



REMEDIATION INVESTIGATION REPORT AND CLEANUP ACTION PLAN

**SHELL-BRANDED WHOLESALE FACILITY
3740 PACIFIC AVENUE
TACOMA, WASHINGTON**

SAP CODE	121182
INCIDENT NO.	97789101
AGENCY NO.	17847919

Prepared For:

**Shell Oil Products US
20945 S. Wilmington Ave
Carson, CA 90810**

**JULY 29, 2011
REF. NO. 241876 (3)**

This report is printed on recycled paper.

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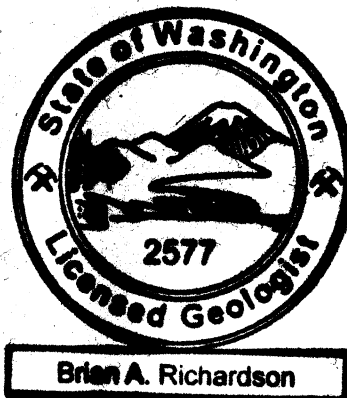
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1.0 INTRODUCTION

1.1 SITE INFORMATION

<i>Site Name:</i>	Shell-Branded Wholesale Facility
<i>Site Address:</i>	3740 Pacific Avenue, Tacoma, WA
<i>Voluntary Cleanup Program Number:</i>	Not Active
<i>Project Consultant:</i>	Conestoga-Rovers & Associates
<i>Project Consultant Contact Information:</i>	Brian Richardson, LG 20818 44 th Avenue West, Suite 190 Lynnwood, Washington 98036 Office – 425.563-6500 Direct – 425.563-6511
<i>Current Owner/Operator:</i>	PacWest Energy LLC/Jackson's Food Stores

1.2 PURPOSE

Conestoga-Rovers & Associates (CRA) prepared this Remedial Investigation (RI) report and cleanup action plan (CAP) on behalf of Equilon Enterprises, LLC. (Equilon) dba Shell Oil Products US (SOPUS) for the Shell-branded service station located at the northeast corner of the intersection of Pacific Avenue and South 38th Street with the address 3740 Pacific Avenue, Tacoma, Pierce County, Washington (Property; Figure 1).

This RI /CAP was prepared to satisfy the items required by Washington Administrative Code (WAC) 173-340-350 through -390 and summarizes environmental investigation findings for the petroleum hydrocarbon release associated with the property. The background and previous investigations and remediation activities described in this report are a summary of historical investigations and documents prepared by CRA and previous consultants. A list of historical documents associated with this release is included as Appendix A.

2.0 SITE IDENTIFICATION AND DESCRIPTION

2.1 SITE DISCOVERY AND REGULATORY STATUS

Six steel previously unknown underground storage tanks (USTs), ranging in volume from 550-gallons to 3,200-gallons were discovered during trenching activities for a Stage II vapor recovery system upgrade in March 1995. The consultant performing the recovery system upgrade was not aware of the presence of the abandoned USTs and

assumed them to be associated with the original gasoline service station dating back to approximately 1970. The removal of the USTs was added to the scope of work in March 1995. The tanks were documented in good condition, with no apparent pitting or holes. The product conveyance piping was still attached, but had been cut and capped at the edge of the UST basin. Soil samples collected during UST removal and vapor recovery system upgrade activities contained petroleum hydrocarbon compounds exceeding Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels in the vicinity of the USTs and dispenser islands. No specific equipment failure was identified at the time of discovery.

A petroleum release impacting soil was reported to Ecology in March 1993 and the Site was listed with Ecology's leaking UST (LUST) program (ID #4434). The current status with Ecology is "Cleanup Started" for soil and groundwater as of June 1995.

MTCA Method A cleanup levels will be used as screening levels for purposes of discussion of investigation results. Cleanup standards are more fully developed in Section 8 of this report.

2.2 SITE AND PROPERTY LOCATION/DEFINITION

The Property is an active Shell-branded wholesale facility located at the northwest corner of the intersection of Pacific Avenue and South 38th Street (Figure 1). The MTCA site (Site) is defined as all affected areas from the petroleum release associated with the Property and any potentially impacted adjacent parcels. The MTCA site boundary is presented in Figure 2.

2.3 NEIGHBORHOOD SETTING

The Property is zoned commercial. Residential and commercial properties are located in the immediate vicinity of the Property. The nearest residential properties are located approximately 150 feet west and 100 feet north of the Property. Surrounding properties are a residence to the north, South 38th Street and a retail building across South 38th Street to the south, Pacific Avenue and a drugstore to the east, and a vacant lot and residence to the west (Figure 3). Lincoln High School is located approximately 1,600 feet to the northwest.

2.4 PHYSIOGRAPHIC SETTING/TOPOGRAPHY

The Property is located at approximately 340 feet above mean sea level (msl; Figure 1). Topography in the vicinity of the Property slopes down to the north toward Interstate 5

and ultimately to the Thea Foss Waterway and Puget Sound located approximately 1.75 miles to the north.. Hood Street Reservoir is located approximately ½ mile to the northwest, and the Portland Avenue reservoir is located approximately 1 mile to the east. No other surface water is located within 1 mile of the Property. Surface cover at the Property is primarily asphalt and concrete pavement.

3.0 **PROPERTY DEVELOPMENT AND HISTORY**

3.1 **PAST PROPERTY USES AND FACILITIES**

Based on available historical aerial photographs, the Property was developed as an automotive service and fueling station by at least 1968. An internet search yielded a 1968 aerial photograph which depicted the station building and dispenser islands in approximately the present-day configuration. According to the Pierce County Assessor's office, a service station was built on the Property in 1970. Texaco Refining and Marketing, Inc. (TRMI) owned the Property prior to 1995, and was sold to Equilon in 1998. In December 2009, Equilon sold the Property to PacWest Energy LLC/Jackson's Food Stores, Inc.

Original facilities on the Property included six steel USTs, including two 3,200-gallon UST, one 2,100-gallon USTs, two 1,000-gallon USTs, and one 550-gallon UST. During the decommissioning of the steel USTs in 1995, Groundwater Technology, Inc. (GTI) reported that the contents of the USTs were unknown, but that the USTs likely contained petroleum hydrocarbons used in the fueling of automobiles. The current USTs at the Property were installed in 1985. A 550-gallon steel waste oil UST that was installed in 1985 south of the station building was removed in 2006. Ecology records identified a heating oil UST associated with the Property, but the dates of installation and decommissioning, type, size, and exact on-Property location of the UST were not reported. The former UST system configuration is presented in Figure 2. A list of the former USTs at the Property, the contents, and the date of installation and decommission is presented below.

<i>Tank Type & Volume (quantity)</i>	<i>Content</i>	<i>Date Installed</i>	<i>Date Decommissioned</i>
3,200-gallon UST (2)	Unknown*	Unknown	1995
2,100-gallon UST	Unknown*	Unknown	1995
1,000-gallon UST (2)	Unknown*	Unknown	1995
550-gallon UST	Unknown*	Unknown	1995
550-gallon UST	Waste Oil	1985	2006

* GTI (1995) reported that the former USTs were used for storage and dispensing of fuel hydrocarbons.

3.2 CURRENT PROPERTY USE AND FACILITIES

The Property currently includes an operating Shell-branded wholesale facility. Facilities on the Property currently include a station building, two dispenser islands, one 12,000-gallon fiberglass unleaded gasoline UST, two 10,000-gallon fiberglass unleaded gasoline USTs, and one 8,000-gallon fiberglass diesel UST. The USTs are located within a common excavation in the southern portion of the Property (Figure 2).

3.3 PROPOSED OR POTENTIAL FUTURE SITE USES

Planned use for the Property is uncertain; however, due to its location, it will likely continue as a commercial-use property.

3.4 ZONING

The Property is zoned commercial according to the City of Tacoma zoning map.

3.5 TRANSPORTATION AND ROADS

The Property is located on the northwestern corner of the intersection of Pacific Avenue and South 38th Street. Pacific Avenue is a major north-south arterial which stretches several miles, connecting with Interstate 5 to the north and provides access to local residential areas south of Interstate 5 with mixed light industrial and residential neighborhoods north of Interstate 5.

3.6 UTILITIES AND WATER SUPPLY

According to the Tacoma Public Utilities (TPU), water for the Property is sourced by blending water from water supply wells and the Green River via the Second Supply Project Pipeline (TPU, 2010). Electric lines run from the sidewalk along South 38th Street to the southeast side of the station building.

3.7 POTENTIAL SOURCES OF SITE CONTAMINATION

Potential on-Property sources of contamination include the current USTs located in the eastern portion of the Property, the former USTs located in southeastern portion of the Property, the current dispenser islands and conveyance piping, located in the southern

and eastern portions of the Property. The likely sources of the original release of petroleum hydrocarbons were the former USTs and the former conveyance system.

4.0 ENVIRONMENTAL INVESTIGATION AND INTERIM ACTION SUMMARY

A total of eighteen soil borings have been completed at the Site to date. Additionally, 21 compliance soil samples have been collected related to UST closure at the Site (Figure 4a; Table 1). During the discovery and removal of the six steel USTs and the Stage II vapor recovery system upgrade, approximately 200 cubic yards of petroleum hydrocarbon impacted soil was removed and transported off-Property for disposal. No additional interim actions have occurred at the Site. The following investigations were completed:

- 1995 *Report of UST Decommissioning and Stage II Compliance Sampling*, Groundwater Technology, Inc. (GTI)
- 1995 *Report of Environmental Site Assessment*, GTI
- 2006 *Underground Storage Tank Removal and Compliance Sampling Report*, Cambria Environmental Technology (Cambria)
- 2007 *Site Investigation Report*, Conestoga-Rovers & Associates (CRA)
- 2010 Site Investigation, CRA (data included herein)

A release for the Site was reported to Ecology on June 23, 1995. A complete chronological summary of work completed during the investigations listed above at the Site is included as Appendix B. Reports summarized in Appendix B represent all available investigation reports obtained by or provided to CRA. A summary of historical soil analytical data is presented in Table 1. All available historical boring logs for the previous investigations are included in Appendix C. Soil boring logs from CRA's 2010 investigation are included in Appendix D. Laboratory analytical reports for soil samples collected in association with CRA's 2010 investigation are included as Appendix E.

4.1 CONSTITUENTS OF CONCERN

Potential constituents of concern (COCs), based on current and past use of the Property, include the compounds listed in MTCA 173-340-900 Table 830-1 Required Testing for Petroleum Releases. Potential COCs associated with historical and current USTs at the Site are:

<i>Potential Source</i>	<i>Potential COCs</i>
Historical and current gasoline USTs and distribution system	<ul style="list-style-type: none"> • Total petroleum hydrocarbons (TPH) as gasoline (TPHg) • Benzene, toluene, ethylbenzene, xylenes (BTEX) • 1,2-dichloroethane (EDC) • 1,2-dibromoethane (EDB) • Methyl tertiary butyl ether (MTBE) • Total lead
Historical and current diesel UST and distribution system	<ul style="list-style-type: none"> • TPH as diesel (TPHd) and TPH as oil (TPHo) • BTEX
Historical waste oil USTs and distribution system	<ul style="list-style-type: none"> • TPHg • TPHd and TPHo • BTEX • EDB • EDC • MTBE • Halogenated volatile organic compounds (HVOCs) • Polycyclic aromatic hydrocarbons (PAHs) • Polychlorinated biphenyls (PCBs) • Total lead

TPHg, TPHd, TPHo, BTEX, and naphthalene were detected in soil above MTCA Method A screening levels during environmental investigations at the Site, and therefore, are considered potential COCs requiring further evaluation. The remaining potential COCs have been sampled and have not been detected or have been reported at concentrations below MTCA Method A screening levels.

4.2 SOIL

Multiple soil investigations have been conducted at the Site from 1995 through 2010. Figures 4a and 4b presents the locations of all soil samples collected during the investigation activities conducted at the Site. A summary of all soil samples submitted for analysis, including the date of the sample, depth, consultant performing sampling, and analytical methods and results are presented in Table 1. The majority of the soil sampling has been conducted in the vicinity of the former and current USTs, dispenser islands, and product conveyance system. The depths of soil samples collected range from 2 to 35 feet bgs.

4.3 SURFACE WATER

No surface water has been sampled as there has been no indication that surface water has been impacted from the Site.

4.4 GROUNDWATER

Two UST excavation water samples have been collected at the Site, one in March 1995 during the former steel USTs removal, and one in November 2006 during the waste oil UST removal. The likely source of this water was surface water during rain events. No other groundwater has been encountered at the Site to a depth of 35 feet bgs during drilling activities. A temporary monitoring well installed to a depth of 30 feet bgs in soil boring SB-8 was dry.

4.5 SEDIMENT

No indication of surface water impact has been identified in association with the Site, therefore, no sediment sampling has been conducted.

4.6 AIR/SOIL VAPOR

There have been no investigations of soil vapor at the Site. Based on the concentrations remaining in soil, and current and future use of the site, potential impact to the Site from soil vapor is unlikely.

4.7 NATURAL RESOURCES/WILDLIFE

A Terrestrial Ecological Evaluation (TEE) Exclusion Form is included in this report (see Section 5.4 below).

4.8 CULTURAL HISTORY/ARCHAEOLOGY

No prior information or results of historical investigation have indicated a need for additional investigation of Site cultural history or archaeology.

4.9 INTERIM ACTIONS

In 1995, during the removal of the former USTs, approximately 150 cubic yards of petroleum hydrocarbon soil was removed and disposed of offsite. Also in 1995, an additional 50 cubic yards was removed and disposed of offsite during the installation of a Stage II vapor recovery system. During the removal of a 550-gallon steel waste oil UST in 2006, 6 cubic yards of pea gravel was removed and stockpiled on Site and sampled for analysis. Analytical results reported that the pea gravel was not impacted by petroleum hydrocarbons, and pea gravel combined with clean imported fill was used to backfill the waste oil UST excavation. No additional interim actions have occurred at the Site.

4.10 2010 SITE INVESTIGATION

In August 2010, CRA completed five soil borings (SB-8 through SB-12) and installed a temporary monitoring well in soil boring SB-8, in order to assess site soil conditions and determine if perched groundwater is present at the Site. The borings were advanced to a maximum depth of 30 feet. Table 1 presents the date sampled, depth, and analytical methods and results for all soil samples collected during this investigation. Soil boring locations are presented in Figures 4a and 4b and boring logs for borings SB-8 through SB-12 are included in Appendix E. The laboratory reports for the soil samples collected during this investigation are included in Appendix F.

5.0 NATURAL CONDITIONS

5.1 GEOLOGY

The regional geological setting and property geological conditions are summarized below:

Regional Geological Setting: The Site is located in the Puget Lowland which is generally comprised of hundreds of feet of Pleistocene age undivided glacial and non-glacial deposits overlain by a thin layer of glacial till and outwash deposits. In many areas, most commonly along river valleys, recent alluvial deposits of Holocene age are present. The undivided glacial and non-glacial deposits consist of clay, silt, sand, gravel, till, and peat. The till portion consists of a compact mixture of clay, silt, sand, and gravel. The outwash portion consists of sand and gravel. The alluvial deposits consist of clay, silt, sand, gravel and peat (Richardson, 1968).

Site Geological Conditions: The Site is underlain predominantly with silts, silty sands, and sands with varying amounts of silt, clay, and gravels. When subsurface lithology is

reviewed in conjunction with the high blow counts recorded for Site subsurface soils, it can be suggested that the Site is underlain by till which increases in density with depth to the maximum explored depth of 36 feet below ground surface.

Cross sections depicting subsurface soil conditions are included as Figures 5 and 6.

5.2 SURFACE WATER

The nearest surface water is Hood Street Reservoir, which is located approximately ½ mile to the northwest. No other surface water is located within 1 mile of the Property. Other surface water bodies are located approximately 1 to 1.75 miles away include Portland Avenue Reservoir, the Thea Foss Waterway, and Swan Creek.

5.3 GROUNDWATER

Regional and local groundwater conditions are summarized below:

Regional Groundwater Conditions: Tacoma, Washington is located in the Puget-Willamette Trough lowland regional aquifer between the Cascade and Olympic Mountain ranges in Washington. According to Tacoma Public Utilities, water for the City of Tacoma is sourced from the Green River watershed near its source waters in the Cascade Mountains, and from local groundwater wells. The groundwater wells nearest to the Property, according to Tacoma Public Utilities, draw from an aquifer at approximately 462-643 feet bgs.

Site Groundwater Conditions: Groundwater has not been observed at the Site to a depth of 36 feet bgs. GTI (1995) reported that Pierce County Water Resources Department estimated that saturated subsurface conditions in the area of the Property are first observed at 80 to 100 feet bgs.

5.4 NATURAL RESOURCES AND ECOLOGICAL RECEPTORS

A TEE Exclusion Form was completed for the Site indicating that a TEE is not required for the Site and is included as Appendix F, in addition to an aerial map depicting a 500-foot radius around the Site.

6.0 CONTAMINANT OCCURRENCE AND MOVEMENT

MTCA Method A screening levels for soil will be used for purposes of discussion of investigation results. Cleanup standards are more fully developed and discussed in Section 8.

6.1 WASTE MATERIAL

There is no waste material present on the surface or in the subsurface of the Site. Investigative-derived waste is transported from the Site and disposed of properly.

6.2 SOIL

Table 1 summarizes soil analytical data for the Site. Figures 4a and 4b depict soil sampling locations and their analytical results in comparison to Site-specific cleanup levels developed in Section 8 of this report. Concentrations of TPHg, TPHd, benzene, and total xylenes in soil sampled from beneath the southern dispenser island and concentrations of TPHg, benzene, and total xylenes in soil sampled from beneath the northern dispenser island were detected above the MTCA Method A screening levels. Concentrations of TPHg, TPHd, and BTEX in soil sampled in association with the former UST removal in March 1995 and subsequent investigations exceed MTCA Method A screening levels.

Three soil samples (OTP-4-10, OTP-6-10, and OTP-12-12) collected in March 1995 that had petroleum hydrocarbon concentrations above the Site-specific cleanup levels developed in Section 8 of this report were confirmed below the Site-specific cleanup levels by soil samples collected during the March 2007 and August 2010 site investigations (Table 1; Figure 4b).

6.3 SURFACE WATER

Based on the distance to the nearest surface water, discussion of movement and occurrence of surface water is not necessary at this time.

6.4 GROUNDWATER

Groundwater has not been encountered at the Site to a total explored depth of 36 feet bgs. First encountered regional groundwater is anticipated at approximately 80 to

100 feet bgs. Based on this information, it is unlikely that groundwater has been adversely impacted from this release.

Standing water has been observed during Site excavation activities, however, due to the absence of water in all Site investigations conducted to date, the water in the excavation is attributed to surface runoff from precipitation. During the March 2007 investigation, separate phase hydrocarbons (SPH) were erroneously reported as being present in boring SB-3 at a depth of 10 feet bgs in the former UST excavation footprint. Based on field screening and analytical results from the soil sample collected at 10 feet bgs in boring SB-3, the liquid encountered in this boring was likely stagnant water with significant biogrowth that was trapped in the bottom of the excavation at the time of UST removal.

6.5 SEDIMENT

No discussion of the occurrence or movement of contaminants in this media is necessary.

6.6 AIR/SOIL VAPOR

Based on the concentrations present in soil at the Site and current and future Property use, it is unlikely that soil vapor poses a risk to air quality.

7.0 CONCEPTUAL MODEL

Petroleum was released into soil at the service station sometime prior to 1995. It is not certain when or how the release occurred, but based on environmental investigations the release likely occurred from the former gasoline USTs and the former product conveyance system. Based on the environmental sampling at the Site, the extent of petroleum hydrocarbon impact to subsurface soils above MTCA Method A screening levels was limited to areas around the former USTs and dispenser islands. Subsequent sampling has been conducted and no further impact has been detected at the Site above MTCA Method A screening levels. The vertical migration of contaminant has been defined and has likely been limited by the relatively impermeable glacial till present in the subsurface at the Site.

The Site has been capped by asphalt and concrete since the Property was developed and therefore has not been exposed to infiltrating surface water. No groundwater has been observed to the maximum depth explored of 36 feet bgs. The till has been observed to extend to a depth of over 150 feet bgs in the vicinity of the Site associated with water

wells near the Portland Avenue Reservoir located approximately 1 mile to the east. Static water in this well was reported at a depth of 98 feet bgs according to the well drillers log. Other resource protection wells within 1 mile of the Site indicate that discontinuous perched water may be present in other areas, however, based on previous reports and discussions with Tacoma Public Utilities, water is likely present at the Site at a depth of over 80 feet bgs.

No surface water receptors are located in close proximity to the Site and will likely not be affected from this release. Based on current soil quality at the site, and the commercial use of the Property, soil vapor concentrations of petroleum hydrocarbon compounds are not likely to be a potential risk to human health.

8.0 CLEANUP STANDARDS - SOIL AND GROUNDWATER

In accordance with MTCA, development of cleanup levels includes identifying potential exposure pathways for humans and environmental impacts based on the planned land use. The Property is currently zoned for commercial use and future zoning is not anticipated to change. As previously noted, the Property is currently used as a gasoline service station.

8.1 GROUNDWATER CLEANUP LEVELS

No investigation of groundwater quality has been conducted at the Site. Based on presence of low permeable glacial till from the ground surface to at least 36 feet bgs and the vertical delineation of impacted soils above MTCA Method A screening levels, groundwater has not been impacted by this release. Therefore, no discussion of groundwater cleanup levels is necessary for this Site.

8.2 SOIL CLEANUP LEVELS

Since groundwater is not present at this Site to a depth of at least 36 feet bgs and likely is not present to a depth of 80 feet bgs, soil cleanup levels are based on protection of the direct contact pathway. The points of compliance for this Site are all soil throughout the Site from the ground surface to a maximum depth of 15 feet bgs.

The Site-specific soil cleanup levels for the COCs are presented in Table 1. MTCA Method B cleanup levels were developed for soil protective of the direct contact pathway using the standard Cleanup Level and Risk Calculations (CLARC) values. The MTCA Method B cleanup level for TPH was calculated using the MTCATPH workbook and hydrocarbon fractionation (EPH/VPH) data obtained by CRA in 2010 from the

sample collected in the vicinity of the former USTs (sample SB8-5). The cleanup level calculation table is included as Appendix G.

9.0 AREAS REQUIRING FUTURE MANAGEMENT AND CONCLUSIONS

9.1 CONSTITUENTS OF CONCERN

Based on the Site-specific cleanup levels established for the Site, the only COC remaining at the Site is TPHd in soil.

9.2 SOIL - VERTICAL AND LATERAL

Figures 4a and 4b identify soil sample locations containing petroleum hydrocarbon concentrations greater than the MTCA Method B cleanup levels. The areas requiring future management of petroleum hydrocarbons are limited to the vicinity of the former USTs. Results of CRA's 2007 and 2010 Site investigation activities confirm that soil impacts are limited vertically to less than 10 feet bgs and laterally in the vicinity of boring SB-8 in the northeast corner of the former UST basin.

9.3 GROUNDWATER - VERTICAL AND LATERAL

Groundwater is not present at the Site to a depth of at least 36 feet bgs. Groundwater is expected to be first encountered at greater than 80 feet bgs. Groundwater quality has not been adversely impacted at this Site.

9.4 SEDIMENT

No areas of impacted sediment exist at the Site nor require any future management.

9.5 SURFACE WATER

Based on distance to the nearest surface water body, surface water quality has not been adversely impacted from this release.

9.6 SOIL VAPOR/AIR

Based on concentrations of petroleum compounds in soil, and the anticipated continued use of the facility as a service station, future management of soil vapor impact is not required.

10.0 CLEANUP ACTION PLAN

Soil in the vicinity of the northeastern sidewall of former UST basin contain petroleum hydrocarbons exceeding Site-specific soil cleanup levels that are protective of the direct contact pathway. Excavation of the impacted soil in this area is required to achieve compliance with soil cleanup levels.

10.1 SCOPE OF WORK

All work will be conducted according to the Standard Operating Procedures in Section 10.2 of this section and the Draft Shell Sampling and Analysis Plan. The scope of work may be amended based on observations during field work indicating the need to further advance locations beyond the anticipated depth and/or add additional locations to define impacts associated with the Site. If impacts are observed using field screening techniques at the specified sample depths and locations noted below, field staff will contact the Project Manager to coordinate additional actions.

The proposed scope of work outlined in the following section of this work plan has been developed using the rationale discussed in this report.

10.2 SOIL EXCAVATION

Based on the investigation activities conducted to date, CRA estimates that the maximum volume of soil removal will be approximately 6 cubic yards. The extent of the proposed excavation is presented on Figure 7.

Confirmation soil samples will be collected once the anticipated excavation vertical and lateral extents are achieved. Confirmation samples will be collected from the bottom of the excavation and along the sidewalls at the anticipated depths ranging from approximately 5 to 8 feet bgs, based upon the results of previous sampling.

Upon completion of confirmation sampling, the excavation will be backfilled with clean fill material and compacted in lifts to surface grade in accordance with Shell specifications (Appendix H).

10.3 STANDARD OPERATING PROCEDURES

A detailed standard operating procedure specific for excavation and confirmatory sampling is attached as Appendix I.

10.3.1 HEALTH AND SAFETY PLAN

CRA will prepare a comprehensive Site-Specific Health and Safety Plan to protect Site workers. The plan will be reviewed and signed by each Site worker and kept on the Site during field activities.

10.3.2 UTILITY CLEARANCE

The excavation extents will be cleared through the Washington Utilities Coordinating Council (WUCC) prior to any excavation activities. A private utility locating service will also be used to verify clearance excavation extents from subsurface utilities or other obstructions. The final excavation extents will be based on the clearance of utilities.

10.3.3 INVESTIGATION-DERIVED WASTE

IDW will include personal protective equipment, decontamination fluids, and petroleum hydrocarbon contaminated soil from the excavation. Personal protective equipment and decontamination fluids will be placed in properly labeled 55-gallon drums and stored on-Site pending analyses. The excavated soil will be direct loaded into a roll off bin, profiled and disposed of at a state certified landfill. The IDW will be transported and disposed of according to SOPUS procedures and applicable regulatory requirements.

10.3.4 CERTIFICATION

The scope of work described in this work plan will be performed under the supervision of a Washington state licensed professional.

11.0 REFERENCES

Report of UST Decommissioning and Stage II Compliance Sampling, GTI, 1995

Report of Environmental Site Assessment, GTI, 1995

Underground Storage Tank Removal and Compliance Sampling Report, Cambria, 2006

Site Investigation Report, Conestoga-Rovers & Associates (CRA), 2007

Water Resources of King County, Washington: U.S., Richardson and others, 1968

Geological Survey Water Supply Paper 1858

FIGURES

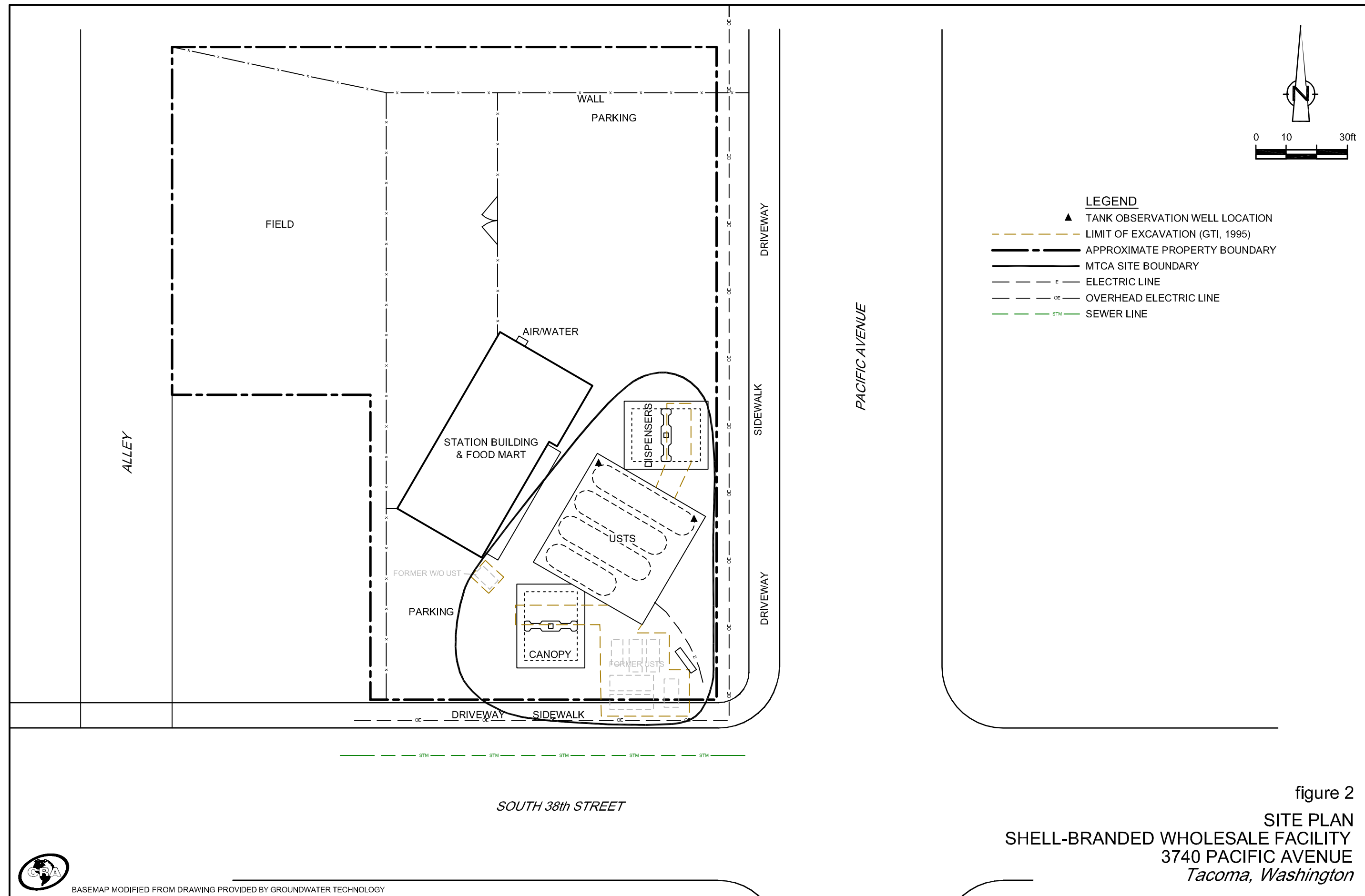


SOURCE: TOPO! MAPS.

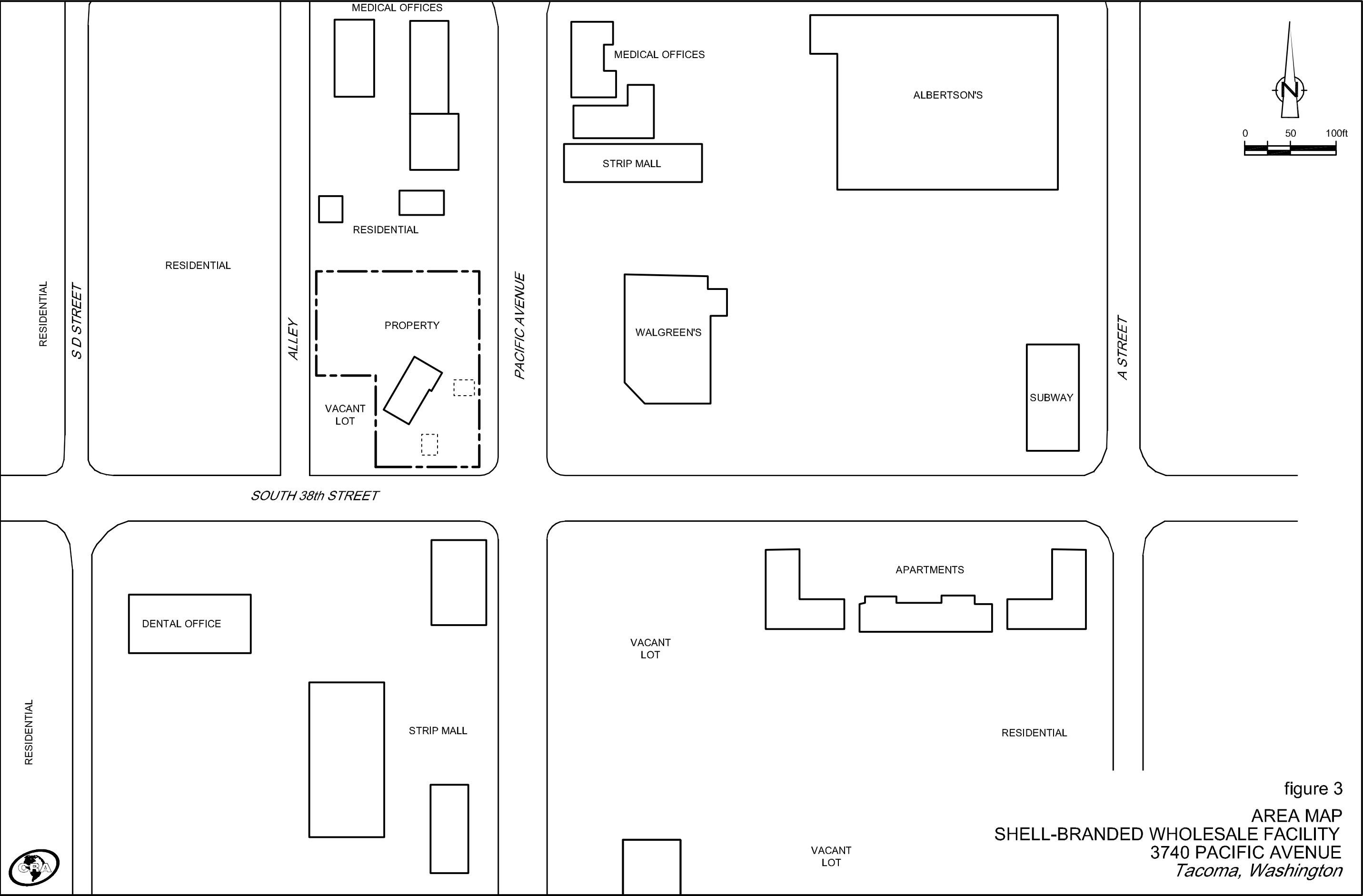
figure 1

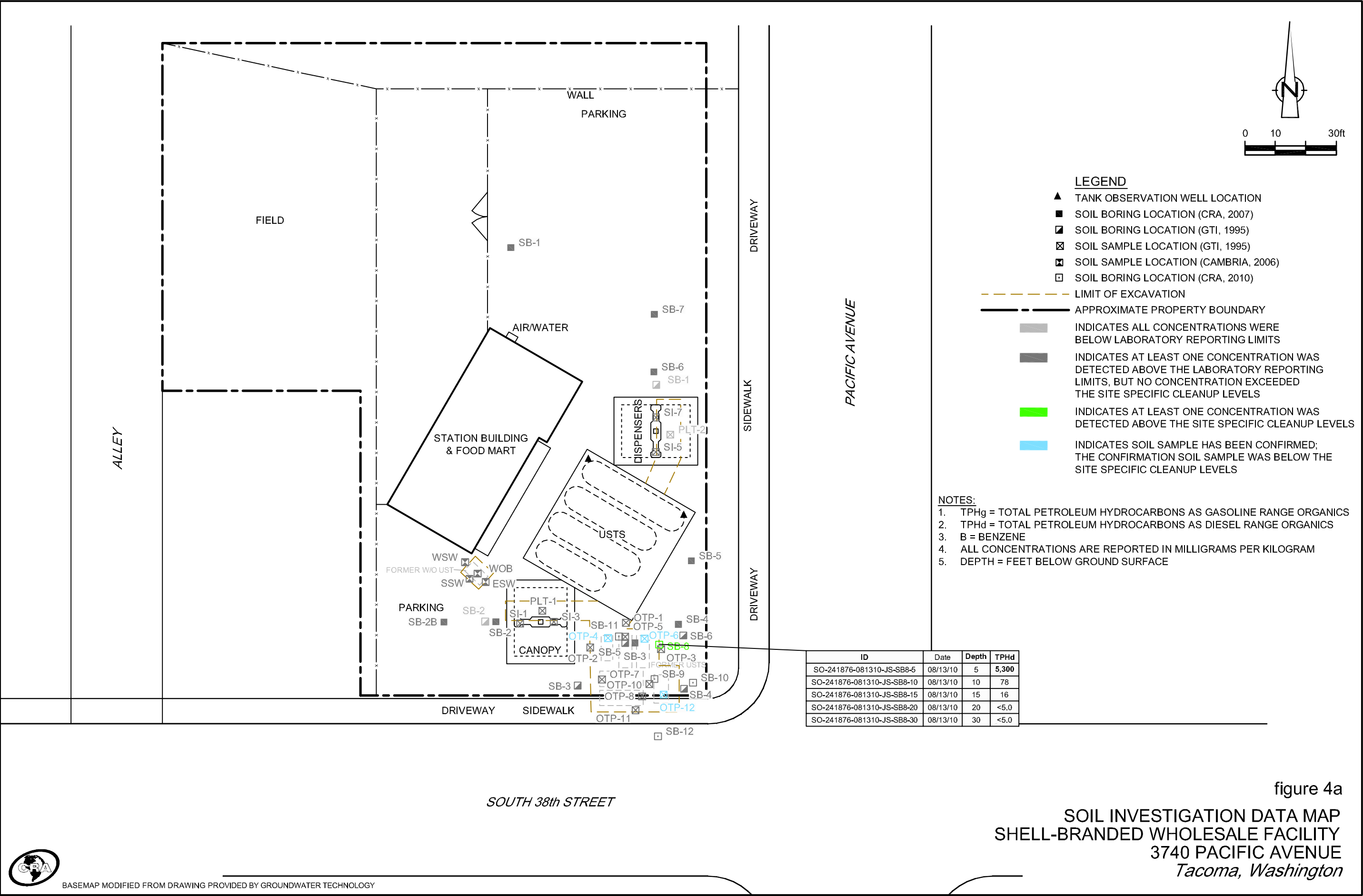
VICINITY MAP
SHELL-BRANDED WHOLESALE FACILITY
3740 PACIFIC AVENUE SOUTH
Tacoma, Washington

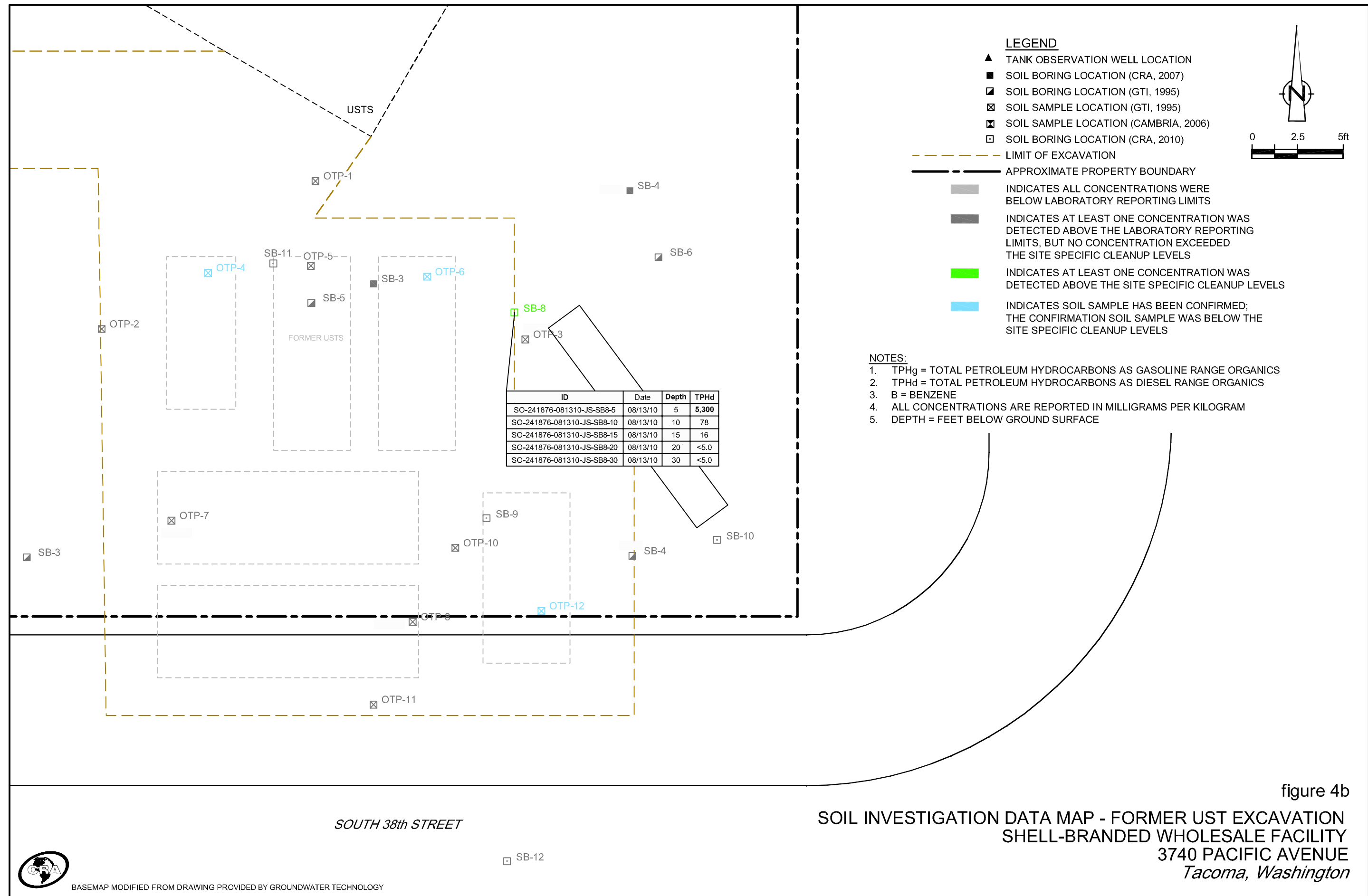




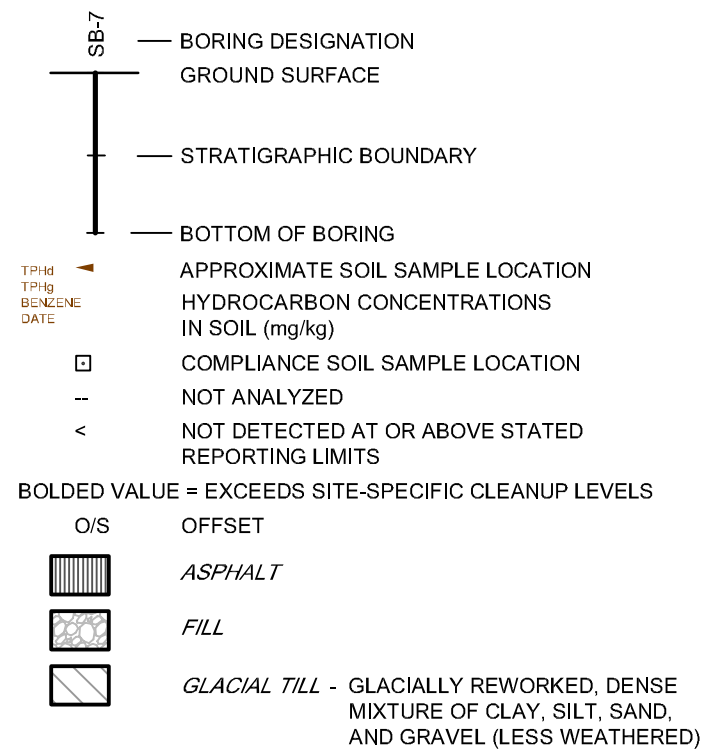
BASEMAP MODIFIED FROM DRAWING PROVIDED BY GROUNDWATER TECHNOLOGY







LEGEND



LEGEND

OTP-6 AND OTP-12 CONFIRMED DURING CRA'S 2007 AND 2010 ASSESSMENTS, RESPECTIVELY. SOIL SAMPLE ANALYTICAL CONCENTRATIONS OF CONFIRMATION SAMPLE WERE LESS THAN THE SITE-SPECIFIC CLEANUP LEVELS.

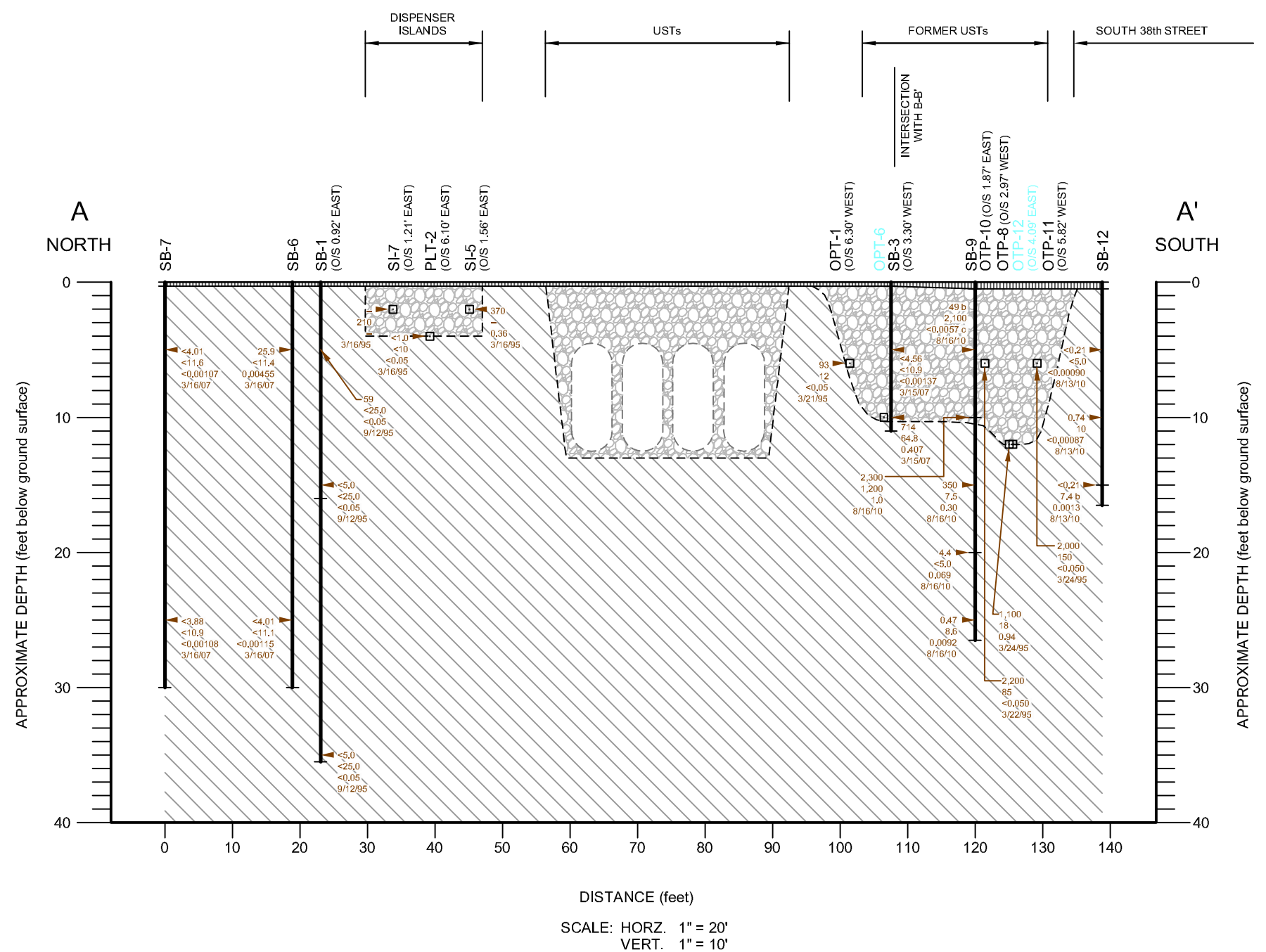
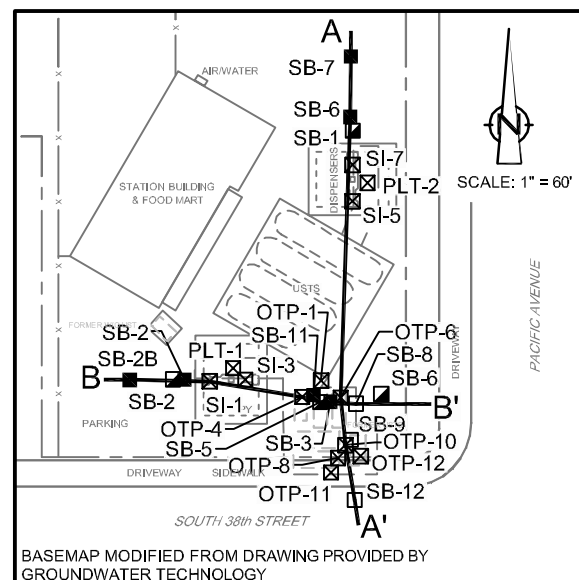
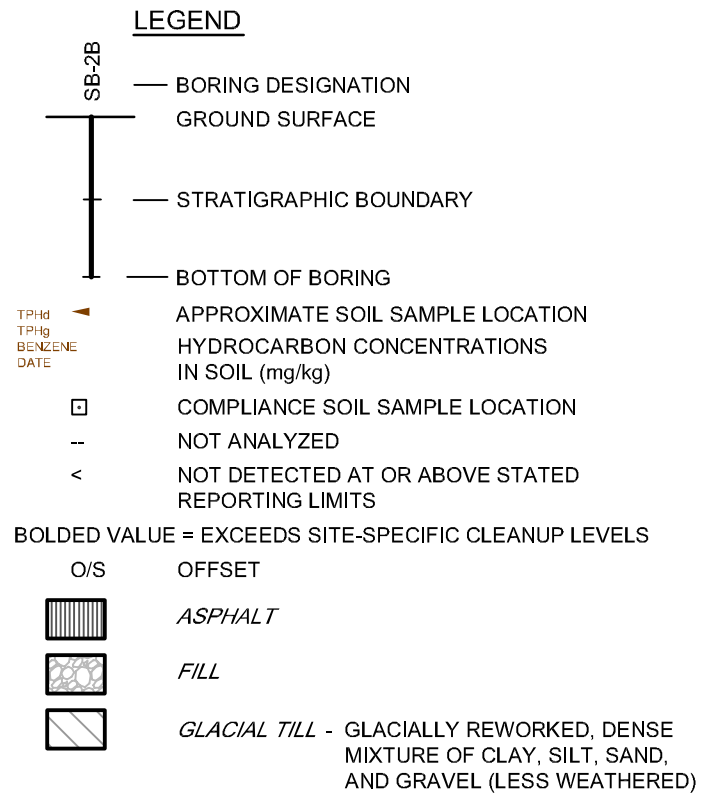


figure 5

GEOLOGIC CROSS SECTION A-A'
SHELL-BRANDED WHOLESALE FACILITY
3740 PACIFIC AVENUE
Tacoma, Washington



LEGEND
 OTP-4 CONFIRMED DURING CRA's 2010
 ASSESSMENT. SOIL SAMPLE ANALYTICAL
 RESULTS OF CONFIRMATION SAMPLE WERE
 BELOW THE SITE-SPECIFIC CLEANUP LEVELS.

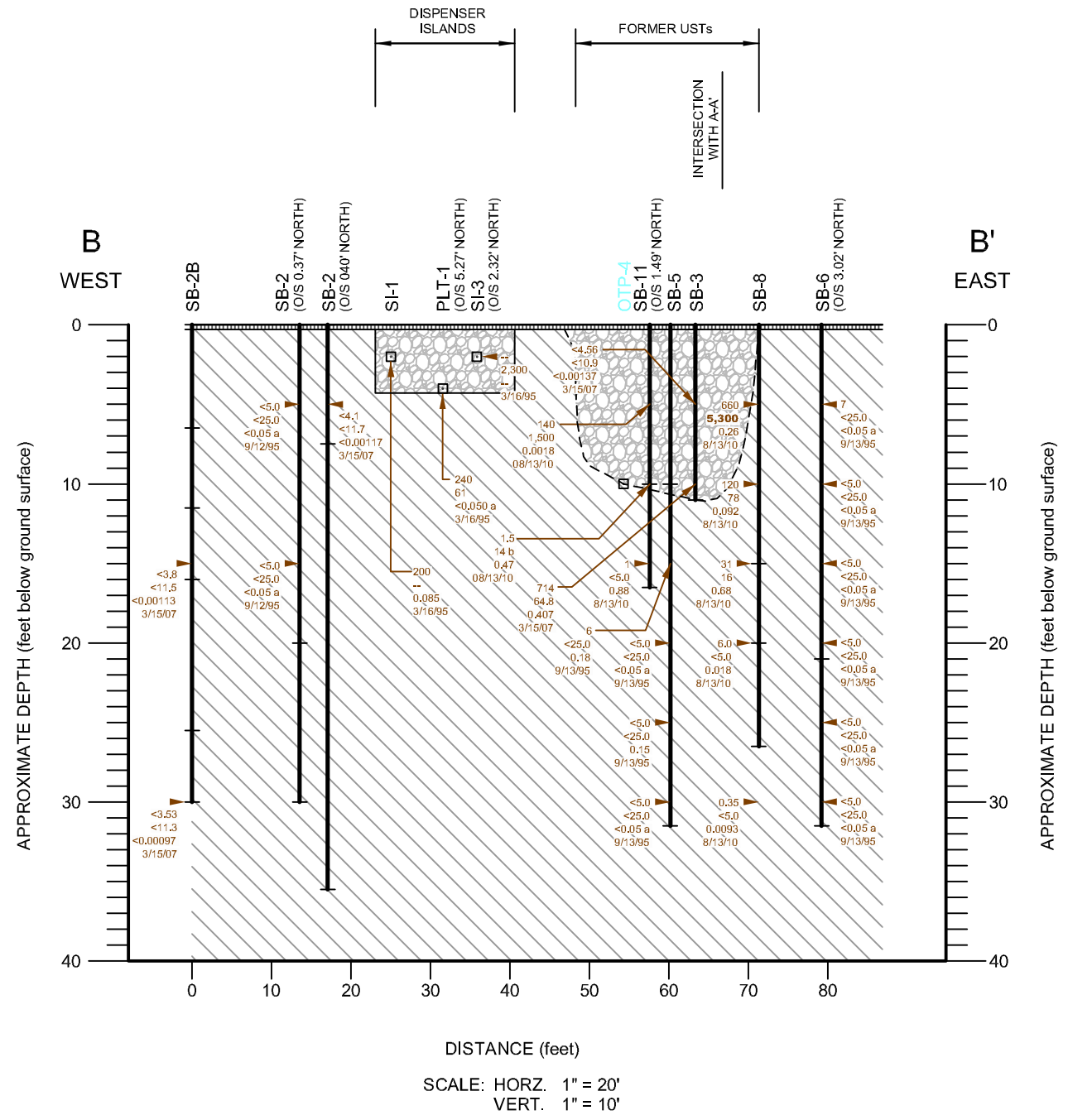
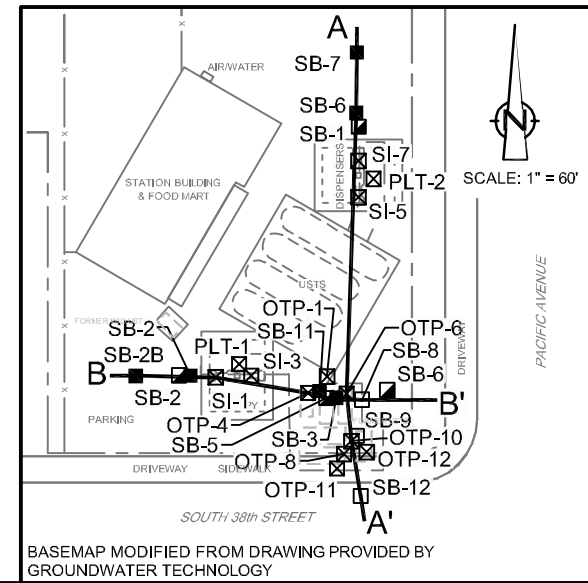
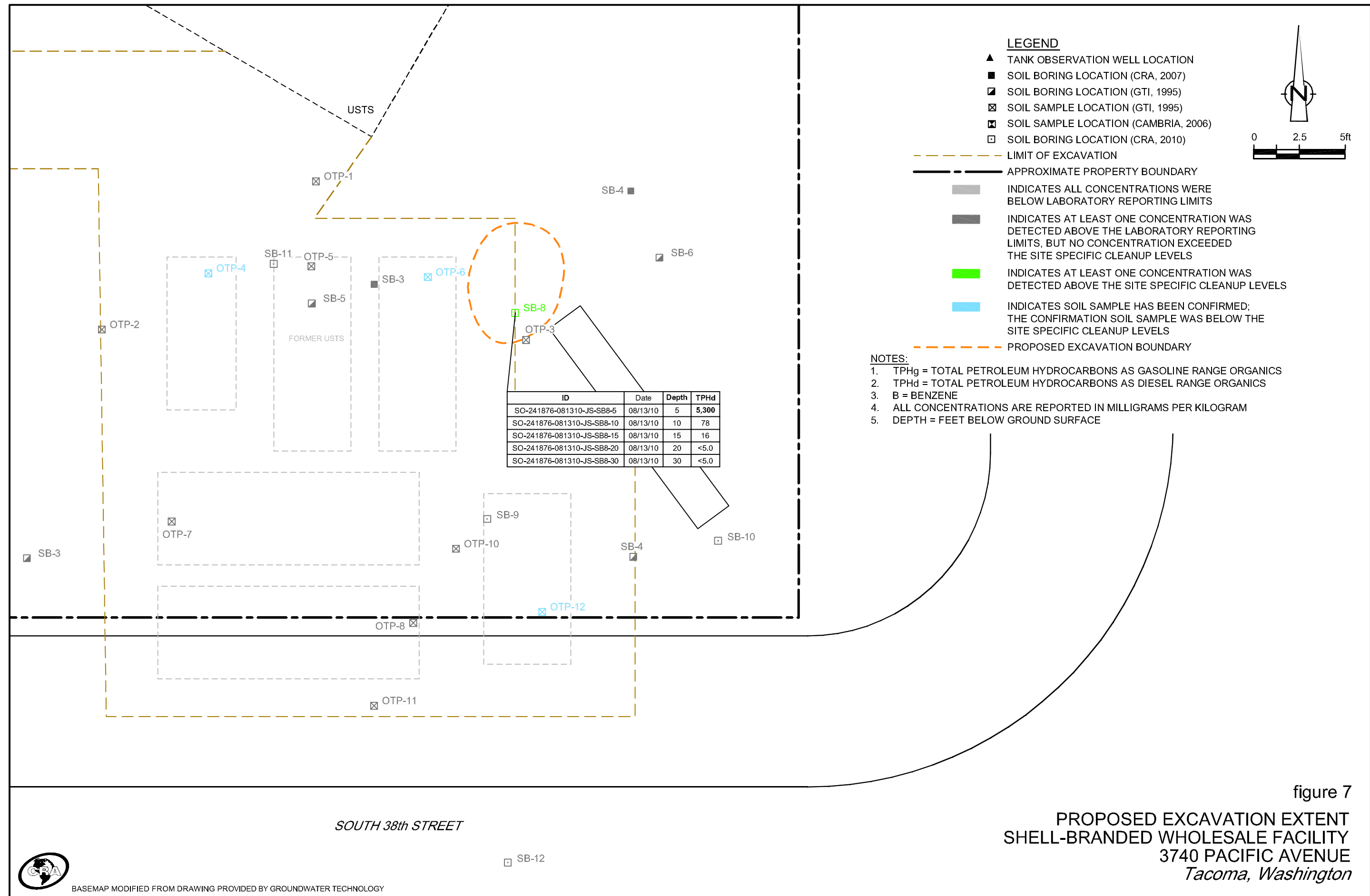


figure 6
 GEOLOGIC CROSS SECTION B-B'
 SHELL-BRANDED WHOLESALE FACILITY
 3740 PACIFIC AVENUE
 Tacoma, Washington



BASEMAP MODIFIED FROM DRAWING PROVIDED BY GROUNDWATER TECHNOLOGY

TABLES

TABLE 1

SUMMARY OF SOIL ANALYTICAL DATA
SHELL-BRANDED SERVICE STATION
3740 PACIFIC AVENUE
TACOMA, WASHINGTON

Sample ID	Referenced	Sample Date	Sample Depth	HYDROCARBONS			PRIMARY VOCs						OXYGENATES					LEAD	PCBs	PAHs	
				TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	Total	Total	Naphthalene	Total cPAHs
				30/100	2,000	2,000	0.03	7	6	9	0.005	NE	0.1	NE	NE	NE	NE	250	1	5	0.1
				Site-Specific Cleanup Levels	3,154	3,154	3,154	18	6,400	8,000	16,000	NE	NE	NE	NE	NE	NE	NE	NE	1,600	NE
			ft	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SI-1-2	GTI (1995)	03/16/95	2	200	---	---	0.085	1.4	1.5	15	---	---	---	---	---	---	---	---	---	---	---
SI-3-2	GTI (1995)	03/16/95	2	---	2,300	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SI-5-2	GTI (1995)	03/16/95	2	370	---	---	0.36	<0.050	2.3	26	---	---	---	---	---	---	---	---	---	---	---
SI-7-2	GTI (1995)	03/16/95	2	---	210	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PLT-1-4	GTI (1995)	03/16/95	4	240	61	---	<0.050 a	0.83	2.4	15	---	---	---	---	---	---	---	---	---	---	---
PLT-2-4	GTI (1995)	03/16/95	4	<1.0	<10	---	<0.050 a	<0.050	<0.050	<0.10	---	---	---	---	---	---	---	---	---	---	---
OTP-1-6	GTI (1995)	03/21/95	6	93	12	---	<0.050 a	0.054	0.13	0.18	---	---	---	---	---	---	---	---	---	---	---
OTP-2-6	GTI (1995)	03/21/95	6	58	21	---	<0.050 a	<0.050	<0.050	0.11	---	---	---	---	---	---	---	---	---	---	---
OTP-3-6	GTI (1995)	03/21/95	6	1,000	19	---	<0.050 a	0.83	3.8	25	---	---	---	---	---	---	---	---	---	---	---
OTP-4-10	GTI (1995)	03/21/95	10	4600 f	260	---	11	80	31	200	---	---	---	---	---	---	---	---	---	---	---
OTP-5-10	GTI (1995)	03/21/95	10	1,400	51	---	1.0	6.0	5.4	42	---	---	---	---	---	---	---	---	---	---	---
OTP-6-10	GTI (1995)	03/21/95	10	19000 e	1,100	---	58	540	220	1,200	---	---	---	---	---	---	---	---	---	---	---
OTP-7-12	GTI (1995)	03/22/95	12	1,400	17	---	3.2	27	17	100	---	---	---	---	---	---	---	---	---	---	---
OTP-8-12	GTI (1995)	03/24/95	12	1,100	18	---	0.94	3.1	4.5	29	---	---	---	---	---	---	---	---	---	---	---
OTP-10-6	GTI (1995)	03/22/95	6	2,200	85	---	<0.050	5.4	4.0	49	---	---	---	---	---	---	---	---	---	---	---
OTP-11-6	GTI (1995)	03/24/95	6	2,000	150	---	<0.050	24	14	91	---	---	---	---	---	---	---	---	---	---	---
OTP-12-12	GTI (1995)	03/24/95	12	8300 e	310	---	9.9	190	86	510	---	---	---	---	---	---	---	---	---	---	---
SB1-5	GTI (1995)	09/12/95	5	59	<25.0	<100.0	<0.05 a	<0.1	0.2	1.3	---	---	---	---	---	---	---	<10.0	---	---	---
SB1-15	GTI (1995)	09/12/95	15	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB1-35	GTI (1995)	09/12/95	35	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB2-5	GTI (1995)	09/12/95	5	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB2-10	GTI (1995)	09/12/95	10	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB3-5	GTI (1995)	09/12/95	5	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	13	---	---	---
SB3-15	GTI (1995)	09/12/95	15	<5.0	<25.0	<100.0	0.2	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB4-4.5	GTI (1995)	09/13/95	4.5	164	40	160	0.06	<0.1	1.3	2.2	---	---	---	---	---	---	---	10	---	---	---
SB4-13.5	GTI (1995)	09/13/95	13.5	1,820	227	660	0.22	6.9	13.1	70.6	---	---	---	---	---	---	---	<10.0	---	---	---
SB4-30	GTI (1995)	09/13/95	30	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB5-15	GTI (1995)	09/13/95	15	6	<25.0	<100.0	0.18	0.2	0.5	1.3	---	---	---	---	---	---	---	<10.0	---	---	---
SB5-20	GTI (1995)	09/13/95	20	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB5-25	GTI (1995)	09/13/95	25	<5.0	<25.0	<100.0	0.15	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB5-30	GTI (1995)	09/13/95	30	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB6-5	GTI (1995)	09/13/95	5	7	<25.0	<100.0	<0.05 a	<0.1	<0.1	0.2	---	---	---	---	---	---	---	<10.0	---	---	---
SB6-10	GTI (1995)	09/13/95	10	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB6-15	GTI (1995)	09/13/95	15	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB6-20	GTI (1995)	09/13/95	20	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
SB6-25	GTI (1995)	09/13/95	25	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---

TABLE 1

SUMMARY OF SOIL ANALYTICAL DATA
SHELL-BRANDED SERVICE STATION
3740 PACIFIC AVENUE
TACOMA, WASHINGTON

Sample ID	Referenced	Sample Date	Sample Depth	HYDROCARBONS			PRIMARY VOCs						OXYGENATES					LEAD	PCBs	PAHs	
				TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	Total	Total	Naphthalene	Total cPAHs
				30/100	2,000	2,000	0.03	7	6	9	0.005	NE	0.1	NE	NE	NE	NE	250	1	5	0.1
				Site-Specific Cleanup Levels	3,154	3,154	3,154	18	6,400	8,000	16,000	NE	NE	NE	NE	NE	NE	NE	NE	1,600	NE
			ft	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB6-30	GTI (1995)	09/13/95	30	<5.0	<25.0	<100.0	<0.05 a	<0.1	<0.1	<0.1	---	---	---	---	---	---	---	<10.0	---	---	---
ESW	Cambria (2006)	11/28/06	--	<12.5	<11.9	<29.8	<0.02	0.08	<0.02	0.14	---	<0.00535	<0.02	---	---	---	---	3.98	<0.0596	---	<0.0101
SSW	Cambria (2006)	11/28/06	--	<3.96	<11.8	<29.5	<0.05 a	<0.005	<0.007	<0.02	---	<0.00450	<0.005	---	---	---	---	2.48	<0.0593	---	<0.0119
WOB	Cambria (2006)	11/28/06	--	<4.55	<11.6	<28.9	<0.05 a	<0.005	<0.008	<0.02	---	<0.00455	<0.005	---	---	---	---	3.86	<0.0575	---	<0.0115
WSW	Cambria (2006)	11/28/06	--	<4.20	<12.0	<30.1	<0.05 a	<0.005	<0.008	<0.02	---	<0.00431	<0.005	---	---	---	---	3.33	<0.0598	---	<0.0119
SB-1-5	CRA (2007)	03/16/07	5	<4.08	<11.9	44.7	<0.00113	<0.00113	<0.003	<0.0075	<0.000938	<0.00375	<0.41	---	---	---	---	3.54	--	---	<0.0121
SB-1-25	CRA (2007)	03/16/07	25	<3.98	<11	<27.5	<0.00103	<0.00103	<0.00275	<0.00689	<0.000861	<0.00344	<0.4	---	---	---	---	2.71	--	---	<0.0107
SB-2-5	CRA (2007)	03/15/07	5	<4.1	<11.7	<29.3	<0.00117	<0.00117	<0.00313	<0.00783	<0.000979	<0.00392	<0.41	---	---	---	---	2.85	--	---	<0.0115
SB2B-15	CRA (2007)	03/15/07	15	<3.8	<11.5	<28.8	<0.00113	<0.00113	<0.00301	<0.00752	<0.00094	<0.00376	<0.38	---	---	---	---	2.61	--	---	<0.0114
SB-2B-30	CRA (2007)	03/15/07	30	<3.53	<11.3	<28.2	<0.00097	<0.00097	<0.0026	<0.0065	<0.000812	<0.00325	<0.35	---	---	---	---	2.30	--	---	<0.0112
SB-3-5	CRA (2007)	03/15/07	5	<4.56	<10.9	<27.2	<0.00137	<0.00317	<0.00365	<0.00911	<0.00114	<0.00456	<0.46	---	---	---	---	2.37	--	---	<0.0108
SB-3-10	CRA (2007)	03/15/07	10	714	64.8	65.8	0.407	2.13	4.09	19.7	<0.377	<0.377	<0.38	---	---	---	---	7.48	--	---	<0.0567
SB-4-5	CRA (2007)	03/16/07	5	80.2	14.3	<26.8	0.00345	0.00115	0.00115	0.0339	<0.00089	<0.00356	<0.4	---	---	---	---	3.28	--	---	<0.0109
SB-4-7.5	CRA (2007)	03/16/07	7.5	<4.04	<11.3	<28.3	0.0127	<0.00107	<0.00285	<0.00713	<0.000891	<0.00356	<0.4	---	---	---	---	2.55	--	---	<0.0115
SB-5-5	CRA (2007)	03/15/07	5	9.84	<11.1	<27.8	<0.00104	<0.00104	0.00563	<0.00696	<0.00087	<0.00348	<0.37	---	---	---	---	2.89	--	---	<0.0113
SB-5-30	CRA (2007)	03/15/07	30	10.2	<11	<27.4	<0.000958	<0.000958	<0.00256	<0.00639	<0.000799	<0.00319	<0.37	---	---	---	---	2.31	--	---	<0.0107
SB-6-5	CRA (2007)	03/16/07	5	25.9	<11.4	<28.4	0.00455	0.661	0.172	2.33	<0.000976	<0.0039	<0.38	---	---	---	---	2.33	--	---	<0.0113
SB-6-25	CRA (2007)	03/16/07	25	<4.01	<11.1	<27.8	<0.00115	0.00189	<0.00307	0.0169	<0.000959	<0.00384	<0.4	---	---	---	---	2.11	--	---	<0.0108
SB-7-5	CRA (2007)	03/16/07	5	<4.01	<11.6	<28.9	<0.00107	<0.00107	<0.00285	<0.00712	<0.00089	<0.00356	<0.4	---	---	---	---	2.52	--	---	<0.0116
SB-7-25	CRA (2007)	03/16/07	25	<3.88	<10.9	<27.4	<0.00108	<0.00108	<0.00287	<0.00718	<0.000897	<0.00359	<0.39	---	---	---	---	2.22	--	---	<0.0111
SO-241876-081310-JS-SB8-5 *	CRA (2010)	08/13/10	5	660	5,300	2,100	0.26	0.45 J	6.8	<0.96	---	<0.48	<0.064 c	<9.6	<0.48	<0.48	<0.48	---	<0.050	2.7 J	---
SO-241876-081310-JS-SB8-10 *	CRA (2010)	08/13/10	10	120	78	28	0.092	0.016	0.11	0.072	---	<0.00094	<0.0019	<0.019	<0.00094	<0.00094	<0.00094	---	<0.050	0.054	---
SO-241876-081310-JS-SB8-15 *	CRA (2010)	08/13/10	15	31	16	<5.0	0.68	0.059	0.81	4.4	---	<0.039	<0.077	<0.77	<0.039	<0.039	<0.039	---	<0.050	0.59 d	---
SO-241876-081310-JS-SB8-20 *	CRA (2010)	08/13/10	20	6.0	<5.0	<5.0	0.018	0.0016	0.034	0.15	---	0.0025	<0.0016	<0.016	<0.00081	<0.00081	<0.00081	---	<0.050	0.023	---
SO-241876-081310-JS-SB8-30 *	CRA (2010)	08/13/10	30	0.35	<5.0	<5.0	0.0093	0.0016	0.0047	0.024	---	0.0018	<0.0016	0.020	<0.00078	<0.00078	<0.00078	---	<0.050	<0.0078	---
SO-241876-081610-JS-SB9-5 *	CRA (2010)	08/16/10	5	49 b	2,100	1,200	<0.0057 c	<0.042	0.02	<0.085	---	<0.042	<0.085	<0.85	<0.042	<0.042	<0.042	---	<0.050	0.039 d, J	---
SO-241876-081610-JS-SB9-10 *	CRA (2010)	08/16/10	10	2,300	1,200	220	1.0	8.8	19	100	---	<0.40	<0.80	<8.0	<0.40	<0.40	<0.40	---	<0.050	6.8	---
SO-241876-081610-JS-SB9-15 *	CRA (2010)	08/16/10	15	350	7.5	<5.0	0.30	0.75	1.8	7.5	---	<0.036	<0.072	<0.72	<0.036	<0.036	<0.036	---	<0.050	0.47 d	---
SO-241876-081610-JS-SB9-20 *	CRA (2010)	08/16/10	20	4.4	<5.0	<5.0	0.069	0.0048	0.029	0.12	---	<0.00091	<0.0018	<0.018	<0.00091	<0.00091	<0.00091	---	<0.050	0.044	---
SO-241876-081610-JS-SB9-25 *	CRA (2010)	08/16/10	25	0.47	8.6	<5.0	0.0092	0.0096	0.03	0.077	---	<0.00075	<0.0015	<0.015	<0.00075	<0.00075	<0.00075	---	<0.050	<0.0075	---
SO-241876-081610-JS-SB10-5 *	CRA (2010)	08/16/10	5	0.86	610	280	<0.00090	0.0028	0.0062	0.025	---	<0.00090	<0.0018	<0.018	<0.00090	<0.00090	<0.00090	---	<0.050	0.013	---
SO-241876-081610-JS-SB10-10 *	CRA (2010)	08/16/10	10	1.2	<5.0	7.4	0.0094	0.0071	0.18	0.091	---	<0.0010	<0.0020	<0.020	<0.0010	<0.0010	<0.0010	---	<0.050	0.13	---
SO-241876-081610-JS-SB10-15 *	CRA (2010)	08/16/10	15	120	340	310	0.0068	0.018	0.34	0.26	---	<0.00076	<0.0015	<0.015	<0.00076	<0.00076	<0.00076	---	<0.050	0.14	---
SO-241876-081310-JS-SB11-5 *	CRA (2010)	08/13/10	5	140 b	1,500	620	0.0018	0.0076	0.014	0.080	---	<0.00096	<0.0019	<0.019	<0.00096	<0.00096	<0.00096	---	<0.050	0.030	---
SO-241876-081310-JS-SB11-10 *	CRA (2010)	08/13/10	10	1.5	14 b	16 b	0.47	0.11	0.91	1.6	---	<0.043	<0.085	<0.85	<0.043	<0.043	<0.043	---	<0.050	0.45 d	---
SO-241876-081310-JS-SB11-15 *	CRA (2010)	08/13/10	15	1.0 b	<5.0	<5.0	0.88	0.0036	0.32	0.0019	---	<0.00076	0.0022	0.029	<0.00076	<0.00076	<0.00076	---	<0.050	<0.0076	---

TABLE 1

SUMMARY OF SOIL ANALYTICAL DATA
SHELL-BRANDED SERVICE STATION
3740 PACIFIC AVENUE
TACOMA, WASHINGTON

Sample ID	Referenced	Sample Date	Sample Depth	HYDROCARBONS			PRIMARY VOCs						OXYGENATES					LEAD	PCBs	PAHs	
				TPHg	TPHd	TPHo	B	T	E	X	EDB	EDC	MTBE	TBA	DIPE	ETBE	TAME	Total	Total	Naphthalene	Total cPAHs
				30/100	2,000	2,000	0.03	7	6	9	0.005	NE	0.1	NE	NE	NE	NE	250	1	5	0.1
				Site-Specific Cleanup Levels	3,154	3,154	3,154	18	6,400	8,000	16,000	NE	NE	NE	NE	NE	NE	NE	NE	1,600	NE
				ft	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SO-241876-081310-JS-SB12-5 *	CRA (2010)	08/13/10	5	<0.21	<5.0	<5.0	<0.00090	<0.00090	<0.00090	<0.0018	---	<0.00090	<0.0018	<0.018	<0.00090	<0.00090	<0.00090	---	<0.050	<0.0092	---
SO-241876-081310-JS-SB12-10 *	CRA (2010)	08/13/10	10	0.74	10	<5.0	<0.00087	<0.00087	<0.00087	0.0035	---	<0.00087	<0.0017	<0.017	<0.00087	<0.00087	<0.00087	---	<0.050	<0.0087	---
SO-241876-081310-JS-SB12-15 *	CRA (2010)	08/13/10	15	<0.21	7.4 b	<5.0	0.0013	<0.00082	<0.00082	<0.0016	---	<0.00082	<0.0016	<0.016	<0.00082	<0.00082	<0.00082	---	<0.050	<0.0082	---

Notes:

MTCA = Model Toxics Control Act

Results in bold indicate an analyte was detected above the MTCA Method A cleanup level.

bgs = below ground surface (in feet)

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

TPHo = Total petroleum hydrocarbons as motor oil

BTEX = Benzene, toluene, ethylbenzene, and xylenes

EDB = 1,2 Dibromoethane

EDC = 1,2 Dichloroethane

MTBE = Methyl tertiary-butyl ether

VOCs = Volatile organic compounds

PCB = Polychlorinated biphenyls

PAHs = Polycyclic aromatic hydrocarbons

cPAHs = Carcinogenic PAHs

<x = Not detected at reporting limit x

-- = Not analyzed

ft = Feet below ground surface

NE = Not established

* Indicate the samples were additionally analyzed for PCBs by EPA Method 8082 and full set of VOCs by EPA Method 8260B. Analyte concentrations are either below laboratory reporting limits or MTCA Method A cleanup levels.

- a = Indicates analytes were not detected above the laboratory detection limits. However, the laboratory detection limits were above the MTCA Method A cleanup levels.
- b = The sample chromatographic pattern for TPH does not match the specified standard. Quantitation of the unknown hydrocarbons was based on the specified standard.
- c = Method detection limits are used since reporting limits are above the MTCA Method A cleanup levels.
- d = The trace level of naphthalene found in the method blank may have a bias high impact on the sample data.
- e = Sample concentrations were confirmed to be below the Site-specific cleanup levels based on the results of CRA's August 2010 site investigation.
- f = Sample concentrations were confirmed to be below the Site-specific cleanup levels based on the results of CRA's March 2007 site investigation.
- J = Results were evaluated to method detection limits. Concentrations >= method detection limits but < reporting limits, if found, are qualified with a "J" flag.

APPENDIX A

ENVIRONMENTAL DOCUMENT LIST

Environmental Document List: 3740 Pacific Avenue, Tacoma, Washington		
Title	Author	Date
Report of UST Decommissioning and Stage II Compliance Sampling	Groundwater Technology, Inc.	6/19/1995
Report of Environmental Site Assessment	Groundwater Technology, Inc.	11/9/1995
Underground Storage Tank Removal and Compliance Sampling Report	Cambria Environmental Technology	12/28/2006
Site Investigation Report	Conestoga-Rovers & Associates	5/3/2007

APPENDIX B

SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIVITIES

SITE ACTIVITIES HISTORY

1995 Report of UST Decommissioning and Stage II Compliance Sampling:

Groundwater Technology Inc. (GTI) oversaw removal of six underground storage tanks (USTs) from the Site and sampled soil during a Stage II vapor recovery system installation. Six single-walled, steel USTs were removed, ranging in size from 550 gallons to 3,200 gallons. GTI indicated that the original contents of the USTs and the dates of installation and abandonment of the USTs were unknown. Approximately 150 cubic yards of petroleum hydrocarbon impacted soil were removed from the former UST cavity. An additional 50 cubic yards of soil was removed during the Stage II Vapor Recovery System upgrades. GTI reported concentrations of total petroleum hydrocarbons (TPH) as gasoline (TPHg), benzene, and total xylenes in excess of the Washington State Department of Ecology's Model Toxics Control Act (MTCA) Method A cleanup levels in soil associated with the northern and southern dispenser islands. TPH as diesel (TPHd) was also reported above the MTCA Method A cleanup level in soil sampled at the southern dispenser island. Concentrations of TPHg and various benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents were above the MTCA Method A cleanup levels. Petroleum hydrocarbon impacted soil extended to a depth of approximately 10 feet below ground surface (bgs) at a maximum concentration of 19,000 milligrams per kilogram (mg/kg) for TPHg and 58 mg/kg for benzene. GTI reported concentrations of water sampled from the discovered USTs excavation in excess of the MTCA Method A cleanup levels for TPHg, TPHd, and BTEX. More information is available in GTI's *Report of UST Decommissioning and Stage II Compliance Sampling*, dated June 19, 1995.

1995 Environmental Site Assessment: In September 1995, GTI drilled six soil borings (SB-1 through SB-6) to assess subsurface conditions associated with the former UST field. Moist soil conditions were encountered in soil boring SB-5 at 10 feet bgs, advanced in the former UST field, at the interface of the UST backfill and native soil. However, a sample collected in SB-5 at 11.5 feet bgs, in native soil underlying the former UST cavity, was dry. Concentrations of TPHg in soil sampled from soil boring SB-4 at 4.5 feet bgs and 13.5 feet bgs, were above the MTCA Method A cleanup levels. Concentrations of benzene in soil sampled from SB-3 at 15 feet bgs, SB-4 at 4.5 and 13.5 feet bgs, and SB-5 at 15 and 25 feet bgs were above the MTCA Method A cleanup level. More information is available in GTI's *Report of Environmental Site Assessment*, dated November 20, 1995.

2006 Underground Storage Tank Removal: In November 2006, Cambria Environmental Technology (Cambria) oversaw removal and excavation of a 550-gallon waste oil UST. The 6 cubic yards of pea gravel removed from the excavation was field screened for petroleum hydrocarbons, did not have detectable levels of petroleum hydrocarbon constituents, and, along with clean imported fill, was used as backfill for the excavation. All analyte concentrations in sidewall and bottom soil samples collected were below the MTCA Method A cleanup levels or laboratory reporting limits. A grab excavation water sample was collected, and exceeded the MTCA Method A cleanup levels for TPH as heavy oil (TPHo) and total lead. Cambria suggested that the constituent concentrations above MTCA Method A cleanup levels in excavation water sampled, was the result of surface runoff. More information is available in Cambria's *Underground Storage Tank Removal and Compliance Sampling Report*, dated December 28, 2006.

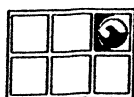
2007 Subsurface Investigation: In March 2007, Conestoga-Rovers & Associates (CRA) drilled eight soil borings (SB-1 through SB-7; SB-2B), to a maximum depth of 30.5 feet bgs in order to assess soil conditions associated with the current dispenser islands, and current and former UST fields. CRA removed approximately 1-2 liters of liquid reported as separate phase hydrocarbons (SPH) from soil boring SB-3 at a depth of 10 feet bgs. Wet soil conditions were reported in soil boring SB-3 at the same depth as the SPH, but all other soil sampled in soil boring SB-3 and all other soil borings drilled were dry. Concentrations of TPHg, benzene, and total xylenes in soil boring SB-3 at 10 feet bgs exceeded the MTCA Method A cleanup levels. Concentrations of TPHg in soil sampled in soil boring SB-4 at 5 feet bgs were above the MTCA Method A cleanup level. More information is available in CRA's *Site Investigation Report*, dated May 3, 2007.

2010 Site Investigation: In August 2010, CRA completed five soil borings (SB-8 through SB-12) and installed a temporary monitoring well in soil boring SB-8, in order to assess site soil conditions and confirm or deny the presence of perched groundwater at the Site. CRA advanced the borings to a maximum depth of 30 feet. Concentrations of TPHg in soil sampled from soil boring SB-8 at 5 and 10 feet bgs, soil boring SB-9 at 10 and 15 feet bgs, soil boring SB-10 at 15 feet bgs, and soil boring SB-11 at 5 feet bgs, were above the MTCA Method A cleanup levels. Soil sampled from soil boring SB-8 at 5 feet bgs was above the MTCA Method A cleanup levels for concentrations of TPHd and TPHo, as was the concentration of TPHd in soil sampled from soil boring SB-9 at 5 feet bgs. Various concentrations of BTEX constituents exceeded the MTCA Method A cleanup levels to 15 feet bgs in soil boring SB-8, to 20 feet bgs in soil boring SB-9,

and to 15 feet bgs in soil boring SB-11. The concentration of naphthalene in soil sampled from SB-9 at 10 feet bgs was also above the MTCA Method A cleanup level. CRA did not observe any groundwater in the temporary well installed in soil boring SB-8.

APPENDIX C

AVAILABLE HISTORICAL SOIL BORING LOGS



GROUNDWATER
TECHNOLOGY

Drilling Log


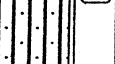
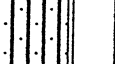
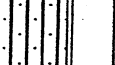
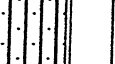
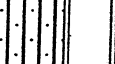
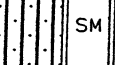
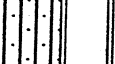
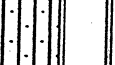
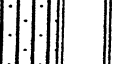
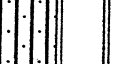
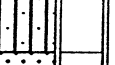

Soil Boring SB-1

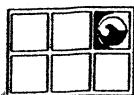
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Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172
Surface Elev. _____ Total Hole Depth 35.5 ft. Diameter 6.5 in.
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core _____
Drill Co. Holt Drilling Co. Method HSA
Driller Clyde Moore Log By Tim Lewallen Date 09/12/95 Permit # _____
Checked By Steve Hartman License No. _____

See Site Map
For Boring Location

COMMENTS:

Soil samples submitted for laboratory
analysis are identified by a black box.

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0				Asp	4" asphalt.
2					Brown, fine-grained SAND, little silt, trace clay, trace gravel (dense, dry, slight odor)
4					(grades little clay)
6	95	-5 12 20 22			(grades trace clay)
8				SM	(grades gray, medium dense, moist)
10	80	-10 7 7 10			(grades brown, very dense, dry, no odor)
12					Gray-brown, medium-grained SAND, trace fine-grained sand, trace gravel (very dense, moist, no odor)
14					(grades gray, trace gravel)
16	8	-15 17 23 50-2"			(grades gray, trace gravel)
18					(grades gray, trace gravel)
20	3.5	-20 50-6"		SP	(grades gray, trace gravel)
22					(grades gray, trace gravel)
24					(grades gray, trace gravel)



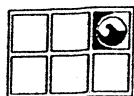
GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-1

Project Texaco Facility No. 63-232-0091 Owner Texaco Refining and Marketing Inc.
Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ x Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24					
25	2.5	-25 50-2"			
26					
28					
30	2.5	-30 49 50-5"		SP	
32					
34					(grades little gravel)
35					
36	2	-35 17 50-4"			End of borehole. Backfilled with bentonite and capped with concrete.
38					
40					
42					
44					
46					
48					
50					
52					
54					
56					



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-2

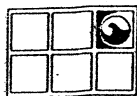
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Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core _____
Drill Co. Holt Drilling Co. Method HSA
Driller Clyde Moore Log By Tim Lewallen Date 09/12/95 Permit # _____
Checked By Steve Hartman License No. _____

See Site Map
For Boring Location

COMMENTS:

Soil samples submitted for laboratory
analysis are identified by a black box.

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0				Asp	3" asphalt.
2					Brown, fine-grained SAND, little silt, trace clay, trace gravel (very dense, dry, no odor)
4					(grades slight odor)
6	3.2	-5 17 23 42			
8					(grades some silt)
10	1.7	-10 8 18 23		SM	(grades dense, little silt, no odor)
12					
14					(grades gray, moist)
16	2.0	-15 4 2 3			(grades loose)
18					
20	1.7	-20 50-5"			End of borehole. Backfilled with bentonite and capped with concrete.
22					
24					



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-3

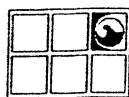
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Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172
Surface Elev. _____ Total Hole Depth 20 ft. Diameter 6.5 in.
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core _____
Drill Co. Holt Drilling Co. Method HSA
Driller Clyde Moore Log By Tim Lewallen Date 09/12/95 Permit # _____
Checked By Steve Hartman License No. _____

See Site Map
For Boring Location

COMMENTS:

Soil samples submitted for laboratory
analysis are identified by a black box.

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0					3" asphalt.
2					Brown, fine-grained SAND, little silt, trace clay (dense, dry, no odor)
4					(grades gray-brown, trace gravel)
6	5	-5 12 17 18			
8				SM	
10	15	-10 12 13 24			
12					(grades gray)
14					(grades moist, medium dense)
16	6	-15 3 5 7			
18				SP	Gray, fine to medium-grained SAND, trace gravel (very dense, dry, no odor)
20	1.4	-20 50-4"			(grades very dense) End of borehole. Backfilled with bentonite and capped with concrete.
22					
24					



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-4

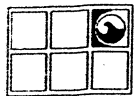
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Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172
Surface Elev. _____ Total Hole Depth 30 ft. Diameter 6.5 in.
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core _____
Drill Co. Holt Drilling Co. Method HSA
Driller Clyde Moore Log By Tim Lewallen Date 09/13/95 Permit # _____
Checked By Steve Hartman License No. _____

See Site Map
For Boring Location

COMMENTS:

Soil samples submitted for laboratory
analysis are identified by a black box.

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						3" asphalt.
2						Gray, fine-grained SAND, little silt, trace clay (dense, dry, moderate odor)
4	90	-3	3			
6	700	-4.5	13			(grades trace silt, trace gravel)
8	100	-6	11			(grades very dense, strong odor)
10	NR	-7.5	15			(grades dense)
12	25	-9	15			(grades gray-brown, moderate odor)
14	35	-10.5	12			(grades very dense)
16	10	-12	12			(grades little silt, strong odor)
18	1300	-13.5	13			(grades moist)
20	1100	-14	14			(grades dense)
22	NR	-16.5	24			(grades dry, trace silt)
24	100	-18	24			
26	100	-19.5	37			
28	90	-21	24			
30	50	-22.5	38			
32	40	-24	42			



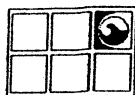
GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-4

Project Texaco Facility No. 63-232-0091 Owner Texaco Refining and Marketing Inc.
Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24	40	-24	42 50-4"		SM	Gray fine-grained SAND and SILT, trace gravel (very dense, dry, slight odor)
26	NR	25.5	50-4"			
28	40	-27	50-4"			
30	NR	-28.5	47 50-4"		SP	Brown fine- to medium-grained SAND, trace gravel (very dense, dry, no odor)
30	10	-30	50-5"			(300 lb hammer was used to collect sample End of borehole. Backfilled with bentonite and capped with concrete.
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-5

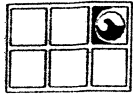
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Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172
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Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core _____
Drill Co. Holt Drilling Co. Method HSA
Driller Clyde Moore Log By Tim Lewallen Date 09/13/95 Permit # _____
Checked By Steve Hartman License No. _____

See Site Map
For Boring Location

COMMENTS:

Soil samples submitted for laboratory
analysis are identified by a black box.

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0					3" asphalt.
2					Brown, medium-grained SAND, trace gravel (medium dense, dry, no odor) (imported back fill)
4					
6				SP	
8					
10	600	-10 4 6 16			(grades wet, strong odor, sheen)
12					Gray, fine-grained SAND, little silt, trace clay, trace gravel (medium dense, dry, strong odor)
14					
16	400	-15 3 4 7		SM	(Blows were counted with a 300 lb hammer)
18					
20	80	-20 50-4"			Brown fine-grained SAND, trace silt, trace gravel (very dense, dry, moderate odor)
22				SP	
24					



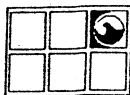
GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-5

Project Texaco Facility No. 63-232-0091 Owner Texaco Refining and Marketing Inc.
Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24	20	-25 50-3"		SP	(slight odor)
26					
28					
30	5	-30 35 31 42			(grades no silt)
32					End of borehole. Backfilled with bentonite and capped with concrete.
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					
56					



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-6

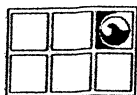
Project Texaco Facility No. 63-232-0091 Owner Texaco Refining and Marketing Inc.
Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172
Surface Elev. _____ Total Hole Depth 31.5 ft. Diameter 6.5 in.
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia _____ Length _____ Type/Size _____
Casing: Dia _____ Length _____ Type _____
Fill Material _____ Rig/Core _____
Drill Co. Holt Drilling Co. Method HSA
Driller Clyde Moore Log By Tim Lewallen Date 09/13/95 Permit # _____
Checked By Steve Hartman License No. _____

See Site Map
For Boring Location

COMMENTS:

Soil samples submitted for laboratory
analysis are identified by a black box.

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2					
0					3" asphalt.
2					Gray, fine grained SAND, little silt, trace gravel (medium dense, dry, strong odor)
4					
6	>2500 -5	10 11 14			
8					
10	1000 -10	16 18 25		SM	(grades dense)
12					
14					
16	160 -15	35 30 33			(grades very dense, moderate odor)
18					
20	125 -20	14 18 39			
22				SP	Gray, fine to medium grained SAND, trace gravel (very dense, dry, no odor)
24					



GROUNDWATER
TECHNOLOGY

Drilling Log

Soil Boring SB-6

Project Texaco Facility No. 63-232-0091 Owner Texaco Refining and Marketing Inc.
Location 3740 Pacific Avenue, Tacoma, Washington Proj. No. 020600172

Depth (ft.)	PID (ppm)	Sample ID Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24					
26	135	25 50-3"			
28				SP	
30	5	30 5 22 26			(Blows were counted with a 300 lb hammer)
32					End of borehole. Backfilled with bentonite and capped with concrete.
34					
36					
38					
40					
42					
44					
46					
48					
50					
52					
54					
56					



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-1
JOB/SITE NAME	Taco3740	DRILLING STARTED	15-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	16-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crowell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located north of building on west side of site near the fence.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ftg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ftg)	WELL DIAGRAM
0.2	50/6	SB-1- 5		5	ML		ASPHALT <u>Clayey SILT with sand and gravel:</u> Grayish brown; fine grained sand, subrounded gravel up to 1 in., wet, medium plasticity, low estimated permeability, no staining or odor	0.3	<p>Portland Type III</p> <p>Bentonite Seal</p>
0	39 50/6			10	ML		<u>Clayey SILT with sand:</u> Grayish brown; very fine grained sand, damp, medium plasticity, low estimated permeability, no staining or odor	5.5	
0	50/6			15	SM		<u>Sandy SILT with gravel:</u> Gray; fine to coarse grained sand, angular gravel up to 1 in., dry, low plasticity, medium estimated permeability, no staining or odor	11.0	
0	50/6			20	SM		<u>Sandy SILT with gravel:</u> Brown; fine to coarse grained sand, angular to rounded gravel up to 1 in., dry, low plasticity, medium estimated permeability, no staining or odor	15.5	
0.6	50/6	SB-1- 25		25	SP		<u>SAND with gravel:</u> Brown; medium to coarse grained sand, subrounded gravel up to 2 in., dry, low plasticity, high estimated permeability, no staining or odor	20.5	
0.3	50/6			30	SP		Same as above; moist	25.5	
								30.5	Bottom of Boring @ 30.5 ftg

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\DESKTOP\TACO3740_SB-1-SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-2
JOB/SITE NAME	Taco3740	DRILLING STARTED	15-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	15-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located west of the southern pump island.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
1.5		SB-2-5	0.3	ML		ASPHALT Clayey SILT with sand and gravel: Light brown; very fine grained sand, stiff clay, subangular gravel up to 3 in., medium plasticity, low estimated permeability, no staining or odor	0.3	
			5.5	ML		Same as above	5.5	
			7.5				7.5	

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\TUESKTPTACO3740 SB-1 - SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-2B
JOB/SITE NAME	Taco3740	DRILLING STARTED	15-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	15-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crowell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located west of the southern pump island, approximately 20 feet west of soil boring SB-2.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (ftg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ftg)	WELL DIAGRAM
0	22 20 20			ML		ASPHALT <u>SILT with gravel</u> : Brown; subangular to subrounded gravel up to 1 in., dry, low plasticity, low estimated permeability, no staining or odor	0.3	<p>Portland Type I/II</p> <p>Bentonite Seal</p> <p>Bottom of Boring @ 30.3 ftg</p>
0.1	17 30 32			SM		<u>Silty SAND with clay</u> : Brown; very fine to fine grained sand, loose, dry, low plasticity, medium estimated permeability, no staining or odor	6.5	
8.2	36 50/6	SB-2B -15		ML		<u>Sandy SILT with clay</u> : Gray; very fine to fine grained sand, loose, moist, medium plasticity, low estimated permeability, no staining or odor	11.5	
0.5	50/6			SP		<u>Silty SAND with gravel</u> : Dark brown; fine to medium grained sand, subangular to subrounded gravel up to 1 in., dry, low plasticity, high estimated permeability, no staining or odor	16.0	
0.8	50/4	SB-2B -25		SP		Same as above; moist	20.5	
1.2	50/4			GM		<u>GRAVEL with sand and silt</u> : Olive gray; fine to coarse grained sand, subrounded gravel up to 2 in., moist, low plasticity, high estimated permeability, no staining or odor	25.5	
							30.3	

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\DESKTOP\TACO3740_SB-1-SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-3
JOB/SITE NAME	Taco3740	DRILLING STARTED	15-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	15-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crowell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located south of UST pit, east of southern pump island.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ftg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ftg)	WELL DIAGRAM
1		SB-3- 5		0.3	SW		ASPHALT SAND: brown; fine to coarse grained sand, low plasticity, high estimated permeability, no staining or odor	0.3	
				5.5			SAND with gravel: Gray; fine to coarse grained sand, subrounded gravel up to 3 in., wet, low plasticity, high estimated permeability, soil saturated with free product	5.5	
		SB-3- 10		11.0	SW			11.0	Bottom of Boring @ 11 ftg

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\DESKTOP\TACO3740_SB-1 - SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-4
JOB/SITE NAME	Taco3740	DRILLING STARTED	16-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	16-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located southeast of UST pit.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
522		SB-4- 5		5	ML		ASPHALT <u>Clayey SILT with gravel</u> : Grayish brown; soft clay, subrounded gravel up to 2 in., dry, medium plasticity, medium estimated permeability, strong petroleum odor, no staining	0.3	<p>Portland Type I/II</p> <p>Bentonite Seal</p> <p>Bottom of Boring @ 7.5 fbg</p>
12.1		SB-4- 7.5			SM		<u>Silty SAND</u> : Grayish brown; fine grained sand, dry, low plasticity, medium estimated permeability, strong petroleum odor, no staining	7.5	

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARDT\DESKTOP\TACO3740 SB-1 - SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-5
JOB/SITE NAME	Taco3740	DRILLING STARTED	15-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	15-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located east of UST pit.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
607	32 50/6	SB-5- 5		5	ML		ASPHALT <u>Clayey SILT with sand and gravel:</u> Olive gray; very fine to coarse grained sand, angular to subangular gravel up to 0.25 in., damp, low plasticity, medium estimated permeability, petroleum odor, no staining	0.3	<p>Portland Type I/II</p> <p>Bentonite Seal</p> <p>Bottom of Boring @ 30.3 fbg</p>
65	50/6			10	ML		<u>Clayey SILT with sand and gravel:</u> Brown; subrounded gravel up to 0.25 in., damp, low plasticity, medium estimated permeability, petroleum odor, no staining	6.0	
				15			NO RECOVERY	10.5	
30	50/6			20	SP		<u>SAND with silt and gravel:</u> Gray; subrounded to rounded gravel up to 2 in., moist, low plasticity, high estimated permeability, petroleum odor, no staining	15.5	
25.3	50/6			25	ML		<u>Clayey SILT with sand and gravel:</u> Gray; fine grained sand, angular to subangular gravel up to 3 in., damp, low plasticity, medium estimated permeability, petroleum odor, no staining	20.5	
				30	SM		<u>Sandy SILT with gravel:</u> Brown; fine grained sand, subangular to subrounded gravel up to 2 in., dry, low plasticity, medium estimated permeability, slight petroleum odor, no staining	25.5	
8.3	50/4	SB-5- 30		30				30.3	

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\DESKTOP\TACO3740_SB-1 - SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-6
JOB/SITE NAME	Taco3740	DRILLING STARTED	16-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	16-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located north of northern pump island.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (ftg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ftg)	WELL DIAGRAM
1345	25 25 31	SB-6- 5	5	SM		ASPHALT <u>Clayey SILT with sand and gravel:</u> Brown; angular to subrounded gravel up to 3 in., fine grained sand, moist, medium plasticity, medium estimated permeability, strong petroleum odor, no staining	0.3	Portland Type I/II
						Same as above	5.5	
228	31 50/6		10	SM			10.5	
						<u>Silty SAND with gravel:</u> Brown; fine to coarse grained sand, angular to subrounded gravel, dry, low plasticity, medium estimated permeability, very little odor, no staining		
36	50/6		15	SM		Same as above	15.5	Bentonite Seal
65	50/6		20	SM		Same as above	20.5	
7.4	50/6	SB-6- 25	25	SM		NO RECOVERY	25.5	
			30				30.0	Bottom of Boring @ 30 ftg

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\DESKTOP\TACO3740_SB-1 - SB-7.GPJ DEFAULT.GDT 5/3/07



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BORING/WELL LOG

CLIENT NAME	Shell Oil Products US	BORING/WELL NAME	SB-7
JOB/SITE NAME	Taco3740	DRILLING STARTED	16-Mar-07
LOCATION	3740 Pacific Avenue, Tacoma, Washington	DRILLING COMPLETED	16-Mar-07
PROJECT NUMBER	249-1876	WELL DEVELOPMENT DATE (YIELD)	NA
DRILLER	Cascade Drilling, Inc.	GROUND SURFACE ELEVATION	Not Surveyed
DRILLING METHOD	Hollow-stem auger	TOP OF CASING ELEVATION	Not Surveyed
BORING DIAMETER	8 in.	SCREENED INTERVAL	NA
LOGGED BY	E. Blakemore	DEPTH TO WATER (First Encountered)	NA
REVIEWED BY	T. Crotwell, LG # 2331	DEPTH TO WATER (Static)	NA
REMARKS	Located north of northern pump island, approximately 20 feet north of soil boring SB-6.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT DEPTH (ftg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ftg)	WELL DIAGRAM
0.6	13 15 16	SB-7- 5	0.3	SM		ASPHALT <u>Clayey SILT with sand and gravel:</u> Brown; very fine grained sand, subrounded gravel up to 1 in., dry, low plasticity, medium estimated permeability, no staining or odor	0.3	<p>Portland Type I/II</p> <p>Bentonite Seal</p> <p>Bottom of Boring @ 30 ftg</p>
0.5	36 50/6		5.5	SM		<u>Clayey SILT with sand:</u> Brown; very fine grained sand, stiff clay, moist, medium plasticity, low estimated permeability, no staining or odor	5.5	
0.4	33 50/6		10.5	SM		<u>Silty SAND:</u> Brown; fine to coarse grained sand, moist, low plasticity, medium estimated permeability, no staining or odor	10.5	
0.6	50/6		15.5	SM		<u>Silty SAND with gravel:</u> Brown; fine to coarse grained sand, angular gravel up to 1 in., moist, low plasticity, medium estimated permeability, no staining or odor	15.5	
0.8	50/6	SB-7- 25	20.5	SM		Same as above; subangular to rounded gravel	20.5	
			25.5			NO RECOVERY	25.5	
			30.0				30.0	

WELL LOG (PID) EVERETT C:\DOCUMENTS AND SETTINGS\AVANDERPAARD\DESKTOP\TACO3740_SB-1-SB-7.GPJ DEFAULT.GDT 5/3/07

APPENDIX D

BORING LOGS FOR SB-8 THROUGH SB-12



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: 3740 TACO

PROJECT NUMBER: 241876

CLIENT: Shell Oil Products USA

LOCATION: 3740 Pacific Avenue, Tacoma, WA

HOLE DESIGNATION: SB-10

DATE COMPLETED: August 16, 2010

DRILLING METHOD: HSA

FIELD PERSONNEL: J. Song

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.50	CONCRETE					
2	SM-SILTY SAND, with gravel, dense, well graded, fine to medium grained, brown, dry, no odor							
4								
6	SM-SILTY SAND, with clay, dense, well graded, fine to medium grained, dark grayish brown (10YR 4/2), dry, hydrocarbon staining and odor	5.00	BACKFILLED WITH BENTONITE CHIPS	SB10-5	X	50	21 50-6"	480
8								
10	SC-CLAYEY SAND, fine grained, dense, dark grayish brown (10YR 4/2), dry, no odor	10.00		SB10-10	X	75	15 21 50-6"	23.0
12								
14								
16	SC-CLAYEY SAND, fine grained, dark grayish brown (10YR 4/2), dry, no odor	15.00		SB10-15	X	20	50-6"	10.3
16	END OF BOREHOLE @ 16.5ft BGS	16.50						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 241876\WIN.GPJ CRA CORP-SPANISH.GDT 9/17/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: 3740 TACO

PROJECT NUMBER: 241876

CLIENT: Shell Oil Products USA

LOCATION: 3740 Pacific Avenue, Tacoma, WA

HOLE DESIGNATION: SB-11

DATE COMPLETED: August 13, 2010

DRILLING METHOD: HSA

FIELD PERSONNEL: J. Song

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	ASPHALT	0.50	CONCRETE					
4	SW-SAND, with 10% gravel, well graded, fine to medium grained, loose, brown, dry, no odor							
6	SW-SAND, with gravel, well graded, fine to coarse grained, olive brown (2.5Y 4/3), dry, no odor	5.00	BACKFILLED WITH BENTONITE CHIPS	SB11-5		75	24 8 14	11.4
8								
10	SC-CLAYEY SAND, fine grained, medium stiff, olive gray (5Y 5/2), dry, no odor	10.00		SB11-10		75	8 16 30	48
12								
14								
16	SC-CLAYEY SAND, fine grained, medium stiff, olive gray (5Y 5/3), moist, no odor	15.00		SB11-15		75	9 18 40	1.5
16	END OF BOREHOLE @ 16.5ft BGS	16.50						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 241876\WIN.GPJ CRA CORP-SPANISH.GDT 9/17/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: 3740 TACO

PROJECT NUMBER: 241876

CLIENT: Shell Oil Products USA

LOCATION: 3740 Pacific Avenue, Tacoma, WA

HOLE DESIGNATION: SB-12

DATE COMPLETED: August 13, 2010

DRILLING METHOD: HSA

FIELD PERSONNEL: J. Song

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	ASPHALT	0.50	ASPHALT					
4	SM-SILTY SAND, with gravel, dense, well graded, fine to medium grained, brown, no odor		CEMENT					
6	SM-SILTY SAND, with trace clay, poorly graded, fine grained, very dense, minor plasticity, brown (10YR 5/3), no odor	5.00		SB12-5	X	50	21 50-6"	0.0
8								
10	- more clayey at 10.0ft BGS			SB12-10	X	75	23 30 50-4"	4.5
12			BENTONITE CHIPS					
14								
16	SC-CLAYEY SAND, stiff, fine grained, poorly graded, olive (5Y 5/3), moist, no odor	15.00		SB12-15	X	75	36 50-6"	0.0
16.50	END OF BOREHOLE @ 16.5ft BGS	16.50						
18								
20								
22								
24								
26								
28								
30								
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 241876\WIN.GPJ CRA CORP-SPANISH.GDT 9/17/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: 3740 TACO

PROJECT NUMBER: 241876

CLIENT: Shell Oil Products USA

LOCATION: 3740 Pacific Avenue, Tacoma, WA

HOLE DESIGNATION: SB-8

DATE COMPLETED: August 13, 2010

DRILLING METHOD: HSA

FIELD PERSONNEL: J. Song

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	TEMP MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.50	CONCRETE					
2	SM-SILTY SAND, with gravel, dense, well graded, fine to medium grained, gray, dry, no odor							
4								
6	SM-SILTY SAND, with coarse gravel, well graded, fine to medium grained, very dense, brown (10yr 5/3) staining, dry, hydrocarbon odor	5.00		SB8-5	X	25	50-6"	450
8								
10	SM-SILTY SAND, with coarse clay, well graded, fine to medium grained, very dense, brown (10yr 5/3), moist, hydrocarbon odor	10.00		SB8-10	X	50	27 50-6"	30
12								
14								
16	SC-CLAYEY SAND, fine grained, stiff, dark greenish gray (5BG 4/1), moist, hydrocarbon odor	15.00	BACKFILLED WITH BENTONITE CHIPS	SB8-15	X	25		12.0
18								
20	SM-SILTY SAND, well graded, fine to medium grained, very dense, brown (10yr 5/3), dry, minor hydrocarbon odor	20.00		SB8-20	X	25	50-6"	6.0
22								
24								
26	SM-SILTY SAND, with gravel, well graded, fine to medium grained, very dark greenish gray (5BG 4/1), dry, minor hydrocarbon odor	25.00			X	25	50-6"	1.0
28								
30				SB8-30				
32	END OF BOREHOLE @ 31.5ft BGS	31.50						
34								

WELL DETAILS

Screened Interval:

10.00 to 30.00ft BGS

Length: 20ft

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 241876\WIN.GPJ CRA CORP-SPANISH.GDT 9/17/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: 3740 TACO

PROJECT NUMBER: 241876

CLIENT: Shell Oil Products USA

LOCATION: 3740 Pacific Avenue, Tacoma, WA

HOLE DESIGNATION: SB-9

DATE COMPLETED: August 16, 2010

DRILLING METHOD: HSA

FIELD PERSONNEL: J. Song

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	ASPHALT	0.50	CONCRETE					
2	SM-SILTY SAND, with gravel, well graded, fine to medium grained, dense, brown, dry, no odor							
4								
6	SM-SILTY SAND, with clay, very dense, well graded, fine to medium grained, dark grayish brown (10R 4/2), dry, minor hydrocarbon odor	5.00	BACKFILLED WITH BENTONITE CHIPS	SB9-5	X	25	50-6"	25.2
8								
10	SC-CLAYEY SAND, fine grained, dense, dark grayish brown (10R 4/2), moist, strong hydrocarbon odor	10.00		SB9-10	X	75	18 50-6"	800
12								
14								
16	SC-CLAYEY SAND, with silt, dense, fine grained, dark grayish brown (10R 4/2), dry, minor hydrocarbon odor	15.00		SB9-15	X	75	10 17 50-6"	92
18								
20	SM-SILTY SAND, with coarse gravel, very dense, well graded, fine to medium grained, dark grayish brown (10R 4/2), dry, minor hydrocarbon odor	20.00		SB9-20	X	25	50-6"	24
22								
24								
26				SB9-25	X	25	50-6"	2.4
26.50	END OF BOREHOLE @ 26.5ft BGS	26.50						
28								
30							30	
32								
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



OVERBURDEN LOG 241876\WIN.GPJ CRA CORP-SPANISH.GDT 9/17/10

APPENDIX E

LABORATORY ANALYTICAL REPORTS



CERTIFICATE OF ANALYSIS

CLIENT: Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427

DATE: 8/25/2010
ALS JOB#: 1008076
DATE RECEIVED: 8/16/2010
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Xuan Dang
CLIENT PROJECT ID: 3740 Pacific Ave - Tacoma, WA
CLIENT SAMPLE ID: 8/13/2010 SO-241876-081310-JS-SB8-5
ALS SAMPLE #: -01

DATA RESULTS

ANALYTE	METHOD	RESULTS*	REPORTING LIMITS	DILUTION FACTOR	UNITS**	ANALYSIS DATE	ANALYSIS BY
C5-C6 Aliphatics	NWVPH	ND	25	5	MG/KG	8/20/2010	DLC
>C6-C8 Aliphatics	NWVPH	230	25	5	MG/KG	8/20/2010	DLC
>C8-C10 Aliphatics	NWVPH	100	25	5	MG/KG	8/20/2010	DLC
>C8-C10 Aromatics	NWVPH	270	25	5	MG/KG	8/20/2010	DLC
Total Aliphatics	NWVPH	350	25	5	MG/KG	8/20/2010	DLC
Total Aromatics	NWVPH	270	25	5	MG/KG	8/20/2010	DLC
Hexane	NWVPH	6.5	0.20	1	MG/KG	8/20/2010	DLC
>C10-C12 Aliphatics	NWEPH	280	5.0	1	MG/KG	8/19/2010	EBS
>C12-C16 Aliphatics	NWEPH	790	5.0	1	MG/KG	8/19/2010	EBS
>C16-C21 Aliphatics	NWEPH	720	5.0	1	MG/KG	8/19/2010	EBS
>C21-C34 Aliphatics	NWEPH	530	5.0	1	MG/KG	8/19/2010	EBS
>C10-C12 Aromatics	NWEPH	70	25	5	MG/KG	8/24/2010	EBS
>C12-C16 Aromatics	NWEPH	310	25	5	MG/KG	8/24/2010	EBS
>C16-C21 Aromatics	NWEPH	490	25	5	MG/KG	8/24/2010	EBS
>C21-C34 Aromatics	NWEPH	410	25	5	MG/KG	8/24/2010	EBS
Total Aliphatics	NWEPH	2,300	10	1	MG/KG	8/19/2010	EBS
Total Aromatics	NWEPH	1,300	50	5	MG/KG	8/24/2010	EBS

* "ND" INDICATES ANALYTE ANALYZED FOR BUT NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT.

** UNITS FOR ALL NON-LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS.

APPROVED BY:



CERTIFICATE OF ANALYSIS

CLIENT: Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427

DATE: 8/25/2010
ALS JOB#: 1008076
DATE RECEIVED: 8/16/2010
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Xuan Dang
CLIENT PROJECT ID: 3740 Pacific Ave - Tacoma, WA

QUALITY CONTROL RESULTS

SURROGATE RECOVERY

ALS SAMPLE ID	METHOD	SUR ID	% RECV
1008076-01	NWVPH	TFT - Hexane	89%
1008076-01 5X Dilution	NWVPH	TFT - Aliphatic	82%
1008076-01 5X Dilution	NWVPH	TFT - Aromatic	85%
1008076-01	NWEPH	C25	103%
1008076-01 5X Dilution	NWEPH	p-Terphenyl	115%

APPROVED BY:



CERTIFICATE OF ANALYSIS

CLIENT: Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427

DATE: 8/25/2010
ALS JOB#: 1008076
DATE RECEIVED: 8/16/2010
WDOE ACCREDITATION #: C1336

CLIENT CONTACT: Xuan Dang
CLIENT PROJECT ID: 3740 Pacific Ave - Tacoma, WA

QUALITY CONTROL RESULTS

BLANK RESULTS

QC SAMPLE ID	MATRIX	METHOD	ANALYTE	RESULT	UNITS
MBLK-8202010	Soil	NWVPH	C5-C6 Aliphatics	ND(<5.0)	MG/KG
MBLK-8202010	Soil	NWVPH	>C6-C8 Aliphatics	ND(<5.0)	MG/KG
MBLK-8202010	Soil	NWVPH	>C8-C10 Aliphatics	ND(<5.0)	MG/KG
MBLK-8202010	Soil	NWVPH	>C8-C10 Aromatics	ND(<5.0)	MG/KG
MBLK-8202010	Soil	NWVPH	Total Aliphatics	ND(<5.0)	MG/KG
MBLK-8202010	Soil	NWVPH	Total Aromatics	ND(<5.0)	MG/KG
MBLK-8202010	Soil	NWVPH	Hexane	ND(<0.20)	MG/KG
MBLK-8192010	Soil	NWEPH	>C10-C12 Aliphatics	ND(<5.0)	MG/KG
MBLK-8192010	Soil	NWEPH	>C12-C16 Aliphatics	ND(<5.0)	MG/KG
MBLK-8192010	Soil	NWEPH	>C16-C21 Aliphatics	ND(<5.0)	MG/KG
MBLK-8192010	Soil	NWEPH	>C21-C34 Aliphatics	ND(<5.0)	MG/KG
MBLK-8192010	Soil	NWEPH	Total Aliphatics	ND(<10)	MG/KG
MBLK-8242010	Soil	NWEPH	>C10-C12 Aromatics	ND(<5.0)	MG/KG
MBLK-8242010	Soil	NWEPH	>C12-C16 Aromatics	ND(<5.0)	MG/KG
MBLK-8242010	Soil	NWEPH	>C16-C21 Aromatics	ND(<5.0)	MG/KG
MBLK-8242010	Soil	NWEPH	>C21-C34 Aromatics	ND(<5.0)	MG/KG
MBLK-8242010	Soil	NWEPH	Total Aromatics	ND(<10)	MG/KG

APPROVED BY:



CERTIFICATE OF ANALYSIS

CLIENT: Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427

DATE: 8/25/2010
ALS JOB#: 1008076
DATE RECEIVED: 8/16/2010
WDOE ACCREDITATION #: C1336

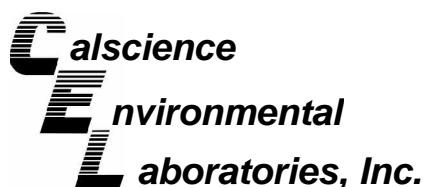
CLIENT CONTACT: Xuan Dang
CLIENT PROJECT ID: 3740 Pacific Ave - Tacoma, WA

QUALITY CONTROL RESULTS

BLANK SPIKE/BLANK SPIKE DUPLICATE RESULTS

QC BATCH ID	MATRIX	METHOD	ANALYTE	SPIKE AMOUNT	BLANK SPIKE RECOVERY	BLANK SPIKE DUPLICATE RECOVERY	RPD
R70236	Soil	NWVPH	C5-C6 Aliphatics	100	94%	89%	5
R70236	Soil	NWVPH	>C6-C8 Aliphatics	100	103%	98%	5
R70236	Soil	NWVPH	>C8-C10 Aliphatics	100	103%	101%	2
R70236	Soil	NWVPH	>C8-C10 Aromatics	100	106%	101%	5
R70238	Soil	NWVPH	Hexane	100	91%	96%	5
R70234	Soil	NWEPH	>C10-C12 Aliphatics	100	92%	91%	1
R70234	Soil	NWEPH	>C12-C16 Aliphatics	100	94%	93%	1
R70234	Soil	NWEPH	>C16-C21 Aliphatics	100	94%	93%	1
R70234	Soil	NWEPH	>C21-C34 Aliphatics	100	101%	105%	4
R70235	Soil	NWEPH	>C10-C12 Aromatics	100	91%	93%	2
R70235	Soil	NWEPH	>C12-C16 Aromatics	100	92%	94%	2
R70235	Soil	NWEPH	>C16-C21 Aromatics	100	93%	95%	2
R70235	Soil	NWEPH	>C21-C34 Aromatics	100	105%	107%	2

APPROVED BY:



August 31, 2010

Justin Foslien
Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Subject: **CalScience Work Order No.: 10-08-1402**
Client Reference: **3740 Pacific Avenue, Tacoma, WA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 8/18/2010 and analyzed in accordance with the attached chain-of-custody.

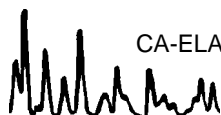
CalScience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard CalScience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read 'Xuan H. Dang'.

CalScience Environmental
Laboratories, Inc.
Xuan H. Dang
Project Manager



CASE NARRATIVE

CalScience Work Order No.: 10-08-1402

EPA 8260 - Contamination of the Method Blank

Naphthalene - Batch # 100827L01 GC/MS Z

Samples #6, 10, 17: The levels of Naphthalene found in these samples are much greater than the blank contamination. The trace level found in the method blank is not expected to have any significant impact on the samples data.

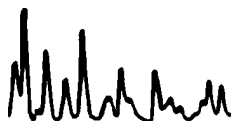
Sample #15: The on column trace level of Naphthalene found in the sample is almost 2x the blank contaminations. The trace level found in the method blank may have a bias high impact on the sample data.

Bromomethane - Batch # 100827L01 GC/MS Z

Samples #6, 10, 15, 17: Trace level of Bromomethane was identified and reported in the method blank. Since all associated samples were non-detect for this compound, the data was reported without further clarification.

EPA 8260 – Internal Standards Recoveries

Samples #2 and 7: Recovery for internal standard TBA-d9 was biased high, possibly due to sample matrix interference. Since the associated compounds were non-detect in the samples, the data was reported without further clarification.



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3550B
 Method: NWTPH-Dx
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB-12-5	10-08-1402-1-A	08/13/10 09:20	Solid	GC 47	08/20/10	08/20/10 19:47	100820B14S

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	115	61-145							

SO-241876-081310-JS-SB-12-10	10-08-1402-2-A	08/13/10 09:30	Solid	GC 47	08/20/10	08/20/10 20:03	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	10	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	120	61-145							

SO-241876-081310-JS-SB-12-15	10-08-1402-3-A	08/13/10 09:45	Solid	GC 47	08/20/10	08/20/10 20:18	100820B14S
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard.

Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	7.4	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	118	61-145							

SO-241876-081310-JS-SB8-5	10-08-1402-4-A	08/13/10 11:00	Solid	GC 47	08/20/10	08/20/10 20:33	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	5300	100	20		TPH as Motor Oil Range	2100	100	20	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	140	61-145							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3550B
 Method: NWTPH-Dx
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-10	10-08-1402-5-A	08/13/10 11:05	Solid	GC 47	08/20/10	08/20/10 20:48	100820B14S

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	78	5.0	1		TPH as Motor Oil Range	28	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	125	61-145							

SO-241876-081310-JS-SB8-15	10-08-1402-6-A	08/13/10 11:15	Solid	GC 47	08/20/10	08/20/10 21:04	100820B14S
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard.

Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	16	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	121	61-145							

SO-241876-081310-JS-SB8-20	10-08-1402-7-A	08/13/10 11:20	Solid	GC 47	08/20/10	08/20/10 21:19	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	123	61-145							

SO-241876-081310-JS-SB8-30	10-08-1402-8-A	08/13/10 11:40	Solid	GC 47	08/20/10	08/20/10 21:34	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	114	61-145							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3550B
 Method: NWTPH-Dx
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-5	10-08-1402-9-A	08/13/10 13:05	Solid	GC 47	08/20/10	08/20/10 21:49	100820B14S

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	1500	25	5		TPH as Motor Oil Range	620	25	5	

Surrogates: REC (%) Control Limits

Decachlorobiphenyl 137 61-145

SO-241876-081310-JS-SB11-10	10-08-1402-10-A	08/13/10 13:10	Solid	GC 47	08/20/10	08/20/10 22:05	100820B14S
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard.

Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	14	5.0	1		TPH as Motor Oil Range	16	5.0	1	

Surrogates: REC (%) Control Limits

Decachlorobiphenyl 131 61-145

SO-241876-081310-JS-SB11-15	10-08-1402-11-A	08/13/10 13:20	Solid	GC 47	08/20/10	08/20/10 22:35	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1		TPH as Motor Oil Range	ND	5.0	1	

Surrogates: REC (%) Control Limits

Decachlorobiphenyl 124 61-145

SO-241876-081610-JS-SB10-5	10-08-1402-12-A	08/16/10 07:55	Solid	GC 47	08/20/10	08/20/10 22:50	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	610	15	3		TPH as Motor Oil Range	280	15	3	

Surrogates: REC (%) Control Limits

Decachlorobiphenyl 127 61-145

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3550B
 Method: NWTPH-Dx
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB10-10	10-08-1402-13-A	08/16/10 08:00	Solid	GC 47	08/20/10	08/20/10 23:06	100820B14S

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1		TPH as Motor Oil Range	7.4	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	117	61-145							

SO-241876-081610-JS-SB10-15	10-08-1402-14-A	08/16/10 08:10	Solid	GC 47	08/20/10	08/20/10 23:21	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	340	10	2		TPH as Motor Oil Range	310	10	2	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	116	61-145							

SO-241876-081610-JS-SB9-5	10-08-1402-15-A	08/16/10 08:45	Solid	GC 47	08/20/10	08/20/10 23:36	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	2100	40	8		TPH as Motor Oil Range	1200	40	8	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	143	61-145							

SO-241876-081610-JS-SB9-10	10-08-1402-16-A	08/16/10 08:50	Solid	GC 47	08/20/10	08/21/10 09:23	100820B14S
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard.
 Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

-The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	1200	25	5		TPH as Motor Oil Range	220	25	5	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	120	61-145							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3550B
 Method: NWTPH-Dx
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-15	10-08-1402-17-A	08/16/10 08:55	Solid	GC 47	08/20/10	08/21/10 00:07	100820B14S

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	7.5	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	119	61-145							

SO-241876-081610-JS-SB9-20	10-08-1402-18-A	08/16/10 09:15	Solid	GC 47	08/20/10	08/21/10 00:22	100820B14S
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Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	123	61-145							

SO-241876-081610-JS-SB9-25	10-08-1402-19-A	08/16/10 09:25	Solid	GC 47	08/20/10	08/21/10 00:37	100820B14S
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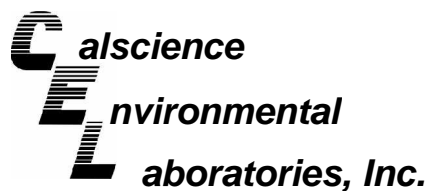
Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
TPH as Diesel Range	8.6	5.0	1		TPH as Motor Oil Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual						
Decachlorobiphenyl	122	61-145							

Method Blank	099-12-838-99	N/A	Solid	GC 47	08/20/10	08/20/10 18:31	100820B14S
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Parameter	Result	RL	DF	Qual
TPH as Diesel Range	ND	5.0	1	
Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	104	61-145		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

Page 1 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB-12-5	10-08-1402-1-F	08/13/10 09:20	Solid	GC 22	08/13/10	08/20/10 16:58	100819B02

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	0.21	0.832		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	87	60-126	

SO-241876-081310-JS-SB-12-10	10-08-1402-2-F	08/13/10 09:30	Solid	GC 22	08/13/10	08/21/10 07:40	100819B03
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	0.74	0.21	0.855		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	90	60-126	

SO-241876-081310-JS-SB-12-15	10-08-1402-3-F	08/13/10 09:45	Solid	GC 22	08/13/10	08/20/10 17:31	100819B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	0.21	0.833		mg/kg

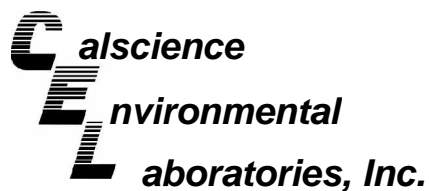
Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	85	60-126	

SO-241876-081310-JS-SB8-5	10-08-1402-4-E	08/13/10 11:00	Solid	GC 22	08/13/10	08/25/10 23:35	100825B03
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	660	100	413		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	98	60-126	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

Page 2 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-10	10-08-1402-5-E	08/13/10 11:05	Solid	GC 22	08/13/10	08/26/10 00:07	100825B03

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	120	8.0	32		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	117	60-126	

SO-241876-081310-JS-SB8-15	10-08-1402-6-E	08/13/10 11:15	Solid	GC 22	08/13/10	08/27/10 01:54	100826B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	31	19	77		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	93	60-126	

SO-241876-081310-JS-SB8-20	10-08-1402-7-F	08/13/10 11:20	Solid	GC 22	08/13/10	08/20/10 19:41	100819B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	6.0	0.21	0.85		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	137	60-126	2

SO-241876-081310-JS-SB8-30	10-08-1402-8-G	08/13/10 11:40	Solid	GC 22	08/13/10	08/21/10 23:36	100821B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	0.35	0.20	0.791		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	84	60-126	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-5	10-08-1402-9-E	08/13/10 13:05	Solid	GC 22	08/13/10	08/26/10 01:45	100825B03

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	140	13	52		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	93	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-10	10-08-1402-10-F	08/13/10 13:10	Solid	GC 22	08/13/10	08/21/10 08:13	100819B03

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	1.5	0.21	0.859		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	105	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-15	10-08-1402-11-F	08/13/10 13:20	Solid	GC 22	08/13/10	08/21/10 08:45	100819B03

Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	1.0	0.19	0.745		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	60-126	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB10-5	10-08-1402-12-F	08/16/10 07:55	Solid	GC 22	08/16/10	08/21/10 09:18	100819B03

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	0.86	0.20	0.799		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	99	60-126			

SO-241876-081610-JS-SB10-10	10-08-1402-13-F	08/16/10 08:00	Solid	GC 22	08/16/10	08/21/10 09:51	100819B03
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	1.2	0.19	0.779		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	94	60-126			

SO-241876-081610-JS-SB10-15	10-08-1402-14-E	08/16/10 08:10	Solid	GC 22	08/16/10	08/26/10 03:23	100825B03
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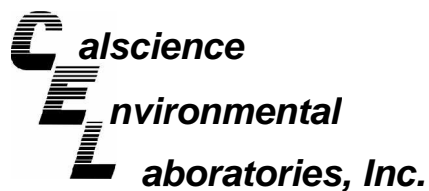
Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	120	9.2	37		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	100	60-126			

SO-241876-081610-JS-SB9-5	10-08-1402-15-E	08/16/10 08:45	Solid	GC 22	08/16/10	08/27/10 00:16	100826B02
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Comment(s): -The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	49	21	85		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	88	60-126			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

Page 5 of 7

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-10	10-08-1402-16-E	08/16/10 08:50	Solid	GC 22	08/16/10	08/26/10 04:28	100825B03

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	2300	100	399		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	118	60-126	

SO-241876-081610-JS-SB9-15	10-08-1402-17-E	08/16/10 08:55	Solid	GC 22	08/16/10	08/26/10 05:01	100825B03
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	350	110	439		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	91	60-126	

SO-241876-081610-JS-SB9-20	10-08-1402-18-G	08/16/10 09:15	Solid	GC 22	08/16/10	08/22/10 00:42	100821B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	4.4	0.21	0.829		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	115	60-126	

SO-241876-081610-JS-SB9-25	10-08-1402-19-G	08/16/10 09:25	Solid	GC 22	08/16/10	08/22/10 01:47	100821B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	0.47	0.25	1.01		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	92	60-126	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-848-145	N/A	Solid	GC 22	08/19/10	08/20/10 05:32	100819B02

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	0.25	1		mg/kg
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	89	60-126			

Method Blank	099-12-848-146	N/A	Solid	GC 22	08/19/10	08/21/10 06:02	100819B03
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	0.25	1		mg/kg
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	87	60-126			

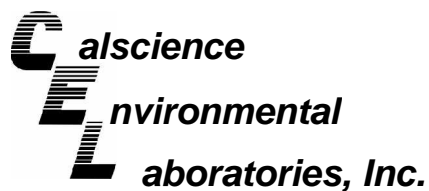
Method Blank	099-12-848-147	N/A	Solid	GC 22	08/21/10	08/21/10 20:20	100821B02
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	0.25	1		mg/kg
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	83	60-126			

Method Blank	099-12-848-149	N/A	Solid	GC 22	08/25/10	08/25/10 17:36	100825B03
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Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	10	40		mg/kg
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	88	60-126			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-848-150	N/A	Solid	GC 22	08/26/10	08/26/10 23:43	100826B02

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	10	40		mg/kg
Surrogates:	REC (%)	Control Limits		Qual	
1,4-Bromofluorobenzene	90	60-126			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3545
 Method: EPA 8082
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB-12-5	10-08-1402-1-A	08/13/10 09:20	Solid	GC 58	08/19/10	08/20/10 23:22	100819L14

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	68	50-130			2,4,5,6-Tetrachloro-m-Xylene	71	50-130		

SO-241876-081310-JS-SB-12-10	10-08-1402-2-A	08/13/10 09:30	Solid	GC 58	08/19/10	08/20/10 23:40	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	113	50-130			2,4,5,6-Tetrachloro-m-Xylene	107	50-130		

SO-241876-081310-JS-SB-12-15	10-08-1402-3-A	08/13/10 09:45	Solid	GC 58	08/19/10	08/20/10 23:58	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	99	50-130			2,4,5,6-Tetrachloro-m-Xylene	94	50-130		

SO-241876-081310-JS-SB8-5	10-08-1402-4-A	08/13/10 11:00	Solid	GC 58	08/19/10	08/21/10 00:16	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	118	50-130			2,4,5,6-Tetrachloro-m-Xylene	126	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3545
 Method: EPA 8082
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-10	10-08-1402-5-A	08/13/10 11:05	Solid	GC 58	08/19/10	08/21/10 00:34	100819L14

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	82	50-130			2,4,5,6-Tetrachloro-m-Xylene	74	50-130		

SO-241876-081310-JS-SB8-15	10-08-1402-6-A	08/13/10 11:15	Solid	GC 58	08/19/10	08/21/10 00:52	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	94	50-130			2,4,5,6-Tetrachloro-m-Xylene	89	50-130		

SO-241876-081310-JS-SB8-20	10-08-1402-7-A	08/13/10 11:20	Solid	GC 58	08/19/10	08/21/10 01:10	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	102	50-130			2,4,5,6-Tetrachloro-m-Xylene	92	50-130		

SO-241876-081310-JS-SB8-30	10-08-1402-8-A	08/13/10 11:40	Solid	GC 58	08/19/10	08/21/10 01:28	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	112	50-130			2,4,5,6-Tetrachloro-m-Xylene	118	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3545
 Method: EPA 8082
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-5	10-08-1402-9-A	08/13/10 13:05	Solid	GC 58	08/19/10	08/21/10 01:46	100819L14

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	100	50-130			2,4,5,6-Tetrachloro-m-Xylene	95	50-130		

SO-241876-081310-JS-SB11-10	10-08-1402-10-A	08/13/10 13:10	Solid	GC 58	08/19/10	08/21/10 02:04	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	92	50-130			2,4,5,6-Tetrachloro-m-Xylene	82	50-130		

SO-241876-081310-JS-SB11-15	10-08-1402-11-A	08/13/10 13:20	Solid	GC 58	08/19/10	08/21/10 02:22	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	112	50-130			2,4,5,6-Tetrachloro-m-Xylene	115	50-130		

SO-241876-081610-JS-SB10-5	10-08-1402-12-A	08/16/10 07:55	Solid	GC 58	08/19/10	08/21/10 02:40	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	100	50-130			2,4,5,6-Tetrachloro-m-Xylene	92	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3545
 Method: EPA 8082
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB10-10	10-08-1402-13-A	08/16/10 08:00	Solid	GC 58	08/19/10	08/21/10 02:58	100819L14

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	104	50-130			2,4,5,6-Tetrachloro-m-Xylene	109	50-130		

SO-241876-081610-JS-SB10-15	10-08-1402-14-A	08/16/10 08:10	Solid	GC 58	08/19/10	08/21/10 03:16	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	95	50-130			2,4,5,6-Tetrachloro-m-Xylene	80	50-130		

SO-241876-081610-JS-SB9-5	10-08-1402-15-A	08/16/10 08:45	Solid	GC 58	08/19/10	08/21/10 03:34	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	100	50-130			2,4,5,6-Tetrachloro-m-Xylene	93	50-130		

SO-241876-081610-JS-SB9-10	10-08-1402-16-A	08/16/10 08:50	Solid	GC 58	08/19/10	08/21/10 03:52	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	113	50-130			2,4,5,6-Tetrachloro-m-Xylene	118	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 3545
 Method: EPA 8082
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-15	10-08-1402-17-A	08/16/10 08:55	Solid	GC 58	08/19/10	08/21/10 04:10	100819L14

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	100	50-130			2,4,5,6-Tetrachloro-m-Xylene	104	50-130		

SO-241876-081610-JS-SB9-20	10-08-1402-18-A	08/16/10 09:15	Solid	GC 58	08/19/10	08/21/10 04:46	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	123	50-130			2,4,5,6-Tetrachloro-m-Xylene	130	50-130		

SO-241876-081610-JS-SB9-25	10-08-1402-19-A	08/16/10 09:25	Solid	GC 58	08/19/10	08/21/10 05:04	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	106	50-130			2,4,5,6-Tetrachloro-m-Xylene	96	50-130		

Method Blank	099-12-535-989	N/A	Solid	GC 58	08/19/10	08/20/10 23:04	100819L14
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aroclor-1016	ND	0.050	1		Aroclor-1248	ND	0.050	1	
Aroclor-1221	ND	0.050	1		Aroclor-1254	ND	0.050	1	
Aroclor-1232	ND	0.050	1		Aroclor-1260	ND	0.050	1	
Aroclor-1242	ND	0.050	1		Aroclor-1262	ND	0.050	1	
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
Decachlorobiphenyl	89	50-130			2,4,5,6-Tetrachloro-m-Xylene	88	50-130		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB-12-5	10-08-1402-1-D	08/13/10 09:20	Solid	GC/MS UU	08/13/10	08/27/10 14:15	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.045		0.896		1,1-Dichloropropene	ND	0.0018		0.896	
Benzene	ND	0.00090		0.896		c-1,3-Dichloropropene	ND	0.00090		0.896	
Bromobenzene	ND	0.00090		0.896		t-1,3-Dichloropropene	ND	0.0018		0.896	
Bromochloromethane	ND	0.0018		0.896		Ethylbenzene	ND	0.00090		0.896	
Bromodichloromethane	ND	0.00090		0.896		2-Hexanone	ND	0.018		0.896	
Bromoform	ND	0.0045		0.896		Isopropylbenzene	ND	0.00090		0.896	
Bromomethane	ND	0.018		0.896		p-Isopropyltoluene	ND	0.00090		0.896	
2-Butanone	ND	0.018		0.896		Methylene Chloride	ND	0.0090		0.896	
n-Butylbenzene	ND	0.00090		0.896		4-Methyl-2-Pentanone	ND	0.018		0.896	
sec-Butylbenzene	ND	0.00090		0.896		Naphthalene	ND	0.0090		0.896	
tert-Butylbenzene	ND	0.00090		0.896		n-Propylbenzene	ND	0.0018		0.896	
Carbon Disulfide	ND	0.0090		0.896		Styrene	ND	0.00090		0.896	
Carbon Tetrachloride	ND	0.00090		0.896		1,1,1,2-Tetrachloroethane	ND	0.00090		0.896	
Chlorobenzene	ND	0.00090		0.896		1,1,2,2-Tetrachloroethane	ND	0.0018		0.896	
Chloroethane	ND	0.0018		0.896		Tetrachloroethene	ND	0.00090		0.896	
Chloroform	ND	0.00090		0.896		Toluene	ND	0.00090		0.896	
Chloromethane	ND	0.018		0.896		1,2,3-Trichlorobenzene	ND	0.0018		0.896	
2-Chlorotoluene	ND	0.00090		0.896		1,2,4-Trichlorobenzene	ND	0.0018		0.896	
4-Chlorotoluene	ND	0.00090		0.896		1,1,1-Trichloroethane	ND	0.00090		0.896	
Dibromochloromethane	ND	0.0018		0.896		1,1,2-Trichloroethane	ND	0.00090		0.896	
1,2-Dibromo-3-Chloropropane	ND	0.0045		0.896		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0090		0.896	
1,2-Dibromoethane	ND	0.00090		0.896		Trichloroethene	ND	0.0018		0.896	
Dibromomethane	ND	0.00090		0.896		Trichlorofluoromethane	ND	0.0090		0.896	
1,2-Dichlorobenzene	ND	0.00090		0.896		1,2,3-Trichloropropane	ND	0.0018		0.896	
1,3-Dichlorobenzene	ND	0.00090		0.896		1,2,4-Trimethylbenzene	ND	0.0018		0.896	
1,4-Dichlorobenzene	ND	0.00090		0.896		1,3,5-Trimethylbenzene	ND	0.0018		0.896	
Dichlorodifluoromethane	ND	0.0018		0.896		Vinyl Acetate	ND	0.0090		0.896	
1,1-Dichloroethane	ND	0.00090		0.896		Vinyl Chloride	ND	0.00090		0.896	
1,2-Dichloroethane	ND	0.00090		0.896		Xylenes (total)	ND	0.0018		0.896	
1,1-Dichloroethene	ND	0.00090		0.896		Methyl-t-Butyl Ether (MTBE)	ND	0.0018		0.896	
c-1,2-Dichloroethene	ND	0.00090		0.896		Tert-Butyl Alcohol (TBA)	ND	0.018		0.896	
t-1,2-Dichloroethene	ND	0.00090		0.896		Diisopropyl Ether (DIPE)	ND	0.00090		0.896	
1,2-Dichloropropane	ND	0.00090		0.896		Ethyl-t-Butyl Ether (ETBE)	ND	0.00090		0.896	
1,3-Dichloropropane	ND	0.00090		0.896		Tert-Amyl-Methyl Ether (TAME)	ND	0.00090		0.896	
2,2-Dichloropropane	ND	0.0045		0.896		Ethanol	ND	0.45		0.896	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	96	79-133				1,2-Dichloroethane-d4	108	71-155			
1,4-Bromofluorobenzene	94	80-120				Toluene-d8	98	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 2 of 25

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB-12-10	10-08-1402-2-C	08/13/10 09:30	Solid	GC/MS W	08/13/10	08/26/10 17:20	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.044		0.871		1,1-Dichloropropene	ND	0.0017		0.871	
Benzene	ND	0.00087		0.871		c-1,3-Dichloropropene	ND	0.00087		0.871	
Bromobenzene	ND	0.00087		0.871		t-1,3-Dichloropropene	ND	0.0017		0.871	
Bromochloromethane	ND	0.0017		0.871		Ethylbenzene	ND	0.00087		0.871	
Bromodichloromethane	ND	0.00087		0.871		2-Hexanone	ND	0.017		0.871	
Bromoform	ND	0.0044		0.871		Isopropylbenzene	ND	0.00087		0.871	
Bromomethane	ND	0.017		0.871		p-Isopropyltoluene	ND	0.00087		0.871	
2-Butanone	ND	0.017		0.871		Methylene Chloride	ND	0.0087		0.871	
n-Butylbenzene	0.0012	0.00087		0.871		4-Methyl-2-Pentanone	ND	0.017		0.871	
sec-Butylbenzene	0.00098	0.00087		0.871		Naphthalene	ND	0.0087		0.871	
tert-Butylbenzene	ND	0.00087		0.871		n-Propylbenzene	ND	0.0017		0.871	
Carbon Disulfide	ND	0.0087		0.871		Styrene	ND	0.00087		0.871	
Carbon Tetrachloride	ND	0.00087		0.871		1,1,1,2-Tetrachloroethane	ND	0.00087		0.871	
Chlorobenzene	ND	0.00087		0.871		1,1,2,2-Tetrachloroethane	ND	0.0017		0.871	
Chloroethane	ND	0.0017		0.871		Tetrachloroethene	ND	0.00087		0.871	
Chloroform	ND	0.00087		0.871		Toluene	ND	0.00087		0.871	
Chloromethane	ND	0.017		0.871		1,2,3-Trichlorobenzene	ND	0.0017		0.871	
2-Chlorotoluene	ND	0.00087		0.871		1,2,4-Trichlorobenzene	ND	0.0017		0.871	
4-Chlorotoluene	ND	0.00087		0.871		1,1,1-Trichloroethane	ND	0.00087		0.871	
Dibromochloromethane	ND	0.0017		0.871		1,1,2-Trichloroethane	ND	0.00087		0.871	
1,2-Dibromo-3-Chloropropane	ND	0.0044		0.871		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0087		0.871	
1,2-Dibromoethane	ND	0.00087		0.871		Trichloroethene	ND	0.0017		0.871	
Dibromomethane	ND	0.00087		0.871		Trichlorofluoromethane	ND	0.0087		0.871	
1,2-Dichlorobenzene	ND	0.00087		0.871		1,2,3-Trichloropropane	ND	0.0017		0.871	
1,3-Dichlorobenzene	ND	0.00087		0.871		1,2,4-Trimethylbenzene	0.0045	0.0017		0.871	
1,4-Dichlorobenzene	ND	0.00087		0.871		1,3,5-Trimethylbenzene	ND	0.0017		0.871	
Dichlorodifluoromethane	ND	0.0017		0.871		Vinyl Acetate	ND	0.0087		0.871	
1,1-Dichloroethane	ND	0.00087		0.871		Vinyl Chloride	ND	0.00087		0.871	
1,2-Dichloroethane	ND	0.00087		0.871		Xylenes (total)	0.0035	0.0017		0.871	
1,1-Dichloroethene	ND	0.00087		0.871		Methyl-t-Butyl Ether (MTBE)	ND	0.0017		0.871	
c-1,2-Dichloroethene	ND	0.00087		0.871		Tert-Butyl Alcohol (TBA)	ND	0.017		0.871	
t-1,2-Dichloroethene	ND	0.00087		0.871		Diisopropyl Ether (DIPE)	ND	0.00087		0.871	
1,2-Dichloropropane	ND	0.00087		0.871		Ethyl-t-Butyl Ether (ETBE)	ND	0.00087		0.871	
1,3-Dichloropropane	ND	0.00087		0.871		Tert-Amyl-Methyl Ether (TAME)	ND	0.00087		0.871	
2,2-Dichloropropane	ND	0.0044		0.871		Ethanol	ND	0.44		0.871	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	101	79-133		1,2-Dichloroethane-d4	91	71-155	
1,4-Bromofluorobenzene	96	80-120		Toluene-d8	96	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB-12-15	10-08-1402-3-D	08/13/10 09:45	Solid	GC/MS UU	08/13/10	08/27/10 15:06	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.041		0.821		1,1-Dichloropropene	ND	0.0016		0.821	
Benzene	0.0013	0.00082		0.821		c-1,3-Dichloropropene	ND	0.00082		0.821	
Bromobenzene	ND	0.00082		0.821		t-1,3-Dichloropropene	ND	0.0016		0.821	
Bromochloromethane	ND	0.0016		0.821		Ethylbenzene	ND	0.00082		0.821	
Bromodichloromethane	ND	0.00082		0.821		2-Hexanone	ND	0.016		0.821	
Bromoform	ND	0.0041		0.821		Isopropylbenzene	ND	0.00082		0.821	
Bromomethane	ND	0.016		0.821		p-Isopropyltoluene	ND	0.00082		0.821	
2-Butanone	ND	0.016		0.821		Methylene Chloride	ND	0.0082		0.821	
n-Butylbenzene	ND	0.00082		0.821		4-Methyl-2-Pentanone	ND	0.016		0.821	
sec-Butylbenzene	ND	0.00082		0.821		Naphthalene	ND	0.0082		0.821	
tert-Butylbenzene	ND	0.00082		0.821		n-Propylbenzene	ND	0.0016		0.821	
Carbon Disulfide	ND	0.0082		0.821		Styrene	ND	0.00082		0.821	
Carbon Tetrachloride	ND	0.00082		0.821		1,1,1,2-Tetrachloroethane	ND	0.00082		0.821	
Chlorobenzene	ND	0.00082		0.821		1,1,2,2-Tetrachloroethane	ND	0.0016		0.821	
Chloroethane	ND	0.0016		0.821		Tetrachloroethene	ND	0.00082		0.821	
Chloroform	ND	0.00082		0.821		Toluene	ND	0.00082		0.821	
Chloromethane	ND	0.016		0.821		1,2,3-Trichlorobenzene	ND	0.0016		0.821	
2-Chlorotoluene	ND	0.00082		0.821		1,2,4-Trichlorobenzene	ND	0.0016		0.821	
4-Chlorotoluene	ND	0.00082		0.821		1,1,1-Trichloroethane	ND	0.00082		0.821	
Dibromochloromethane	ND	0.0016		0.821		1,1,2-Trichloroethane	ND	0.00082		0.821	
1,2-Dibromo-3-Chloropropane	ND	0.0041		0.821		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0082		0.821	
1,2-Dibromoethane	ND	0.00082		0.821		Trichloroethene	ND	0.0016		0.821	
Dibromomethane	ND	0.00082		0.821		Trichlorofluoromethane	ND	0.0082		0.821	
1,2-Dichlorobenzene	ND	0.00082		0.821		1,2,3-Trichloropropane	ND	0.0016		0.821	
1,3-Dichlorobenzene	ND	0.00082		0.821		1,2,4-Trimethylbenzene	ND	0.0016		0.821	
1,4-Dichlorobenzene	ND	0.00082		0.821		1,3,5-Trimethylbenzene	ND	0.0016		0.821	
Dichlorodifluoromethane	ND	0.0016		0.821		Vinyl Acetate	ND	0.0082		0.821	
1,1-Dichloroethane	ND	0.00082		0.821		Vinyl Chloride	ND	0.00082		0.821	
1,2-Dichloroethane	ND	0.00082		0.821		Xylenes (total)	ND	0.0016		0.821	
1,1-Dichloroethene	ND	0.00082		0.821		Methyl-t-Butyl Ether (MTBE)	ND	0.0016		0.821	
c-1,2-Dichloroethene	ND	0.00082		0.821		Tert-Butyl Alcohol (TBA)	ND	0.016		0.821	
t-1,2-Dichloroethene	ND	0.00082		0.821		Diisopropyl Ether (DIPE)	ND	0.00082		0.821	
1,2-Dichloropropane	ND	0.00082		0.821		Ethyl-t-Butyl Ether (ETBE)	ND	0.00082		0.821	
1,3-Dichloropropane	ND	0.00082		0.821		Tert-Amyl-Methyl Ether (TAME)	ND	0.00082		0.821	
2,2-Dichloropropane	ND	0.0041		0.821		Ethanol	ND	0.41		0.821	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	102	79-133		1,2-Dichloroethane-d4	106	71-155	
1,4-Bromofluorobenzene	99	80-120		Toluene-d8	98	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-5	10-08-1402-4-E	08/13/10 11:00	Solid	GC/MS UU	08/13/10	08/26/10 17:25	100826L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	24	3.1	481		1,1-Dichloropropene	ND	0.96	0.11	481	
Benzene	0.26	0.48	0.065	481	J	c-1,3-Dichloropropene	ND	0.48	0.088	481	
Bromobenzene	ND	0.48	0.10	481		t-1,3-Dichloropropene	ND	0.96	0.92	481	
Bromochloromethane	ND	0.96	0.67	481		Ethylbenzene	6.8	0.48	0.075	481	
Bromodichloromethane	ND	0.48	0.071	481		2-Hexanone	ND	9.6	2.7	481	
Bromoform	ND	2.4	0.32	481		Isopropylbenzene	2.6	0.48	0.057	481	
Bromomethane	ND	9.6	0.89	481		p-Isopropyltoluene	2.8	0.48	0.055	481	
2-Butanone	ND	9.6	4.6	481		Methylene Chloride	ND	4.8	2.5	481	
n-Butylbenzene	3.3	0.48	0.11	481		4-Methyl-2-Pentanone	ND	9.6	0.98	481	
sec-Butylbenzene	1.7	0.48	0.050	481		Naphthalene	2.7	4.8	0.16	481	J
tert-Butylbenzene	ND	0.48	0.059	481		n-Propylbenzene	4.0	0.96	0.49	481	
Carbon Disulfide	ND	4.8	0.084	481		Styrene	ND	0.48	0.099	481	
Carbon Tetrachloride	ND	0.48	0.15	481		1,1,1,2-Tetrachloroethane	ND	0.48	0.16	481	
Chlorobenzene	ND	0.48	0.072	481		1,1,2,2-Tetrachloroethane	ND	0.96	0.11	481	
Chloroethane	ND	0.96	0.20	481		Tetrachloroethene	ND	0.48	0.082	481	
Chloroform	0.11	0.48	0.083	481	J	Toluene	0.45	0.48	0.072	481	J
Chloromethane	ND	9.6	1.4	481		1,2,3-Trichlorobenzene	ND	0.96	0.098	481	
2-Chlorotoluene	ND	0.48	0.056	481		1,2,4-Trichlorobenzene	ND	0.96	0.088	481	
4-Chlorotoluene	ND	0.48	0.050	481		1,1,1-Trichloroethane	ND	0.48	0.12	481	
Dibromochloromethane	ND	0.96	0.096	481		1,1,2-Trichloroethane	ND	0.48	0.12	481	
1,2-Dibromo-3-Chloropropane	ND	2.4	1.8	481		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	4.8	0.23	481	
1,2-Dibromoethane	ND	0.48	0.22	481		Trichloroethene	ND	0.96	0.087	481	
Dibromomethane	ND	0.48	0.34	481		Trichlorofluoromethane	ND	4.8	0.075	481	
1,2-Dichlorobenzene	ND	0.48	0.061	481		1,2,3-Trichloropropane	ND	0.96	0.31	481	
1,3-Dichlorobenzene	ND	0.48	0.079	481		1,2,4-Trimethylbenzene	14	0.96	0.056	481	
1,4-Dichlorobenzene	ND	0.48	0.074	481		1,3,5-Trimethylbenzene	7.6	0.96	0.048	481	
Dichlorodifluoromethane	ND	0.96	0.093	481		Vinyl Acetate	ND	4.8	3.6	481	
1,1-Dichloroethane	ND	0.48	0.076	481		Vinyl Chloride	ND	0.48	0.10	481	
1,2-Dichloroethane	ND	0.48	0.082	481		Xylenes (total)	ND	0.96	0.097	481	
1,1-Dichloroethene	ND	0.48	0.067	481		Methyl-t-Butyl Ether (MTBE)	ND	0.96	0.064	481	
c-1,2-Dichloroethene	ND	0.48	0.14	481		Tert-Butyl Alcohol (TBA)	ND	9.6	7.3	481	
t-1,2-Dichloroethene	ND	0.48	0.12	481		Diisopropyl Ether (DIPE)	ND	0.48	0.12	481	
1,2-Dichloropropane	ND	0.48	0.13	481		Ethyl-t-Butyl Ether (ETBE)	ND	0.48	0.10	481	
1,3-Dichloropropane	ND	0.48	0.084	481		Tert-Amyl-Methyl Ether (TAME)	ND	0.48	0.063	481	
2,2-Dichloropropane	ND	2.4	0.22	481		Ethanol	ND	240	48	481	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	94	79-133		1,2-Dichloroethane-d4	95	71-155	
1,4-Bromofluorobenzene	107	80-120		Toluene-d8	109	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-10	10-08-1402-5-D	08/13/10 11:05	Solid	GC/MS PP	08/13/10	08/27/10 15:19	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.047		0.94		1,1-Dichloropropene	ND	0.0019		0.94	
Benzene	0.092	0.00094		0.94		c-1,3-Dichloropropene	ND	0.00094		0.94	
Bromobenzene	ND	0.00094		0.94		t-1,3-Dichloropropene	ND	0.0019		0.94	
Bromochloromethane	ND	0.0019		0.94		Ethylbenzene	0.11	0.00094		0.94	
Bromodichloromethane	ND	0.00094		0.94		2-Hexanone	ND	0.019		0.94	
Bromoform	ND	0.0047		0.94		Isopropylbenzene	0.022	0.00094		0.94	
Bromomethane	ND	0.019		0.94		p-Isopropyltoluene	0.017	0.00094		0.94	
2-Butanone	ND	0.019		0.94		Methylene Chloride	ND	0.0094		0.94	
n-Butylbenzene	0.018	0.00094		0.94		4-Methyl-2-Pentanone	ND	0.019		0.94	
sec-Butylbenzene	0.010	0.00094		0.94		Naphthalene	0.054	0.0094		0.94	
tert-Butylbenzene	ND	0.00094		0.94		n-Propylbenzene	0.033	0.0019		0.94	
Carbon Disulfide	ND	0.0094		0.94		Styrene	ND	0.00094		0.94	
Carbon Tetrachloride	ND	0.00094		0.94		1,1,1,2-Tetrachloroethane	ND	0.00094		0.94	
Chlorobenzene	ND	0.00094		0.94		1,1,2,2-Tetrachloroethane	ND	0.0019		0.94	
Chloroethane	ND	0.0019		0.94		Tetrachloroethene	ND	0.00094		0.94	
Chloroform	0.011	0.00094		0.94		Toluene	0.016	0.00094		0.94	
Chloromethane	ND	0.019		0.94		1,2,3-Trichlorobenzene	ND	0.0019		0.94	
2-Chlorotoluene	ND	0.00094		0.94		1,2,4-Trichlorobenzene	ND	0.0019		0.94	
4-Chlorotoluene	ND	0.00094		0.94		1,1,1-Trichloroethane	ND	0.00094		0.94	
Dibromochloromethane	ND	0.0019		0.94		1,1,2-Trichloroethane	ND	0.00094		0.94	
1,2-Dibromo-3-Chloropropane	ND	0.0047		0.94		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0094		0.94	
1,2-Dibromoethane	ND	0.00094		0.94		Trichloroethene	0.0021	0.0019		0.94	
Dibromomethane	ND	0.00094		0.94		Trichlorofluoromethane	ND	0.0094		0.94	
1,2-Dichlorobenzene	ND	0.00094		0.94		1,2,3-Trichloropropane	ND	0.0019		0.94	
1,3-Dichlorobenzene	ND	0.00094		0.94		1,2,4-Trimethylbenzene	0.067	0.0019		0.94	
1,4-Dichlorobenzene	ND	0.00094		0.94		1,3,5-Trimethylbenzene	0.026	0.0019		0.94	
Dichlorodifluoromethane	ND	0.0019		0.94		Vinyl Acetate	ND	0.0094		0.94	
1,1-Dichloroethane	ND	0.00094		0.94		Vinyl Chloride	ND	0.00094		0.94	
1,2-Dichloroethane	ND	0.00094		0.94		Xylenes (total)	0.072	0.0019		0.94	
1,1-Dichloroethene	ND	0.00094		0.94		Methyl-t-Butyl Ether (MTBE)	ND	0.0019		0.94	
c-1,2-Dichloroethene	0.0026	0.00094		0.94		Tert-Butyl Alcohol (TBA)	ND	0.019		0.94	
t-1,2-Dichloroethene	ND	0.00094		0.94		Diisopropyl Ether (DIPE)	ND	0.00094		0.94	
1,2-Dichloropropane	ND	0.00094		0.94		Ethyl-t-Butyl Ether (ETBE)	ND	0.00094		0.94	
1,3-Dichloropropane	ND	0.00094		0.94		Tert-Amyl-Methyl Ether (TAME)	ND	0.00094		0.94	
2,2-Dichloropropane	ND	0.0047		0.94		Ethanol	ND	0.47		0.94	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	106	79-133		1,2-Dichloroethane-d4	107	71-155	
1,4-Bromofluorobenzene	108	80-120		Toluene-d8	104	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-15	10-08-1402-6-E	08/13/10 11:15	Solid	GC/MS Z	08/13/10	08/27/10 14:14	100827L01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	1.9	0.25	38.7		1,1-Dichloropropene	ND	0.077	0.0085	38.7	
Benzene	0.68	0.039	0.0052	38.7		c-1,3-Dichloropropene	ND	0.039	0.0071	38.7	
Bromobenzene	ND	0.039	0.0081	38.7		t-1,3-Dichloropropene	ND	0.077	0.074	38.7	
Bromochloromethane	ND	0.077	0.054	38.7		Ethylbenzene	0.81	0.039	0.0060	38.7	
Bromodichloromethane	ND	0.039	0.0057	38.7		2-Hexanone	ND	0.77	0.22	38.7	
Bromoform	ND	0.19	0.026	38.7		Isopropylbenzene	0.059	0.039	0.0046	38.7	
Bromomethane	ND	0.77	0.071	38.7		p-Isopropyltoluene	0.030	0.039	0.0045	38.7	J
2-Butanone	ND	0.77	0.37	38.7		Methylene Chloride	ND	0.39	0.20	38.7	
n-Butylbenzene	0.11	0.039	0.0086	38.7		4-Methyl-2-Pentanone	ND	0.77	0.079	38.7	
sec-Butylbenzene	0.026	0.039	0.0040	38.7	J	Naphthalene	0.59	0.39	0.013	38.7	B
tert-Butylbenzene	ND	0.039	0.0048	38.7		n-Propylbenzene	0.28	0.077	0.040	38.7	
Carbon Disulfide	ND	0.39	0.0068	38.7		Styrene	ND	0.039	0.0080	38.7	
Carbon Tetrachloride	ND	0.039	0.012	38.7		1,1,1,2-Tetrachloroethane	ND	0.039	0.013	38.7	
Chlorobenzene	ND	0.039	0.0058	38.7		1,1,2,2-Tetrachloroethane	ND	0.077	0.0089	38.7	
Chloroethane	ND	0.077	0.016	38.7		Tetrachloroethene	ND	0.039	0.0066	38.7	
Chloroform	ND	0.039	0.0067	38.7		Toluene	0.059	0.039	0.0058	38.7	
Chloromethane	ND	0.77	0.11	38.7		1,2,3-Trichlorobenzene	ND	0.077	0.0079	38.7	
2-Chlorotoluene	ND	0.039	0.0045	38.7		1,2,4-Trichlorobenzene	ND	0.077	0.0071	38.7	
4-Chlorotoluene	ND	0.039	0.0040	38.7		1,1,1-Trichloroethane	ND	0.039	0.0098	38.7	
Dibromochloromethane	ND	0.077	0.0077	38.7		1,1,2-Trichloroethane	ND	0.039	0.0093	38.7	
1,2-Dibromo-3-Chloropropane	ND	0.19	0.14	38.7		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.39	0.018	38.7	
1,2-Dibromoethane	ND	0.039	0.017	38.7		Trichloroethene	ND	0.077	0.0070	38.7	
Dibromomethane	ND	0.039	0.027	38.7		Trichlorofluoromethane	ND	0.39	0.0061	38.7	
1,2-Dichlorobenzene	ND	0.039	0.0049	38.7		1,2,3-Trichloropropane	ND	0.077	0.025	38.7	
1,3-Dichlorobenzene	ND	0.039	0.0063	38.7		1,2,4-Trimethylbenzene	2.0	0.077	0.0045	38.7	
1,4-Dichlorobenzene	ND	0.039	0.0060	38.7		1,3,5-Trimethylbenzene	0.59	0.077	0.0038	38.7	
Dichlorodifluoromethane	ND	0.077	0.0075	38.7		Vinyl Acetate	ND	0.39	0.29	38.7	
1,1-Dichloroethane	ND	0.039	0.0062	38.7		Vinyl Chloride	ND	0.039	0.0083	38.7	
1,2-Dichloroethane	ND	0.039	0.0066	38.7		Xylenes (total)	4.4	0.077	0.0078	38.7	
1,1-Dichloroethene	ND	0.039	0.0054	38.7		Methyl-t-Butyl Ether (MTBE)	ND	0.077	0.0051	38.7	
c-1,2-Dichloroethene	ND	0.039	0.011	38.7		Tert-Butyl Alcohol (TBA)	ND	0.77	0.59	38.7	
t-1,2-Dichloroethene	ND	0.039	0.0098	38.7		Diisopropyl Ether (DIPE)	ND	0.039	0.0096	38.7	
1,2-Dichloropropane	ND	0.039	0.010	38.7		Ethyl-t-Butyl Ether (ETBE)	ND	0.039	0.0083	38.7	
1,3-Dichloropropane	ND	0.039	0.0068	38.7		Tert-Amyl-Methyl Ether (TAME)	ND	0.039	0.0050	38.7	
2,2-Dichloropropane	ND	0.19	0.018	38.7		Ethanol	ND	19	3.9	38.7	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	103	79-133		1,2-Dichloroethane-d4	111	71-155	
1,4-Bromofluorobenzene	101	80-120		Toluene-d8	102	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

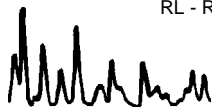
Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-20	10-08-1402-7-C	08/13/10 11:20	Solid	GC/MS W	08/13/10	08/26/10 19:20	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.040		0.809		1,1-Dichloropropene	ND	0.0016		0.809	
Benzene	0.018	0.00081		0.809		c-1,3-Dichloropropene	ND	0.00081		0.809	
Bromobenzene	ND	0.00081		0.809		t-1,3-Dichloropropene	ND	0.0016		0.809	
Bromochloromethane	ND	0.0016		0.809		Ethylbenzene	0.034	0.00081		0.809	
Bromodichloromethane	ND	0.00081		0.809		2-Hexanone	ND	0.016		0.809	
Bromoform	ND	0.0040		0.809		Isopropylbenzene	0.011	0.00081		0.809	
Bromomethane	ND	0.016		0.809		p-Isopropyltoluene	0.0053	0.00081		0.809	
2-Butanone	ND	0.016		0.809		Methylene Chloride	ND	0.0081		0.809	
n-Butylbenzene	0.020	0.00081		0.809		4-Methyl-2-Pentanone	ND	0.016		0.809	
sec-Butylbenzene	0.0062	0.00081		0.809		Naphthalene	0.023	0.0081		0.809	
tert-Butylbenzene	ND	0.00081		0.809		n-Propylbenzene	0.028	0.0016		0.809	
Carbon Disulfide	ND	0.0081		0.809		Styrene	ND	0.00081		0.809	
Carbon Tetrachloride	ND	0.00081		0.809		1,1,1,2-Tetrachloroethane	ND	0.00081		0.809	
Chlorobenzene	ND	0.00081		0.809		1,1,2,2-Tetrachloroethane	ND	0.0016		0.809	
Chloroethane	ND	0.0016		0.809		Tetrachloroethene	ND	0.00081		0.809	
Chloroform	ND	0.00081		0.809		Toluene	0.0016	0.00081		0.809	
Chloromethane	ND	0.016		0.809		1,2,3-Trichlorobenzene	ND	0.0016		0.809	
2-Chlorotoluene	ND	0.00081		0.809		1,2,4-Trichlorobenzene	ND	0.0016		0.809	
4-Chlorotoluene	ND	0.00081		0.809		1,1,1-Trichloroethane	ND	0.00081		0.809	
Dibromochloromethane	ND	0.0016		0.809		1,1,2-Trichloroethane	ND	0.00081		0.809	
1,2-Dibromo-3-Chloropropane	ND	0.0040		0.809		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0081		0.809	
1,2-Dibromoethane	ND	0.00081		0.809		Trichloroethene	0.0027	0.0016		0.809	
Dibromomethane	ND	0.00081		0.809		Trichlorofluoromethane	ND	0.0081		0.809	
1,2-Dichlorobenzene	ND	0.00081		0.809		1,2,3-Trichloropropane	ND	0.0016		0.809	
1,3-Dichlorobenzene	ND	0.00081		0.809		1,2,4-Trimethylbenzene	0.13	0.0016		0.809	
1,4-Dichlorobenzene	ND	0.00081		0.809		1,3,5-Trimethylbenzene	0.054	0.0016		0.809	
Dichlorodifluoromethane	ND	0.0016		0.809		Vinyl Acetate	ND	0.0081		0.809	
1,1-Dichloroethane	ND	0.00081		0.809		Vinyl Chloride	ND	0.00081		0.809	
1,2-Dichloroethane	0.0025	0.00081		0.809		Xylenes (total)	0.15	0.0016		0.809	
1,1-Dichloroethene	ND	0.00081		0.809		Methyl-t-Butyl Ether (MTBE)	ND	0.0016		0.809	
c-1,2-Dichloroethene	0.0060	0.00081		0.809		Tert-Butyl Alcohol (TBA)	ND	0.016		0.809	
t-1,2-Dichloroethene	ND	0.00081		0.809		Diisopropyl Ether (DIPE)	ND	0.00081		0.809	
1,2-Dichloropropane	ND	0.00081		0.809		Ethyl-t-Butyl Ether (ETBE)	ND	0.00081		0.809	
1,3-Dichloropropane	ND	0.00081		0.809		Tert-Amyl-Methyl Ether (TAME)	ND	0.00081		0.809	
2,2-Dichloropropane	ND	0.0040		0.809		Ethanol	ND	0.40		0.809	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	97	79-133				1,2-Dichloroethane-d4	80	71-155			
1,4-Bromofluorobenzene	98	80-120				Toluene-d8	100	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB8-30	10-08-1402-8-C	08/13/10 11:40	Solid	GC/MS UU	08/13/10	08/26/10 19:08	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.039		0.784		1,1-Dichloropropene	ND	0.0016		0.784	
Benzene	0.0093	0.00078		0.784		c-1,3-Dichloropropene	ND	0.00078		0.784	
Bromobenzene	ND	0.00078		0.784		t-1,3-Dichloropropene	ND	0.0016		0.784	
Bromochloromethane	ND	0.0016		0.784		Ethylbenzene	0.0047	0.00078		0.784	
Bromodichloromethane	ND	0.00078		0.784		2-Hexanone	ND	0.016		0.784	
Bromoform	ND	0.0039		0.784		Isopropylbenzene	0.00086	0.00078		0.784	
Bromomethane	ND	0.016		0.784		p-Isopropyltoluene	ND	0.00078		0.784	
2-Butanone	ND	0.016		0.784		Methylene Chloride	ND	0.0078		0.784	
n-Butylbenzene	0.0023	0.00078		0.784		4-Methyl-2-Pentanone	ND	0.016		0.784	
sec-Butylbenzene	ND	0.00078		0.784		Naphthalene	ND	0.0078		0.784	
tert-Butylbenzene	ND	0.00078		0.784		n-Propylbenzene	0.0023	0.0016		0.784	
Carbon Disulfide	ND	0.0078		0.784		Styrene	ND	0.00078		0.784	
Carbon Tetrachloride	ND	0.00078		0.784		1,1,1,2-Tetrachloroethane	ND	0.00078		0.784	
Chlorobenzene	ND	0.00078		0.784		1,1,2,2-Tetrachloroethane	ND	0.0016		0.784	
Chloroethane	ND	0.0016		0.784		Tetrachloroethene	0.0024	0.00078		0.784	
Chloroform	ND	0.00078		0.784		Toluene	0.0016	0.00078		0.784	
Chloromethane	ND	0.016		0.784		1,2,3-Trichlorobenzene	ND	0.0016		0.784	
2-Chlorotoluene	ND	0.00078		0.784		1,2,4-Trichlorobenzene	ND	0.0016		0.784	
4-Chlorotoluene	ND	0.00078		0.784		1,1,1-Trichloroethane	ND	0.00078		0.784	
Dibromochloromethane	ND	0.0016		0.784		1,1,2-Trichloroethane	ND	0.00078		0.784	
1,2-Dibromo-3-Chloropropane	ND	0.0039		0.784		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0078		0.784	
1,2-Dibromoethane	ND	0.00078		0.784		Trichloroethene	ND	0.0016		0.784	
Dibromomethane	ND	0.00078		0.784		Trichlorofluoromethane	ND	0.0078		0.784	
1,2-Dichlorobenzene	ND	0.00078		0.784		1,2,3-Trichloropropane	ND	0.0016		0.784	
1,3-Dichlorobenzene	ND	0.00078		0.784		1,2,4-Trimethylbenzene	0.018	0.0016		0.784	
1,4-Dichlorobenzene	ND	0.00078		0.784		1,3,5-Trimethylbenzene	0.0054	0.0016		0.784	
Dichlorodifluoromethane	ND	0.0016		0.784		Vinyl Acetate	ND	0.0078		0.784	
1,1-Dichloroethane	ND	0.00078		0.784		Vinyl Chloride	ND	0.00078		0.784	
1,2-Dichloroethane	0.0018	0.00078		0.784		Xylenes (total)	0.024	0.0016		0.784	
1,1-Dichloroethene	ND	0.00078		0.784		Methyl-t-Butyl Ether (MTBE)	ND	0.0016		0.784	
c-1,2-Dichloroethene	0.0021	0.00078		0.784		Tert-Butyl Alcohol (TBA)	0.020	0.016		0.784	
t-1,2-Dichloroethene	ND	0.00078		0.784		Diisopropyl Ether (DIPE)	ND	0.00078		0.784	
1,2-Dichloropropane	ND	0.00078		0.784		Ethyl-t-Butyl Ether (ETBE)	ND	0.00078		0.784	
1,3-Dichloropropane	ND	0.00078		0.784		Tert-Amyl-Methyl Ether (TAME)	ND	0.00078		0.784	
2,2-Dichloropropane	ND	0.0039		0.784		Ethanol	ND	0.39		0.784	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	97	79-133				1,2-Dichloroethane-d4	100	71-155			
1,4-Bromofluorobenzene	99	80-120				Toluene-d8	100	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-5	10-08-1402-9-C	08/13/10 13:05	Solid	GC/MS UU	08/13/10	08/26/10 19:34	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.048		0.963		1,1-Dichloropropene	ND	0.0019		0.963	
Benzene	0.0018	0.00096		0.963		c-1,3-Dichloropropene	ND	0.00096		0.963	
Bromobenzene	ND	0.00096		0.963		t-1,3-Dichloropropene	ND	0.0019		0.963	
Bromochloromethane	ND	0.0019		0.963		Ethylbenzene	0.014	0.00096		0.963	
Bromodichloromethane	ND	0.00096		0.963		2-Hexanone	ND	0.019		0.963	
Bromoform	ND	0.0048		0.963		Isopropylbenzene	0.0092	0.00096		0.963	
Bromomethane	ND	0.019		0.963		p-Isopropyltoluene	0.010	0.00096		0.963	
2-Butanone	ND	0.019		0.963		Methylene Chloride	ND	0.0096		0.963	
n-Butylbenzene	0.021	0.00096		0.963		4-Methyl-2-Pentanone	ND	0.019		0.963	
sec-Butylbenzene	0.017	0.00096		0.963		Naphthalene	0.030	0.0096		0.963	
tert-Butylbenzene	ND	0.00096		0.963		n-Propylbenzene	0.015	0.0019		0.963	
Carbon Disulfide	ND	0.0096		0.963		Styrene	ND	0.00096		0.963	
Carbon Tetrachloride	ND	0.00096		0.963		1,1,1,2-Tetrachloroethane	ND	0.00096		0.963	
Chlorobenzene	ND	0.00096		0.963		1,1,2,2-Tetrachloroethane	ND	0.0019		0.963	
Chloroethane	ND	0.0019		0.963		Tetrachloroethene	ND	0.00096		0.963	
Chloroform	ND	0.00096		0.963		Toluene	0.0076	0.00096		0.963	
Chloromethane	ND	0.019		0.963		1,2,3-Trichlorobenzene	ND	0.0019		0.963	
2-Chlorotoluene	ND	0.00096		0.963		1,2,4-Trichlorobenzene	ND	0.0019		0.963	
4-Chlorotoluene	ND	0.00096		0.963		1,1,1-Trichloroethane	ND	0.00096		0.963	
Dibromochloromethane	ND	0.0019		0.963		1,1,2-Trichloroethane	ND	0.00096		0.963	
1,2-Dibromo-3-Chloropropane	ND	0.0048		0.963		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0096		0.963	
1,2-Dibromoethane	ND	0.00096		0.963		Trichloroethene	ND	0.0019		0.963	
Dibromomethane	ND	0.00096		0.963		Trichlorofluoromethane	ND	0.0096		0.963	
1,2-Dichlorobenzene	ND	0.00096		0.963		1,2,3-Trichloropropane	ND	0.0019		0.963	
1,3-Dichlorobenzene	ND	0.00096		0.963		1,2,4-Trimethylbenzene	0.12	0.0019		0.963	
1,4-Dichlorobenzene	ND	0.00096		0.963		1,3,5-Trimethylbenzene	0.023	0.0019		0.963	
Dichlorodifluoromethane	ND	0.0019		0.963		Vinyl Acetate	ND	0.0096		0.963	
1,1-Dichloroethane	ND	0.00096		0.963		Vinyl Chloride	ND	0.00096		0.963	
1,2-Dichloroethane	ND	0.00096		0.963		Xylenes (total)	0.080	0.0019		0.963	
1,1-Dichloroethene	ND	0.00096		0.963		Methyl-t-Butyl Ether (MTBE)	ND	0.0019		0.963	
c-1,2-Dichloroethene	ND	0.00096		0.963		Tert-Butyl Alcohol (TBA)	ND	0.019		0.963	
t-1,2-Dichloroethene	ND	0.00096		0.963		Diisopropyl Ether (DIPE)	ND	0.00096		0.963	
1,2-Dichloropropane	ND	0.00096		0.963		Ethyl-t-Butyl Ether (ETBE)	ND	0.00096		0.963	
1,3-Dichloropropane	ND	0.00096		0.963		Tert-Amyl-Methyl Ether (TAME)	ND	0.00096		0.963	
2,2-Dichloropropane	ND	0.0048		0.963		Ethanol	ND	0.48		0.963	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	104	79-133		1,2-Dichloroethane-d4	112	71-155	
1,4-Bromofluorobenzene	94	80-120		Toluene-d8	94	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-10	10-08-1402-10-E	08/13/10 13:10	Solid	GC/MS Z	08/13/10	08/27/10 14:45	100827L01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	2.1	0.27	42.6		1,1-Dichloropropene	ND	0.085	0.0094	42.6	
Benzene	0.47	0.043	0.0057	42.6		c-1,3-Dichloropropene	ND	0.043	0.0078	42.6	
Bromobenzene	ND	0.043	0.0089	42.6		t-1,3-Dichloropropene	ND	0.085	0.081	42.6	
Bromochloromethane	ND	0.085	0.059	42.6		Ethylbenzene	0.91	0.043	0.0066	42.6	
Bromodichloromethane	ND	0.043	0.0063	42.6		2-Hexanone	ND	0.85	0.24	42.6	
Bromoform	ND	0.21	0.028	42.6		Isopropylbenzene	0.074	0.043	0.0051	42.6	
Bromomethane	ND	0.85	0.079	42.6		p-Isopropyltoluene	0.039	0.043	0.0049	42.6	J
2-Butanone	ND	0.85	0.41	42.6		Methylene Chloride	ND	0.43	0.22	42.6	
n-Butylbenzene	0.055	0.043	0.0095	42.6		4-Methyl-2-Pentanone	ND	0.85	0.087	42.6	
sec-Butylbenzene	0.023	0.043	0.0044	42.6	J	Naphthalene	0.45	0.43	0.014	42.6	B
tert-Butylbenzene	ND	0.043	0.0053	42.6		n-Propylbenzene	0.20	0.085	0.044	42.6	
Carbon Disulfide	ND	0.43	0.0075	42.6		Styrene	ND	0.043	0.0088	42.6	
Carbon Tetrachloride	ND	0.043	0.014	42.6		1,1,1,2-Tetrachloroethane	ND	0.043	0.014	42.6	
Chlorobenzene	ND	0.043	0.0064	42.6		1,1,2,2-Tetrachloroethane	ND	0.085	0.0098	42.6	
Chloroethane	ND	0.085	0.018	42.6		Tetrachloroethene	ND	0.043	0.0072	42.6	
Chloroform	ND	0.043	0.0074	42.6		Toluene	0.11	0.043	0.0064	42.6	
Chloromethane	ND	0.85	0.12	42.6		1,2,3-Trichlorobenzene	ND	0.085	0.0087	42.6	
2-Chlorotoluene	ND	0.043	0.0050	42.6		1,2,4-Trichlorobenzene	ND	0.085	0.0078	42.6	
4-Chlorotoluene	ND	0.043	0.0044	42.6		1,1,1-Trichloroethane	ND	0.043	0.011	42.6	
Dibromochloromethane	ND	0.085	0.0085	42.6		1,1,2-Trichloroethane	ND	0.043	0.010	42.6	
1,2-Dibromo-3-Chloropropane	ND	0.21	0.16	42.6		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.43	0.020	42.6	
1,2-Dibromoethane	ND	0.043	0.019	42.6		Trichloroethene	0.059	0.085	0.0077	42.6	J
Dibromomethane	ND	0.043	0.030	42.6		Trichlorofluoromethane	ND	0.43	0.0067	42.6	
1,2-Dichlorobenzene	ND	0.043	0.0054	42.6		1,2,3-Trichloropropane	ND	0.085	0.028	42.6	
1,3-Dichlorobenzene	ND	0.043	0.0070	42.6		1,2,4-Trimethylbenzene	1.2	0.085	0.0050	42.6	
1,4-Dichlorobenzene	ND	0.043	0.0066	42.6		1,3,5-Trimethylbenzene	0.40	0.085	0.0042	42.6	
Dichlorodifluoromethane	ND	0.085	0.0082	42.6		Vinyl Acetate	ND	0.43	0.32	42.6	
1,1-Dichloroethane	ND	0.043	0.0068	42.6		Vinyl Chloride	ND	0.043	0.0091	42.6	
1,2-Dichloroethane	ND	0.043	0.0073	42.6		Xylenes (total)	1.6	0.085	0.0086	42.6	
1,1-Dichloroethene	ND	0.043	0.0059	42.6		Methyl-t-Butyl Ether (MTBE)	ND	0.085	0.0057	42.6	
c-1,2-Dichloroethene	0.019	0.043	0.012	42.6	J	Tert-Butyl Alcohol (TBA)	ND	0.85	0.65	42.6	
t-1,2-Dichloroethene	ND	0.043	0.011	42.6		Diisopropyl Ether (DIPE)	ND	0.043	0.011	42.6	
1,2-Dichloropropane	ND	0.043	0.011	42.6		Ethyl-t-Butyl Ether (ETBE)	ND	0.043	0.0092	42.6	
1,3-Dichloropropane	ND	0.043	0.0075	42.6		Tert-Amyl-Methyl Ether (TAME)	ND	0.043	0.0056	42.6	
2,2-Dichloropropane	ND	0.21	0.019	42.6		Ethanol	ND	21	4.3	42.6	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	104	79-133		1,2-Dichloroethane-d4	109	71-155	
1,4-Bromofluorobenzene	105	80-120		Toluene-d8	100	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

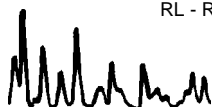
Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081310-JS-SB11-15	10-08-1402-11-C	08/13/10 13:20	Solid	GC/MS UU	08/13/10	08/26/10 20:00	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.038		0.762		1,1-Dichloropropene	ND	0.0015		0.762	
Benzene	0.88	0.042		41.9		c-1,3-Dichloropropene	ND	0.00076		0.762	
Bromobenzene	ND	0.00076		0.762		t-1,3-Dichloropropene	ND	0.0015		0.762	
Bromochloromethane	ND	0.0015		0.762		Ethylbenzene	0.32	0.042		41.9	
Bromodichloromethane	ND	0.00076		0.762		2-Hexanone	ND	0.015		0.762	
Bromoform	ND	0.0038		0.762		Isopropylbenzene	0.012	0.00076		0.762	
Bromomethane	ND	0.015		0.762		p-Isopropyltoluene	ND	0.00076		0.762	
2-Butanone	ND	0.015		0.762		Methylene Chloride	ND	0.0076		0.762	
n-Butylbenzene	ND	0.00076		0.762		4-Methyl-2-Pentanone	ND	0.015		0.762	
sec-Butylbenzene	ND	0.00076		0.762		Naphthalene	ND	0.0076		0.762	
tert-Butylbenzene	ND	0.00076		0.762		n-Propylbenzene	0.0029	0.0015		0.762	
Carbon Disulfide	ND	0.0076		0.762		Styrene	ND	0.00076		0.762	
Carbon Tetrachloride	ND	0.00076		0.762		1,1,1,2-Tetrachloroethane	ND	0.00076		0.762	
Chlorobenzene	ND	0.00076		0.762		1,1,2,2-Tetrachloroethane	ND	0.0015		0.762	
Chloroethane	ND	0.0015		0.762		Tetrachloroethene	ND	0.00076		0.762	
Chloroform	ND	0.00076		0.762		Toluene	0.0036	0.00076		0.762	
Chloromethane	ND	0.015		0.762		1,2,3-Trichlorobenzene	ND	0.0015		0.762	
2-Chlorotoluene	ND	0.00076		0.762		1,2,4-Trichlorobenzene	ND	0.0015		0.762	
4-Chlorotoluene	ND	0.00076		0.762		1,1,1-Trichloroethane	ND	0.00076		0.762	
Dibromochloromethane	ND	0.0015		0.762		1,1,2-Trichloroethane	ND	0.00076		0.762	
1,2-Dibromo-3-Chloropropane	ND	0.0038		0.762		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0076		0.762	
1,2-Dibromoethane	ND	0.00076		0.762		Trichloroethene	0.022	0.0015		0.762	
Dibromomethane	ND	0.00076		0.762		Trichlorofluoromethane	ND	0.0076		0.762	
1,2-Dichlorobenzene	ND	0.00076		0.762		1,2,3-Trichloropropane	ND	0.0015		0.762	
1,3-Dichlorobenzene	ND	0.00076		0.762		1,2,4-Trimethylbenzene	ND	0.0015		0.762	
1,4-Dichlorobenzene	ND	0.00076		0.762		1,3,5-Trimethylbenzene	ND	0.0015		0.762	
Dichlorodifluoromethane	ND	0.0015		0.762		Vinyl Acetate	ND	0.0076		0.762	
1,1-Dichloroethane	ND	0.00076		0.762		Vinyl Chloride	ND	0.00076		0.762	
1,2-Dichloroethane	ND	0.00076		0.762		Xylenes (total)	0.0019	0.0015		0.762	
1,1-Dichloroethene	ND	0.00076		0.762		Methyl-t-Butyl Ether (MTBE)	0.0022	0.0015		0.762	
c-1,2-Dichloroethene	0.069	0.00076		0.762		Tert-Butyl Alcohol (TBA)	0.029	0.015		0.762	
t-1,2-Dichloroethene	ND	0.00076		0.762		Diisopropyl Ether (DIPE)	ND	0.00076		0.762	
1,2-Dichloropropane	ND	0.00076		0.762		Ethyl-t-Butyl Ether (ETBE)	ND	0.00076		0.762	
1,3-Dichloropropane	ND	0.00076		0.762		Tert-Amyl-Methyl Ether (TAME)	ND	0.00076		0.762	
2,2-Dichloropropane	ND	0.0038		0.762		Ethanol	ND	0.38		0.762	
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	95	79-133				1,2-Dichloroethane-d4	97	71-155			
1,4-Bromofluorobenzene	98	80-120				Toluene-d8	102	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB10-5	10-08-1402-12-D	08/16/10 07:55	Solid	GC/MS UU	08/16/10	08/27/10 13:49	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.045		0.896		1,1-Dichloropropene	ND	0.0018		0.896	
Benzene	ND	0.00090		0.896		c-1,3-Dichloropropene	ND	0.00090		0.896	
Bromobenzene	ND	0.00090		0.896		t-1,3-Dichloropropene	ND	0.0018		0.896	
Bromochloromethane	ND	0.0018		0.896		Ethylbenzene	0.0062	0.00090		0.896	
Bromodichloromethane	ND	0.00090		0.896		2-Hexanone	ND	0.018		0.896	
Bromoform	ND	0.0045		0.896		Isopropylbenzene	0.0031	0.00090		0.896	
Bromomethane	ND	0.018		0.896		p-Isopropyltoluene	0.0034	0.00090		0.896	
2-Butanone	ND	0.018		0.896		Methylene Chloride	ND	0.0090		0.896	
n-Butylbenzene	0.0065	0.00090		0.896		4-Methyl-2-Pentanone	ND	0.018		0.896	
sec-Butylbenzene	0.0050	0.00090		0.896		Naphthalene	0.013	0.0090		0.896	
tert-Butylbenzene	ND	0.00090		0.896		n-Propylbenzene	0.0055	0.0018		0.896	
Carbon Disulfide	ND	0.0090		0.896		Styrene	ND	0.00090		0.896	
Carbon Tetrachloride	ND	0.00090		0.896		1,1,1,2-Tetrachloroethane	ND	0.00090		0.896	
Chlorobenzene	ND	0.00090		0.896		1,1,2,2-Tetrachloroethane	ND	0.0018		0.896	
Chloroethane	ND	0.0018		0.896		Tetrachloroethene	ND	0.00090		0.896	
Chloroform	ND	0.00090		0.896		Toluene	0.0028	0.00090		0.896	
Chloromethane	ND	0.018		0.896		1,2,3-Trichlorobenzene	ND	0.0018		0.896	
2-Chlorotoluene	ND	0.00090		0.896		1,2,4-Trichlorobenzene	ND	0.0018		0.896	
4-Chlorotoluene	ND	0.00090		0.896		1,1,1-Trichloroethane	ND	0.00090		0.896	
Dibromochloromethane	ND	0.0018		0.896		1,1,2-Trichloroethane	ND	0.00090		0.896	
1,2-Dibromo-3-Chloropropane	ND	0.0045		0.896		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0090		0.896	
1,2-Dibromoethane	ND	0.00090		0.896		Trichloroethene	ND	0.0018		0.896	
Dibromomethane	ND	0.00090		0.896		Trichlorofluoromethane	ND	0.0090		0.896	
1,2-Dichlorobenzene	ND	0.00090		0.896		1,2,3-Trichloropropane	ND	0.0018		0.896	
1,3-Dichlorobenzene	ND	0.00090		0.896		1,2,4-Trimethylbenzene	0.035	0.0018		0.896	
1,4-Dichlorobenzene	ND	0.00090		0.896		1,3,5-Trimethylbenzene	0.0081	0.0018		0.896	
Dichlorodifluoromethane	ND	0.0018		0.896		Vinyl Acetate	ND	0.0090		0.896	
1,1-Dichloroethane	ND	0.00090		0.896		Vinyl Chloride	ND	0.00090		0.896	
1,2-Dichloroethane	ND	0.00090		0.896		Xylenes (total)	0.025	0.0018		0.896	
1,1-Dichloroethene	ND	0.00090		0.896		Methyl-t-Butyl Ether (MTBE)	ND	0.0018		0.896	
c-1,2-Dichloroethene	ND	0.00090		0.896		Tert-Butyl Alcohol (TBA)	ND	0.018		0.896	
t-1,2-Dichloroethene	ND	0.00090		0.896		Diisopropyl Ether (DIPE)	ND	0.00090		0.896	
1,2-Dichloropropane	ND	0.00090		0.896		Ethyl-t-Butyl Ether (ETBE)	ND	0.00090		0.896	
1,3-Dichloropropane	ND	0.00090		0.896		Tert-Amyl-Methyl Ether (TAME)	ND	0.00090		0.896	
2,2-Dichloropropane	ND	0.0045		0.896		Ethanol	ND	0.45		0.896	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	99	79-133				1,2-Dichloroethane-d4	106	71-155			
1,4-Bromofluorobenzene	97	80-120				Toluene-d8	104	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB10-10	10-08-1402-13-C	08/16/10 08:00	Solid	GC/MS UU	08/16/10	08/26/10 20:52	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.051		1.02		1,1-Dichloropropene	ND	0.0020		1.02	
Benzene	0.0094	0.0010		1.02		c-1,3-Dichloropropene	ND	0.0010		1.02	
Bromobenzene	ND	0.0010		1.02		t-1,3-Dichloropropene	ND	0.0020		1.02	
Bromochloromethane	ND	0.0020		1.02		Ethylbenzene	0.18	0.0010		1.02	
Bromodichloromethane	ND	0.0010		1.02		2-Hexanone	ND	0.020		1.02	
Bromoform	ND	0.0051		1.02		Isopropylbenzene	0.0033	0.0010		1.02	
Bromomethane	ND	0.020		1.02		p-Isopropyltoluene	ND	0.0010		1.02	
2-Butanone	ND	0.020		1.02		Methylene Chloride	ND	0.010		1.02	
n-Butylbenzene	0.0057	0.0010		1.02		4-Methyl-2-Pentanone	ND	0.020		1.02	
sec-Butylbenzene	ND	0.0010		1.02		Naphthalene	0.13	0.010		1.02	
tert-Butylbenzene	ND	0.0010		1.02		n-Propylbenzene	0.013	0.0020		1.02	
Carbon Disulfide	ND	0.010		1.02		Styrene	ND	0.0010		1.02	
Carbon Tetrachloride	ND	0.0010		1.02		1,1,1,2-Tetrachloroethane	ND	0.0010		1.02	
Chlorobenzene	ND	0.0010		1.02		1,1,2,2-Tetrachloroethane	ND	0.0020		1.02	
Chloroethane	ND	0.0020		1.02		Tetrachloroethene	ND	0.0010		1.02	
Chloroform	ND	0.0010		1.02		Toluene	0.0071	0.0010		1.02	
Chloromethane	ND	0.020		1.02		1,2,3-Trichlorobenzene	ND	0.0020		1.02	
2-Chlorotoluene	ND	0.0010		1.02		1,2,4-Trichlorobenzene	ND	0.0020		1.02	
4-Chlorotoluene	ND	0.0010		1.02		1,1,1-Trichloroethane	ND	0.0010		1.02	
Dibromochloromethane	ND	0.0020		1.02		1,1,2-Trichloroethane	ND	0.0010		1.02	
1,2-Dibromo-3-Chloropropane	ND	0.0051		1.02		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.010		1.02	
1,2-Dibromoethane	ND	0.0010		1.02		Trichloroethene	ND	0.0020		1.02	
Dibromomethane	ND	0.0010		1.02		Trichlorofluoromethane	ND	0.010		1.02	
1,2-Dichlorobenzene	ND	0.0010		1.02		1,2,3-Trichloropropane	ND	0.0020		1.02	
1,3-Dichlorobenzene	ND	0.0010		1.02		1,2,4-Trimethylbenzene	0.089	0.0020		1.02	
1,4-Dichlorobenzene	ND	0.0010		1.02		1,3,5-Trimethylbenzene	0.028	0.0020		1.02	
Dichlorodifluoromethane	ND	0.0020		1.02		Vinyl Acetate	ND	0.010		1.02	
1,1-Dichloroethane	ND	0.0010		1.02		Vinyl Chloride	ND	0.0010		1.02	
1,2-Dichloroethane	ND	0.0010		1.02		Xylenes (total)	0.091	0.0020		1.02	
1,1-Dichloroethene	ND	0.0010		1.02		Methyl-t-Butyl Ether (MTBE)	ND	0.0020		1.02	
c-1,2-Dichloroethene	ND	0.0010		1.02		Tert-Butyl Alcohol (TBA)	ND	0.020		1.02	
t-1,2-Dichloroethene	ND	0.0010		1.02		Diisopropyl Ether (DIPE)	ND	0.0010		1.02	
1,2-Dichloropropane	ND	0.0010		1.02		Ethyl-t-Butyl Ether (ETBE)	ND	0.0010		1.02	
1,3-Dichloropropane	ND	0.0010		1.02		Tert-Amyl-Methyl Ether (TAME)	ND	0.0010		1.02	
2,2-Dichloropropane	ND	0.0051		1.02		Ethanol	ND	0.51		1.02	
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	95	79-133				1,2-Dichloroethane-d4	97	71-155			
1,4-Bromofluorobenzene	99	80-120				Toluene-d8	99	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB10-15	10-08-1402-14-C	08/16/10 08:10	Solid	GC/MS UU	08/16/10	08/26/10 21:17	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.038		0.759		1,1-Dichloropropene	ND	0.0015		0.759	
Benzene	0.0068	0.00076		0.759		c-1,3-Dichloropropene	ND	0.00076		0.759	
Bromobenzene	ND	0.00076		0.759		t-1,3-Dichloropropene	ND	0.0015		0.759	
Bromochloromethane	ND	0.0015		0.759		Ethylbenzene	0.34	0.037		37.4	
Bromodichloromethane	ND	0.00076		0.759		2-Hexanone	ND	0.015		0.759	
Bromoform	ND	0.0038		0.759		Isopropylbenzene	0.026	0.00076		0.759	
Bromomethane	ND	0.015		0.759		p-Isopropyltoluene	0.019	0.00076		0.759	
2-Butanone	ND	0.015		0.759		Methylene Chloride	ND	0.0076		0.759	
n-Butylbenzene	0.059	0.00076		0.759		4-Methyl-2-Pentanone	ND	0.015		0.759	
sec-Butylbenzene	0.029	0.00076		0.759		Naphthalene	0.14	0.0076		0.759	
tert-Butylbenzene	ND	0.00076		0.759		n-Propylbenzene	0.067	0.0015		0.759	
Carbon Disulfide	ND	0.0076		0.759		Styrene	ND	0.00076		0.759	
Carbon Tetrachloride	ND	0.00076		0.759		1,1,1,2-Tetrachloroethane	ND	0.00076		0.759	
Chlorobenzene	ND	0.00076		0.759		1,1,2,2-Tetrachloroethane	ND	0.0015		0.759	
Chloroethane	ND	0.0015		0.759		Tetrachloroethene	ND	0.00076		0.759	
Chloroform	ND	0.00076		0.759		Toluene	0.018	0.00076		0.759	
Chloromethane	ND	0.015		0.759		1,2,3-Trichlorobenzene	ND	0.0015		0.759	
2-Chlorotoluene	ND	0.00076		0.759		1,2,4-Trichlorobenzene	ND	0.0015		0.759	
4-Chlorotoluene	ND	0.00076		0.759		1,1,1-Trichloroethane	ND	0.00076		0.759	
Dibromochloromethane	ND	0.0015		0.759		1,1,2-Trichloroethane	ND	0.00076		0.759	
1,2-Dibromo-3-Chloropropane	ND	0.0038		0.759		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0076		0.759	
1,2-Dibromoethane	ND	0.00076		0.759		Trichloroethene	ND	0.0015		0.759	
Dibromomethane	ND	0.00076		0.759		Trichlorofluoromethane	ND	0.0076		0.759	
1,2-Dichlorobenzene	ND	0.00076		0.759		1,2,3-Trichloropropane	ND	0.0015		0.759	
1,3-Dichlorobenzene	ND	0.00076		0.759		1,2,4-Trimethylbenzene	0.40	0.075		37.4	
1,4-Dichlorobenzene	ND	0.00076		0.759		1,3,5-Trimethylbenzene	0.12	0.0015		0.759	
Dichlorodifluoromethane	ND	0.0015		0.759		Vinyl Acetate	ND	0.0076		0.759	
1,1-Dichloroethane	ND	0.00076		0.759		Vinyl Chloride	ND	0.00076		0.759	
1,2-Dichloroethane	ND	0.00076		0.759		Xylenes (total)	0.26	0.0015		0.759	
1,1-Dichloroethene	ND	0.00076		0.759		Methyl-t-Butyl Ether (MTBE)	ND	0.0015		0.759	
c-1,2-Dichloroethene	ND	0.00076		0.759		Tert-Butyl Alcohol (TBA)	ND	0.015		0.759	
t-1,2-Dichloroethene	ND	0.00076		0.759		Diisopropyl Ether (DIPE)	ND	0.00076		0.759	
1,2-Dichloropropane	ND	0.00076		0.759		Ethyl-t-Butyl Ether (ETBE)	ND	0.00076		0.759	
1,3-Dichloropropane	ND	0.00076		0.759		Tert-Amyl-Methyl Ether (TAME)	ND	0.00076		0.759	
2,2-Dichloropropane	ND	0.0038		0.759		Ethanol	ND	0.38		0.759	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	100	79-133				1,2-Dichloroethane-d4	103	71-155			
1,4-Bromofluorobenzene	101	80-120				Toluene-d8	106	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-5	10-08-1402-15-E	08/16/10 08:45	Solid	GC/MS Z	08/16/10	08/27/10 13:44	100827L01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	2.1	0.27	42.4		1,1-Dichloropropene	ND	0.085	0.0094	42.4	
Benzene	ND	0.042	0.0057	42.4		c-1,3-Dichloropropene	ND	0.042	0.0077	42.4	
Bromobenzene	ND	0.042	0.0089	42.4		t-1,3-Dichloropropene	ND	0.085	0.081	42.4	
Bromochloromethane	ND	0.085	0.059	42.4		Ethylbenzene	0.020	0.042	0.0066	42.4	J
Bromodichloromethane	ND	0.042	0.0062	42.4		2-Hexanone	ND	0.85	0.24	42.4	
Bromoform	ND	0.21	0.028	42.4		Isopropylbenzene	0.028	0.042	0.0050	42.4	J
Bromomethane	ND	0.85	0.078	42.4		p-Isopropyltoluene	0.021	0.042	0.0049	42.4	J
2-Butanone	ND	0.85	0.41	42.4		Methylene Chloride	ND	0.42	0.22	42.4	
n-Butylbenzene	0.064	0.042	0.0094	42.4		4-Methyl-2-Pentanone	ND	0.85	0.086	42.4	
sec-Butylbenzene	0.036	0.042	0.0044	42.4	J	Naphthalene	0.039	0.42	0.014	42.4	B,J
tert-Butylbenzene	ND	0.042	0.0052	42.4		n-Propylbenzene	ND	0.085	0.043	42.4	
Carbon Disulfide	ND	0.42	0.0074	42.4		Styrene	ND	0.042	0.0087	42.4	
Carbon Tetrachloride	ND	0.042	0.014	42.4		1,1,1,2-Tetrachloroethane	ND	0.042	0.014	42.4	
Chlorobenzene	ND	0.042	0.0063	42.4		1,1,2,2-Tetrachloroethane	ND	0.085	0.0098	42.4	
Chloroethane	ND	0.085	0.018	42.4		Tetrachloroethene	ND	0.042	0.0072	42.4	
Chloroform	ND	0.042	0.0073	42.4		Toluene	ND	0.042	0.0064	42.4	
Chloromethane	ND	0.85	0.12	42.4		1,2,3-Trichlorobenzene	ND	0.085	0.0087	42.4	
2-Chlorotoluene	ND	0.042	0.0049	42.4		1,2,4-Trichlorobenzene	ND	0.085	0.0078	42.4	
4-Chlorotoluene	ND	0.042	0.0044	42.4		1,1,1-Trichloroethane	ND	0.042	0.011	42.4	
Dibromochloromethane	ND	0.085	0.0085	42.4		1,1,2-Trichloroethane	ND	0.042	0.010	42.4	
1,2-Dibromo-3-Chloropropane	ND	0.21	0.16	42.4		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.42	0.020	42.4	
1,2-Dibromoethane	ND	0.042	0.019	42.4		Trichloroethene	ND	0.085	0.0077	42.4	
Dibromomethane	ND	0.042	0.030	42.4		Trichlorofluoromethane	ND	0.42	0.0066	42.4	
1,2-Dichlorobenzene	ND	0.042	0.0054	42.4		1,2,3-Trichloropropane	ND	0.085	0.028	42.4	
1,3-Dichlorobenzene	ND	0.042	0.0069	42.4		1,2,4-Trimethylbenzene	0.16	0.085	0.0049	42.4	
1,4-Dichlorobenzene	ND	0.042	0.0065	42.4		1,3,5-Trimethylbenzene	0.049	0.085	0.0042	42.4	J
Dichlorodifluoromethane	ND	0.085	0.0082	42.4		Vinyl Acetate	ND	0.42	0.32	42.4	
1,1-Dichloroethane	ND	0.042	0.0067	42.4		Vinyl Chloride	ND	0.042	0.0091	42.4	
1,2-Dichloroethane	ND	0.042	0.0072	42.4		Xylenes (total)	ND	0.085	0.0085	42.4	
1,1-Dichloroethene	ND	0.042	0.0059	42.4		Methyl-t-Butyl Ether (MTBE)	ND	0.085	0.0056	42.4	
c-1,2-Dichloroethene	ND	0.042	0.012	42.4		Tert-Butyl Alcohol (TBA)	ND	0.85	0.65	42.4	
t-1,2-Dichloroethene	ND	0.042	0.011	42.4		Diisopropyl Ether (DIPE)	ND	0.042	0.010	42.4	
1,2-Dichloropropane	ND	0.042	0.011	42.4		Ethyl-t-Butyl Ether (ETBE)	ND	0.042	0.0091	42.4	
1,3-Dichloropropane	ND	0.042	0.0074	42.4		Tert-Amyl-Methyl Ether (TAME)	ND	0.042	0.0055	42.4	
2,2-Dichloropropane	ND	0.21	0.019	42.4		Ethanol	ND	21	4.2	42.4	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	99	79-133		1,2-Dichloroethane-d4	117	71-155	
1,4-Bromofluorobenzene	109	80-120		Toluene-d8	101	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-10	10-08-1402-16-E	08/16/10 08:50	Solid	GC/MS UU	08/16/10	08/26/10 18:43	100826L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	20	2.6	399		1,1-Dichloropropene	ND	0.80	0.088	399	
Benzene	1.0	0.40	0.054	399		c-1,3-Dichloropropene	ND	0.40	0.073	399	
Bromobenzene	ND	0.40	0.083	399		t-1,3-Dichloropropene	ND	0.80	0.76	399	
Bromochloromethane	ND	0.80	0.55	399		Ethylbenzene	19	0.40	0.062	399	
Bromodichloromethane	ND	0.40	0.059	399		2-Hexanone	ND	8.0	2.2	399	
Bromoform	ND	2.0	0.26	399		Isopropylbenzene	1.9	0.40	0.047	399	
Bromomethane	ND	8.0	0.74	399		p-Isopropyltoluene	0.86	0.40	0.046	399	
2-Butanone	ND	8.0	3.8	399		Methylene Chloride	ND	4.0	2.1	399	
n-Butylbenzene	4.7	0.40	0.089	399		4-Methyl-2-Pentanone	ND	8.0	0.81	399	
sec-Butylbenzene	0.85	0.40	0.041	399		Naphthalene	6.8	4.0	0.13	399	
tert-Butylbenzene	ND	0.40	0.049	399		n-Propylbenzene	6.7	0.80	0.41	399	
Carbon Disulfide	ND	4.0	0.070	399		Styrene	ND	0.40	0.082	399	
Carbon Tetrachloride	ND	0.40	0.13	399		1,1,1,2-Tetrachloroethane	ND	0.40	0.13	399	
Chlorobenzene	ND	0.40	0.060	399		1,1,2,2-Tetrachloroethane	ND	0.80	0.092	399	
Chloroethane	ND	0.80	0.17	399		Tetrachloroethene	ND	0.40	0.068	399	
Chloroform	ND	0.40	0.069	399		Toluene	8.8	0.40	0.060	399	
Chloromethane	ND	8.0	1.2	399		1,2,3-Trichlorobenzene	ND	0.80	0.082	399	
2-Chlorotoluene	ND	0.40	0.047	399		1,2,4-Trichlorobenzene	ND	0.80	0.073	399	
4-Chlorotoluene	ND	0.40	0.042	399		1,1,1-Trichloroethane	ND	0.40	0.10	399	
Dibromochloromethane	ND	0.80	0.080	399		1,1,2-Trichloroethane	ND	0.40	0.096	399	
1,2-Dibromo-3-Chloropropane	ND	2.0	1.5	399		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	4.0	0.19	399	
1,2-Dibromoethane	ND	0.40	0.18	399		Trichloroethene	ND	0.80	0.072	399	
Dibromomethane	ND	0.40	0.28	399		Trichlorofluoromethane	ND	4.0	0.062	399	
1,2-Dichlorobenzene	ND	0.40	0.051	399		1,2,3-Trichloropropane	ND	0.80	0.26	399	
1,3-Dichlorobenzene	ND	0.40	0.065	399		1,2,4-Trimethylbenzene	50	0.80	0.047	399	
1,4-Dichlorobenzene	ND	0.40	0.062	399		1,3,5-Trimethylbenzene	16	0.80	0.039	399	
Dichlorodifluoromethane	ND	0.80	0.077	399		Vinyl Acetate	ND	4.0	3.0	399	
1,1-Dichloroethane	ND	0.40	0.063	399		Vinyl Chloride	ND	0.40	0.086	399	
1,2-Dichloroethane	ND	0.40	0.068	399		Xylenes (total)	100	0.80	0.080	399	
1,1-Dichloroethene	ND	0.40	0.056	399		Methyl-t-Butyl Ether (MTBE)	ND	0.80	0.053	399	
c-1,2-Dichloroethene	ND	0.40	0.11	399		Tert-Butyl Alcohol (TBA)	ND	8.0	6.1	399	
t-1,2-Dichloroethene	ND	0.40	0.10	399		Diisopropyl Ether (DIPE)	ND	0.40	0.099	399	
1,2-Dichloropropane	ND	0.40	0.11	399		Ethyl-t-Butyl Ether (ETBE)	ND	0.40	0.086	399	
1,3-Dichloropropane	ND	0.40	0.070	399		Tert-Amyl-Methyl Ether (TAME)	ND	0.40	0.052	399	
2,2-Dichloropropane	ND	2.0	0.18	399		Ethanol	ND	200	40	399	
Surrogates:	REC (%)	Control Limits	Qual			Surrogates:	REC (%)	Control Limits	Qual		
Dibromofluoromethane	93	79-133				1,2-Dichloroethane-d4	92	71-155			
1,4-Bromofluorobenzene	101	80-120				Toluene-d8	103	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-15	10-08-1402-17-E	08/16/10 08:55	Solid	GC/MS Z	08/16/10	08/27/10 16:15	100827L01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	1.8	0.23	36.1		1,1-Dichloropropene	ND	0.072	0.0080	36.1	
Benzene	0.30	0.036	0.0049	36.1		c-1,3-Dichloropropene	ND	0.036	0.0066	36.1	
Bromobenzene	ND	0.036	0.0076	36.1		t-1,3-Dichloropropene	ND	0.072	0.069	36.1	
Bromochloromethane	ND	0.072	0.050	36.1		Ethylbenzene	1.8	0.036	0.0056	36.1	
Bromodichloromethane	ND	0.036	0.0053	36.1		2-Hexanone	ND	0.72	0.20	36.1	
Bromoform	ND	0.18	0.024	36.1		Isopropylbenzene	0.23	0.036	0.0043	36.1	
Bromomethane	ND	0.72	0.067	36.1		p-Isopropyltoluene	0.17	0.036	0.0042	36.1	
2-Butanone	ND	0.72	0.35	36.1		Methylene Chloride	ND	0.36	0.19	36.1	
n-Butylbenzene	0.55	0.036	0.0080	36.1		4-Methyl-2-Pentanone	ND	0.72	0.073	36.1	
sec-Butylbenzene	0.20	0.036	0.0037	36.1		Naphthalene	0.47	0.36	0.012	36.1	B
tert-Butylbenzene	ND	0.036	0.0045	36.1		n-Propylbenzene	0.68	0.072	0.037	36.1	
Carbon Disulfide	ND	0.36	0.0063	36.1		Styrene	ND	0.036	0.0074	36.1	
Carbon Tetrachloride	ND	0.036	0.012	36.1		1,1,1,2-Tetrachloroethane	ND	0.036	0.012	36.1	
Chlorobenzene	ND	0.036	0.0054	36.1		1,1,2,2-Tetrachloroethane	ND	0.072	0.0083	36.1	
Chloroethane	ND	0.072	0.015	36.1		Tetrachloroethene	ND	0.036	0.0061	36.1	
Chloroform	ND	0.036	0.0062	36.1		Toluene	0.75	0.036	0.0054	36.1	
Chloromethane	ND	0.72	0.11	36.1		1,2,3-Trichlorobenzene	ND	0.072	0.0074	36.1	
2-Chlorotoluene	ND	0.036	0.0042	36.1		1,2,4-Trichlorobenzene	ND	0.072	0.0066	36.1	
4-Chlorotoluene	ND	0.036	0.0038	36.1		1,1,1-Trichloroethane	0.011	0.036	0.0091	36.1	J
Dibromochloromethane	ND	0.072	0.0072	36.1		1,1,2-Trichloroethane	ND	0.036	0.0087	36.1	
1,2-Dibromo-3-Chloropropane	ND	0.18	0.13	36.1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.36	0.017	36.1	
1,2-Dibromoethane	ND	0.036	0.016	36.1		Trichloroethene	ND	0.072	0.0065	36.1	
Dibromomethane	ND	0.036	0.025	36.1		Trichlorofluoromethane	ND	0.36	0.0056	36.1	
1,2-Dichlorobenzene	ND	0.036	0.0046	36.1		1,2,3-Trichloropropane	ND	0.072	0.023	36.1	
1,3-Dichlorobenzene	ND	0.036	0.0059	36.1		1,2,4-Trimethylbenzene	3.7	0.072	0.0042	36.1	
1,4-Dichlorobenzene	ND	0.036	0.0056	36.1		1,3,5-Trimethylbenzene	1.3	0.072	0.0036	36.1	
Dichlorodifluoromethane	ND	0.072	0.0070	36.1		Vinyl Acetate	ND	0.36	0.27	36.1	
1,1-Dichloroethane	ND	0.036	0.0057	36.1		Vinyl Chloride	ND	0.036	0.0078	36.1	
1,2-Dichloroethane	ND	0.036	0.0062	36.1		Xylenes (total)	7.5	0.072	0.0073	36.1	
1,1-Dichloroethene	ND	0.036	0.0050	36.1		Methyl-t-Butyl Ether (MTBE)	ND	0.072	0.0048	36.1	
c-1,2-Dichloroethene	ND	0.036	0.010	36.1		Tert-Butyl Alcohol (TBA)	ND	0.72	0.55	36.1	
t-1,2-Dichloroethene	ND	0.036	0.0091	36.1		Diisopropyl Ether (DIPE)	ND	0.036	0.0089	36.1	
1,2-Dichloropropane	ND	0.036	0.0096	36.1		Ethyl-t-Butyl Ether (ETBE)	ND	0.036	0.0078	36.1	
1,3-Dichloropropane	ND	0.036	0.0063	36.1		Tert-Amyl-Methyl Ether (TAME)	ND	0.036	0.0047	36.1	
2,2-Dichloropropane	ND	0.18	0.016	36.1		Ethanol	ND	18	3.6	36.1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	105	79-133		1,2-Dichloroethane-d4	106	71-155	
1,4-Bromofluorobenzene	109	80-120		Toluene-d8	102	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-20	10-08-1402-18-D	08/16/10 09:15	Solid	GC/MS PP	08/16/10	08/27/10 14:24	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.046		0.914		1,1-Dichloropropene	ND	0.0018		0.914	
Benzene	0.069	0.00091		0.914		c-1,3-Dichloropropene	ND	0.00091		0.914	
Bromobenzene	ND	0.00091		0.914		t-1,3-Dichloropropene	ND	0.0018		0.914	
Bromochloromethane	ND	0.0018		0.914		Ethylbenzene	0.029	0.00091		0.914	
Bromodichloromethane	ND	0.00091		0.914		2-Hexanone	ND	0.018		0.914	
Bromoform	ND	0.0046		0.914		Isopropylbenzene	0.0064	0.00091		0.914	
Bromomethane	ND	0.018		0.914		p-Isopropyltoluene	0.0031	0.00091		0.914	
2-Butanone	ND	0.018		0.914		Methylene Chloride	ND	0.0091		0.914	
n-Butylbenzene	0.011	0.00091		0.914		4-Methyl-2-Pentanone	ND	0.018		0.914	
sec-Butylbenzene	0.0033	0.00091		0.914		Naphthalene	0.044	0.0091		0.914	
tert-Butylbenzene	ND	0.00091		0.914		n-Propylbenzene	0.015	0.0018		0.914	
Carbon Disulfide	ND	0.0091		0.914		Styrene	ND	0.00091		0.914	
Carbon Tetrachloride	ND	0.00091		0.914		1,1,1,2-Tetrachloroethane	ND	0.00091		0.914	
Chlorobenzene	ND	0.00091		0.914		1,1,2,2-Tetrachloroethane	ND	0.0018		0.914	
Chloroethane	ND	0.0018		0.914		Tetrachloroethene	ND	0.00091		0.914	
Chloroform	0.0016	0.00091		0.914		Toluene	0.0048	0.00091		0.914	
Chloromethane	ND	0.018		0.914		1,2,3-Trichlorobenzene	ND	0.0018		0.914	
2-Chlorotoluene	ND	0.00091		0.914		1,2,4-Trichlorobenzene	ND	0.0018		0.914	
4-Chlorotoluene	ND	0.00091		0.914		1,1,1-Trichloroethane	ND	0.00091		0.914	
Dibromochloromethane	ND	0.0018		0.914		1,1,2-Trichloroethane	ND	0.00091		0.914	
1,2-Dibromo-3-Chloropropane	ND	0.0046		0.914		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0091		0.914	
1,2-Dibromoethane	ND	0.00091		0.914		Trichloroethene	0.0025	0.0018		0.914	
Dibromomethane	ND	0.00091		0.914		Trichlorofluoromethane	ND	0.0091		0.914	
1,2-Dichlorobenzene	ND	0.00091		0.914		1,2,3-Trichloropropane	ND	0.0018		0.914	
1,3-Dichlorobenzene	ND	0.00091		0.914		1,2,4-Trimethylbenzene	0.11	0.0018		0.914	
1,4-Dichlorobenzene	ND	0.00091		0.914		1,3,5-Trimethylbenzene	0.040	0.0018		0.914	
Dichlorodifluoromethane	ND	0.0018		0.914		Vinyl Acetate	ND	0.0091		0.914	
1,1-Dichloroethane	ND	0.00091		0.914		Vinyl Chloride	ND	0.00091		0.914	
1,2-Dichloroethane	ND	0.00091		0.914		Xylenes (total)	0.12	0.0018		0.914	
1,1-Dichloroethene	ND	0.00091		0.914		Methyl-t-Butyl Ether (MTBE)	ND	0.0018		0.914	
c-1,2-Dichloroethene	0.0066	0.00091		0.914		Tert-Butyl Alcohol (TBA)	ND	0.018		0.914	
t-1,2-Dichloroethene	ND	0.00091		0.914		Diisopropyl Ether (DIPE)	ND	0.00091		0.914	
1,2-Dichloropropane	ND	0.00091		0.914		Ethyl-t-Butyl Ether (ETBE)	ND	0.00091		0.914	
1,3-Dichloropropane	ND	0.00091		0.914		Tert-Amyl-Methyl Ether (TAME)	ND	0.00091		0.914	
2,2-Dichloropropane	ND	0.0046		0.914		Ethanol	ND	0.46		0.914	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	102	79-133				1,2-Dichloroethane-d4	106	71-155			
1,4-Bromofluorobenzene	100	80-120				Toluene-d8	103	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SO-241876-081610-JS-SB9-25	10-08-1402-19-D	08/16/10 09:25	Solid	GC/MS PP	08/16/10	08/27/10 14:51	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.037		0.749		1,1-Dichloropropene	ND	0.0015		0.749	
Benzene	0.0092	0.00075		0.749		c-1,3-Dichloropropene	ND	0.00075		0.749	
Bromobenzene	ND	0.00075		0.749		t-1,3-Dichloropropene	ND	0.0015		0.749	
Bromochloromethane	ND	0.0015		0.749		Ethylbenzene	0.030	0.00075		0.749	
Bromodichloromethane	ND	0.00075		0.749		2-Hexanone	ND	0.015		0.749	
Bromoform	ND	0.0037		0.749		Isopropylbenzene	0.0054	0.00075		0.749	
Bromomethane	ND	0.015		0.749		p-Isopropyltoluene	0.0024	0.00075		0.749	
2-Butanone	ND	0.015		0.749		Methylene Chloride	ND	0.0075		0.749	
n-Butylbenzene	0.0057	0.00075		0.749		4-Methyl-2-Pentanone	ND	0.015		0.749	
sec-Butylbenzene	0.0028	0.00075		0.749		Naphthalene	ND	0.0075		0.749	
tert-Butylbenzene	ND	0.00075		0.749		n-Propylbenzene	0.011	0.0015		0.749	
Carbon Disulfide	ND	0.0075		0.749		Styrene	ND	0.00075		0.749	
Carbon Tetrachloride	ND	0.00075		0.749		1,1,1,2-Tetrachloroethane	ND	0.00075		0.749	
Chlorobenzene	ND	0.00075		0.749		1,1,2,2-Tetrachloroethane	ND	0.0015		0.749	
Chloroethane	ND	0.0015		0.749		Tetrachloroethene	ND	0.00075		0.749	
Chloroform	0.0018	0.00075		0.749		Toluene	0.0096	0.00075		0.749	
Chloromethane	ND	0.015		0.749		1,2,3-Trichlorobenzene	ND	0.0015		0.749	
2-Chlorotoluene	ND	0.00075		0.749		1,2,4-Trichlorobenzene	ND	0.0015		0.749	
4-Chlorotoluene	ND	0.00075		0.749		1,1,1-Trichloroethane	ND	0.00075		0.749	
Dibromochloromethane	ND	0.0015		0.749		1,1,2-Trichloroethane	ND	0.00075		0.749	
1,2-Dibromo-3-Chloropropane	ND	0.0037		0.749		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.0075		0.749	
1,2-Dibromoethane	ND	0.00075		0.749		Trichloroethene	0.0017	0.0015		0.749	
Dibromomethane	ND	0.00075		0.749		Trichlorofluoromethane	ND	0.0075		0.749	
1,2-Dichlorobenzene	ND	0.00075		0.749		1,2,3-Trichloropropane	ND	0.0015		0.749	
1,3-Dichlorobenzene	ND	0.00075		0.749		1,2,4-Trimethylbenzene	0.042	0.0015		0.749	
1,4-Dichlorobenzene	ND	0.00075		0.749		1,3,5-Trimethylbenzene	0.016	0.0015		0.749	
Dichlorodifluoromethane	ND	0.0015		0.749		Vinyl Acetate	ND	0.0075		0.749	
1,1-Dichloroethane	ND	0.00075		0.749		Vinyl Chloride	ND	0.00075		0.749	
1,2-Dichloroethane	ND	0.00075		0.749		Xylenes (total)	0.077	0.0015		0.749	
1,1-Dichloroethene	ND	0.00075		0.749		Methyl-t-Butyl Ether (MTBE)	ND	0.0015		0.749	
c-1,2-Dichloroethene	0.0022	0.00075		0.749		Tert-Butyl Alcohol (TBA)	ND	0.015		0.749	
t-1,2-Dichloroethene	ND	0.00075		0.749		Diisopropyl Ether (DIPE)	ND	0.00075		0.749	
1,2-Dichloropropane	ND	0.00075		0.749		Ethyl-t-Butyl Ether (ETBE)	ND	0.00075		0.749	
1,3-Dichloropropane	ND	0.00075		0.749		Tert-Amyl-Methyl Ether (TAME)	ND	0.00075		0.749	
2,2-Dichloropropane	ND	0.0037		0.749		Ethanol	ND	0.37		0.749	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	101	79-133		1,2-Dichloroethane-d4	105	71-155	
1,4-Bromofluorobenzene	99	80-120		Toluene-d8	100	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-20,294	N/A	Solid	GC/MS W	08/26/10	08/26/10 11:48	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.050		1		1,1-Dichloropropene	ND	0.0020		1	
Benzene	ND	0.0010		1		c-1,3-Dichloropropene	ND	0.0010		1	
Bromobenzene	ND	0.0010		1		t-1,3-Dichloropropene	ND	0.0020		1	
Bromochloromethane	ND	0.0020		1		Ethylbenzene	ND	0.0010		1	
Bromodichloromethane	ND	0.0010		1		2-Hexanone	ND	0.020		1	
Bromoform	ND	0.0050		1		Isopropylbenzene	ND	0.0010		1	
Bromomethane	ND	0.020		1		p-Isopropyltoluene	ND	0.0010		1	
2-Butanone	ND	0.020		1		Methylene Chloride	ND	0.010		1	
n-Butylbenzene	ND	0.0010		1		4-Methyl-2-Pentanone	ND	0.020		1	
sec-Butylbenzene	ND	0.0010		1		Naphthalene	ND	0.010		1	
tert-Butylbenzene	ND	0.0010		1		n-Propylbenzene	ND	0.0020		1	
Carbon Disulfide	ND	0.010		1		Styrene	ND	0.0010		1	
Carbon Tetrachloride	ND	0.0010		1		1,1,1,2-Tetrachloroethane	ND	0.0010		1	
Chlorobenzene	ND	0.0010		1		1,1,2,2-Tetrachloroethane	ND	0.0020		1	
Chloroethane	ND	0.0020		1		Tetrachloroethene	ND	0.0010		1	
Chloroform	ND	0.0010		1		Toluene	ND	0.0010		1	
Chloromethane	ND	0.020		1		1,2,3-Trichlorobenzene	ND	0.0020		1	
2-Chlorotoluene	ND	0.0010		1		1,2,4-Trichlorobenzene	ND	0.0020		1	
4-Chlorotoluene	ND	0.0010		1		1,1,1-Trichloroethane	ND	0.0010		1	
Dibromochloromethane	ND	0.0020		1		1,1,2-Trichloroethane	ND	0.0010		1	
1,2-Dibromo-3-Chloropropane	ND	0.0050		1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.010		1	
1,2-Dibromoethane	ND	0.0010		1		Trichloroethene	ND	0.0020		1	
Dibromomethane	ND	0.0010		1		Trichlorofluoromethane	ND	0.010		1	
1,2-Dichlorobenzene	ND	0.0010		1		1,2,3-Trichloropropane	ND	0.0020		1	
1,3-Dichlorobenzene	ND	0.0010		1		1,2,4-Trimethylbenzene	ND	0.0020		1	
1,4-Dichlorobenzene	ND	0.0010		1		1,3,5-Trimethylbenzene	ND	0.0020		1	
Dichlorodifluoromethane	ND	0.0020		1		Vinyl Acetate	ND	0.010		1	
1,1-Dichloroethane	ND	0.0010		1		Vinyl Chloride	ND	0.0010		1	
1,2-Dichloroethane	ND	0.0010		1		Xylenes (total)	ND	0.0020		1	
1,1-Dichloroethene	ND	0.0010		1		Methyl-t-Butyl Ether (MTBE)	ND	0.0020		1	
c-1,2-Dichloroethene	ND	0.0010		1		Tert-Butyl Alcohol (TBA)	ND	0.020		1	
t-1,2-Dichloroethene	ND	0.0010		1		Diisopropyl Ether (DIPE)	ND	0.0010		1	
1,2-Dichloropropane	ND	0.0010		1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0010		1	
1,3-Dichloropropane	ND	0.0010		1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0010		1	
2,2-Dichloropropane	ND	0.0050		1		Ethanol	ND	0.50		1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	117	79-133				1,2-Dichloroethane-d4	115	71-155			
1,4-Bromofluorobenzene	86	80-120				Toluene-d8	97	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-20,295	N/A	Solid	GC/MS UU	08/26/10	08/26/10 14:24	100826L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.050		1		1,1-Dichloropropene	ND	0.0020		1	
Benzene	ND	0.0010		1		c-1,3-Dichloropropene	ND	0.0010		1	
Bromobenzene	ND	0.0010		1		t-1,3-Dichloropropene	ND	0.0020		1	
Bromochloromethane	ND	0.0020		1		Ethylbenzene	ND	0.0010		1	
Bromodichloromethane	ND	0.0010		1		2-Hexanone	ND	0.020		1	
Bromoform	ND	0.0050		1		Isopropylbenzene	ND	0.0010		1	
Bromomethane	ND	0.020		1		p-Isopropyltoluene	ND	0.0010		1	
2-Butanone	ND	0.020		1		Methylene Chloride	ND	0.010		1	
n-Butylbenzene	ND	0.0010		1		4-Methyl-2-Pentanone	ND	0.020		1	
sec-Butylbenzene	ND	0.0010		1		Naphthalene	ND	0.010		1	
tert-Butylbenzene	ND	0.0010		1		n-Propylbenzene	ND	0.0020		1	
Carbon Disulfide	ND	0.010		1		Styrene	ND	0.0010		1	
Carbon Tetrachloride	ND	0.0010		1		1,1,1,2-Tetrachloroethane	ND	0.0010		1	
Chlorobenzene	ND	0.0010		1		1,1,2,2-Tetrachloroethane	ND	0.0020		1	
Chloroethane	ND	0.0020		1		Tetrachloroethene	ND	0.0010		1	
Chloroform	ND	0.0010		1		Toluene	ND	0.0010		1	
Chloromethane	ND	0.020		1		1,2,3-Trichlorobenzene	ND	0.0020		1	
2-Chlorotoluene	ND	0.0010		1		1,2,4-Trichlorobenzene	ND	0.0020		1	
4-Chlorotoluene	ND	0.0010		1		1,1,1-Trichloroethane	ND	0.0010		1	
Dibromochloromethane	ND	0.0020		1		1,1,2-Trichloroethane	ND	0.0010		1	
1,2-Dibromo-3-Chloropropane	ND	0.0050		1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.010		1	
1,2-Dibromoethane	ND	0.0010		1		Trichloroethene	ND	0.0020		1	
Dibromomethane	ND	0.0010		1		Trichlorofluoromethane	ND	0.010		1	
1,2-Dichlorobenzene	ND	0.0010		1		1,2,3-Trichloropropane	ND	0.0020		1	
1,3-Dichlorobenzene	ND	0.0010		1		1,2,4-Trimethylbenzene	ND	0.0020		1	
1,4-Dichlorobenzene	ND	0.0010		1		1,3,5-Trimethylbenzene	ND	0.0020		1	
Dichlorodifluoromethane	ND	0.0020		1		Vinyl Acetate	ND	0.010		1	
1,1-Dichloroethane	ND	0.0010		1		Vinyl Chloride	ND	0.0010		1	
1,2-Dichloroethane	ND	0.0010		1		Xylenes (total)	ND	0.0020		1	
1,1-Dichloroethene	ND	0.0010		1		Methyl-t-Butyl Ether (MTBE)	ND	0.0020		1	
c-1,2-Dichloroethene	ND	0.0010		1		Tert-Butyl Alcohol (TBA)	ND	0.020		1	
t-1,2-Dichloroethene	ND	0.0010		1		Diisopropyl Ether (DIPE)	ND	0.0010		1	
1,2-Dichloropropane	ND	0.0010		1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0010		1	
1,3-Dichloropropane	ND	0.0010		1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0010		1	
2,2-Dichloropropane	ND	0.0050		1		Ethanol	ND	0.50		1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	104	79-133				1,2-Dichloroethane-d4	106	71-155			
1,4-Bromofluorobenzene	95	80-120				Toluene-d8	97	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-20,305	N/A	Solid	GC/MS UU	08/26/10	08/26/10 14:50	100826L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	5.0	0.64	100		1,1-Dichloropropene	ND	0.20	0.022	100	
Benzene	ND	0.10	0.013	100		c-1,3-Dichloropropene	ND	0.10	0.018	100	
Bromobenzene	ND	0.10	0.021	100		t-1,3-Dichloropropene	ND	0.20	0.19	100	
Bromochloromethane	ND	0.20	0.14	100		Ethylbenzene	ND	0.10	0.015	100	
Bromodichloromethane	ND	0.10	0.015	100		2-Hexanone	ND	2.0	0.56	100	
Bromoform	ND	0.50	0.066	100		Isopropylbenzene	ND	0.10	0.012	100	
Bromomethane	ND	2.0	0.18	100		p-Isopropyltoluene	ND	0.10	0.012	100	
2-Butanone	ND	2.0	0.96	100		Methylene Chloride	ND	1.0	0.52	100	
n-Butylbenzene	ND	0.10	0.022	100		4-Methyl-2-Pentanone	ND	2.0	0.20	100	
sec-Butylbenzene	ND	0.10	0.010	100		Naphthalene	ND	1.0	0.033	100	
tert-Butylbenzene	ND	0.10	0.012	100		n-Propylbenzene	ND	0.20	0.10	100	
Carbon Disulfide	ND	1.0	0.018	100		Styrene	ND	0.10	0.021	100	
Carbon Tetrachloride	ND	0.10	0.032	100		1,1,1,2-Tetrachloroethane	ND	0.10	0.033	100	
Chlorobenzene	ND	0.10	0.015	100		1,1,2,2-Tetrachloroethane	ND	0.20	0.023	100	
Chloroethane	ND	0.20	0.042	100		Tetrachloroethene	ND	0.10	0.017	100	
Chloroform	ND	0.10	0.017	100		Toluene	ND	0.10	0.015	100	
Chloromethane	ND	2.0	0.29	100		1,2,3-Trichlorobenzene	ND	0.20	0.020	100	
2-Chlorotoluene	ND	0.10	0.012	100		1,2,4-Trichlorobenzene	ND	0.20	0.018	100	
4-Chlorotoluene	ND	0.10	0.010	100		1,1,1-Trichloroethane	ND	0.10	0.025	100	
Dibromochloromethane	ND	0.20	0.020	100		1,1,2-Trichloroethane	ND	0.10	0.024	100	
1,2-Dibromo-3-Chloropropane	ND	0.50	0.37	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	0.047	100	
1,2-Dibromoethane	ND	0.10	0.045	100		Trichloroethene	ND	0.20	0.018	100	
Dibromomethane	ND	0.10	0.070	100		Trichlorofluoromethane	ND	1.0	0.016	100	
1,2-Dichlorobenzene	ND	0.10	0.013	100		1,2,3-Trichloropropane	ND	0.20	0.065	100	
1,3-Dichlorobenzene	ND	0.10	0.016	100		1,2,4-Trimethylbenzene	ND	0.20	0.012	100	
1,4-Dichlorobenzene	ND	0.10	0.015	100		1,3,5-Trimethylbenzene	ND	0.20	0.0099	100	
Dichlorodifluoromethane	ND	0.20	0.019	100		Vinyl Acetate	ND	1.0	0.75	100	
1,1-Dichloroethane	ND	0.10	0.016	100		Vinyl Chloride	ND	0.10	0.021	100	
1,2-Dichloroethane	ND	0.10	0.017	100		Xylenes (total)	ND	0.20	0.020	100	
1,1-Dichloroethene	ND	0.10	0.014	100		Methyl-t-Butyl Ether (MTBE)	ND	0.20	0.013	100	
c-1,2-Dichloroethene	ND	0.10	0.028	100		Tert-Butyl Alcohol (TBA)	ND	2.0	1.5	100	
t-1,2-Dichloroethene	ND	0.10	0.025	100		Diisopropyl Ether (DIPE)	ND	0.10	0.025	100	
1,2-Dichloropropane	ND	0.10	0.027	100		Ethyl-t-Butyl Ether (ETBE)	ND	0.10	0.021	100	
1,3-Dichloropropane	ND	0.10	0.018	100		Tert-Amyl-Methyl Ether (TAME)	ND	0.10	0.013	100	
2,2-Dichloropropane	ND	0.50	0.046	100		Ethanol	ND	50	10	100	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	97	79-133		1,2-Dichloroethane-d4	103	71-155	
1,4-Bromofluorobenzene	94	80-120		Toluene-d8	99	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

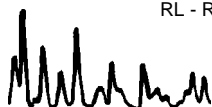
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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-20,308	N/A	Solid	GC/MS UU	08/27/10	08/27/10 12:57	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.050		1		1,1-Dichloropropene	ND	0.0020		1	
Benzene	ND	0.0010		1		c-1,3-Dichloropropene	ND	0.0010		1	
Bromobenzene	ND	0.0010		1		t-1,3-Dichloropropene	ND	0.0020		1	
Bromochloromethane	ND	0.0020		1		Ethylbenzene	ND	0.0010		1	
Bromodichloromethane	ND	0.0010		1		2-Hexanone	ND	0.020		1	
Bromoform	ND	0.0050		1		Isopropylbenzene	ND	0.0010		1	
Bromomethane	ND	0.020		1		p-Isopropyltoluene	ND	0.0010		1	
2-Butanone	ND	0.020		1		Methylene Chloride	ND	0.010		1	
n-Butylbenzene	ND	0.0010		1		4-Methyl-2-Pentanone	ND	0.020		1	
sec-Butylbenzene	ND	0.0010		1		Naphthalene	ND	0.010		1	
tert-Butylbenzene	ND	0.0010		1		n-Propylbenzene	ND	0.0020		1	
Carbon Disulfide	ND	0.010		1		Styrene	ND	0.0010		1	
Carbon Tetrachloride	ND	0.0010		1		1,1,1,2-Tetrachloroethane	ND	0.0010		1	
Chlorobenzene	ND	0.0010		1		1,1,2,2-Tetrachloroethane	ND	0.0020		1	
Chloroethane	ND	0.0020		1		Tetrachloroethene	ND	0.0010		1	
Chloroform	ND	0.0010		1		Toluene	ND	0.0010		1	
Chloromethane	ND	0.020		1		1,2,3-Trichlorobenzene	ND	0.0020		1	
2-Chlorotoluene	ND	0.0010		1		1,2,4-Trichlorobenzene	ND	0.0020		1	
4-Chlorotoluene	ND	0.0010		1		1,1,1-Trichloroethane	ND	0.0010		1	
Dibromochloromethane	ND	0.0020		1		1,1,2-Trichloroethane	ND	0.0010		1	
1,2-Dibromo-3-Chloropropane	ND	0.0050		1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.010		1	
1,2-Dibromoethane	ND	0.0010		1		Trichloroethene	ND	0.0020		1	
Dibromomethane	ND	0.0010		1		Trichlorofluoromethane	ND	0.010		1	
1,2-Dichlorobenzene	ND	0.0010		1		1,2,3-Trichloropropane	ND	0.0020		1	
1,3-Dichlorobenzene	ND	0.0010		1		1,2,4-Trimethylbenzene	ND	0.0020		1	
1,4-Dichlorobenzene	ND	0.0010		1		1,3,5-Trimethylbenzene	ND	0.0020		1	
Dichlorodifluoromethane	ND	0.0020		1		Vinyl Acetate	ND	0.010		1	
1,1-Dichloroethane	ND	0.0010		1		Vinyl Chloride	ND	0.0010		1	
1,2-Dichloroethane	ND	0.0010		1		Xylenes (total)	ND	0.0020		1	
1,1-Dichloroethene	ND	0.0010		1		Methyl-t-Butyl Ether (MTBE)	ND	0.0020		1	
c-1,2-Dichloroethene	ND	0.0010		1		Tert-Butyl Alcohol (TBA)	ND	0.020		1	
t-1,2-Dichloroethene	ND	0.0010		1		Diisopropyl Ether (DIPE)	ND	0.0010		1	
1,2-Dichloropropane	ND	0.0010		1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0010		1	
1,3-Dichloropropane	ND	0.0010		1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0010		1	
2,2-Dichloropropane	ND	0.0050		1		Ethanol	ND	0.50		1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	95	79-133		1,2-Dichloroethane-d4	106	71-155	
1,4-Bromofluorobenzene	93	80-120		Toluene-d8	97	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

Page 24 of 25

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-20,310	N/A	Solid	GC/MS Z	08/27/10	08/27/10 13:14	100827L01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	5.0	0.64	100		1,1-Dichloropropene	ND	0.20	0.022	100	
Benzene	ND	0.10	0.013	100		c-1,3-Dichloropropene	ND	0.10	0.018	100	
Bromobenzene	ND	0.10	0.021	100		t-1,3-Dichloropropene	ND	0.20	0.19	100	
Bromochloromethane	ND	0.20	0.14	100		Ethylbenzene	ND	0.10	0.015	100	
Bromodichloromethane	ND	0.10	0.015	100		2-Hexanone	ND	2.0	0.56	100	
Bromoform	ND	0.50	0.066	100		Isopropylbenzene	ND	0.10	0.012	100	
Bromomethane	1.3	2.0	0.18	100	J	p-Isopropyltoluene	ND	0.10	0.012	100	
2-Butanone	ND	2.0	0.96	100		Methylene Chloride	ND	1.0	0.52	100	
n-Butylbenzene	ND	0.10	0.022	100		4-Methyl-2-Pentanone	ND	2.0	0.20	100	
sec-Butylbenzene	ND	0.10	0.010	100		Naphthalene	0.050	1.0	0.033	100	J
tert-Butylbenzene	ND	0.10	0.012	100		n-Propylbenzene	ND	0.20	0.10	100	
Carbon Disulfide	ND	1.0	0.018	100		Styrene	ND	0.10	0.021	100	
Carbon Tetrachloride	ND	0.10	0.032	100		1,1,1,2-Tetrachloroethane	ND	0.10	0.033	100	
Chlorobenzene	ND	0.10	0.015	100		1,1,2,2-Tetrachloroethane	ND	0.20	0.023	100	
Chloroethane	ND	0.20	0.042	100		Tetrachloroethene	ND	0.10	0.017	100	
Chloroform	ND	0.10	0.017	100		Toluene	ND	0.10	0.015	100	
Chloromethane	ND	2.0	0.29	100		1,2,3-Trichlorobenzene	ND	0.20	0.020	100	
2-Chlorotoluene	ND	0.10	0.012	100		1,2,4-Trichlorobenzene	ND	0.20	0.018	100	
4-Chlorotoluene	ND	0.10	0.010	100		1,1,1-Trichloroethane	ND	0.10	0.025	100	
Dibromochloromethane	ND	0.20	0.020	100		1,1,2-Trichloroethane	ND	0.10	0.024	100	
1,2-Dibromo-3-Chloropropane	ND	0.50	0.37	100		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	0.047	100	
1,2-Dibromoethane	ND	0.10	0.045	100		Trichloroethene	ND	0.20	0.018	100	
Dibromomethane	ND	0.10	0.070	100		Trichlorofluoromethane	ND	1.0	0.016	100	
1,2-Dichlorobenzene	ND	0.10	0.013	100		1,2,3-Trichloropropane	ND	0.20	0.065	100	
1,3-Dichlorobenzene	ND	0.10	0.016	100		1,2,4-Trimethylbenzene	ND	0.20	0.012	100	
1,4-Dichlorobenzene	ND	0.10	0.015	100		1,3,5-Trimethylbenzene	ND	0.20	0.0099	100	
Dichlorodifluoromethane	ND	0.20	0.019	100		Vinyl Acetate	ND	1.0	0.75	100	
1,1-Dichloroethane	ND	0.10	0.016	100		Vinyl Chloride	ND	0.10	0.021	100	
1,2-Dichloroethane	ND	0.10	0.017	100		Xylenes (total)	ND	0.20	0.020	100	
1,1-Dichloroethene	ND	0.10	0.014	100		Methyl-t-Butyl Ether (MTBE)	ND	0.20	0.013	100	
c-1,2-Dichloroethene	ND	0.10	0.028	100		Tert-Butyl Alcohol (TBA)	ND	2.0	1.5	100	
t-1,2-Dichloroethene	ND	0.10	0.025	100		Diisopropyl Ether (DIPE)	ND	0.10	0.025	100	
1,2-Dichloropropane	ND	0.10	0.027	100		Ethyl-t-Butyl Ether (ETBE)	ND	0.10	0.021	100	
1,3-Dichloropropane	ND	0.10	0.018	100		Tert-Amyl-Methyl Ether (TAME)	ND	0.10	0.013	100	
2,2-Dichloropropane	ND	0.50	0.046	100		Ethanol	ND	50	10	100	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	98	79-133		1,2-Dichloroethane-d4	120	71-155	
1,4-Bromofluorobenzene	105	80-120		Toluene-d8	101	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Conestoga-Rovers & Associates
 1420 80th St. SW, Suite A
 Everett, WA 98203-6248

Date Received: 08/18/10
 Work Order No: 10-08-1402
 Preparation: EPA 5035
 Method: EPA 8260B
 Units: mg/kg

Project: 3740 Pacific Avenue, Tacoma, WA

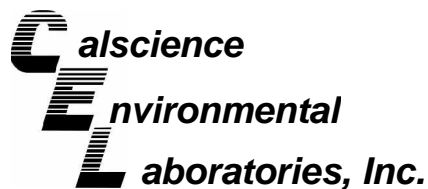
Page 25 of 25

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	095-01-025-20,311	N/A	Solid	GC/MS PP	08/27/10	08/27/10 13:29	100827L01

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Acetone	ND	0.050		1		1,1-Dichloropropene	ND	0.0020		1	
Benzene	ND	0.0010		1		c-1,3-Dichloropropene	ND	0.0010		1	
Bromobenzene	ND	0.0010		1		t-1,3-Dichloropropene	ND	0.0020		1	
Bromochloromethane	ND	0.0020		1		Ethylbenzene	ND	0.0010		1	
Bromodichloromethane	ND	0.0010		1		2-Hexanone	ND	0.020		1	
Bromoform	ND	0.0050		1		Isopropylbenzene	ND	0.0010		1	
Bromomethane	ND	0.020		1		p-Isopropyltoluene	ND	0.0010		1	
2-Butanone	ND	0.020		1		Methylene Chloride	ND	0.010		1	
n-Butylbenzene	ND	0.0010		1		4-Methyl-2-Pentanone	ND	0.020		1	
sec-Butylbenzene	ND	0.0010		1		Naphthalene	ND	0.010		1	
tert-Butylbenzene	ND	0.0010		1		n-Propylbenzene	ND	0.0020		1	
Carbon Disulfide	ND	0.010		1		Styrene	ND	0.0010		1	
Carbon Tetrachloride	ND	0.0010		1		1,1,1,2-Tetrachloroethane	ND	0.0010		1	
Chlorobenzene	ND	0.0010		1		1,1,2,2-Tetrachloroethane	ND	0.0020		1	
Chloroethane	ND	0.0020		1		Tetrachloroethene	ND	0.0010		1	
Chloroform	ND	0.0010		1		Toluene	ND	0.0010		1	
Chloromethane	ND	0.020		1		1,2,3-Trichlorobenzene	ND	0.0020		1	
2-Chlorotoluene	ND	0.0010		1		1,2,4-Trichlorobenzene	ND	0.0020		1	
4-Chlorotoluene	ND	0.0010		1		1,1,1-Trichloroethane	ND	0.0010		1	
Dibromochloromethane	ND	0.0020		1		1,1,2-Trichloroethane	ND	0.0010		1	
1,2-Dibromo-3-Chloropropane	ND	0.0050		1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.010		1	
1,2-Dibromoethane	ND	0.0010		1		Trichloroethene	ND	0.0020		1	
Dibromomethane	ND	0.0010		1		Trichlorofluoromethane	ND	0.010		1	
1,2-Dichlorobenzene	ND	0.0010		1		1,2,3-Trichloropropane	ND	0.0020		1	
1,3-Dichlorobenzene	ND	0.0010		1		1,2,4-Trimethylbenzene	ND	0.0020		1	
1,4-Dichlorobenzene	ND	0.0010		1		1,3,5-Trimethylbenzene	ND	0.0020		1	
Dichlorodifluoromethane	ND	0.0020		1		Vinyl Acetate	ND	0.010		1	
1,1-Dichloroethane	ND	0.0010		1		Vinyl Chloride	ND	0.0010		1	
1,2-Dichloroethane	ND	0.0010		1		Xylenes (total)	ND	0.0020		1	
1,1-Dichloroethene	ND	0.0010		1		Methyl-t-Butyl Ether (MTBE)	ND	0.0020		1	
c-1,2-Dichloroethene	ND	0.0010		1		Tert-Butyl Alcohol (TBA)	ND	0.020		1	
t-1,2-Dichloroethene	ND	0.0010		1		Diisopropyl Ether (DIPE)	ND	0.0010		1	
1,2-Dichloropropane	ND	0.0010		1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0010		1	
1,3-Dichloropropane	ND	0.0010		1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0010		1	
2,2-Dichloropropane	ND	0.0050		1		Ethanol	ND	0.50		1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>			<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		
Dibromofluoromethane	101	79-133				1,2-Dichloroethane-d4	106	71-155			
1,4-Bromofluorobenzene	97	80-120				Toluene-d8	99	80-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





Quality Control - Spike/Spike Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

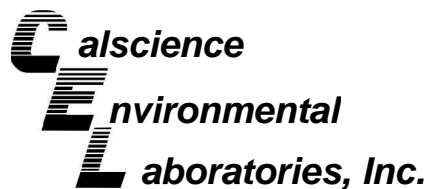
Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 3550B
Method: NWTPH-Dx

Project 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SO-241876-081310-JS-SB-12-5	Solid	GC 47	08/20/10	08/20/10	100820S14

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel Range	96	95	64-130	1	0-15	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

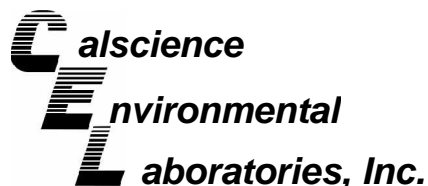
Date Received: 08/18/10
Work Order No: 10-08-1402
Preparation: EPA 3545
Method: EPA 8082

Project 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
SO-241876-081310-JS-SB-12-5	Solid	GC 58	08/19/10	08/21/10	100819S14

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	99	100	50-135	1	0-20	
Aroclor-1260	94	98	50-135	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

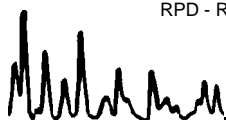
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Work Order No: 10-08-1402
Preparation: EPA 3550B
Method: NWTPH-Dx

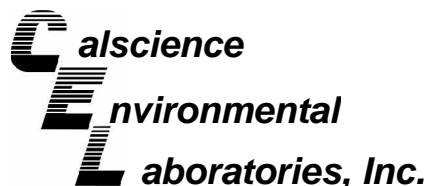
Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-838-99	Solid	GC 47	08/20/10	08/20/10	100820B14S

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel Range	91	96	75-123	6	0-12	

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

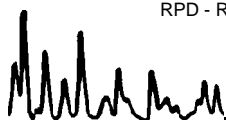
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Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTTPH-Gx

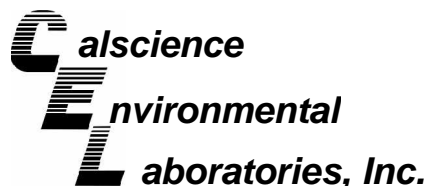
Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-848-145	Solid	GC 22	08/19/10	08/20/10	100819B02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	94	95	55-139	1	0-18	

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

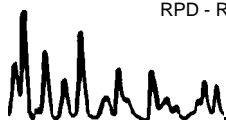
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Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

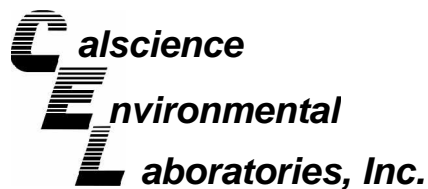
Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-848-146	Solid	GC 22	08/19/10	08/21/10	100819B03

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	88	89	55-139	0	0-18	

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

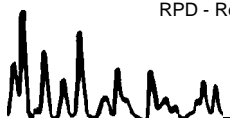
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Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

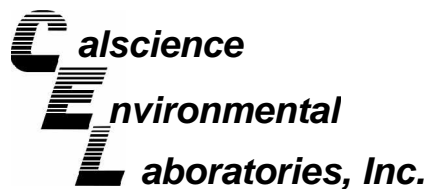
Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-848-147	Solid	GC 22	08/21/10	08/21/10	100821B02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	91	92	55-139	2	0-18	

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

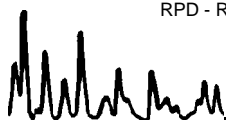
Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

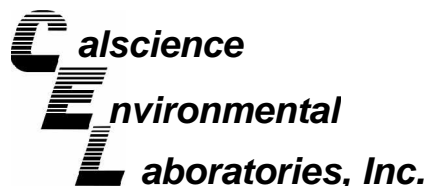
Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-848-149	Solid	GC 22	08/25/10	08/25/10	100825B03

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	91	88	55-139	3	0-18	

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

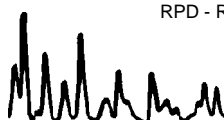
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Work Order No: 10-08-1402
Preparation: EPA 5035
Method: NWTPH-Gx

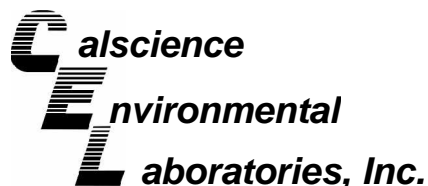
Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-848-150	Solid	GC 22	08/26/10	08/26/10	100826B02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	92	92	55-139	1	0-18	

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

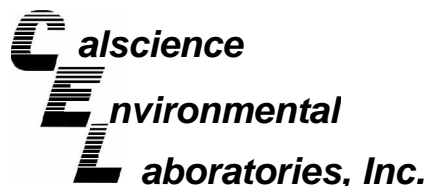
Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 3545
Method: EPA 8082

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-535-989	Solid	GC 58	08/19/10	08/20/10	100819L14

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aroclor-1016	112	118	50-135	5	0-20	
Aroclor-1260	72	76	50-135	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: EPA 8260B

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-025-20,294	Solid	GC/MS W	08/26/10	08/26/10	100826L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	101	100	80-120	73-127	1	0-20	
Carbon Tetrachloride	91	91	65-137	53-149	0	0-20	
Chlorobenzene	98	98	80-120	73-127	0	0-20	
1,2-Dibromoethane	97	99	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	96	99	80-120	73-127	4	0-20	
1,2-Dichloroethane	94	94	80-120	73-127	0	0-20	
1,1-Dichloroethene	101	99	68-128	58-138	2	0-20	
Ethylbenzene	108	107	80-120	73-127	0	0-20	
Toluene	103	103	80-120	73-127	0	0-20	
Trichloroethene	99	99	80-120	73-127	0	0-20	
Vinyl Chloride	88	86	67-127	57-137	2	0-20	
Methyl-t-Butyl Ether (MTBE)	97	98	70-124	61-133	1	0-20	
Tert-Butyl Alcohol (TBA)	96	99	73-121	65-129	3	0-20	
Diisopropyl Ether (DIPE)	106	105	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	102	102	70-124	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	102	102	74-122	66-130	0	0-20	
Ethanol	111	97	51-135	37-149	14	0-27	

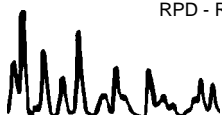
Total number of LCS compounds : 17

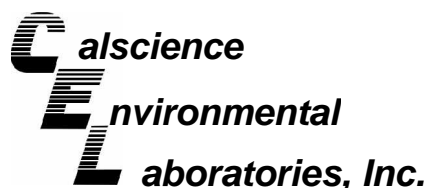
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: EPA 8260B

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-025-20,295	Solid	GC/MS UU	08/26/10	08/26/10	100826L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	97	97	80-120	73-127	0	0-20	
Carbon Tetrachloride	96	99	65-137	53-149	3	0-20	
Chlorobenzene	97	98	80-120	73-127	0	0-20	
1,2-Dibromoethane	98	99	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	98	98	80-120	73-127	1	0-20	
1,2-Dichloroethane	94	94	80-120	73-127	0	0-20	
1,1-Dichloroethene	99	102	68-128	58-138	4	0-20	
Ethylbenzene	104	104	80-120	73-127	0	0-20	
Toluene	98	99	80-120	73-127	1	0-20	
Trichloroethene	96	98	80-120	73-127	2	0-20	
Vinyl Chloride	93	91	67-127	57-137	3	0-20	
Methyl-t-Butyl Ether (MTBE)	105	103	70-124	61-133	2	0-20	
Tert-Butyl Alcohol (TBA)	96	96	73-121	65-129	0	0-20	
Diisopropyl Ether (DIPE)	105	106	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	110	109	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	109	107	74-122	66-130	2	0-20	
Ethanol	75	69	51-135	37-149	8	0-27	

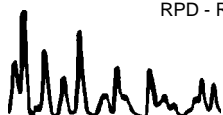
Total number of LCS compounds : 17

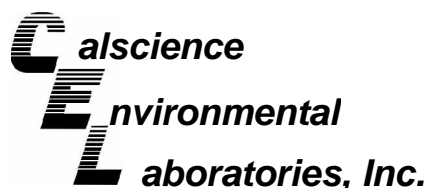
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: EPA 8260B

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-025-20,305	Solid	GC/MS UU	08/26/10	08/26/10	100826L02		
<u>Parameter</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>%REC CL</u>	<u>ME CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Benzene	97	97	80-120	73-127	0	0-20	
Carbon Tetrachloride	96	99	65-137	53-149	3	0-20	
Chlorobenzene	97	98	80-120	73-127	0	0-20	
1,2-Dibromoethane	98	99	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	98	98	80-120	73-127	1	0-20	
1,2-Dichloroethane	94	94	80-120	73-127	0	0-20	
1,1-Dichloroethene	99	102	68-128	58-138	4	0-20	
Ethylbenzene	104	104	80-120	73-127	0	0-20	
Toluene	98	99	80-120	73-127	1	0-20	
Trichloroethene	96	98	80-120	73-127	2	0-20	
Vinyl Chloride	93	91	67-127	57-137	3	0-20	
Methyl-t-Butyl Ether (MTBE)	105	103	70-124	61-133	2	0-20	
Tert-Butyl Alcohol (TBA)	96	96	73-121	65-129	0	0-20	
Diisopropyl Ether (DIPE)	105	106	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	110	109	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	109	107	74-122	66-130	2	0-20	
Ethanol	75	69	51-135	37-149	8	0-27	

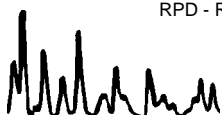
Total number of LCS compounds : 17

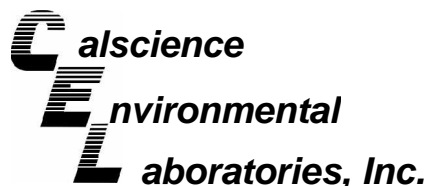
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: EPA 8260B

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-025-20,310	Solid	GC/MS Z	08/27/10	08/27/10	100827L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	91	91	80-120	73-127	0	0-20	
Carbon Tetrachloride	109	109	65-137	53-149	1	0-20	
Chlorobenzene	96	97	80-120	73-127	0	0-20	
1,2-Dibromoethane	102	101	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	97	97	80-120	73-127	0	0-20	
1,2-Dichloroethane	118	119	80-120	73-127	2	0-20	
1,1-Dichloroethene	104	102	68-128	58-138	2	0-20	
Ethylbenzene	100	99	80-120	73-127	1	0-20	
Toluene	92	94	80-120	73-127	2	0-20	
Trichloroethene	99	101	80-120	73-127	2	0-20	
Vinyl Chloride	96	97	67-127	57-137	1	0-20	
Methyl-t-Butyl Ether (MTBE)	99	100	70-124	61-133	0	0-20	
Tert-Butyl Alcohol (TBA)	92	102	73-121	65-129	10	0-20	
Diisopropyl Ether (DIPE)	93	95	69-129	59-139	2	0-20	
Ethyl-t-Butyl Ether (ETBE)	99	100	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	103	105	74-122	66-130	2	0-20	
Ethanol	76	87	51-135	37-149	14	0-27	

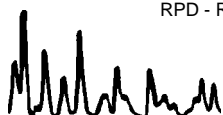
Total number of LCS compounds : 17

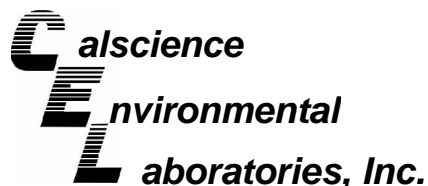
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: EPA 8260B

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-025-20,311	Solid	GC/MS PP	08/27/10	08/27/10	100827L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	94	92	80-120	73-127	2	0-20	
Carbon Tetrachloride	99	98	65-137	53-149	1	0-20	
Chlorobenzene	91	91	80-120	73-127	0	0-20	
1,2-Dibromoethane	93	93	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	90	90	80-120	73-127	1	0-20	
1,2-Dichloroethane	96	91	80-120	73-127	6	0-20	
1,1-Dichloroethene	100	100	68-128	58-138	1	0-20	
Ethylbenzene	93	93	80-120	73-127	0	0-20	
Toluene	95	93	80-120	73-127	2	0-20	
Trichloroethene	96	94	80-120	73-127	3	0-20	
Vinyl Chloride	85	86	67-127	57-137	2	0-20	
Methyl-t-Butyl Ether (MTBE)	98	99	70-124	61-133	1	0-20	
Tert-Butyl Alcohol (TBA)	88	83	73-121	65-129	6	0-20	
Diisopropyl Ether (DIPE)	99	98	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	99	97	70-124	61-133	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	96	93	74-122	66-130	3	0-20	
Ethanol	83	76	51-135	37-149	8	0-27	

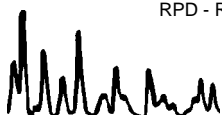
Total number of LCS compounds : 17

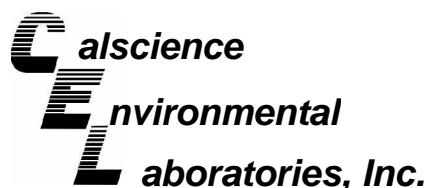
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



Conestoga-Rovers & Associates
1420 80th St. SW, Suite A
Everett, WA 98203-6248

Date Received: N/A
Work Order No: 10-08-1402
Preparation: EPA 5035
Method: EPA 8260B

Project: 3740 Pacific Avenue, Tacoma, WA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
095-01-025-20,308	Solid	GC/MS UU	08/27/10	08/27/10	100827L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	97	98	80-120	73-127	1	0-20	
Carbon Tetrachloride	98	99	65-137	53-149	1	0-20	
Chlorobenzene	100	99	80-120	73-127	1	0-20	
1,2-Dibromoethane	93	99	80-120	73-127	6	0-20	
1,2-Dichlorobenzene	101	97	80-120	73-127	5	0-20	
1,2-Dichloroethane	94	96	80-120	73-127	2	0-20	
1,1-Dichloroethene	85	97	68-128	58-138	13	0-20	
Ethylbenzene	111	105	80-120	73-127	6	0-20	
Toluene	89	100	80-120	73-127	12	0-20	
Trichloroethene	100	102	80-120	73-127	2	0-20	
Vinyl Chloride	91	81	67-127	57-137	12	0-20	
Methyl-t-Butyl Ether (MTBE)	101	103	70-124	61-133	2	0-20	
Tert-Butyl Alcohol (TBA)	95	99	73-121	65-129	4	0-20	
Diisopropyl Ether (DIPE)	104	104	69-129	59-139	0	0-20	
Ethyl-t-Butyl Ether (ETBE)	105	106	70-124	61-133	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	101	105	74-122	66-130	3	0-20	
Ethanol	85	70	51-135	37-149	19	0-27	

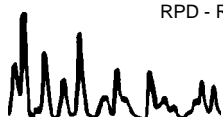
Total number of LCS compounds : 17

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Glossary of Terms and Qualifiers



Work Order Number: 10-08-1402

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
B	Analyte was present in the associated method blank.
E	Concentration exceeds the calibration range.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.





Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
☒ CALSCIENCE (Garden Grove, CA)
☐ SPL Houston
☐ XENCO
☐ TEST AMERICA
☐ OTHER

Please Check Appropriate Box:

<input type="checkbox"/> ENV. SERVICES	<input type="checkbox"/> MOTIVA RETAIL	<input type="checkbox"/> SHELL RETAIL
<input type="checkbox"/> MOTIVA SD&CM	<input checked="" type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES
<input type="checkbox"/> SHELL PIPELINE	<input type="checkbox"/> OTHER	

Print Bill To Contact Name: Justin Fozliem-241876-95-10.02
PO # 40-4021318
INCIDENT # (ENV SERVICES) 97712437
SAP # 121182
CHECK IF NO INCIDENT # APPLIES
DATE: 8/16/10
PAGE: 1 of 2

SAMPLING COMPANY: Conestoga-Rovers & Associates
ADDRESS: 1420 80th St SW, Suite , Everett, WA 98203
PROJECT CONTACT (Hardcopy or PDF Report to): Justin Fozliem copy to shell lab billing@croworld.com
TELEPHONE: 425-212-5100 FAX: 425-212-5199 E-MAIL: jfozliem@croworld.com

LOG CODE: CRAW
SITE ADDRESS: Street and City 3740 Pacific Avenue, Tacoma WA
EDF DELIVERABLE TO (Name, Company, Office Location): Christine Schweigert, CRA, Everett 425-212-5100
SAMPLER NAME(S) (Print): Jing Song
CONSULTANT PROJECT NO.: 241876-95-10.02
LAB USE ONLY 08-1402

TURNAROUND TIME (CALENDAR DAYS):
☒ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES:
Copy final report to Shell.Lab.Billing@croworld.com
See SPL PM for WA Dept. of Ecology MTCA Method A cleanup levels for minimum detection limits
☒ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☒ RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS

<div><input type="checkbox"/> LA - RWQCB REPORT FORMAT <input type="checkbox"/> UST AGENCY:</div> <div>SPECIAL INSTRUCTIONS OR NOTES : Copy final report to Shell.Lab.Billing@craworld.com See SPL PM for WA Dept. of Ecology MTCA Method A cleanup levels for <u>minimum</u> detection limits</div>											NWTPH-GX	NWTPH-Dx w/Silica Gel Cleanup	BTEX (8260B)	5 Oxygenates, MTBE, TBA, DIPE, TAME, ETBE (8260B)	EDC (8260B)	EDC (8011)	Total Lead (6020)	PCBs (8082)	PAHs (8070 SIM)	VOCs Full list (8260B)	Pest (8080)	NWTPH-VPH	NWTPH-EPH	n-Hexane (9071B)																																																																																																																																																																																																																																																																																																																																																																												
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Relinquished by: (Signature) [Signature]	Received by: (Signature) Ted Ex	Date: 8/16/10	Time: 15200
Relinquished by: (Signature) [Signature]	Received by: (Signature) [Signature]	Date: 8/18/10	Time: 1030
Relinquished by: (Signature)	Received by: (Signature)		



Shell Oil Products Chain Of Custody Record

LAB (LOCATION)
☒ CALSCIENCE Graden Grove, CA
☐ SPL Houston ()
☐ XENCO ()
☐ TEST AMERICA ()
☐ OTHER ()

Please Check Appropriate Box:

<input type="checkbox"/> ENV. SERVICES	<input type="checkbox"/> MOTIVA RETAIL	<input type="checkbox"/> SHELL RETAIL
<input type="checkbox"/> MOTIVA SD&CM	<input checked="" type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUBES
<input type="checkbox"/> SHELL PIPELINE	<input type="checkbox"/> OTHER	

Print Bill To Contact Name:
Justin Foshlen 24876-95-10.02
PO #
00-00021318

INCIDENT # (ENV SERVICES) 97712K37
DATE: 8/16/10
PAGE: 2 of 2
SAP #
0001182

SAMPLING COMPANY:
Conestoga-Rovers & Associates
ADDRESS:
1420 80th St SW, Suite , Everett, WA 98203
PROJECT CONTACT (Hardcopy or PDF Report to):
Justin Foshlen copy to shell.lab.billing@craworld.com
TELEPHONE: 425-212-5100 FAX: 425-212-5199 E-MAIL: jfoshlen@craworld.com
TURNAROUND TIME (CALENDAR DAYS):
☒ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND
☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES :
Copy final report to Shell.Lab.Billing@craworld.com
See SPL PM for WA Dept. of Ecology MTCA Method A cleanup levels for minimum detection limits
☒ SHELL CONTRACT RATE APPLIES
☐ STATE REIMBURSEMENT RATE APPLIES
☐ EDD NOT NEEDED
☒ RECEIPT VERIFICATION REQUESTED

SITE ADDRESS: Street and City
3140 Pacific Ave, Tacoma State: WA GLOBAL ID NO.:
EDF DELIVERABLE TO (Name, Company, Office Location):
Christine Schweigert, CRA, Everett PHONE NO.: 425-212-5100 E-MAIL: cschweigert@CRAworld.com CONSULTANT PROJECT NO.: 24876-95-10.02
SAMPLER NAME(S) (Print):
Tim Song LAB USE ONLY: 08-1402

REQUESTED ANALYSIS																									TEMPERATURE ON RECEIPT C°		
NWTPH-Gx	NWTPH-Dx w/Silica Gel Cleanup	BTEX (8260B)	5 Oxygenates, MTBE, TBA, DIPE, TAME, ETBE (8260B)	EDC (8260B)	EDC (8011)	Total Lead (6020)	PCBs (8082)	PAHs (8070 SIM)	VOCs Full list (8260B)	Pest (8080)	NWTPH-VPH	NWTPH-EPH	n-Hexane (9071B)	Temperature	Container PID Readings or Laboratory Notes												
X	X	X					X		X																		
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Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>8/18/10</u>	Time: <u>10:00</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

FedEx MPS
16AUG 14:18
MASTER TRK#:
Pkg Trk#'s: 799523577688
799523577699

Pcs: 3 1 of 1
Emp#: 2261274 Rt#: BSC
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Part # 156297-435 RTT 07/10

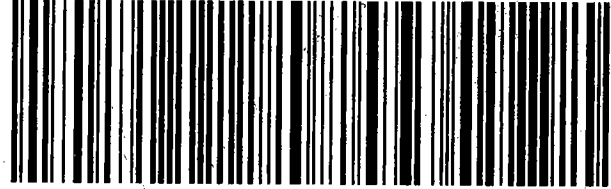
FedEx 1 of 3

WED - 18 AUG A1
** 2DAY **

TRK#
0215 8704 8094 7580
MASTER

92841
CA-US
SNA

CZ APVA



508G4/33D6/9A24

RT 357 1 C
7580
08.18
FZ

Recipient Copy

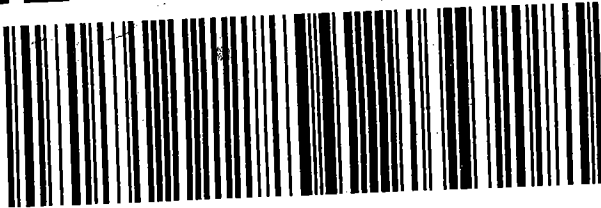
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** 2DAY **

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92841
CA-US
SNA

CZ APVA



508G4/33D6/9A24

Part # 156297-435 RTT 07/10

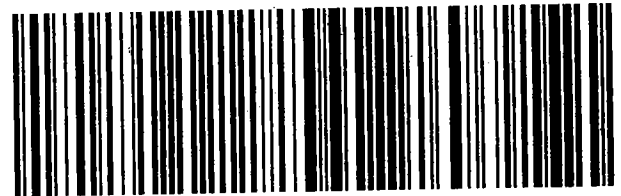
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WED - 18 AUG
** 2DAY

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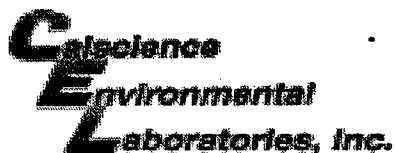
928
C
S

CZ APVA



508G4/33D6/9A24

1402



WORK ORDER #: 10-08-1402

SAMPLE RECEIPT FORM

Cooler 1 of 3

CLIENT: CRA

DATE: 08/18/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen)

Temperature 3.1°C + 0.5°C (CF) = 3.6°C ☒ Blank ☐ Sample☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.☐ Received at ambient temperature, placed on ice for transport by Courier.Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs OnlyInitial: AF

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/AInitial: AF☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not PresentInitial: AC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.Sampler's name indicated on COC..... ☒ Yes ☐ No ☐ N/ASample container label(s) consistent with COC..... ☒ Yes ☐ No ☐ N/ASample container(s) intact and good condition..... ☐ Yes ☒ No ☐ N/AProper containers and sufficient volume for analyses requested..... ☒ Yes ☐ No ☐ N/AAnalyses received within holding time..... ☒ Yes ☐ No ☐ N/ApH / Residual Chlorine / Dissolved Sulfide received within 24 hours..... ☐ Yes ☐ No ☒ N/AProper preservation noted on COC or sample container..... ☒ Yes ☐ No ☐ N/A☐ Unpreserved vials received for Volatiles analysisVolatile analysis container(s) free of headspace..... ☐ Yes ☐ No ☒ N/ATedlar bag(s) free of condensation..... ☐ Yes ☐ No ☒ N/A

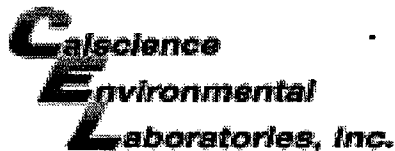
CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☒ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☒ TerraCores® ☒ 202PJWater: ☐ VOA ☐ VOAh ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 500PB ☐ 500PBna☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznnna ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____Air: ☐ Tedlar® ☐ Summa® Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: ACContainer: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: ACPreservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ znnna: ZnAc₂+NaOH f: Field-filtered Scanned by: AC

WORK ORDER #: **10-08-1402****SAMPLE RECEIPT FORM**Cooler 2 of 3CLIENT: CRADATE: 08/18/10**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)Temperature 5.3 °C + 0.5 °C (CF) = 5.8 °C ☒ Blank ☐ Sample☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.☐ Received at ambient temperature, placed on ice for transport by Courier.Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs OnlyInitial: AF**CUSTODY SEALS INTACT:**☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/AInitial: AF☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not PresentInitial: AF**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.Sampler's name indicated on COC..... ☒ Yes ☐ No ☐ N/ASample container label(s) consistent with COC..... ☒ Yes ☐ No ☐ N/ASample container(s) intact and good condition..... ☒ Yes ☐ No ☐ N/AProper containers and sufficient volume for analyses requested..... ☒ Yes ☐ No ☐ N/AAnalyses received within holding time..... ☒ Yes ☐ No ☐ N/ApH / Residual Chlorine / Dissolved Sulfide received within 24 hours..... ☐ Yes ☐ No ☒ N/AProper preservation noted on COC or sample container..... ☒ Yes ☐ No ☐ N/A☐ Unpreserved vials received for Volatiles analysisVolatile analysis container(s) free of headspace..... ☐ Yes ☐ No ☒ N/ATedlar bag(s) free of condensation..... ☐ Yes ☐ No ☒ N/A**CONTAINER TYPE:**Solid: ☐ 4ozCGJ ☒ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☒ TerraCores® ☒ 202PJWater: ☐ VOA ☐ VOA_h ☐ VOA_{na2} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGB_{na2} ☐ 1AGB_s☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 1PB ☐ 500PB ☐ 500PB_{na}☐ 250PB ☐ 250PB_n ☐ 125PB ☐ 125PB_{znna} ☐ 100PJ ☐ 100PJ_{na2} ☐ _____ ☐ _____ ☐ _____Air: ☐ Tedlar® ☐ Summa® Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: AcContainer: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: ALPreservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ znna: ZnAc₂+NaOH f: Field-filtered Scanned by: h.L



WORK ORDER #: 10-08-1402

SAMPLE RECEIPT FORMCooler 3 of 3CLIENT: CRADATE: 08/18/10**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0°C – 6.0°C, not frozen)Temperature 5.4 °C + 0.5°C (CF) = 5.9 °C ☒ Blank ☐ Sample☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.☐ Received at ambient temperature, placed on ice for transport by Courier.Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs OnlyInitial: JP**CUSTODY SEALS INTACT:**☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/AInitial: JP☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not PresentInitial: AL**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.Sampler's name indicated on COC..... ☒ ☐ ☐Sample container label(s) consistent with COC..... ☒ ☐ ☐Sample container(s) intact and good condition..... ☒ ☐ ☐Proper containers and sufficient volume for analyses requested..... ☒ ☐ ☐Analyses received within holding time..... ☒ ☐ ☐pH / Residual Chlorine / Dissolved Sulfide received within 24 hours..... ☐ ☐ ☒Proper preservation noted on COC or sample container..... ☒ ☐ ☐☐ Unpreserved vials received for Volatiles analysisVolatile analysis container(s) free of headspace..... ☐ ☐ ☒Tedlar bag(s) free of condensation..... ☐ ☐ ☒**CONTAINER TYPE:**Solid: ☐ 4ozCGJ ☒ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☒ TerraCores® ☒ 202PJWater: ☐ VOA ☐ VOA_h ☐ VOA_{na2} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 1AGB ☐ 1AGB_{na2} ☐ 1AGB_s☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 1PB ☐ 500PB ☐ 500PB_{na}☐ 250PB ☐ 250PB_n ☐ 125PB ☐ 125PB_{znna} ☐ 100PJ ☐ 100PJ_{na2} ☐ _____ ☐ _____ ☐ _____Air: ☐ Tedlar® ☐ Summa® Other: ☐ _____ Trip Blank Lot#: _____ Labeled/Checked by: ALContainer: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: ALPreservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ znna: ZnAc₂+NaOH f: Field-filtered Scanned by: AL

WORK ORDER #: 10-08-1402

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ Sample(s)/Container(s) NOT RECEIVED but listed on COC
- ☐ Sample(s)/Container(s) received but NOT LISTED on COC
- ☐ Holding time expired – list sample ID(s) and test
- ☐ Insufficient quantities for analysis – list test
- ☐ Improper container(s) used – list test
- ☐ Improper preservative used – list test
- ☐ No preservative noted on COC or label – list test & notify lab
- ☐ Sample labels illegible – note test/container type
- ☐ Sample label(s) do not match COC – Note in comments
 - ☐ Sample ID
 - ☐ Date and/or Time Collected
 - ☐ Project Information
 - ☐ # of Container(s)
 - ☐ Analysis
- ☒ Sample container(s) compromised – Note in comments
 - ☐ Water present in sample container
 - ☒ Broken *Empty*
 - ☐ Without Label(s)
- ☐ Air sample container(s) compromised – Note in comments
 - ☐ Flat
 - ☐ Very low in volume
 - ☐ Leaking (Not transferred - duplicate bag submitted)
 - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
 - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

Comments:

*(-8) 1/2 (-14) 1 of 2 2 oz.
plastic jar received empty*

*(-16) 1 of 6 terra cores
(Na₂S₂O₃) received
broken.*

HEADSPACE – Containers with Bubble > 6mm or 1/4 inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date: *AL* 08/18/10

APPENDIX F

TERRESTRIAL ECOLOGICAL EVALUATION EXCLUSION FORM



Voluntary Cleanup Program

Washington State Department of Ecology Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION EXCLUSION FORM

Under the Model Toxics Control Act (MTCA), a Terrestrial Ecological Evaluation (TEE) is not required if the Site meets the criteria in WAC 173-340-7491 for an exclusion. If you determine that your Site does not require a TEE, please complete this form and submit it to the Department of Ecology (Ecology) at the appropriate time, either with your VCP Application or with a subsequent request for a written opinion. Please note that exclusion from the TEE does not exclude the Site from an evaluation of aquatic or sediment ecological receptors.

If your Site does not meet the criteria for exclusion under WAC 173-340-7491, then you may have to conduct a simplified TEE in accordance with WAC 173-340-7492 or a site-specific TEE in accordance with WAC 173-340-7493. If you have questions about conducting a simplified or site-specific TEE, please contact the Ecology site manager assigned to your Site or the appropriate Ecology regional office.

Step 1: IDENTIFY HAZARDOUS WASTE SITE AND EVALUATOR

Please identify below the hazardous waste site for which you are documenting an exclusion from conducting a TEE and the name of the person who conducted the evaluation.

Facility/Site Name: Shell Service Station 121182

Facility/Site Address: 3740 Pacific Avenue, Tacoma, WA

Facility/Site No: 17847919

VCP Project No.: Not Active

Name of Evaluator: Timothy C. Mullin

Step 2: DOCUMENT BASIS FOR EXCLUSION

The bases for excluding a site from a terrestrial ecological evaluation are set forth in WAC 173-340-7491(1). Please identify below the basis for excluding your Site from further evaluation. Please check all that apply.

POINT OF COMPLIANCE – WAC 173-340-7491(1)(A)

- 1-☐ No contamination present at site.
- 2-☐ All contamination is 15 feet below ground level prior to remedial activities.
- 3-☐ All contamination is six feet below ground level and an institutional control has been implemented as required by WAC 173-340-440.
- 4-☐ All contamination is below a site-specific point of compliance established in compliance with WAC 173-340-7490(4)(b) with an institutional control implemented as required by WAC 173-340-440. ***Please provide documentation that describes the rationale for setting a site-specific point of compliance.***

BARRIERS TO EXPOSURE – WAC 173-340-7491(1)(b)

- 5-☐ All contaminated soil, is or will be, covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife and an institutional control has been implemented as required by WAC 173-340-440. ***An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.***

Step 2: DOCUMENT BASIS FOR EXCLUSION continued

UNDEVELOPED LAND – WAC 173-340-7491(1)(c)

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

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

- There is less than one-quarter acre of contiguous undeveloped land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- 6- ☐ For sites not containing any of the chemicals mentioned above, there is less than one-and-a-half acres of contiguous undeveloped land on or within 500 feet of any area of the Site.
- 7- ☒

BACKGROUND CONCENTRATIONS – WAC 173-340-7491(1)(d)

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

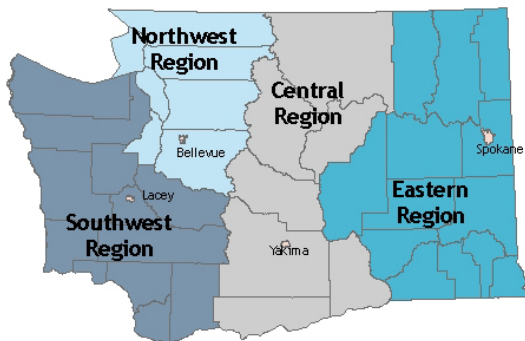
Step 3: PROVIDE EXPLANATION FOR EXCLUSION (IF NECESSARY)

The Site is fully paved with asphalt or concrete. None of the chemicals listed in point 6 (above) are present at the site. Less than 1.5 acres of undeveloped land is on or within 500 feet of any area of the Site.

Attach additional pages if necessary.

Step 4: SUBMITTAL

Please mail your completed form to Ecology at the appropriate time, either with your VCP Application or with a subsequent request for a written opinion. If you complete the form after you enter the VCP, please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



Northwest Region:

Attn: Sara Maser
3190 160th Ave. SE
Bellevue, WA 98008-5452

Southwest Region:

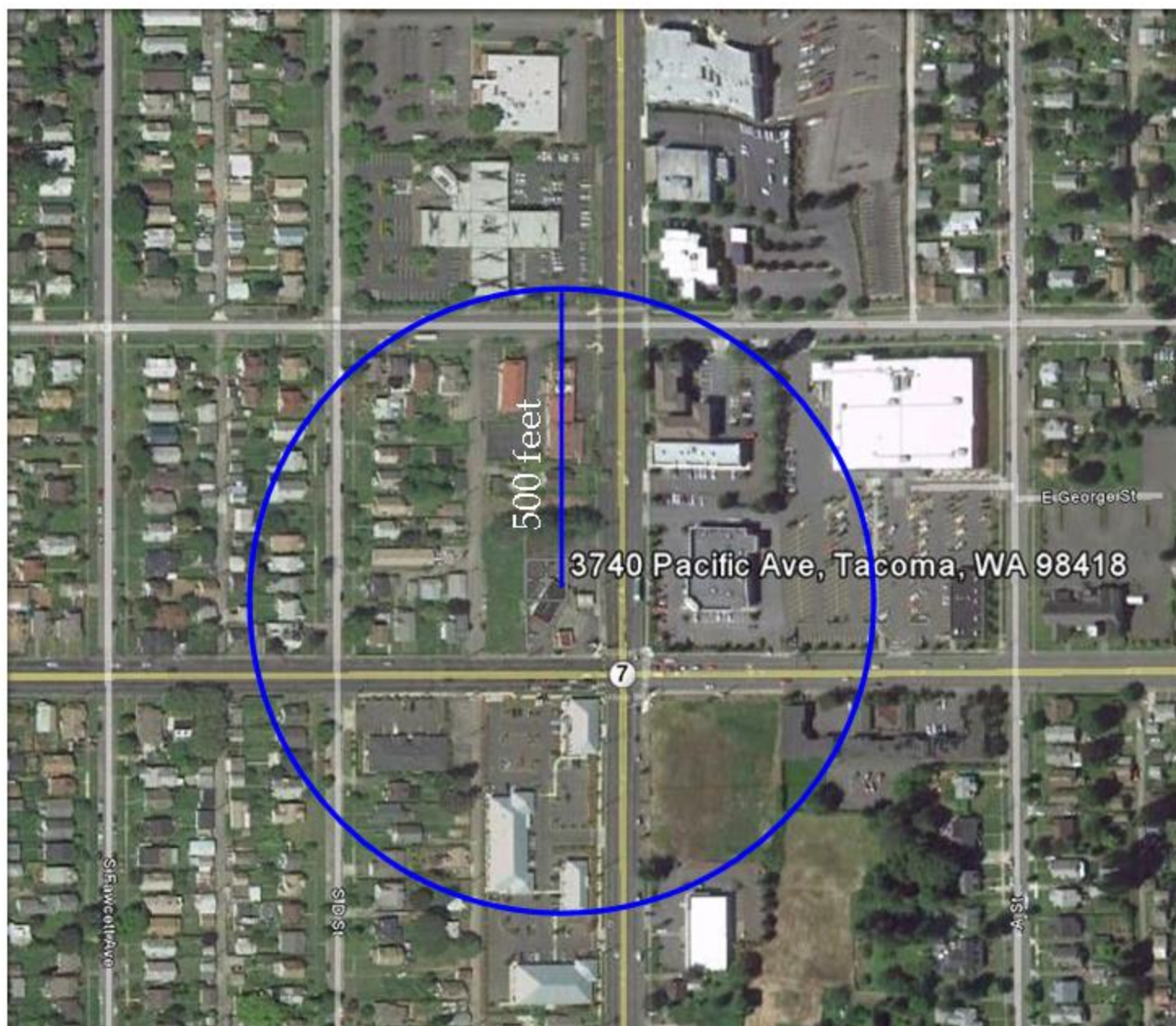
Attn: Scott Rose
P.O. Box 47775
Olympia, WA 98504-7775

Central Region:

Attn: Mark Dunbar
15 W. Yakima Ave., Suite 200
Yakima, WA 98902

Eastern Region:

Patti Carter
N. 4601 Monroe
Spokane WA 99205-1295



APPENDIX G

MTCA METHOD B SOIL CLEANUP LEVEL CALCULATION

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/23/10

Site Name: 3740 Pacific Avenue, Tacoma, WA

Sample Name: SB8-5

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	2.50	0.06%
AL_EC >6-8	230.00	5.45%
AL_EC >8-10	100.00	2.37%
AL_EC >10-12	280.00	6.64%
AL_EC >12-16	790.00	18.72%
AL_EC >16-21	720.00	17.06%
AL_EC >21-34	530.00	12.56%
AR_EC >8-10	270.00	6.40%
AR_EC >10-12	70.00	1.66%
AR_EC >12-16	310.00	7.35%
AR_EC >16-21	490.00	11.61%
AR_EC >21-34	410.00	9.72%
Benzene	0.26	0.01%
Toluene	0.45	0.01%
Ethylbenzene	6.8	0.16%
Total Xylenes	0.48	0.01%
Naphthalene	2.7	0.06%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane	6.5	0.15%
MTBE		0.00%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene		0.00%
Benzo(b)fluoranthene		0.00%
Benzo(k)fluoranthene		0.00%
Benzo(a)pyrene		0.00%
Chrysene		0.00%
Dibenz(a,h)anthracene		0.00%
Indeno(1,2,3-cd)pyrene		0.00%
Sum	4219.69	100.00%

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.003	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: 800 ug/L

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

Enter site-specific information here.....

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/23/2010

Site Name: 3740 Pacific Avenue, Tacoma, WA

Sample Name: SB8 - 5

Measured Soil TPH Concentration, mg/kg: 4,219.690

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3,154	1.43E-08	1.34E+00	Fail
	Method C	40,967	1.92E-09	1.03E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	1,008	1.20E-05	9.52E-01	Fail
	Target TPH GW Conc. @ 800 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	3,153.69	40,967.49
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI=1	YES	3.15E+03	1.07E-08	1.00E+00	YES	4.10E+04	1.86E-08	1.00E+00
Total Risk=1E-5	NO	2.95E+06	1.00E-05	9.35E+02	NO	2.20E+07	1.00E-05	5.37E+02
Risk of Benzene= 1E-6	NO	2.95E+05	1.00E-06	9.35E+01	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	Benzene MCL = 5 ug/L
Protective Ground Water Concentration, ug/L	349.21
Protective Soil Concentration, mg/kg	1008.29

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	NO	4.46E+02	1.32E-05	1.00E+00	6.47E+03
Total Risk = 1E-5	NO	4.12E+02	1.00E-05	8.74E-01	2.49E+03
Total Risk = 1E-6	YES	1.17E+02	1.00E-06	2.10E-01	1.09E+02
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	3.49E+02	6.29E-06	6.94E-01	1.01E+03
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	4.69E+02	1.62E-05	1.10E+00	100% NAPL

APPENDIX H

SHELL OIL BACKFILL SPECIFICATIONS

SECTION 18.0:

**SOIL EXCAVATION AND CONFIRMATORY
SAMPLING
STANDARD OPERATING PROCEDURES**

(FLD-0107)

(Modified and included as Appendix C -060486(1))

JUNE 2008

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LIST OF QUALITY SYSTEM FORMS

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QSF-014	FIELD EQUIPMENT REQUISITION FORM
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QSF-021	FIELD METHOD TRAINING RECORD
QSF-030	SAFETY AND HEALTH SCHEDULE (CANADA)
QSF-031	SAFETY AND HEALTH SCHEDULE (U.S.)

18.0 SOIL EXCAVATION AND CONFIRMATORY SAMPLING STANDARD OPERATING PROCEDURES

18.1 INTRODUCTION

The excavation of drums and contaminated soil is a specialized remedial activity which requires a qualified contractor working under a CRA specification (and contract). The contract will require the contractor to not only direct/conduct the actual field work but may also stipulate the direction/ performance of remedial activities. Requirements may include; field analytical/ screening and completion of required documentation. The primary function of the CRA representative in such a contract will be to observe the activities of the contractor to insure the requirements of the specification are upheld.

The remainder of this section is organized as follows:

- Section 18.2 Background
- Section 18.3 Planning and Preparation
- Section 18.4 Safety and Health
- Section 18.5 Quality Assurance/Quality Control
- Section 18.6 Equipment Decontamination
- Section 18.7 Regulatory Framework
- Section 18.8 Excavation Activities
- Section 18.9 Confirmatory Soil Sampling
- Section 18.10 Backfilling
- Section 18.11 Waste Removal
- Section 18.12 Follow-up Activities

18.2 BACKGROUND

Excavation activities are governed by the following:

- OSHA Standard (29 CFR 1926.650-652) specifies safety requirements for excavations.
- Complete CRA's ASETS - "Excavation Safety for Competent Persons" training course before overseeing any excavation work.

It is important to highlight that CRA does not prescribe its own guidance for remedial excavation or confirmatory soil sampling. Each project should be carried out by regulatory guidance for a state or province.

This Standard Operating Procedure has been modified and included in the Corrective Action Work Plan for Shell Oil Products US (SOPUS) (Reference 060486(1)).

18.3 PLANNING AND PREPARATION

Prior to undertaking any soil excavation and confirmatory soil sampling:

- Review the Work Plan
- Conduct preliminary site visit if practical to assess logistics for excavation, equipment staging, truck loading, exclusion/econ/support zones, overhead utilities and underground utilities, buildings, etc.
- Review and sign the Health and Safety Plan (HASP)
- Review and modify the Job Safety Analysis specific for the site work
- Complete a Vendor Evaluation Form (QSF-012) and file in the Project file for any vendors that do not have full approval status or are not listed on the Approved Vendor List (QSL-004). Completion of a Safety and Health Schedule (QSF-030 for Canadian work, QSF-031 for U.S. work) is necessary for all vendors who complete field services. Prior to mobilization on site, the vendor must submit the form to the Regional Safety and Health Manager for review and approval (if not already posted on QSL-004).
- Review CRA's Safety & Manual for the specific county for Applied Safety and Environmental Training Solutions (ASETS) guidelines for excavation work
- Review quality assurance/quality control (QA/QC) requirements. See Shell Backfill Specification included in Appendix C to Report 060486(1)
- Review the investigation report for contamination depths, stratigraphy, and groundwater level
- Ensure characterization of contamination as best as possible, if applicable
- Ensure all permits and licenses have been received and reviewed

- Confirm all plans and permits/approvals for transportation and disposal of excavated waste
- Contact CRA's Waste Services Group
- Review provincial or state screening and sampling requirements, if applicable
- Coordinate removal of contaminated soil with the contractor (licensed waste hauler)
- Contact regulatory agency - some require 14 days prior notification
- Contact the excavation contractor to verify that equipment meets CRA and OSHA standards, such as backhoe - hydraulic hoses in good condition, chains and cables contain rating tags, trench boxes contain rating specs, ladders are in good condition, etc.
- Complete a Field Requisition Form (QSF-014) and assemble all equipment and personal protective equipment (PPE) [e.g., photoionization detector (PID), oxygen and lower explosive limit (LEL) meter, tape measure, first aid kit, fire extinguishers, cascade air system or self-contained breathing apparatus (SCBA)] if Level B work, spill response equipment, etc.
- Contact CRA chemistry group to arrange:
 - SSOW (Simplified Scope of Work)
 - Accredited laboratory
 - Sample containers
 - Coolers
 - Shipping details
 - Sampling start date
 - Expected duration of sampling program
 - U.S. laboratories typically need state accreditation
 - Arrange access to the site and confirm site contact(s)
 - Arrange for confined space entry, if applicable
 - Initiate a Property Access/Utility Clearance Data Sheet (Form QSF-019)
 - Obtain client sign-off(s). Follow all Shell Permit to Work and MBI procedures
 - Verify backfilling (compaction testing), confirmatory sampling, and site restoration requirements in accordance with SOPUS Backfill Specifications

18.4 SAFETY AND HEALTH

CRA is committed to conducting field activities in accordance with sound safety and health practices. CRA adheres to high safety standards to protect the safety and health of all employees, subcontractors, customers, and communities in which they work. The safety and health of our employees takes precedence over cost and schedule implications.

Field personnel are required to implement the Safety Means Awareness Responsibility Teamwork (SMART) program as follows:

- Assure the Health and Safety Plan (HASP) is specific to the job and approved by a Regional Safety & Health Manager
- Confirm that all HASP elements have been implemented for the job
- A Job Safety Analysis (JSA) for each task has been reviewed, modified for the specific site conditions and communicated to all appropriate site personnel. The JSAs are a component of the HASP
- Incorporate Stop Work Authority; Stop, Think, Act, Review (STAR) process; Safe Task Evaluation Process (STEP); Observations process; Near Loss and Incident Management process in the day-to-day operations of the job
- Review and implement applicable sections of the CRA Safety & Health Policy Manual
- Confirm that all site personnel have the required training and medical surveillance , as defined in the HASP
- Be prepared for emergency situations, locating safety showers, fire protection equipment, evacuation route, rally point, and first aid equipment before you begin working, and make sure that the equipment is in good working order
- Maintain all required Personal Protective Equipment (PPE), safety equipment, and instrumentation necessary to perform the work effectively, efficiently and safely
- Be prepared to call the CRA Incident Hotline at 1-866-529-4886 for all incidents involving injury/illness, property damage, and vehicle incident and/or significant Near Loss

It is the responsibility of the Project Manager to:

- Ensure that all CRA field personnel have received the appropriate health and safety and field training and are qualified to complete the work
- Provide subcontractors with a Job Hazard Analysis to enable them to develop their own HASP
- Ensure that all subcontractors meet CRA's (and the Client's) safety requirements

18.5 QUALITY ASSURANCE/QUALITY CONTROL

A well-designed QA/QC program will:

- ensure that data of sufficient quality are obtained in order to facilitate good site management
- allow for monitoring of staff and contractor performance
- verify the quality of the data for the regulatory agency

The QA/QC program is developed on a site-specific basis. QA/QC requirements are discussed in detail in Section 3.9.

The Draft SOPUS Sampling and Analysis Plan shall be used to complete the confirmation sampling scope of work.

18.6 EQUIPMENT DECONTAMINATION

Prior to use and between excavation locations at an environmental site, the excavation and sampling equipment must be decontaminated in accordance with the Work Plan, the Quality Assurance Project Plan (QAPP), or the methods presented in this section.

The minimum was procedures for decontamination of excavating equipment are:

- High pressure, hot water detergent wash (brushing as necessary to remove particulate matter)
- Potable, hot water, high pressure rinse

On environmental sites, the soil sampling equipment (trowels, spoons, shovels, and bowls) are typically cleaned as follows:

- Wash with potable water and laboratory detergent, using a brush as necessary to remove particulates.
- Rinse with potable water.
- Rinse with deionized water.
- Air dry for as long as possible.

18.7 REGULATORY FRAMEWORK

Excavation and sampling associated to Underground Storage Tanks (USTs) is regulated separately as compared to drum removal, landfill excavation or other remedial excavation. Consequently, all remedial excavations must first be determined to be UST or non-UST related prior to locating the applicable authority.

In the U.S.:

The UST regulatory requirements in the United States are governed on a state-by-state basis. There are a few states that may defer to the USEPA in their region, for a complete directory and link to the requirements for each state, including five US territories use the following web site:

<http://www.epa.gov/OUST/states/statcon1.htm>

18.8 EXCAVATION ACTIVITIES

- Confirm that utility clearance process has been completed.
- Complete SOPUS Permit for excavation activities
- Confirm that an Excavation Competent person is on-site at all times during work activities to assure regulatory compliance.
- No one is allowed to enter an excavation deeper than 4 feet without the specific permission and safety systems confirmed by the Excavation Competent person.

- Locate, isolate, and lock out of all known utility systems such as electrical, water, phone, etc.
- Excavate and stockpile "clean" soil upwind of the excavation at least 2 feet from the edge of the excavation, it can be used for backfill material.
- Excavate contaminated soil and either stockpile for characterization and eventual disposal or for direct load and haul.
- Remove and store contaminated groundwater (Vac truck, lined roll-off box, temporary treatment system).
- Confirmatory soil sampling (including groundwater and/or sediment sampling, if required).
- Characterize for disposal of all waste liquids.
- Site restoration.
- Removal of contaminated soil cannot occur until the appropriate waste classification and disposal facility has been determined.
- Potential asbestos must not be removed unless an abatement container licensed for asbestos removal conducts the work.
- The client is considered the generator of all materials disposed of and will sign all manifests prior to removal of contaminated materials from the site.
- In no case should CRA personnel sign manifest forms on behalf of the client as a generator, unless written authorization is given by a Shareholder.

For reporting purposes, the following must be documented:

- Chronology of events.
- Summary of tank and piping condition findings.
- Soil and groundwater conditions.
- Waste materials generated (soil, groundwater, wash/rinse fluids, tank bottoms).
- Soil sample locations.
- Record waste disposal activities and locations.
- Label photographs.
- Retain all manifests, weigh scale receipts, and other releases.
- Retain all chain-of-custody records.
- Return field equipment and any other supplies, rented or owned.

18.9 SOIL SCREENING AND CONFIRMATORY SAMPLING

Confirmatory sampling procedures will vary from project to project due to the different parameters of concern and/or the different regulatory requirements as provided by the state/province/federal jurisdiction, where the site is located. The primary goal of confirmatory sampling is to collect the required number of representative samples for chemical analysis that will be used to document post-excavation conditions relevant to regulatory standards. Confirmation samples will be collected in accordance with SOPUS Draft Sampling and Analysis Plan.

18.9.1 SOIL SCREENING

Soil screening is required for any remedial excavation. It is used as a general form of quantitative field determination for contaminated soil. It is also used as a preliminary assessment for clean soil, which must be verified through confirmatory sampling.

Common devices used for screening include photoionization detector, flameionization detector, multi-gas meter, organic vapor analyzer, explosimeter, single or dual gas tube analyzer, or radiological survey instrument. In addition, soil may be monitored visually for discoloration or other signs that could indicate contamination. Backup instruments are recommended, such that they should be available at the site at all times, if approved by the Project Manager.

More advanced screening of the soil may be required to include, but not limited to; hydrogen cyanide gas, mercury vapor, and polychlorinated biphenyl (PCB) screening. These tests may be used for initial segregation of clean soils from contaminated soils as well as to determine the compatibility of mixed soils.

18.9.2 CONFIRMATORY SAMPLING

Confirmatory samples are generally collected from the sides and bottom of an excavation to substantiate the screening process as discussed above and to show that contaminated soil has either been removed or if left in-place, to what extent contaminated soil remains. Confirmatory samples may also include "clean soil" that had

been removed from an excavation and stockpiled to access underlying contaminated material. Based on the analytical results, confirmation of "clean soil", may be placed back into the excavation upon completion of the work.

The Work Plan will likely require sampling of both contaminated soil and clean soil associated with and excavation. Analytical results from the contaminated soil will be used for waste characterization/compatibility testing in preparation for treatment or disposal of contaminated soil.

As with drum removal procedures, prior consideration must be given to how a sample will be removed from the base or sidewalls of the excavation. Extended reach sampling equipment or use of the excavating equipment (if properly decontaminated) may be required. See Section 4.13 - Surficial Soil Sampling, for more detailed sampling information.

Random, Biased, and Grid-Based Sampling

Unless there is a strong indication of contaminant presence, such as staining, then soil sample locations should be selected randomly from within the excavation.

If any areas show evidence of contamination, such as staining, biased samples will be collected from those areas to characterize the contamination present or left in place. Background and/or control samples are considered biased, since they are collected in locations that are intended to represent non-site-impacted conditions.

When sampling involves large excavation areas, a grid-based soil sampling program is usually used. There is no single grid size that is appropriate for all excavations. Refer to your state/province/federal guidance for the requirements.

It is also important to consider the presence of structures and preferred pathways that might promote contaminant migration. Stratigraphic contact zones are good sample locations where contaminate accumulation is likely such as sand/clay, sand/silt contacts or fill material/natural material contacts. These areas represent a worst-case scenario when screening and visual determinations indicate no impact.

Grab Versus Composite Samples

A grab sample is collected to identify and quantify compounds at a specific location or interval. The sample is comprised of no more than the minimum amount of soil necessary to fill the sample container. Composite samples are a mixture of a given number of subsamples and are collected to characterize the average composition in a given surface area.

Composite samples with the exception of VOC analyses, should be placed in a stainless steel bowl to be homogenized prior to filling sample containers. This step can be bypassed if only one sample container is required to be filled and the laboratory is instructed to homogenize the sample upon receipt.

It is important that soil samples be mixed thoroughly to ensure that the sample interval or area is adequately represented. Round stainless bowls work best for sample mixing, whereby, mixing involves stirring in a circular motion while occasionally turning the material over. The sample container should be filled completely; no space should remain in the sample containers.

Note that soil collected for VOCs shall not be mixed.

18.9.3 SAMPLE COLLECTION PROCEDURE

Sampling techniques are dependent upon the sample interval of interest, the type of soil material to be sampled, and the requirements for handling the sample after retrieval. The most common method for collection of excavation soil samples involves the use of a the backhoe bucket. Soil samples may also be collected with spoons and push tubes. Remember, no one may enter an excavation greater than 4 feet without the specific permission and safety systems confirmed by the Excavation Competent person on site. In each case, the sampling device must be constructed of an inert material with smooth surfaces which can be readily cleaned. The cleaning protocol involves the use of a sequence of cleaning agents and water designed to remove surface contaminants. The sampling equipment is cleaned between sample locations. A typical soil sampling protocol is outlined below:

- Soil samples will be collected using a precleaned stainless steel trowel or other appropriate tool. Each sample will consist of soil from the surface to the depth specified within the Work Plan. Sampling in ditches will be done only when there is no water present.

- A new pair of disposable gloves will be used at each sample location.
- Prior to use, at each sample location, all sampling tools will be decontaminated in accordance with the Work Plan.
- A precleaned sampling tool will be used to remove the sample from the layer of exposed soil. The collected soil will be placed directly in a clean, prelabeled sample jar and sealed with a Teflon-lined cap. Samples to be split for duplicate analyses will first be homogenized in a precleaned stainless steel bowl.
- Samples will be placed in ice or cooler packs in laboratory supplied coolers after collection.

In the event that the soil conditions are not as the sampler was led to believe by the Work Plan or if there are unexpected distinct layers of soil present (e.g., a layer of high organic carbon content overlying a layer of fine grained soil), then the sampling personnel should report the conditions to the Project Coordinator immediately for resolution.

Also, the sampling team members should immediately report any conditions to the Project Coordinator that they believe may have a negative effect on the quality of the results.

Generally it is not advisable to collect samples containing excessive amounts of large particles such as gravel. Gravel presents difficulties for the laboratory in terms of sample preparation and may not be truly representative of contaminant concentrations in nearby soil.

All conditions at the time of sample collection should be properly documented in the field log book. This should include a thorough description of the sample characteristics, including grain size, color, and general appearance, as well as date/time of sampling and labeling information. The location of the sampling point should be described in words and three measurements should be taken to adjacent permanent structures so that the sample location can be readily identified in the field at a future date if necessary. It is often advisable to have a licensed land surveyor accurately survey the locations.

VOC Sampling

In general, most regions or states require soil sampled for VOCs (in the U.S.) to be preserved using US EPA method 5035 (verify with your region or state). This method

consists of three preservation types (depending on site conditions one of these will be used): the Encore sampler, the vial/sodium bisulfate, and the vial/methanol. Each method is specific to site conditions and therefore the sampler and the laboratory needs to discuss the method best suited for the project.

During the sampling program, the sampling team leader should stay in contact with the CRA chemist assigned to the project such that the CRA chemist can properly inform the contract laboratory with the progress of the work. This includes submitting sample summaries and/or copies of completed chain-of-custody forms to the CRA chemist.

Finally, some CRA QAPPs require a designation of a QA/QC officer for field activities. The sampling team leader may be required to conduct certain field audit activities and at minimum, should be familiar with and responsible for completion of all QA/QC sample activities.

18.10 BACKFILLING

The excavation may only be backfilled after approval by the site engineer (CRA site representative or responsible contractor). Excavations should be backfilled with approved clean imported fill or native soils previously stockpiled which have been deemed suitable based on screening/testing protocols specified in the Work Plan. Backfilling of the excavation should proceed in lifts of no more than 12 inches, placing material in the opposite order of removal with each lift being compacted to the density specified. The CRA on-site representative should document the volume/weight of material brought on site for backfill as this information will likely be required for payment or other regulatory records.

Note: In deep excavations not meeting entry criteria, equipment used for compacting backfill material will have to be approved in advance. Particular attention to compacting standards must be paid in areas where future settlement could cause damage to surface structures/pavements.

If immediate backfilling is specified and the potential exists for re-excavation in order to remove additional soils, the excavation should be lined with filter fabric or polyethylene sheeting prior to backfilling. This will allow re-excavation to proceed quickly to the limits of the original excavation.

SOPUS Backfill Specifications will be followed for this project.

18.11 WASTE REMOVAL

Waste Manifests

The transportation of contaminated materials to off-site disposal facilities requires documentation on appropriate federal and/or state/provincial manifests, as required. Manifest forms must be consistent with applicable federal and/or state/provincial regulations. Usually, the site contractor will prepare and provide CRA with copies of manifests and/or other records for each shipment of material from the site (or as otherwise required by the project specifications). The site contractor is responsible for maintaining manifests from the time the manifested material leaves the site to the time of ultimate disposal, unless other specified responsibilities have been established.

For the purpose of transportation and off-site disposal, the Client will be considered the generator of all materials disposed of and will sign all manifests prior to removal of contaminated materials from the site. In no case shall CRA on-site personnel sign manifest forms on behalf of the Client as a generator unless written authorization is given by the Client and a CRA Shareholder.

Waste Removal

The waste removal activity will be coordinated by the Project Manager such that all disposal facilities are designated and approved prior to commencing any field activities. The contractor is required to load waste into licensed hauling vehicles. The type of vehicle may vary according to the waste classification. Also, more than one disposal facility may be specified for various waste depending on the results of the waste compatibility and characterization results.

Depending upon site conditions, the contractor will be required to decontaminate the tires and axles of haulage vehicles upon leaving the site.

The CRA on-site representative is required to collect various documents from the contractor during the waste removal operation. These include:

- manifests, as discussed in the previous section;

- weigh scale receipts - copies of weigh scale receipts must be submitted to CRA on approved forms and must be signed by the weigh scale operator or his designated agent and must include the following:
 - location, date and time of weighing,
 - measured weights,
 - vehicle and container identification,
 - shipment identification number, and
 - manifest number; and
- certificates of disposal issued by the disposal facility for each shipment delivered to the disposal facility.

18.12 FOLLOW-UP ACTIVITIES

Once the excavation and site restoration activities have been substantially completed, the following tasks should be completed:

- All field data and field notes will be submitted to the Project Manager and project file;
- the location of the excavations, including the location of all confirmatory soil sample locations will be plotted on a site plan and submitted to the Project Manager;
- a summary write-up on field activities including such items as: number of excavations, field procedures, waste handling, and confirmation soil sampling procedures, and any problems encountered;
- a photographic log of site activities should be completed (pictures labeled in sequential order) and given to the Project Manager;
- field book or field sheers should be kept at the appropriate CRA office;
- obtain all post excavation submittals required of the subcontractor.

APPENDIX I

STANDARD OPERATING PROCEDURE SPECIFIC FOR EXCAVATION AND CONFIRMATORY SAMPLING

Retail Network Engineering

Backfill Specification for Post Demolition Work at Retail Service Stations

Date: June 11, 2007

Version: 1.2

" The requirements and guidelines set by this document shall not be applicable and shall not be implemented where they do not meet minimum requirements of local laws and regulations. In all cases, the minimum requirements set by applicable local laws and regulations must be met when conducting activities associated with this document."



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1 Introduction

1.1 Scope

This specification identifies backfill materials and backfilling procedures to be used for excavations resulting from the demolition and removal of buildings and equipment located on a retail site. This specification does not apply to design backfill for site construction projects where buildings, roads, and underground equipment is to be installed. In those cases, backfill requirements are to be engineered within the project construction design scope of work. This specification applies to but is not limited to the following works;

- Removal of Underground Storage Tanks and Pipe-work Systems.
- Removal of Electrical Vaults.
- Removal of basements and building foundations.
- Removal of sign pole and electrical pole foundations.
- Removal of oil water separators, oil pits, and storm basins.
- Site grading.

2 Backfill Material Selection

2.1 Backfill Material Selection Criteria

- If the immediate or near future use of the area to be backfilled is required to provide structural support of buildings, foundations, footings, underground storage tanks systems and pipe-work, utilities (vaults, sewer lines), or drive areas, then the use of “structural fill” is required. Otherwise, non-structural backfill that meets the requirements stated in 2.4 below may be used.
- Meets local regulatory definition of clean backfill materials. At minimum backfill material must contain less than 100ppm TPH and less than 10ppm BETX.

2.2 Imported Structural Backfill Material Requirement*

- Structural Backfill Material shall be gravel, sand, clay, or silt, or a mixture of these constituents with Plasticity Index between 6 and 20 (expressed as percent water in soil) and liquid limit maximum of 40 (expressed as percent water in soil).
- Chemical stabilization is acceptable when approved by the Shell Engineer or Designated Shell Representative, if modification of liquid limit (LL) and plasticity index (PI) are necessary to obtain satisfactory compaction.

* Requirements established by PIP CVS02100 Rev May 2001.

- The moisture content of the material being compacted shall be within $\pm 3\%$ of the optimum moisture content as determined by compaction curves generated by testing of the soil. The Contractor shall condition the moisture content of fill materials as necessary to achieve the required moisture content without additional cost to Shell.
- Material must be of uniform size, not frozen, and not contain any trash or debris.

2.3 Use of onsite excavation or native soils

- Onsite excavation soils may be used if the listed general requirements and requirements for the Structural Backfill Material can be met. Backfill materials selected must be certified that requirements in 2.2, are met by a qualified person using industry accepted analyses methods.

2.4 Use of Non-Structural Backfill Materials

- Must be comparable to surrounding native soils in cohesiveness, water density, and particulate size.

3 Backfilling Requirements

3.1 General

- Contractor shall adhere to applicable Shell Permit to Work System requirements.
- Backfilling procedures must be conducted in accordance with local regulatory requirements.
- All existing open excavations are to be appropriately barricaded and fenced.
- All areas shall be maintained using temporary erosion and sediment control measures in accordance with local industry practices and requirements.
- Demolition activities with excavations deeper than 1.5 meters (5 feet) shall be immediately backfilled unless local regulatory requirements prohibit immediate backfilling. In those cases, backfilling shall take place as soon as allowed. The excavation is to remain properly fenced and barricaded until backfilling is complete. Exceptions may be provided by the conditions of section 3.4. These exceptions however, must be reviewed and approved by the Local Engineering Team Lead or Manager.

3.2 Compaction

- Backfill material is to be compacted using no more than 200mm (8") lifts.
- It is the responsibility of the contractor to select a compaction method that is a approved industry method compatible with the selected backfill material.
- Structural Fill that is non-granular shall achieve at least 90% compaction (using ASTM D1557 or equivalent compaction using alternative standard).
- Structural Fill that is granular material shall achieve at least 80% relative density (using ASTM D4253 or equivalent compaction using alternative standard).
- Non-structural Fill, not classified as sand, shall achieve at least 85% compaction (using ASTM D1557 or equivalent compaction using alternative standard).
- If sand is used for non-structural fill (in case surrounding soil is sand), shall achieve at least 70% relative density (using ASTM D4253 or equivalent compaction using alternative standard).
- Compaction by water jetting or flooding is not permitted.

3.3 Quality Control

- Compaction shall be measured/determined for each backfill lift.
- Compaction tools/equipment should be instrumented with compaction measuring devices that will determine the compaction achieved or maximum when maximum compaction has been obtained.
- The contractor shall obtain representative sampling of compaction measurements for each lift.
- A tabulation of compaction measurements are to be submitted with the project completion package to the Shell Engineer or Shell Representative at the conclusion of project.

3.4 Subsequent UST Installation by a Non-Shell Party

- In cases where underground storage tanks are to be installed by a Non-Shell Party subsequent to demolition of and removal of tanks by Shell and transfer of property title to a Non-Shell party, unless the Non-Shell Party is able to coordinate the simultaneous installation of the new UST System at no additional cost to Shell or delay in the removal of the existing UST System, Shell shall backfill the excavation with un-compacted fill

4 Reference Documents

4.1 Standards – for reference in absence of local industry standards for determination soil compaction of structural fill materials.

- ASTM D1557 - *Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort 56,000 ft-lbf/ft³ (2700 kN-m/m³)* – This standard may be referenced for determining optimum moisture density or proctor density for structural fill.
- ASTM D698 - *Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort 12,400 ft-lbf/ft³ (600 kN-m/m³)* This standard may be referenced for determining optimum moisture density or proctor density for structural fill.
- ASTM D4253 - *Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table*
- PIP (Process Industry Practices - Civil) CVS 02100 Rev. May 2001 - *Site Preparation, Excavation, and Backfill Specification*.

5 Acronyms

- TPH – Concentration of *Total Petroleum Hydrocarbon*
- BETX – *Concentrations of Benzene, Ethylbenzene, Toluene, and Xylenes*.
- ASTM – *American Society of Testing Materials*

6 Definitions

For the purpose of this specification, the following definitions are provided;

- Shell Engineer – A Facility Engineer or Special Projects Engineer employed by Shell.
- Designated Shell Representative – A Engineering Consultant or Project Management Contract Firm working under contract by Shell.
- Structural Fill - Fill or backfill placed beneath or immediately surrounding footings, grade beams, or mats, or beneath slabs, buildings, roads, paved areas, and parking areas.
- Plasticity Index (PI) - a numerical measure of the plasticity of a soil which corresponds to the range of moisture contents, expressed as percent water by dry weight of soil, within which the soil has plastic properties. Soils with a high PI tend to be predominantly clay, those with a lower PI tend to be predominantly silt, and those with a PI of 0 tend to have little or no silt or clay (Definition from Wikipedia Encyclopedia).

- Liquid Limit (LL) - known as the upper plastic limit, is the percent water content at which a soil changes from the liquid to a plastic. (Definition from Wikipedia Encyclopedia).
- Optimum Moisture Content – Percent water content in soil in which the soil can be compacted to the maximum dry unit weight. This value is obtained from a generated compaction curve where compaction tests are conducted for soil samples with varying moisture contents.
- Non-Structural fill Material – Fill or Backfill materials which do not meet the requirements set out in 2.2 for Structural Fill or there is no documentation that demonstrates the fill material meets the requirements for structural fill material.
- Compaction – The measured density of the soil relative to the Modified Proctor Density expressed as a percentage.
- Modified Proctor Density – *The maximum dry density of a soil.*

7 Document Properties

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Amendment history for document

Revision No	Revision Date	Author(s)	Comments/Major Changes
0.1	31/8/06	Brett Hovland	First Draft
1.0	12/12/06	Brett Hovland	Final Issue based upon Network Engineering and Environmental Comments
1.1	11/06/07	Brett Hovland	Clarification of Definitions (WCF comments), JRB Comments.
1.2	11/11/08	Brett Hovland	Updated language of sec 3.4

Summary of Changes since last revision

Section / Topic	Short Description of the Change
Section 3	Clarification of conditions and requirements for allowing excavation to remain open.

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