorobutadiene	0.631	0.0607	0.6069	0	104	40.6	158	0.6571	3.98	30	
Naphthalene	0.599	0.0182	0.6069	0.01341	96.5	52.3	124	0.6148	2.62	30	
1,2,3-Trichlorobenzene	0.584	0.0121	0.6069	0	96.2	54.4	124	0.6019	3.01	30	
Surr: Dibromofluoromethane	0.756		0.7587		99.6	56.5	129		0		
Surr: Toluene-d8	0.795		0.7587		105	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	0.781		0.7587		103	63.1	141		0		

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Sample ID	1610345-006BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/24/2016	RunNo:	32545		
Client ID:	BATCH	Batch ID:	15222			Analysis Date:	10/25/2016	SeqNo:	616321		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.133						0		30	Q



Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610345-006BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545							
Client ID: BATCH	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616321							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloromethane	ND	0.133						0		30	Q
Vinyl chloride	ND	0.00442						0		30	
Bromomethane	ND	0.199						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.111						0		30	
Chloroethane	ND	0.133						0		30	
1,1-Dichloroethene	ND	0.111						0		30	
Methylene chloride	ND	0.0442						0		30	
trans-1,2-Dichloroethene	ND	0.0442						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.111						0		30	
1,1-Dichloroethane	ND	0.0442						0		30	
2,2-Dichloropropane	ND	0.111						0		30	Q
cis-1,2-Dichloroethene	ND	0.0442						0		30	
Chloroform	0.0749	0.0442						0.07251	3.23	30	B
1,1,1-Trichloroethane (TCA)	ND	0.0442						0		30	
1,1-Dichloropropene	ND	0.0442						0		30	
Carbon tetrachloride	ND	0.0442						0		30	
1,2-Dichloroethane (EDC)	ND	0.0663						0		30	
Benzene	ND	0.0442						0		30	
Trichloroethene (TCE)	ND	0.0442						0		30	
1,2-Dichloropropane	ND	0.0442						0		30	
Bromodichloromethane	ND	0.0442						0		30	
Dibromomethane	ND	0.0884						0		30	
cis-1,3-Dichloropropene	ND	0.0442						0		30	
Toluene	ND	0.0442						0		30	
trans-1,3-Dichloropropylene	ND	0.0663						0		30	
1,1,2-Trichloroethane	ND	0.0663						0		30	
1,3-Dichloropropane	ND	0.111						0		30	
Tetrachloroethene (PCE)	ND	0.0442						0		30	
Dibromochloromethane	ND	0.0663						0		30	
1,2-Dibromoethane (EDB)	ND	0.0111						0		30	
Chlorobenzene	ND	0.0442						0		30	

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610345-006BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545
Client ID: BATCH	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616321

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.0663						0		30	
Ethylbenzene	ND	0.0663						0		30	
m,p-Xylene	ND	0.0442						0		30	
o-Xylene	ND	0.0442						0		30	
Styrene	ND	0.0442						0		30	
Isopropylbenzene	ND	0.177						0		30	
Bromoform	ND	0.0442						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0442						0		30	
n-Propylbenzene	ND	0.0442						0		30	
Bromobenzene	ND	0.0663						0		30	
1,3,5-Trimethylbenzene	ND	0.0442						0		30	
2-Chlorotoluene	ND	0.0442						0		30	
4-Chlorotoluene	ND	0.0442						0		30	
tert-Butylbenzene	ND	0.0442						0		30	
1,2,3-Trichloropropane	ND	0.0442						0		30	
1,2,4-Trichlorobenzene	ND	0.111						0		30	
sec-Butylbenzene	ND	0.0442						0		30	
4-Isopropyltoluene	ND	0.0442						0		30	
1,3-Dichlorobenzene	ND	0.0442						0		30	
1,4-Dichlorobenzene	ND	0.0442						0		30	
n-Butylbenzene	ND	0.0442						0		30	
1,2-Dichlorobenzene	ND	0.0442						0		30	
1,2-Dibromo-3-chloropropane	ND	1.11						0		30	
1,2,4-Trimethylbenzene	ND	0.0442						0		30	
Hexachlorobutadiene	ND	0.221						0		30	
Naphthalene	ND	0.0663						0		30	
1,2,3-Trichlorobenzene	ND	0.0442						0		30	
Surr: Dibromofluoromethane	2.67		2.763		96.6	56.5	129		0		
Surr: Toluene-d8	2.77		2.763		100	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	2.75		2.763		99.5	63.1	141		0		

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID 1610345-006BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545							
Client ID: BATCH	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616321							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).
 Chloroform is a common laboratory contaminant that is a bi-product of the chlorination of municipal water. Please refer to the Method Blank.

Sample ID 1610345-022BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545							
Client ID: BATCH	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616328							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	0.0712						0		30	Q
Chloromethane	ND	0.0712						0		30	Q
Vinyl chloride	ND	0.00237						0		30	
Bromomethane	ND	0.107						0		30	
Trichlorofluoromethane (CFC-11)	ND	0.0593						0		30	
Chloroethane	ND	0.0712						0		30	
1,1-Dichloroethene	ND	0.0593						0		30	
Methylene chloride	ND	0.0237						0		30	
trans-1,2-Dichloroethene	ND	0.0237						0		30	
Methyl tert-butyl ether (MTBE)	ND	0.0593						0		30	
1,1-Dichloroethane	ND	0.0237						0		30	
2,2-Dichloropropane	ND	0.0593						0		30	Q
cis-1,2-Dichloroethene	ND	0.0237						0		30	
Chloroform	ND	0.0237						0.02396	34.7	30	
1,1,1-Trichloroethane (TCA)	ND	0.0237						0		30	
1,1-Dichloropropene	ND	0.0237						0		30	
Carbon tetrachloride	ND	0.0237						0		30	
1,2-Dichloroethane (EDC)	ND	0.0356						0		30	
Benzene	ND	0.0237						0		30	
Trichloroethene (TCE)	ND	0.0237						0		30	
1,2-Dichloropropane	ND	0.0237						0		30	
Bromodichloromethane	ND	0.0237						0		30	
Dibromomethane	ND	0.0475						0		30	

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT
Volatile Organic Compounds by EPA Method 8260C

Sample ID: 1610345-022BDUP	SampType: DUP	Units: mg/Kg-dry	Prep Date: 10/24/2016	RunNo: 32545							
Client ID: BATCH	Batch ID: 15222		Analysis Date: 10/25/2016	SeqNo: 616328							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

cis-1,3-Dichloropropene	ND	0.0237						0		30	
Toluene	ND	0.0237						0		30	
trans-1,3-Dichloropropylene	ND	0.0356						0		30	
1,1,2-Trichloroethane	ND	0.0356						0		30	
1,3-Dichloropropane	ND	0.0593						0		30	
Tetrachloroethene (PCE)	ND	0.0237						0		30	
Dibromochloromethane	ND	0.0356						0		30	
1,2-Dibromoethane (EDB)	ND	0.00593						0		30	
Chlorobenzene	ND	0.0237						0		30	
1,1,1,2-Tetrachloroethane	ND	0.0356						0		30	
Ethylbenzene	ND	0.0356						0		30	
m,p-Xylene	ND	0.0237						0		30	
o-Xylene	ND	0.0237						0		30	
Styrene	ND	0.0237						0		30	
Isopropylbenzene	ND	0.0949						0		30	
Bromoform	ND	0.0237						0		30	
1,1,1,2,2-Tetrachloroethane	ND	0.0237						0		30	
n-Propylbenzene	ND	0.0237						0		30	
Bromobenzene	ND	0.0356						0		30	
1,3,5-Trimethylbenzene	ND	0.0237						0		30	
2-Chlorotoluene	ND	0.0237						0		30	
4-Chlorotoluene	ND	0.0237						0		30	
tert-Butylbenzene	ND	0.0237						0		30	
1,2,3-Trichloropropane	ND	0.0237						0		30	
1,2,4-Trichlorobenzene	ND	0.0593						0		30	
sec-Butylbenzene	ND	0.0237						0		30	
4-Isopropyltoluene	ND	0.0237						0		30	
1,3-Dichlorobenzene	ND	0.0237						0		30	
1,4-Dichlorobenzene	ND	0.0237						0		30	
n-Butylbenzene	ND	0.0237						0		30	
1,2-Dichlorobenzene	ND	0.0237						0		30	

Work Order: 1610353
CLIENT: Shannon & Wilson
Project: Sound Transit / Key Bank

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260C

Sample ID	1610345-022BDUP	SampType:	DUP	Units:	mg/Kg-dry	Prep Date:	10/24/2016	RunNo:	32545		
Client ID:	BATCH	Batch ID:	15222	Analysis Date:	10/25/2016	SeqNo:	616328				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.593						0		30	
1,2,4-Trimethylbenzene	ND	0.0237						0		30	
Hexachlorobutadiene	ND	0.119						0		30	
Naphthalene	ND	0.0356						0		30	
1,2,3-Trichlorobenzene	ND	0.0237						0		30	
Surr: Dibromofluoromethane	1.41		1.483		94.8	56.5	129		0		
Surr: Toluene-d8	1.41		1.483		94.7	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.44		1.483		97.0	63.1	141		0		

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF).

Client Name: SW	Work Order Number: 1610353
Logged by: Clare Griggs	Date Received: 10/24/2016 11:17:00 AM

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
5. Custody Seals present on shipping container/cooler?
(Refer to comments for Custody Seals not intact) Yes No Not Required
6. Was an attempt made to cool the samples? Yes No NA
7. Were all items received at a temperature of >0°C to 10.0°C * Yes No NA
8. Sample(s) in proper container(s)? Yes No
9. Sufficient sample volume for indicated test(s)? Yes No
10. Are samples properly preserved? Yes No
11. Was preservative added to bottles? Yes No NA
12. Is there headspace in the VOA vials? Yes No NA
13. Did all samples containers arrive in good condition(unbroken)? Yes No
14. Does paperwork match bottle labels? Yes No
15. Are matrices correctly identified on Chain of Custody? Yes No
16. Is it clear what analyses were requested? Yes No
17. Were all holding times able to be met? Yes No

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	6.1
Sample	4.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont

ANALYTICAL

Chain of Custody Record and Laboratory Services Agreement

3600 Fremont Ave N. Tel: 206-352-3790
Seattle, WA 98103 Fax: 206-352-7178

Date: 10-24-16

Laboratory Project No (internal): 1610353
Page: 1 of: 1

Page 32 of 32

Client: Shannon & Wilson, Inc
Address: 400 N 34th St
City, State, Zip: Seattle, WA
Telephone: 206-900-2720 Fax: _____

Project Name: Sound Transit / Key Bank
Project No: 21-1-16700-123 Collected by: SKH
Location: University District
Report To (PM): Agnes Tirao
PM Email: ACT@shanwil.com

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytical Parameters											Comments			
				VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DH)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM / 625)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) / Dissolved (D)		Anions (IC)**	EDB (8011)	Total Lead
1 UD-B2	10-24-16	0730	Soil	X		X	X										X	
2 UD2-B2	10-24-16	0740	Soil	X		X	X										X	
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite
Sample Disposal: Return to Client Disposal by Lab (Samples will be held for 30 days unless otherwise noted. A fee may be assessed if samples are retained after 30 days.)

Special Remarks:
Please send EDD w/ results.

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x <u>Shubha Havel</u>	<u>10-24-16 / 1117</u>	x <u>[Signature]</u>	<u>10/24/16 1117</u>
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT → SameDay^ NextDay^ 2 Day 3 Day (STD)

^Please coordinate with the lab in advance

APPENDIX F

**IMPORTANT INFORMATION ABOUT YOUR
GEOTECHNICAL/ENVIRONMENTAL REPORT**



Date: December 19, 2016
To: Sound Transit
Attn: Mr. Mark Menard

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland