DRAFT FOCUSED SITE ASSESSMENT REPORT

BETTY BRITE CLEANERS SITE
SOUTH 154TH STREET TRANSIT-ORIENTED DEVELOPMENT PROPERTY

Prepared for
CITY OF SEATAC
SEATAC, WASHINGTON
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The material and data in this report were prepared under the supervision and direction of the undersigned.

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CONTENTS

CONTENTS (CONTINUED)

TABLES AND ILLUSTRATIONS

FOLLOWING REPORT:

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials, International
bgs	below ground surface
the City	City of SeaTac, Washington
COI	chemical of interest
CRS	Chemical Reducing Solution
CSM	conceptual site model
CUL	cleanup level
Ecology	Washington State Department of Ecology
ESA	environmental site assessment
Fe2+	ferrous iron
Golder	Golder Associates, Inc.
HVOC	halogenated volatile organic compound
IHS	indicator hazardous substance
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTCA	Model Toxics Control Act
NFA	No Further Action
PCE	tetrachloroethene
PID	photoionization detector
POC	point of compliance
ppbv	parts per billion by volume
the City	the City of SeaTac, Washington
the Property	Parcels 0043000020, 0043000100, and 0043000093 of the South 154th Street Transit-Oriented Development Property, SeaTac, Washington
TCE	trichloroethene
TPH	total petroleum hydrocarbons
TOD	Transit-Oriented Development
ug/L	micrograms per liter
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VOC	volatile organic compound
WAC	Washington Administrative Code

1 INTRODUCTION

On behalf of the City of SeaTac, Washington (the City), Maul Foster & Alongi, Inc. (MFA) has prepared this focused site assessment report to further characterize the nature and extent of environmental impacts at the City's proposed South 154th Street Transit-Oriented Development (TOD) property in SeaTac, Washington (Figure 1). The proposed TOD comprises the following seven parcels: King County parcels 00430013 (parking garage), 0043000015 (SeaTac Center), 0043000018 (parking lot), 0043000019 (residential), 0043000020 (Betty Brite Dry Cleaners, Pancake Chef, and other retail businesses), 0043000100 (parking lot), and 0043000093 (Dalsan Financial Services). The City owns parcels 00430013, 0043000015, 0043000018, and 0043000019 and is in negotiation to acquire the remaining three parcels (0043000020, 0043000100, and 0043000093). These three parcels, referred to in this document as "the Property", are the focus of this site assessment. In this report, Parcel 0043000020 is referred to as the "Betty Brite parcel", and Parcels 0043000100 and 0043000093 are referred to as "the triangle parcels". The Property currently is used for a variety of commercial applications, including a dry cleaner; money transfer services; retail clothing, food, and beauty supplies; a hair salon; a restaurant; and a law office. The Property includes Washington State Department of Ecology (Ecology) facility site ID 65773341 (Betty Brite Cleaners).

A dry-cleaning business has operated at the Betty Brite parcel since 1959. Additionally, historical archival information indicates that an oil burner served as the heating source at this parcel. The potential exists that, historically, a heating oil underground storage tank (UST) was used at this parcel. Activities associated with the dry cleaner's operations and the oil burner may have released hazardous substances that have potentially impacted environmental media at the Property. An investigation conducted by Golder Associates, Inc. (Golder) in 2009 detected elevated concentrations of tetrachloroethene (PCE) and trichloroethene (TCE) in soil vapor in Betty Brite Dry Cleaners and PCE-impacted groundwater underlying the adjoining parking lot to the east (inferred downgradient) (Golder, 2009). Groundwater samples were also analyzed for petroleum hydrocarbon identification and associated volatile organic compounds (VOCs). Petroleum hydrocarbons were not detected; however, benzene was identified in one of the groundwater samples collected beneath the parking lot adjacent to Betty Brite Dry Cleaners.

1.1 Regulatory Framework

The City received an Integrated Planning Grant from Ecology supporting site assessment and development of a community-based plan to transform the Property into a revitalized asset for the community. The purpose of this focused site assessment is to characterize the nature and extent of the hazardous substance contamination, evaluate potential risk to human health, and screen potential cleanup alternatives. This assessment has been completed for the Property to address the substantive requirements of Washington Administrative Code (WAC) 173-340 of the Model Toxics Control Act (MTCA). The assessment was conducted generally consistent with the Ecology-approved work plan (MFA, 2014). Additionally, the scope of work for the focused site assessment was developed in general accordance with the American Society for Testing and Materials,

International (ASTM) Standard E 1903-11 for Phase II environmental site assessments (ESAs) (ASTM, 2011)and Standard EE 1689 – 95 for developing conceptual site models (CSMs) for contaminated sites (ASTM, 2014). This focused site assessment was limited to evaluating the nature and extent of contamination associated with the Site on the Property; off-Property impacts were not evaluated due to funding limitations.

1.2 Site Assessment Objectives

Historical site assessments identified hazardous substances, including VOCs, particularly PCE and benzene in groundwater at the Property. Site assessment objectives included the following:

- Review of the results of the historical investigations
- Assessing the validity of historical data and data quality objectives for additional site characterization
- Further characterization of the nature and extent of hazardous substances in environmental media above MTCA cleanup levels (CULs), as well as sources of contamination
- Developing a CSM and evaluating potential risk to current and reasonably likely future human receptors at the Property
- Evaluating potential cleanup options for impacted media on the Property

2 BACKGROUND

This section describes the physical location and characteristics of the Property, including the geology and hydrogeology, and summarizes the site history and previous investigations.

2.1 Site Description

The Property is located in the southwest quarter of section 22, township 23 north, range 4 east, of the Willamette Meridian (see Figure 1). The Property comprises three parcels: an irregular, 0.43-acre tax parcel (parcel number 0043000020); an irregular, rectangular-shaped, 0.11-acre tax parcel (parcel number 0043000100); and a triangular-shaped, 0.05-acre tax parcel (parcel number 0043000093). The Property's general surface topography ranges from sloping to the east-southeast at parcel number 0043000020 to generally flat, with a slight downward slope to the east, at the remaining parcels.

Parcel 0443000020 is currently zoned "Community Business" with an "Urban Center" overlay (CB-C), and parcels 0043000100 and 0043000093 are zoned "Commercial" (C). Parcel 0443000020, located at the southwest corner of South 152nd Street and Military Road South, is occupied by the law offices of Brian Wicks (15201 Military Road South), Tsehay Beauty Supply (15203 Military Road

South), Mana Market and Shuruba Salon (15205 Military Road South), Betty Brite Dry Cleaners (15209 Military Road South), Tarak Mini Market and Halal (15213 Military Road South), and the Pancake Chef (15215 Military Road South). The Property is presented in Figure 2. The Pancake Chef is located on the western edge of the parcel and shares its eastern wall with the back (western) side of the retail strip mall below, where the abovementioned six businesses are located. The parking lot for the Pancake Chef is located on the roof of the retail strip mall. Parcels 0043000100 and 0043000093, located at the southeast corner of South 152nd Street and Military Road South, are currently occupied by a parking lot and a money transfer service business, respectively.

2.2 Site History

Archival records indicate that a dry-cleaning business has operated at parcel 0043000020 since building construction in 1959. Betty Brite Dry Cleaners has operated at this location since at least 1999. Archival records also indicate that a two-story office building has occupied parcel 0043000093 from 1949 to the present. Historical usages included real estate and insurance businesses. The adjoining parcel to the north, parcel 0043000100, has historically been used as a parking lot.

2.3 Previous Investigations

Golder conducted a subsurface investigation on the Property in 2009 to assess soil and groundwater related to Betty Brite Dry Cleaners. MFA conducted a Phase I ESA at the Property in July 2013 (MFA, 2013). MFA identified recognized environmental conditions, per ASTM E 1527-05 (ASTM, 2011), based on Golder's findings.

PCE-impacted groundwater was identified. However, the nature and extent of this halogenated VOC (HVOC) contamination at the Property associated with dry-cleaning operations have not been characterized. Additionally, evaluation of the potential presence of an abandoned historical UST and associated impacts has not been completed.

The following are reports that have been completed in association with the evaluation of potential PCE and petroleum hydrocarbon impacts, as well as to identify any additional environmental concerns on the Property. Environmental concerns identified by MFA are discussed in the next section (Section 2.4).

- Draft report on the groundwater, soil, and soil vapor investigation at the Pancake Chef property (Golder, 2009).
- Phase I ESA, City of SeaTac (MFA, 2013).

2.4 Known or Potential Environmental Conditions

MFA conducted a Phase I ESA for the Property in 2013 and identified several features as recognized environmental conditions. The sampling approach for the subsurface investigation was designed to investigate these features as well as to address data gaps, including the following:

- **Betty Brite Dry Cleaners**—confirmed groundwater impacts: A Phase II ESA, conducted by Golder in 2009, confirmed that historical operations of dry-cleaning businesses at Betty Brite Dry Cleaners and previous dry cleaners' operations at this parcel have adversely impacted the subsurface, including soil vapor, soil, and groundwater. PCE concentrations above MTCA Method A CULs were identified in groundwater at borings advanced in the parking lot east (inferred downgradient) of the dry-cleaning business. PCE and TCE were identified in soil vapor samples collected below the subslab inside the business and outside, beneath the adjoining parking lot. PCE, detected in a soil sample collected at 14 to 16 feet below ground surface (bgs) in the adjoining parking lot, was below the MTCA Method A CUL (Golder, 2009). The presence of petroleum hydrocarbons was not identified in the soil samples collected; however, benzene was reported in groundwater at concentrations below the associated MTCA Method A CUL. The nature and extent of the impacts have not been delineated and a risk screening was not performed as part of any prior ESA activities.
- **Inactive Oil Furnace—**An inactive oil furnace is located in a utility closet behind the strip mall, accessed only from the mini-market business at parcel 0043000020. The presence of the furnace as well as archival information regarding the heating source at this parcel indicate the potential presence of an abandoned heating oil UST at this parcel.

2.5 Geology and Hydrogeology

The subsurface conditions at the Property, at locations of investigation, generally consist of approximately 15 to 20 feet of sand, ranging from well sorted to poorly sorted, medium dense sand with silt and clay, overlying an approximately 10- to 15-foot-thick deposit of dense, silty sand.

The matrix of the unconfined shallow aquifer appears to be silty sand. Groundwater, encountered during subsurface exploration activities, ranged approximately from 25 to 28 feet bgs. The direction of groundwater flow at the Property during the June 2014 investigation event, based on professionally surveyed elevations at borings CST-B5 through CST-B8, is generally to the south-southeast (refer to Figure 3).

3 FIELD AND ANALYTICAL METHODS

Field site assessment was conducted in June 2014 and focused on assessing identified recognized environmental conditions at the Property. The investigation included evaluation of soil and groundwater for potential chemicals of interest (COIs), including HVOCs, diesel- and lube-oil-range total petroleum hydrocarbons (TPH), and petroleum-fuel-related VOCs, specifically benzene, toluene, ethylbenzene, and total xylenes.

Prior to subsurface exploration, Global Geophysics conducted a geophysical survey, employing electromagnetic induction to identify the potential presence of an abandoned heating oil UST associated with a historical oil burner furnace at parcel 0043000020. An abandoned heating oil UST

was identified near the southeast corner of this parcel. The geophysical survey report is presented in Appendix B.

All samples collected under this focused site assessment were submitted to OnSite Environmental Inc. of Redmond, Washington, for analysis under standard chain-of-custody procedures. The investigations included collection of groundwater and soil samples at the following locations (see Figure 2):

CST- B1 and CST-B4: Adjacent on the east and west sides, respectively, of the Betty Brite Cleaners dry cleaning machine. Shallow soil samples were collected to evaluate potential soil PCE impacts near the footprint of the dry cleaning machine.

CST-B2 and CST-B3: East and southeast, respectively, of the dry cleaning machine at inferred downgradient locales. Soil samples were collected to evaluate potential soil PCE impacts.

CST-B5: East of Betty Brite Dry Cleaners, at the strip mall parking lot, inferred downgradient locale. Soil and groundwater samples were collected to evaluate potential PCE impacts.

CST-B6: Southeast of Betty Brite Dry Cleaners, at the strip mall parking lot, inferred downgradient locale near the southeast parcel boundary. This boring was also placed adjacent east, inferred downgradient, of the abandoned heating oil UST. Soil and groundwater samples were collected to evaluate potential PCE and petroleum hydrocarbons impacts.

CST-B7: Northeast of Betty Brite Dry Cleaners, at the strip mall parking lot, inferred downgradient locale near the eastern parcel boundary. Soil and groundwater samples were collected to evaluate potential PCE impacts.

CST-B8: East-southeast of Betty Brite Dry Cleaners, adjacent east of Military Road South at the triangle parcel, inferred downgradient locale. Soil and groundwater samples were collected to evaluate potential PCE impacts.

Pacific Geomatic Services (PGS) conducted an ALTA land title survey of the Property (Appendix C). The ground elevation at each boring was professionally surveyed by PGS. Subsequent groundwater elevation data was used for drafting groundwater potentiometric map for the Property.

3.1 Soil Sampling

Soil samples were collected from soil borings (see Figure 2 for sample locations). Four continuous soil cores (CST-B1 through CST-B4) were advanced within the Betty Brite Cleaners building using a direct-push drilling rig following coring through the foundation. Borings were advanced from the building foundation to drilling refusal, which was generally encountered between 2 and 4 feet bgs. Soil samples were collected at the bottom of each borehole, at the maximum depth explored.

At boreholes advanced at the Betty Brite parcel parking lot (CST-B5 through CST-B7) and at the triangle parcels (CST-B8), soil cores were collected via a split spoon sampler at intervals ranging from 2.5 to 5 feet with a hollow-stem auger drilling rig from ground surface to the bottom of each

borehole. Soil samples were generally collected between 5.0 and 31.5 feet bgs and within the capillary fringe of the water table and near the bottom of each borehole in order to evaluate potential density-driven impacts characteristic of a dense nonaqueous-phase liquid release (e.g., PCE). Soil conditions were described and visual and olfactory observations of the soil were recorded. Soil collected during the investigation was also screened for organic vapors, using a photoionization detector (PID). Boring logs are provided in Appendix A.

All soil samples collected were analyzed. The selection of samples for analysis was based on observed potential impacts, elevated head-space readings collected with a PID, depth of the sample with respect to the capillary fringe and total depth of the borehole, and/or on information from previous investigations. Table 1 summarizes soil samples submitted for analysis.

Soil samples collected during the investigation were analyzed for the following:

- VOCs, including HVOCs and selected petroleum fuel VOCs (including benzene, toluene, ethylbenzene, and xylenes) by U.S. Environmental Protection Agency (USEPA) Method 8260C with USEPA 5035 sample preparation.
- Diesel- and lube-oil-range TPH by the Northwest Method NWTPH-Dx Extended (sample collected from CST-B6 only).

3.2 Groundwater Sampling

Groundwater samples were collected from the water table and from the lower extent of the shallow aquifer[1] in order to evaluate potential density-driven impacts characteristic of a dense nonaqueous-phase liquid release (e.g., PCE). Groundwater samples were collected from borings CST-B5 through CST-B8 (see Figure 2 for sample locations). All groundwater sampling was conducted using the methods and protocols outlined in MFA's sampling and analysis plan (MFA, 20014). Groundwater field sampling data sheets are provided in Appendix D.

All groundwater samples were analyzed for VOCs by USEPA Method 8260C. Selected groundwater samples (collected from borings CST-B6 through CST-B8) were also analyzed for diesel- and lube-oil-range TPH.

Additionally, all groundwater samples were also analyzed for the following geochemical parameters to pre-screen for the presence of electron acceptors for assessment of the potential reductive dechlorination process:

[1] The lower screened interval extended to the bottom of each borehole.

- Nitrate by USEPA 353.2
- Ferrous iron (Fe2+) by USEPA ApplEnvMic7-87-1536
- Sulfate by ASTM D516-02
- Sulfide by SM 4500-S2
- Chloride by SM 4500-Cl
- Methane by RSK 175

4 ANALYTICAL RESULTS

Laboratory analytical reports are provided in Appendix E. Analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether they meet project-specific data quality objectives. This review was performed consistent with accepted USEPA procedures for evaluating laboratory analytical data and appropriate laboratory and method-specific guidelines (USEPA, 2004, 2008). Data validation memoranda summarizing data evaluation procedures, usability of data, and deviations from specific field and/or laboratory methods for the investigation data are presented in Appendix F. The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

4.1 Soil

Soil analytical results are summarized in Table 1. Sixteen soil samples were collected from eight boring locations (see Figure 2). All soil samples collected were analyzed. All samples were analyzed for VOCs, and only one VOC was detected in one sample: PCE at 0.068 milligrams per kilogram (mg/kg) at CST-B8 (30.5 feet bgs). Two samples were analyzed for TPH. Diesel- and lube-oil-range organics were not detected at CST-B6, at depths of 8 and 31.5 feet bgs. The risk screening section (Section 6) includes a discussion of soil chemical detections compared to their respective CULs.

4.2 Groundwater

The groundwater analytical results are summarized in Table 2, and PCE-specific results are shown in Figure 4. Four groundwater samples were collected from four boring locations (CST-B5 through CST-B8). All samples collected were analyzed for VOCs. PCE was the only HVOC detected in groundwater at all locations of investigation, at concentrations ranging from 31 micrograms per liter (ug/L) to 180 ug/L. TCE was detected only at CST-B8, at 3.2 ug/L. Groundwater was collected at depths ranging from 20.0 to 30.0 feet bgs.

Diesel- and lube-oil-range organics were not detected in groundwater samples collected for analysis (from CST-B6 through CST-B8). Detections of selected geochemical parameters (chloride, nitrate, sulfate, sulfide, methane, and Fe2+) in all groundwater samples are presented in Table 2. The risk screening section (Section 6) includes a discussion of groundwater chemical detections compared to their respective CULs.

5 CONCEPTUAL SITE MODEL

The CSM describes potential chemical sources, release mechanisms, environmental transport processes, exposure routes, and receptors. Development of a CSM is dynamic and iterative and may be refined as additional information becomes available. The primary purpose of the CSM is to describe pathways by which human and ecological receptors could be exposed to site-related chemicals. A complete exposure pathway consists of four necessary elements: (1) a source and mechanism of chemical release to the environment, (2) an environmental transport medium for a released chemical, (3) a point of potential contact with the impacted medium (referred to as the exposure point), and (4) an exposure route (e.g., soil ingestion) at the exposure point. The CSM describes potential exposure scenarios based on information collected during the site assessment. All of these components and the relationship between them are fundamental in determining potential adverse effects that could be posed by constituents at the facility. Elements of potentially complete exposure scenarios relevant to human health and ecological receptors are discussed below and are presented in Figure 5.

5.1 Source Characterization

Dry-cleaning businesses have operated on the Property at parcel 0043000020 since the building was constructed in 1959. Betty Brite Dry Cleaners has operated at this location since at least 1999. Additionally, historical archival information indicates that an oil burner served as the heating source at this parcel. The potential exists that, historically, a heating oil UST was used at this parcel. Activities associated with the dry cleaner's operations and the oil burner may have resulted in the release of hazardous substances that have potentially impacted environmental media at the Property.

Chemicals of potential concern on the Property include HVOCs and TPH. PCE is still used at Betty Brite Dry Cleaners. Hence, it provides a continuing potential source of hazardous-substance releases at the Property. An investigation conducted by Golder in 2009 detected elevated concentrations of PCE and TCE in soil vapor in Betty Brite Dry Cleaners, and PCE-impacted groundwater underlying the adjoining parking lot to the east (inferred downgradient) of Betty Brite Dry Cleaners. Further characterization of the source area and the adjacent downgradient area, generally to the east (including southeast and northeast) of the dry cleaner business is needed to assess the lateral and vertical extent of the PCE impact. Additionally, further characterization in the interior of Betty Brite Dry Cleaners is needed to assess whether shallow soil within the immediate footprint of the dry cleaning machine and areas nearby have been adversely impacted.

5.2 Fate and Transport of Contaminants

The primary mechanisms likely to influence the fate and transport of chemicals include natural biodegradation of organic chemicals, sorption to soil, advection and dispersion in groundwater, volatilization from soil or groundwater to air, and leaching of chemicals from soil to groundwater. The relative importance of these processes will vary, depending on the chemical and physical

properties of a released contaminant. The properties of soil and the dynamics of groundwater flow also shape contaminant fate and transport.

Chemicals with sufficiently high solubility could leach from soil to pore water, and dissolved chemicals could be transported downward to local groundwater. PCE, however, was not detected in soil. In the dissolved phase, volatilization, dispersion, retardation, and biodegradation may act to further reduce concentrations of chemicals in groundwater downgradient of a source area. The fate and transport of PCE is discussed in more detail in the next section.

Much of the Property is paved; however, the Property's asphalt paving is deteriorated. The dry cleaner store does not currently have a floor drain, which was evaluated as a potential conduit to soil and/or groundwater. Hence, no contamination associated with this feature was identified. Soil impacts are limited to one PCE exceedance at boring CST-B8, located southeast of the dry cleaner business, in the triangle parcel. The slight PCE soil exceedance (0.068 mg/kg) likely is associated with the moist to wet soil encountered below the water table in CST-B8 during drilling investigation. In our professional opinion, the exceedance is representative of the dissolved phase of PCE in groundwater.

PCE-impacted groundwater was encountered at all locations explored, including at borings adjacent east (CST-B5) of Betty Brite Dry Cleaners, southeast (CST-B6), and northeast (CST-B7), as well as adjacent east of Military Road South in the triangle parcel (CST-B8). These locations are deemed downgradient of the source area, based on the groundwater potentiometric map (Figure 3), which shows a south-southeasterly groundwater flow direction. Figure 5 presents a CSM summarizing potential transport pathways.

PCE Fate and Transport

Analysis of the PCE data from the Property indicates that dissolved-phase PCE has migrated off the Property to locales east, southeast, and northeast of the Property. The lateral extent of PCE-impacted groundwater at off-property areas is currently not defined because of the scope of this investigation. Detections of geochemical parameters and their associated concentrations in the groundwater media at borings CST-B5 through CST-B8 indicate the presence of electron acceptors that is conducive to the reductive dechlorination process of PCE, and the groundwater media likely would be supportive of reductive dechlorination as a cleanup option.

Advection, dispersion, and sorption likely are the most significant mechanisms for naturally attenuating PCE concentrations at the Property. Biodegradation by anaerobic reductive dechlorination is not a likely mechanism, based on the lack of detections of PCE daughter products (e.g., TCE, *cis*-1,2-dichlorethene, vinyl chloride [VC]), and the aerobic groundwater conditions. Aerobic conditions are characterized by dissolved-oxygen concentrations greater than 1 milligram per liter (mg/L) (USEPA, 1998), as observed at two of the groundwater sampling points at the Betty Brite parcel. Abiotic degradation (e.g., hydrolysis and dehydrohalogenation) of PCE may also be occurring. While these processes may potentially be significant attenuation mechanisms, it is not practical to demonstrate that these processes are occurring at the Property, given the difficulties of detecting the unstable breakdown products (e.g., acids and alcohols) on a field scale (USEPA, 1998). However, without additional data, we cannot exclude the possibility that sequential dechlorination is

occurring. Because of the lack of historical and currently limited groundwater analytical data as well as a lack of adequate downgradient off-property groundwater data, MFA is unable to assess at this time the lateral and vertical off-site extent of the dissolved-phase PCE plume.

Potential reasons and pathways for PCE to migrate into the subsurface beneath the Property include the following: historical use of PCE from the 1960s to the present time; spills and leakages during dry cleaning operations; poor concrete floor surface (i.e., porous and structurally unsound); subsurface soils with inherently high porosity and transmissivity characteristics; and relatively shallow depth to groundwater. Additional data (soil and groundwater analytical results and subsurface soil) are required from areas east to south-southeast of the Property to complete the off-property characterization of the dissolved-phase PCE plume.

5.3 Potential Soil Exposure Scenarios

The Property is currently zoned as commercial business. It is likely that the Property will be redeveloped for mixed residential and commercial use, which may include retail, restaurants, and service industries. Therefore, it is possible that construction workers, commercial workers, and/or residents will occupy the Property in the foreseeable future.

Soil impact at the Property, based on locations of investigation, is limited to one PCE exceedance in soil at the triangle parcel (CST-B8)—refer to Table 1. The exceedance is vertically bounded by 30.5 feet bgs. In our professional opinion, it is likely that this exceedance is due to the moisture in the soil, which was representative of the dissolved-phase PCE in groundwater and not representative of the soil component. MFA collected soil samples from various depths during subsurface investigation to assess the potential for adverse impact. Depths assessed included shallow soil from approximately 5 to 20 feet bgs, the capillary fringe/water table zone from 20 to 28 feet bgs, and depth near the bottom of each boring. Therefore, the potential for human exposure to PCE in soil is low. If the Property were to require excavation and removal of the shallow soil (within 15 feet bgs), future exposure would not be expected. VOCs were not detected in soils, indicating that inhalation of vapors emanating from soil is an incomplete pathway.

The Property and surrounding area consist of commercial and residential properties, which are unlikely to provide quality ecological habitat or important resources for wildlife. Given the Property's low habitat quality, ecological exposure to soil on the Property is expected to be insignificant. A simplified terrestrial ecological evaluation, completed for the Property determined that the site does not pose a substantial threat to potential ecological receptors (see Appendix G). Therefore, soil analytical results will not be compared to ecological screening values.

The following pathways are potentially incomplete for human health exposure to soil:

On-site residential and commercial/construction workers— The potential for contaminant exposure in soil is low for residential and commercial workers at the Property. It is assumed that future workers may not encounter chemicals in the top 15 feet bgs (Figure 5). The pathways by which future residences and workers could potentially be exposed to chemicals in soil include direct skin contact with soil, incidental ingestion of soil, and inhalation of soil particulates.

On-site construction workers—There are currently no construction workers (e.g., excavation workers, trench workers) on the Property. Construction activities likely will be performed as part of redevelopment. Construction workers could contact chemicals in soil through incidental ingestion, dermal contact, and inhalation of impacted soil particulates. However, it appears unlikely that construction activities will reach a depth of approximately 30 feet bgs.

5.4 Potential Groundwater Exposure Scenarios

The depth to groundwater at the Property is between approximately 25 and 28 feet bgs. Groundwater is inferred to flow in a south-southeasterly direction, based on groundwater monitoring data from this subsurface investigation.

Shallow groundwater is not currently used and is not likely to be used in the future. In addition, future construction activities would not include excavation to depths approaching the groundwater table. Therefore, the ingestion, direct-contact, and inhalation pathways for groundwater are currently incomplete (Figure 5).

PCE volatilizing from groundwater to outdoor air is an insignificant exposure pathway because of the depth to groundwater and rapid dispersion in outdoor air.

PCE exceeds the Ecology vapor-intrusion-to-indoor-air Method B groundwater screening level of 1 ug/L (Ecology, 2009). Groundwater samples were collected at borings CST-B5 through CST-B8. PCE concentrations exhibited at these borings ranged from 31 ug/L to 180 ug/L (refer to Figure 4). The combination of PCE impact to shallow groundwater and PCE present in subslab soil samples from beneath Betty Brite Dry Cleaners results in vapor intrusion concerns for the Property. The groundwater volatilization to indoor air pathway is complete.

5.5 Potential Soil Vapor Exposure Scenarios

PCE and TCE were identified in soil vapor samples collected below the subslab inside Betty Brite Dry Cleaners and outside, beneath the adjoining parking lot, as well as from ambient air of the business (Golder, 2009).

Golder reported that PCE (49 parts per billion by volume [ppbv] to 130 ppbv) and TCE (64 ppbv to 93 ppbv) were exhibited in all interior soil vapor samples. However, the highest concentrations of PCE (370 ppbv) and TCE (160 ppbv) were reported from ambient air samples collected within the dry cleaner business. Subsequently, Golder reported that "based on these analytical results and cracks observed within the concrete slab beneath the dry cleaning equipment, it was not possible to eliminate ambient air as the source of TCE and PCE in the sub-slab vapor samples" (Golder, 2009).

PCE and TCE were exhibited in soil gas (at less than 10-foot bgs) above Ecology screening levels of 1.0 and 4.2 micrograms per cubic meter (or ppbv), respectively. The elevated concentrations of these COIs pose a vapor intrusion threat to the Property and its commercial and (future) construction workers. However, the elevated ambient indoor vapor results indicate that it is a potential source of vapor intrusion for the interior of the dry-cleaning business. The vapor intrusion to indoor pathway is complete (Figure 5).

5.6 Cleanup Standards

According to MTCA, the cleanup standards for a particular site have two primary components: chemical-specific CULs and points of compliance (POCs). The CUL is the concentration of a chemical in a specific environmental medium that will not pose unacceptable risks to human health or the environment. The POC is the location where the CUL must be met.

MTCA provides three different options for establishing CULs for human health: Method A, Method B, and Method C. For Methods B and C, either the standard or the modified approach can be used. The standard method uses generic default assumptions to calculate CULs, and the modified method allows for site-specific adjustments to some assumptions when calculating CULs.

MTCA Method A is designed for cleanups at relatively simple sites, such as small sites that have only a few hazardous substances. Method B can be used at any site. Method C is used primarily for industrial sites.

5.6.1 Soil Cleanup Levels

The Property historically has been used for commercial purposes and it is anticipated that it will be used for commercial and/or mixed-use purposes in the future. Soil on the Property, at locations of investigation, is not impacted by the COIs, PCE and breakdown products, or TPH. Soil screened to Method A CULs for unrestricted land use were applied.

Soil CULs for the protection of potable groundwater (leaching to groundwater pathway) do not appear to be applicable as potential cleanup targets for soil on the Property because empirical evidence indicates that soil impacts are not causing unacceptable groundwater concentrations. The soil-to-drinking-water pathway was deemed incomplete based on the current and unlikely future uses of shallow groundwater at the Property and surrounding area.

5.6.1.1 Points of Compliance in Soil

The soil POC is the depth bgs at which soil CULs shall be attained. The standard POC is soil within 15 feet of the ground surface throughout the entire site. This standard POC is applied to soil on the Property. As discussed below, impacts were not exhibited in soil.

5.6.2 Groundwater Cleanup Levels

Historically, the Property has been used for commercial purposes and it is anticipated that it will continued to be used for commercial or mixed-use purposes in the future. Shallow groundwater at the Property is impacted by PCE. The Method A groundwater CUL is deemed applicable for the Property.

5.6.2.1 Points of Compliance in Groundwater

For groundwater, the POC is the point or points where the groundwater CULs must be attained for a site to be in compliance with the cleanup standards. Groundwater CULs shall be attained in all

groundwater from the POC to the outer boundary of the dissolved-phase PCE plume. A conditional POC may be established if it is not practicable to meet the CULs throughout the site within a reasonable restoration timeframe (WAC 173-340-720(8)(c)). Because this is the preliminary phase of groundwater investigation for the Property, a conditional POC for groundwater is not proposed for the Property at this time.

5.6.3 Soil Vapor Cleanup Levels

Based on the elevated PCE and TCE concentrations identified by Golder in soil vapor samples collected from the interior of Betty Brite Dry Cleaners and the adjoining parking lot, and within ambient air of the business, a complete vapor intrusion assessment will be necessary after acquisition of the necessary data components presented above.

Soil vapor CULs will be referenced from Ecology's guidance for evaluating soil vapor intrusion (Ecology, 2009) and the USEPA's draft guidance for evaluating the vapor intrusion to indoor air pathway from groundwater and soils (USEPA, 2002).

6 RISK SCREENING

The soil and groundwater sample results were compared to MTCA Method A CULs for unrestricted use (see Tables 1 and 2). Indicator hazardous substances (IHSs) are evaluated below by comparing the concentrations found in soil and groundwater to their respective CULs. An IHS is defined as a chemical exceeding a CUL at one or more locations.

6.1 Soil

Soil analytical results are compared to MTCA Methods A soil CULs for unrestricted land use. COIs, VOCs and TPH, were not detected above associated CULs in soil samples, with exception to sample CST-B8-S-30.5, submitted for laboratory analysis (refer to Table 1).

6.2 Groundwater

Groundwater analytical results are compared to MTCA Method A groundwater CULs. PCE was the only constituent identified in groundwater above associated CULs, with all sample analytical results indicating PCE concentrations above the MTCA Method A groundwater CUL (refer to Table 2 and Figure 4). TCE was exhibited only at one boring, CST-B8, at concentration below CUL. PCE is considered an IHS for the Property because of the elevated detections.

6.3 Summary

The only IHS identified at the Property is PCE in groundwater. The long historical use/operation of PCE at Betty Brite Dry Cleaners is likely the source of contamination. Building subslab conditions in

the interior of the dry cleaner business and subsurface conditions (porous and transmissive soil, and relatively shallow groundwater) have resulted in adverse impact at the Property and downgradient generally to the south-southeast of the dry cleaner business. The lateral and vertical extent of PCE-impacted groundwater has not been characterized. Installation of monitoring wells both at on-site and off-property locales will be necessary during the supplemental site characterization phase, which will evaluate the extent of the off-property dissolved-phase PCE groundwater plume. Additionally, a complete vapor intrusion assessment should be conducted concurrently with the supplemental site characterization.

7 CONCLUSIONS

A focused subsurface investigation was completed to evaluate the nature and extent of the following COIs in soil and groundwater at the Property: VOCs and TPH. The site investigation results and risk screening indicate that, of these COIs, only a halogenated VOC, specifically PCE, had adversely impacted soil and groundwater at the Property and is the Property's only IHS. However, the single detection of PCE in soil at the southeast area of the Property likely can be attributed to the presence of moist to wet moisture (i.e., representative of dissolved-phase PCE in groundwater) in this soil sample and is consequently not representative of the soil matrix. Human and ecological exposure pathways were deemed as incomplete based on the current and unlikely future uses of shallow groundwater at the Property and surrounding area.

Findings from the ESA and subsurface investigation indicate that the Property's dry cleaner business, in operation from the 1960s to the present, is the source of PCE groundwater contamination beneath the Property. A supplemental site characterization downgradient and off-property generally to the east and southeast of the Property is necessary to characterize the lateral and vertical extent of the dissolved-phase PCE plume. Installation of monitoring wells both on and off-property will also be completed during this phase. Completion of a vapor intrusion assessment concurrently with the supplemental site characterization is also recommended. Establishment of protective soil gas concentrations for the vapor intrusion pathway during the supplemental phase of characterization, to protect current and future indoor air quality, is also recommended.

8 CLEANUP ACTION EVALUATION

This section summarizes two remedial alternatives for addressing the contamination identified on the Property. These alternatives are not all-inclusive, but represent the most likely cleanup scenarios and encompass a range from relatively aggressive to relatively limited remedial actions. Depending on the configuration of the Property redevelopment, additional cleanup alternatives could be developed and evaluated. Because the lateral extent of groundwater contamination remains undefined and likely extends beyond the Property boundaries, cleanup alternatives have been limited to on-Property, source-specific remedial actions.

8.1 Alternative 1: In situ Bioremediation—Enhanced Anaerobic Bioremediation

This alternative represents one of two options for groundwater remediation, but both Alternatives 1 and 2 include the same proposed remedy for dissolved-phase PCE-contaminated groundwater. Alternative 1 includes the following actions:

- Dissolved-phase PCE in Groundwater Treatment
  - Remediation via in situ bioremediation—enhanced anaerobic bioremediation: install dedicated monitoring wells at the Property and obtain an underground injection control permit from Ecology to conduct the in situ bioremediation by injection of bioremediation products into monitoring wells installed throughout the Property at areas exhibiting PCE concentrations above the CUL and at wells located within the dissolved phase plume at the Property. A baseline groundwater monitoring/sampling event will be conducted before the initial bioremediation injection to obtain background groundwater quality and parameters.
  - Conduct consecutive quarterly groundwater monitoring and sampling events and VOC analysis at designated monitoring wells for two years, followed by semiannual monitoring for a minimum of one additional year to meet the following objectives: (1) confirm effectiveness of the in situ treatment; (2) collect the necessary data for supporting a request for a No Further Action (NFA) or potentially a site-specific NFA determination based on compliance with CULs; and (3) confirm that PCE-impacted groundwater is not migrating past the POC or downgradient of the Property boundary.
- The estimated cost of $452,800 for this alternative is presented in Table 3.

8.2 Alternative 2: Monitored Natural Attenuation

Alternative 2 relies on the natural biodegradation of PCE. Its approach for remediation of PCE-contaminated groundwater involves the progress of natural attenuation processes, including advection, dispersion, and sorption as the most significant mechanisms for naturally attenuating PCE concentrations at the Property to degrade PCE to its successive daughter (i.e., breakdown) products. Long-term monitoring of groundwater quality and natural attenuation of PCE for at least ten years of consecutive quarterly groundwater monitoring/sampling events is proposed. The estimated cost of $635,700 for this alternative is presented in Table 4.

8.3 Evaluation of Cleanup Alternatives

Alternative 1 provides a more aggressive, and therefore more conservative, approach to remediation of PCE-impacted groundwater. Alternative 2 provides a longer-term, higher-cost approach than Alternative 1. Alternative 2 poses a higher risk of migration of impacted groundwater to downgradient properties and requires a longer restoration timeframe for obtaining compliance with PCE CUL.

8.3.1 MTCA Threshold Requirements

Cleanup actions are subject to the threshold requirements set forth in WAC 173-340-360 (2)(a). Under the threshold requirements, the cleanup action shall:

- Protect human health and the environment.
- Comply with cleanup standards.
- Comply with applicable state and federal laws.
- Provide for compliance monitoring.

8.3.1.1 Protect Human Health and the Environment and Comply with Cleanup Standards

Alternative 1 reduces or eliminates risk from contaminated groundwater through a combination of enhanced anaerobic bioremediation and monitored natural attenuation. These remedial actions would eliminate exposure pathways and protect human health and the environment and would comply with cleanup standards. Alternative 2 would reduce risk from contaminated groundwater through monitored natural attenuation.

8.3.1.2 Comply with Applicable State and Federal Laws

The selected CULs are consistent with MTCA. Additionally, local, state, and federal laws related to environmental protection, health and safety, transportation, and disposal apply to each proposed alternative. During remedial design, the selected alternative would be designed to comply with applicable, relevant, and appropriate requirements.

8.3.1.3 Provide for Compliance Monitoring

There are three types of compliance monitoring: protection, performance, and confirmational. Protection monitoring is designed to protect human health and the environment during the construction and operation and maintenance phases of the cleanup action. Performance monitoring confirms that the cleanup action has met cleanup and/or performance standards. Confirmational monitoring confirms the long-term effectiveness of the cleanup action once cleanup standards have been met or other performance standards have been attained. Both alternatives 1 and 2 would meet this provision, as it would require varying levels of all three types of compliance monitoring.

8.4 Other Criteria

MTCA states that when selecting a cleanup alternative, preference shall be given to "permanent solutions to the maximum extent practicable." "Permanent" is defined in WAC 173-340-200 as a cleanup action in which the cleanup standards of WAC 173-340-700 through 760 are met without further action being required at the site being cleaned up or at any other site involved with the cleanup action, other than the approved disposal of any residue from the treatment of hazardous substances.

In order to determine the "maximum extent practicable" for each alternative, a disproportionate-cost analysis outlined in WAC 173-340-360(3)(e) is used. Costs are determined to be disproportionate to benefits if the incremental cost of a more expensive alternative over that of a lower-cost alternative exceeds the incremental degree of benefits achieved by the more expensive alternative. As outlined in WAC 173-340-360(3)(f), the evaluation criteria used were a mix of qualitative and quantitative factors, including protectiveness, permanence, effectiveness over the long term, management of short-term risks, technical and administrative implementability, and consideration of public concerns.

The cleanup alternatives are evaluated by the criteria below.

8.4.1 Protectiveness

Protectiveness is a factor by which human health and the environment are protected by the cleanup action, including the degree to which existing risks are reduced; time required to reduce risk at the facility and attain cleanup standards; on-site and off-site risks resulting from implementing the cleanup action alternative; and improvement of the overall environmental quality. Both of the cleanup alternatives are protective. Alternative 1 has the highest degree of protectiveness because it would actively reduce groundwater PCE concentrations below CULs in a relatively short timeframe (two to three years). Alternative 2 is less protective because a longer natural attenuation timeframe would be required to meet groundwater CULs.

8.4.2 Permanence

Permanence is a factor by which the cleanup action alternative permanently reduces the toxicity, mobility, or volume of hazardous substances. It takes into account the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous substance releases and sources of releases, the degree of irreversibility of the waste-treatment process, and the characteristics and quantity of treatment residuals generated. With respect to groundwater, both alternatives are considered as permanent cleanup actions. PCE is destroyed by chemically enhanced and attenuation processes in alternative 1 while alternative 2 relies on long-term natural attenuation processes to reduce and destroy PCE.

8.4.3 Effectiveness over Long Term

Long-term effectiveness includes the degree of certainty that the alternative will be successful; the reliability of the alternative for the expected duration of hazardous substances remaining on site at concentrations that exceed CULs; the magnitude of residual risk with the alternative in place; and the effectiveness of controls required to manage treatment residues or remaining wastes. The long-term effectiveness of Alternative 1 is considered higher than that of Alternative 2, since it has a greater likelihood of successfully decreasing PCE concentrations to below CULs over a shorter timeframe.

8.4.4 Management of Short-Term Risks

Short-term risks to remediation workers, the public, and the environment are assessed under this criterion. Generally, short-term risks are expected to be linearly related to the amount of material handled, treated, and/or transported and disposed of (e.g., worker injury per cubic yard excavated [equipment failure], public exposure per cubic yard-mile transported [highway accident]).

This factor addresses the risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks. Potential exposure via transport, handling, and injection of oxidizing chemicals required for Alternative 1 could lead to short-term risks. Alternative 2 requires only groundwater monitoring/sampling activities and therefore does not involve short-term risks.

8.4.5 Technical and Administrative Implementability

This factor addresses whether the alternative can be implemented and is technically possible. The availability of necessary materials; regulatory requirements; scheduling; access for injection operations and subsequent monitoring; and integration with existing and neighboring properties must be considered. The proposed alternatives are both well proven and have been employed at many sites throughout the United States; both are readily implementable and rank equivalently.

8.4.6 Public Concerns

This factor includes considering concerns from individuals; community groups; and local governments, tribes, federal and state agencies, and any other organization that may have an interest in or knowledge of the site and that may have a preferred alternative. Both alternatives provide opportunity for members of the public to review and comment on plans.

8.4.7 Disproportionate-Cost Analysis

In accordance with WAC 173-340-360(3)(e), the most practicable permanent solution evaluated will be the baseline cleanup action alternative to which the other cleanup action alternatives are compared. On this basis, Alternative 1 is the baseline alternative for this analysis. Table 5 summarizes the comparative analysis. Each alternative was given a rating between 1 and 5 (5 being optimal, 1 being inadequate). Where there were only slight differences, fractional ratings were applied.

Based on these criteria, Alternative 1 has a higher rating (4.8) than Alternative 2 (3.8) (Table 5). The cost for Alternative 1 ($452,800) is approximately 71 percent of the cost of Alternative 2 ($635,700). A more significant factor is the estimated remediation time for Alternative 1, which ranges from approximately two to three years in comparison to Alternative 2, which ranges from at least ten years to a longer period of time for groundwater quality restoration.

8.4.8 Recommended Cleanup Alternative

Based upon review of the two alternatives to MTCA criteria and in consideration of the findings of the disproportionate cost analysis, Alternative 1, In Situ Bioremediation, is selected as the preferred remedial action alternative for addressing on-Property contamination at the Betty Brite Cleaners site.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

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TABLES

Table 1
Summary of Soil Analytical Results, Betty Brite Cleaners Site
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Location	MTCA Method A URLU CUL	MTCA Method B CAR CUL	MTCA Method B NCAR CUL	CST_B1	CST_B2	CST_B2	CST_B3	CST_B4	CST_B5	CST_B5	CST_B6
Sample Name				CST-B1-S-2.0	CST-B2-S-2.0	CST-B2-S-4.0	CST-B3-S-2.0	CST-B4-S-2.0	CST-B5-S-23.5	CST-B5-S-31.0	CST-B6-S-31.5
Date Collected				06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/02/2014	06/02/2014	06/02/2014
Start Depth (feet)				1	1	3	1	1	22.5	30	30.5
End Depth (feet)				3	3	5	3	3	24.5	32	32.5
VOCs (mg/kg)											
1,1,1,2-Tetrachloroethane	NV	38.46	2400	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,1,1-Trichloroethane	2	NV	160000	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,1,2,2-Tetrachloroethane	NV	5	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,1,2-Trichloroethane	NV	17.54	320	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,1-Dichloroethane	NV	NV	16000	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,1-Dichloroethene	NV	NV	4000	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,1-Dichloropropene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2,3-Trichlorobenzene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2,3-Trichloropropane	NV	0.03	320	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2,4-Trichlorobenzene	NV	34.5	800	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2,4-Trimethylbenzene	NV	NV	NV	--	--	--	--	--	--	--	0.001 U
1,2-Dibromo-3-chloropropane	NV	1.25	16	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
1,2-Dibromoethane	0.005	0.5	720	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2-Dichlorobenzene	NV	NV	7200	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2-Dichloroethane	NV	10.99	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,2-Dichloropropane	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,3,5-Trimethylbenzene	NV	NV	800	--	--	--	--	--	--	--	0.001 U
1,3-Dichlorobenzene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,3-Dichloropropane	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
1,4-Dichlorobenzene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
2,2-Dichloropropane	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
2-Butanone	NV	NV	48000	--	--	--	--	--	--	--	0.005 U
2-Chloroethylvinyl ether	NV	NV	NV	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
2-Chlorotoluene	NV	NV	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
2-Hexanone	NV	NV	NV	--	--	--	--	--	--	--	0.005 U
4-Chlorotoluene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
4-Isopropyltoluene	NV	NV	NV	--	--	--	--	--	--	--	0.001 U
4-Methyl-2-pentanone	NV	NV	6400	--	--	--	--	--	--	--	0.005 U
Acetone	NV	NV	72000	--	--	--	--	--	--	--	0.005 U
Benzene	0.03	18.18	320	--	--	--	--	--	--	--	0.001 U
Bromobenzene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Bromodichloromethane	NV	16.13	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Bromoform	NV	126.58	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Bromomethane	NV	NV	112	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Carbon disulfide	NV	NV	8000	--	--	--	--	--	--	--	0.001 U
Carbon tetrachloride	NV	14.3	320	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Chlorobenzene	NV	NV	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U

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Sample Name				CST-B1-S-2.0	CST-B2-S-2.0	CST-B2-S-4.0	CST-B3-S-2.0	CST-B4-S-2.0	CST-B5-S-23.5	CST-B5-S-31.0	CST-B6-S-31.5
Date Collected				06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/02/2014	06/02/2014	06/02/2014
Start Depth (feet)				1	1	3	1	1	22.5	30	30.5
End Depth (feet)				3	3	5	3	3	24.5	32	32.5
Chlorobromomethane	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Chloroethane	NV	NV	NV	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
Chloroform	NV	NV	800	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Chloromethane	NV	NV	NV	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
cis-1,2-Dichloroethene	NV	NV	160	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
cis-1,3-Dichloropropene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Dibromochloromethane	NV	11.9	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Dibromomethane	NV	NV	800	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Dichlorodifluoromethane	NV	NV	16000	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Ethylbenzene	6	NV	8000	--	--	--	--	--	--	--	0.001 U
Hexachlorobutadiene	NV	12.82	80	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
Isopropylbenzene	NV	NV	8000	--	--	--	--	--	--	--	0.001 U
m,p-Xylene	NV	NV	NV	--	--	--	--	--	--	--	0.002 U
Methyl iodide	NV	NV	NV	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
Methyl tert-butyl ether	0.1	NV	NV	--	--	--	--	--	--	--	0.001 U
Methylene chloride	0.02	133.33	4800	0.005 U	0.0053 U	0.0052 U	0.0055 U	0.0047 U	0.0047 U	0.0047 U	0.005 U
Naphthalene	5	NV	1600	--	--	--	--	--	--	--	0.001 U
n-Butylbenzene	NV	NV	NV	--	--	--	--	--	--	--	0.001 U
n-Propylbenzene	NV	NV	8000	--	--	--	--	--	--	--	0.001 U
o-Xylene	NV	NV	16000	--	--	--	--	--	--	--	0.001 U
sec-Butylbenzene	NV	NV	NV	--	--	--	--	--	--	--	0.001 U
Styrene	NV	NV	16000	--	--	--	--	--	--	--	0.001 U
tert-Butylbenzene	NV	NV	NV	--	--	--	--	--	--	--	0.001 U
Tetrachloroethene	**0.05**	480	480	0.037	0.0029	0.029	0.0042	0.015	0.016	0.037	0.01
Toluene	7	NV	6400	--	--	--	--	--	--	--	0.005 U
trans-1,2-Dichloroethene	NV	NV	1600	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
trans-1,3-Dichloropropene	NV	NV	NV	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Trichloroethene	0.03	12	40	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Trichlorofluoromethane	NV	NV	24000	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
Vinyl acetate	NV	NV	80000	--	--	--	--	--	--	--	0.005 U
Vinyl chloride	NV	NV	240	0.001 U	0.0011 U	0.001 U	0.0011 U	0.00094 U	0.00093 U	0.00095 U	0.001 U
TPH (mg/kg)											
Diesel-range hydrocarbons	2000	NV	NV	--	--	--	--	--	--	--	28 U
Lube-oil-range hydrocarbons	2000	NV	NV	--	--	--	--	--	--	--	56 U

Table 1
Summary of Soil Analytical Results, Betty Brite Cleaners Site
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Location	MTCA Method A URLU CUL	MTCA Method B CAR CUL	MTCA Method B NCAR CUL	CST_B6	CST_B7	CST_B7	CST_B7	CST_B7	CST_B8	CST_B8	CST_B8
Sample Name				CST-B6-S-8.0	CST-B7-S-21.5	CST-B7-S-24.0	CST-B7-S-25.0	CST-B7-S-30.5	CST-B8-S-21.0	CST-B8-S-23.0	**CST-B8-S-30.5**
Date Collected				06/02/2014	06/02/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014
Start Depth (feet)				7	20.5	23	24	29.5	20	22	29.5
End Depth (feet)				9	22.5	25	26	31.5	22	24	31.5
VOCs (mg/kg)											
1,1,1,2-Tetrachloroethane	NV	38.46	2400	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,1,1-Trichloroethane	2	NV	160000	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,1,2,2-Tetrachloroethane	NV	5	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,1,2-Trichloroethane	NV	17.54	320	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,1-Dichloroethane	NV	NV	16000	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,1-Dichloroethene	NV	NV	4000	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,1-Dichloropropene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2,3-Trichlorobenzene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2,3-Trichloropropane	NV	0.03	320	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2,4-Trichlorobenzene	NV	34.5	800	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2,4-Trimethylbenzene	NV	NV	NV	0.0011 U	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	1.25	16	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
1,2-Dibromoethane	0.005	0.5	720	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2-Dichlorobenzene	NV	NV	7200	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2-Dichloroethane	NV	10.99	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,2-Dichloropropane	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,3,5-Trimethylbenzene	NV	NV	800	0.0011 U	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,3-Dichloropropane	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
1,4-Dichlorobenzene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
2,2-Dichloropropane	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
2-Butanone	NV	NV	48000	0.0053 U	--	--	--	--	--	--	--
2-Chloroethylvinyl ether	NV	NV	NV	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
2-Chlorotoluene	NV	NV	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
2-Hexanone	NV	NV	NV	0.0053 U	--	--	--	--	--	--	--
4-Chlorotoluene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
4-Isopropyltoluene	NV	NV	NV	0.0011 U	--	--	--	--	--	--	--
4-Methyl-2-pentanone	NV	NV	6400	0.0053 U	--	--	--	--	--	--	--
Acetone	NV	NV	72000	0.0053 U	--	--	--	--	--	--	--
Benzene	0.03	18.18	320	0.0011 U	--	--	--	--	--	--	--
Bromobenzene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Bromodichloromethane	NV	16.13	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Bromoform	NV	126.58	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Bromomethane	NV	NV	112	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Carbon disulfide	NV	NV	8000	0.0011 U	--	--	--	--	--	--	--
Carbon tetrachloride	NV	14.3	320	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Chlorobenzene	NV	NV	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U

Table 1
Summary of Soil Analytical Results, Betty Brite Cleaners Site
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Location	MTCA Method A URLU CUL	MTCA Method B CAR CUL	MTCA Method B NCAR CUL	CST_B6	CST_B7	CST_B7	CST_B7	CST_B7	CST_B8	CST_B8	CST_B8
Sample Name				CST-B6-S-8.0	CST-B7-S-21.5	CST-B7-S-24.0	CST-B7-S-25.0	CST-B7-S-30.5	CST-B8-S-21.0	CST-B8-S-23.0	**CST-B8-S-30.5**
Date Collected				06/02/2014	06/02/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014	06/03/2014
Start Depth (feet)				7	20.5	23	24	29.5	20	22	29.5
End Depth (feet)				9	22.5	25	26	31.5	22	24	31.5
Chlorobromomethane	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Chloroethane	NV	NV	NV	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
Chloroform	NV	NV	800	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Chloromethane	NV	NV	NV	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
cis-1,2-Dichloroethene	NV	NV	160	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.0023
cis-1,3-Dichloropropene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Dibromochloromethane	NV	11.9	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Dibromomethane	NV	NV	800	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Dichlorodifluoromethane	NV	NV	16000	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Ethylbenzene	6	NV	8000	0.0011 U	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	12.82	80	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
Isopropylbenzene	NV	NV	8000	0.0011 U	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	NV	0.0021 U	--	--	--	--	--	--	--
Methyl iodide	NV	NV	NV	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
Methyl tert-butyl ether	0.1	NV	NV	0.0011 U	--	--	--	--	--	--	--
Methylene chloride	0.02	133.33	4800	0.0053 U	0.0043 U	0.0053 U	0.0046 U	0.0048 U	0.0042 U	0.0073 U	0.0049 U
Naphthalene	5	NV	1600	0.0011 U	--	--	--	--	--	--	--
n-Butylbenzene	NV	NV	NV	0.0011 U	--	--	--	--	--	--	--
n-Propylbenzene	NV	NV	8000	0.0011 U	--	--	--	--	--	--	--
o-Xylene	NV	NV	16000	0.0011 U	--	--	--	--	--	--	--
sec-Butylbenzene	NV	NV	NV	0.0011 U	--	--	--	--	--	--	--
Styrene	NV	NV	16000	0.0011 U	--	--	--	--	--	--	--
tert-Butylbenzene	NV	NV	NV	0.0011 U	--	--	--	--	--	--	--
Tetrachloroethene	**0.05**	480	480	0.0033	0.012	0.0098	0.011	0.011	0.011	0.03	**0.068**
Toluene	7	NV	6400	0.0053 U	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	NV	NV	1600	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
trans-1,3-Dichloropropene	NV	NV	NV	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Trichloroethene	0.03	12	40	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Trichlorofluoromethane	NV	NV	24000	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
Vinyl acetate	NV	NV	80000	0.0053 U	--	--	--	--	--	--	--
Vinyl chloride	NV	NV	240	0.0011 U	0.00087 U	0.0011 U	0.00091 U	0.00097 U	0.00084 U	0.0015 U	0.00097 U
TPH (mg/kg)											
Diesel-range hydrocarbons	2000	NV	NV	29 U	--	--	--	--	--	--	--
Lube-oil-range hydrocarbons	2000	NV	NV	57 U	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results, Betty Brite Cleaners Site
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

NOTES:

Result values in **bold** font indicate exceedance of MTCA Method A cleanup level. Non-detect results are not evaluated against MTCA cleanup levels.

Analytes and sample names with exceedances are also in **bold** font.

-- = not analyzed.

mg/kg = milligrams per kilogram (parts per million).

MTCA = Model Toxics Control Act.

NV = no value.

TPH = total petroleum hydrocarbon.

TOD = transit-oriented development.

U = Analyte not detected at or above method reporting limit.

URLU CULs = unrestricted land use cleanup levels.

CAR CULs = carcinogenic cleanup levels.

NCAR CULs = non-carcinogenic cleanup levels.

VOC = volatile organic compound.

Table 2
Summary of Groundwater Analytical Results, Betty Brite Cleaners
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Location	MTCA Method A CUL	MTCA Method B CUL[a]	CST_B5	CST_B6	CST_B7	CST_B8
Sample Name			**CST-B5-GW-27.0**	**CST-B6-GW-25.4**	**CST-B7-GW-30.0**	**CST-B8-GW-20.0**
Date Collected			06/02/2014	06/02/2014	06/03/2014	06/03/2014
TPH (mg/L)						
Diesel-range hydrocarbons	0.5	NV	--	0.26 U	0.27 U	0.27 U
Lube-oil-range hydrocarbons	0.5	NV	--	0.42 U	0.44 U	0.43 U
Ferrous Iron (mg/L)						
FERROUS Iron	NV	NV	1.42	8.3	0.496	5.56
Anions/Cations (mg/L)						
Chloride	NV	NV	63	22	22	13
Nitrate	NV	25.6	1.5	1.2	1.8	6
Sulfate	NV	NV	15	17	15	29
Sulfide	NV	NV	0.1 U	0.1 U	0.1 U	0.1 U
VOCs (ug/L)						
1,1,1,2-Tetrachloroethane	NV	1.68	1 U	0.2 U	0.4 U	1 U
1,1,1-Trichloroethane	200	16000	1 U	0.2 U	0.4 U	1 U
1,1,2,2-Tetrachloroethane	NV	0.22	1 U	0.2 U	0.4 U	1 U
1,1,2-Trichloroethane	NV	0.77	1 U	0.2 U	0.4 U	1 U
1,1-Dichloroethane	NV	1600	1 U	0.2 U	0.4 U	1 U
1,1-Dichloroethene	NV	400	1 U	0.2 U	0.4 U	1 U
1,1-Dichloropropene	NV	NV	1 U	0.2 U	0.4 U	1 U
1,2,3-Trichlorobenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
1,2,3-Trichloropropane	NV	0.0015	1 U	0.2 U	0.56 U	1 U
1,2,4-Trichlorobenzene	NV	1.51	1 U	0.2 U	0.4 U	1 U
1,2,4-Trimethylbenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
1,2-Dibromo-3-chloropropane	NV	0.05	5 U	1 U	2 U	5 U
1,2-Dibromoethane	0.01	NV	1 U	0.2 U	0.4 U	1 U
1,2-Dichlorobenzene	NV	720	1 U	0.2 U	0.4 U	1 U
1,2-Dichloroethane	5	0.481	1 U	0.2 U	0.4 U	1 U
1,2-Dichloropropane	NV	NV	1 U	0.2 U	0.4 U	1 U
1,3,5-Trimethylbenzene	NV	80	1 U	0.2 U	0.4 U	1 U
1,3-Dichlorobenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
1,3-Dichloropropane	NV	NV	1 U	0.2 U	0.4 U	1 U
1,4-Dichlorobenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
2,2-Dichloropropane	NV	NV	1 U	0.2 U	0.4 U	1 U
2-Butanone	NV	4800	25 U	5 U	10 U	25 U
2-Chloroethylvinyl ether	NV	NV	5 U	1 U	2 U	5 U
2-Chlorotoluene	NV	NV	1 U	0.2 U	0.4 U	1 U
2-Hexanone	NV	NV	10 U	2 U	4 U	10 U

Table 2
Summary of Groundwater Analytical Results, Betty Brite Cleaners
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Location	MTCA Method A CUL	MTCA Method B CUL[a]	CST_B5	CST_B6	CST_B7	CST_B8
Sample Name			**CST-B5-GW-27.0**	**CST-B6-GW-25.4**	**CST-B7-GW-30.0**	**CST-B8-GW-20.0**
Date Collected			06/02/2014	06/02/2014	06/03/2014	06/03/2014
4-Chlorotoluene	NV	NV	1 U	0.2 U	0.4 U	1 U
4-Isopropyltoluene	NV	NV	1 U	0.2 U	0.4 U	1 U
4-Methyl-2-pentanone	NV	640	10 U	2 U	4 U	10 U
Acetone	NV	7200	25 U	5 U	10 U	25 U
Benzene	5	0.795	1 U	0.2 U	0.4 U	1 U
Bromobenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
Bromodichloromethane	NV	0.71	1 U	0.2 U	0.4 U	1 U
Bromoform	NV	5.54	5 U	1 U	2 U	5 U
Bromomethane	NV	11.2	2.2 U	0.2 U	0.4 U	2.2 U
Carbon disulfide	NV	800	1 U	0.2 U	0.4 U	1 U
Carbon tetrachloride	NV	0.63	1 U	0.2 U	0.4 U	1 U
Chlorobenzene	NV	160	1 U	0.2 U	0.4 U	1 U
Chlorobromomethane	NV	NV	1 U	0.2 U	0.4 U	1 U
Chloroethane	NV	NV	5 U	1 U	2 U	5 U
Chloroform	NV	80	1 U	0.2 U	0.4 U	1 U
Chloromethane	NV	NV	6.5 U	1 U	2 U	6.5 U
cis-1,2-Dichloroethene	NV	16	1 U	0.2 U	0.4 U	4.3
cis-1,3-Dichloropropene	NV	0.44	1 U	0.2 U	0.4 U	1 U
Dibromochloromethane	NV	0.52	1 U	0.2 U	0.4 U	1 U
Dibromomethane	NV	80	1 U	0.2 U	0.4 U	1 U
Dichlorodifluoromethane	NV	1600	1 U	0.2 U	0.4 U	1 U
Ethylbenzene	700	800	1 U	0.2 U	0.4 U	1 U
Hexachlorobutadiene	NV	0.56	1 U	0.2 U	0.4 U	1 U
Isopropylbenzene	NV	800	1 U	0.2 U	0.4 U	1 U
m,p-Xylene	1000	1600	2 U	0.4 U	0.8 U	2 U
Methyl iodide	NV	NV	9.5 U	1 U	3 U	9.5 U
Methyl tert-butyl ether	20	24.3	1 U	0.2 U	0.4 U	1 U
Methylene chloride	5	21.9	5 U	1 U	2 U	5 U
Naphthalene	160	160	5 U	1 U	2 U	5 U
n-Butylbenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
n-Propylbenzene	NV	800	1 U	0.2 U	0.4 U	1 U
o-Xylene	1000	1600	1 U	0.2 U	0.4 U	1 U
sec-Butylbenzene	NV	NV	1 U	0.2 U	0.4 U	1 U
Styrene	NV	1600	1 U	0.2 U	0.4 U	1 U
tert-Butylbenzene	NV	NV	1 U	0.2 U	0.4 U	1 U

Table 2
Summary of Groundwater Analytical Results, Betty Brite Cleaners
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Location	MTCA Method A CUL	MTCA Method B CUL[a]	CST_B5	CST_B6	CST_B7	CST_B8
Sample Name			**CST-B5-GW-27.0**	**CST-B6-GW-25.4**	**CST-B7-GW-30.0**	**CST-B8-GW-20.0**
Date Collected			06/02/2014	06/02/2014	06/03/2014	06/03/2014
Tetrachloroethene	**5**	20.8	**140**	**31**	**66**	**180**
Toluene	1000	640	5 U	1 U	2 U	5 U
trans-1,2-Dichloroethene	NV	160	1 U	0.2 U	0.4 U	1 U
trans-1,3-Dichloropropene	NV	0.44	1 U	0.2 U	0.4 U	1 U
Trichloroethene	5	0.54	1 U	0.2 U	0.4 U	3.2
Trichlorofluoromethane	NV	2400	1 U	0.2 U	0.4 U	1 U
Vinyl acetate	NV	NV	5 U	1 U	2 U	5 U
Vinyl chloride	NV	0.2	1 U	0.2 U	0.4 U	1 U
Methane (ug/L)						
Methane	NV	NV	27	2.6	1.3	3.4

NOTES:

Result values in **bold** font indicate exceedance of MTCA Method A cleanup level. Non-detect results are not evaluated against MTCA cleanup levels. Analytes and sample names with exceedances are also in **bold** font.

Exceedances of MTCA B CULS are shaded. Non-detect results are not evaluated against MTCA screening criteria.

-- = not analyzed.

CUL = cleanup level.

mg/L = milligrams per liter (parts per million).

MTCA = Model Toxics Control Act.

NV = no value.

TPH = total petroleum hydrocarbon.

TOD = transit-oriented development.

U = Analyte not detected at or above method reporting limit.

ug/L = micrograms per liter (parts per billion).

VOC = volatile organic compound.

[a]MTCA Method B CUL will be used when no MTCA Method A CUL is available. Lower of carcinogen or noncarcinogen value will be used.

Table 3
Remedial Cost Estimate—Alternative 1: In Situ Bioremediation Groundwater Treatment and Groundwater Monitoring
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Remedy Components

1 Conduct baseline groundwater monitoring/sampling event prior to in situ bioremediation.

2 In situ bioremediation of groundwater using enhanced anaerobic bioremediation.

3 Conduct consecutive quarterly groundwater monitoring/sampling events for two years.

4 Conduct semiannual groundwater monitoring/sampling events for one year.

5 Environmental covenant recorded against the Property

Assumptions

1 In situ treatment via injection of bioremediation products into existing wells.

3 30% contingency.

Item	Description	Quantity	Units	Unit Cost	Total Cost
Remedial Action - Dissolved-Phase Tetrachloroethene Groundwater Plume					
	Well installation				
	Compliance well installation (six wells)	1	LS	$18,000	$18,000
	Groundwater remediation				
	Injection point installation (33 direct-push locations)	10	DAY	$2,900	$29,000
	In situ anaerobic bioremediation products	1	EA	$68,174	$68,174
	Baseline, Quarterly, and Semiannual groundwater monitoring/sampling events				
	Monitoring	11	EA	$3,800	$41,800
	Analytical	11	EA	$1,100	$12,100
	Reporting	11	EA	$4,200	$46,200
	Remedial Action Subtotal				**$215,300**
Professional Services					
	Project management	1	LS	$6,000	$6,000
	Permitting and agency negotiations	1	LS	$4,000	$4,000
	Environmental covenant	1	LS	$7,500	$7,500
	Survey	1	LS	$5,000	$5,000
	Remedial design	1	LS	$15,000	$15,000
	Bid assistance	1	LS	$7,000	$7,000
	Remedial action application/injection oversight	1	LS	$50,000	$50,000
	Data analysis	11	EA	$1,000	$11,000
	Reporting	11	EA	$2,500	$27,500
	Professional Services Subtotal				**$133,000**
Remedial Action and Professional Services Subtotal					**$348,300**
Contingency				**30%**	**$104,500**
	TOTAL COST				**$452,800**

Notes: EA = each; LS = lump sum

Table 4
Remedial Cost Estimate—Alternative 2: Long-Term Groundwater Monitored Natural Attenuation
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Remedy Components

1 Long-term monitored natural attenuation of groundwater relying upon natural biodegradation.

2 Conduct consecutive quarterly groundwater monitoring/sampling events for ten years.

3 Environmental covenant recorded against the Property

Assumptions

1 Contaminants will naturally degrade to below applicable cleanup levels over a ten year period.

2 30% contingency

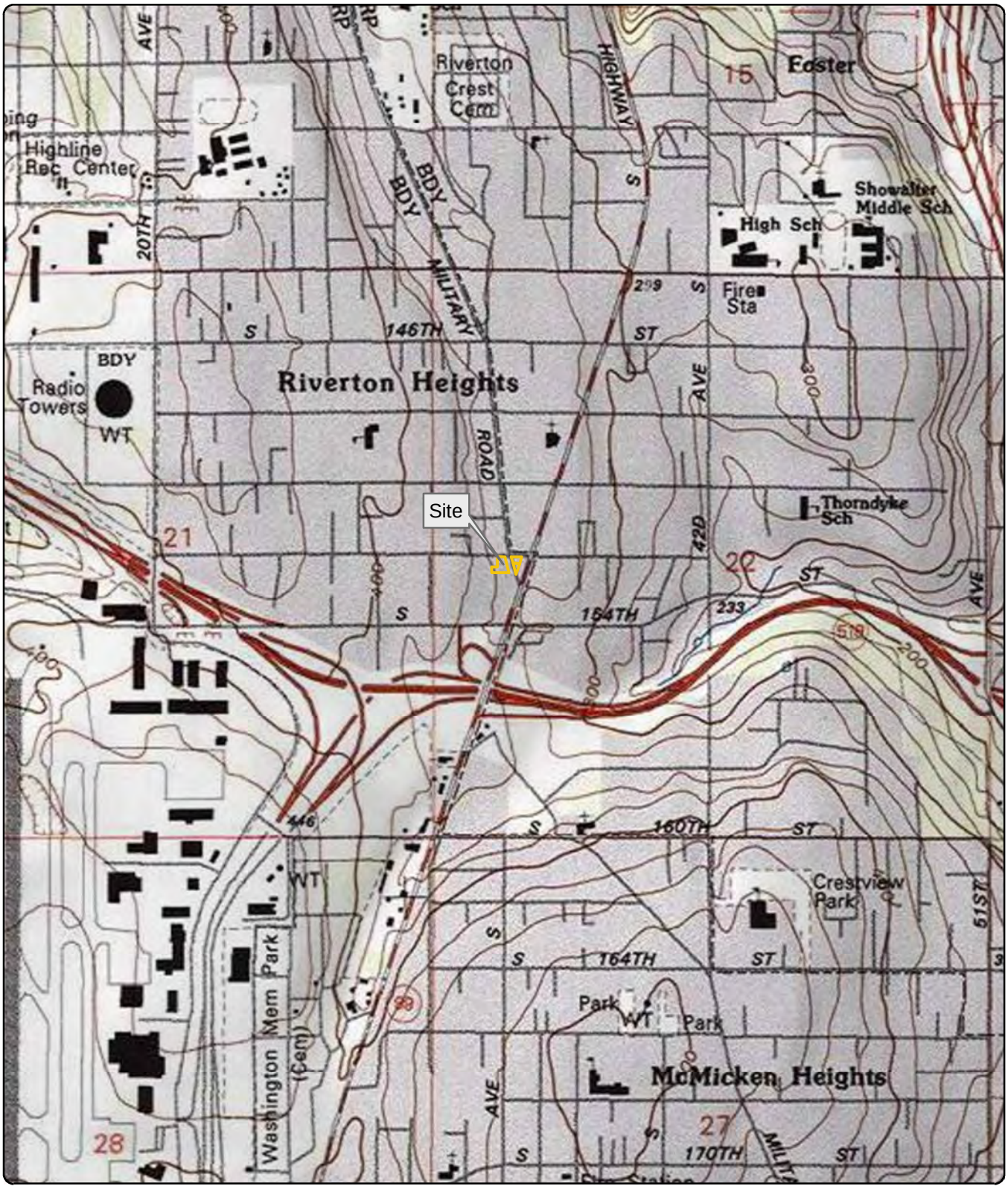
Item	Description	Quantity	Units	Unit Cost	Total Cost
Remedial Action - Dissolved-Phase Tetrachloroethene Groundwater Plume					
	Well installation				
	Compliance well installation (six wells)	1	LS	$18,000	$18,000
	Quarterly groundwater monitoring/sampling events				
	Monitoring	40	EA	$3,800	$152,000
	Analytical	40	EA	$1,100	$44,000
	Reporting	40	EA	$4,200	$168,000
	Remedial Action Subtotal				**$382,000**
Professional Services					
	Project management	1	LS	$10,000	$10,000
	Monitoring wells design, oversight, and documentation	1	LS	$17,000	$17,000
	Permitting and agency negotiations	1	LS	$2,500	$2,500
	Environmental covenant	1	LS	$7,500	$7,500
	Survey	1	LS	$5,000	$5,000
	Remedial design	1	LS	$5,000	$5,000
	Data analysis—ten years of quarterly events	40	EA	$1,000	$40,000
	Coordination/reporting to Ecology	40	EA	$500	$20,000
	Professional Services Subtotal				**$107,000**
Remedial Action and Professional Services Subtotal					**$489,000**
Contingency				**30%**	**$146,700**
	TOTAL COST				**$635,700**

Notes: EA = each; LS = lump sum

Table 5
Disproportionate-Cost Analysis, Betty Brite Cleaners Site
City of SeaTac South 154th Street TOD Property
SeaTac, Washington

Alternative	Description	Protectiveness	Permanence	Long-Term Effectiveness	Management of Short-Term Risks	Implementability	**Average**	Public Concerns	**Total Cost**
Alternative 1	In situ bioremediation of groundwater and groundwater monitoring	5	5	5	4	5	**4.8**	TBD	**$ 452,800**
Alternative 2	Long term groundwater monitored natural attenuation	1	5	3	5	5	**3.8**	TBD	**$ 635,700**

FIGURES



Site Address: 15209 Military Road South, SeaTac, Washington
Source: US Geological Survey (2013) 7.5 minute
topographic quadrangle: Tacoma
Section 22, Township 23 North, Range 4 East

Legend

Site Location

Figure 1
Site Location

Betty Brite Cleaners Site
South 154th Street
Transit-Oriented Development
SeaTac, Washington

0 1,000 2,000
Feet

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Path: X:\0879.01 City of SeaTac\Projects\Fig1_Site_Location.mxd
Print Date: 9/17/2014
Approved By: jvan
Produced By: rmaronn
Project: : 0879.01.02

Figure 2
Site Features

Betty Brite Cleaners Site
South 154th Street
Transit-Oriented Development
SeaTac, Washington

Legend

2014 MFA Environmental Assessment

- Boring Location

2009 Golder Investigation

- Groundwater Sample
- Soil Vapor Sample

2009 EAI Phase II Investigation

- Soil Boring

Site Features

- OF — Inactive Oil Furnace
- Pole-Mounted Transformer
- Betty Brite Dry Cleaners
- Building Extent
- Target Properties
- City-owned Parcels
- Sewer Line
- Fence
- OHW — Overhead Wire
- Underground Communications Line
- Underground Water Line
- G G Underground Gas Line
- Underground Electric Line

City Stormwater Features

- Unknown Type CB/MH
- CB Type 1/1L
- CB Type 2/3
- MH
- Discharge Points
- Fitting
- Cleanout
- Main Pipes
- Culverts
- Laterals
- Ditch

0 50 100
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; roads, parcels, and stormwater features obtained from King County GIS; sewer lines are approximate and were digitized from drawings provided by Valley View sewer district. Target property boundaries surveyed by PGS.

Notes:
1. Building and sample locations obtained from 2009 Environmental Associates, Inc. Preliminary Phase II, SeaTac Center, and a 2009 Golder Associates, Inc. draft report on groundwater, soil, and soil vapor investigation, Pancake Chef property.
2. Feature locations are appoximate.
3. UST = Underground storage tank.

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Path: X:\0879.01 City of SeaTac\Projects\Fig2_Site Features.mxd
Print Date: 9/17/2014
Approved By: yvan
Produced By: rmaronn
Project: 0879.01.02

Figure 3
Groundwater Potentiometric Map—June 2014

Betty Brite Cleaners Site
South 154th Street
Transit-Oriented Development
SeaTac, Washington

S 152ND ST

PIN:
0043000019

Betty Brite
Dry Cleaners

Pancake
Chef

PIN:
0043000020

THE PROPERTY

PIN:
0043000015

CST-B7
311.40

311.00

CST-B5
310.17

310.50

MILITARY RD S

310.00

CST-B6
310.15
UST

309.50

CST-B8
309.40

PIN:
0043000100

PIN:
0043000093

INTERNATIONAL BLVD

Legend

- Groundwater Monitoring Location and Elevation (in Feet MSL)
- Groundwater Elevation Contour
- Groundwater Flow Direction
- UST — Underground Storage Tank
- Betty Brite Dry Cleaners
- Building Extent
- Target Properties
- City-owned Parcels

Notes:
1. MSL = mean sea level.
2. All groundwater monitoring locations were surveyed by Pacific Geomatic Surveyors in June 2014.
3. Groundwater elevations were measured June 2-4, 2014.

0 12.5 25
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; roads and parcels obtained from King County GIS; target property boundaries surveyed by Pacific Geomatic Surveyors.

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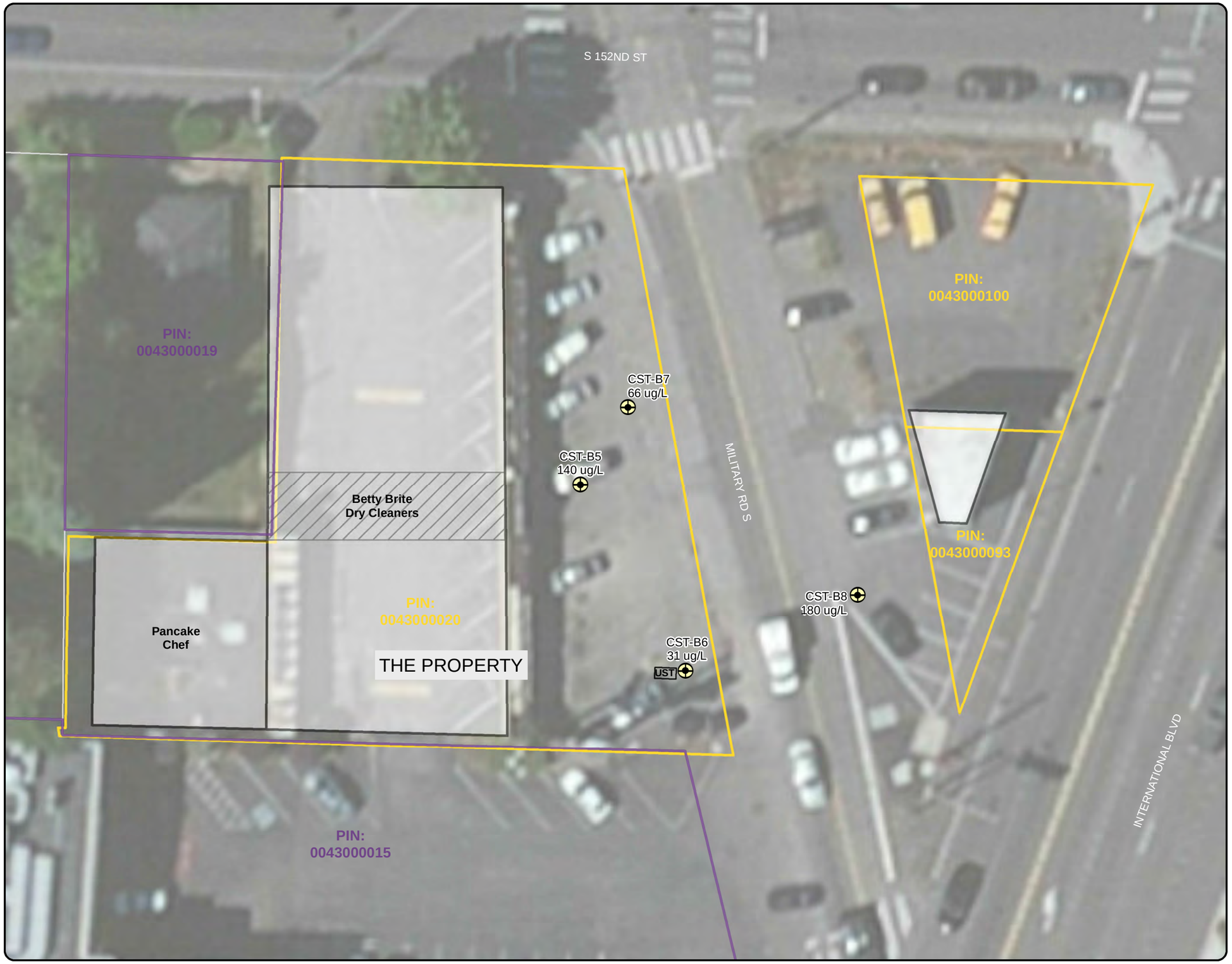
Path: X:\0879.01 City of SeaTac\Projects\Fig3_Groundwater Potentiometric Map_June 2014.mxd
Print Date: 9/17/2014
Approved By: yuan
Produced By: rmaconn
Project: 0879.01.02

Figure 4
Groundwater PCE Results

Betty Brite Cleaners Site
South 154th Street
Transit-Oriented Development
SeaTac, Washington



Legend

Groundwater Boring Locations
- CST-B8 - Boring ID
  180 ug/L - PCE concentration
- UST — Underground Storage Tank
- Betty Brite Dry Cleaners
- Building Extent
- Target Properties
- City-owned Parcels

Notes:
1. PCE = Tetrachloroethene.
2. ug/L = micrograms per liter.
3. All groundwater boring locations were surveyed by Pacific Geomatic Surveyors in June 2014.

0 12.5 25
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; roads and parcels obtained from King County GIS; target property boundaries surveyed by Pacific Geomatic Surveyors.

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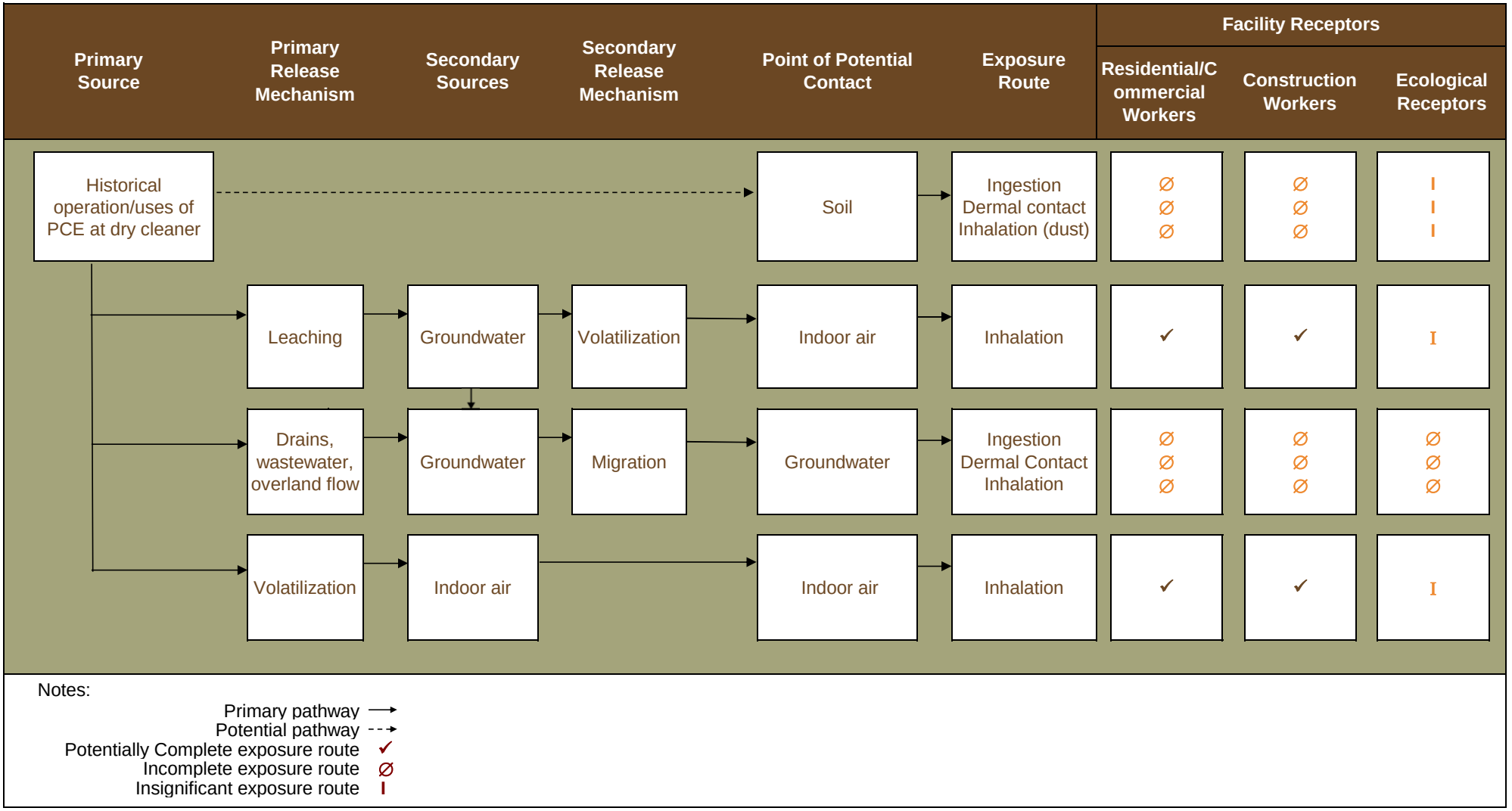
Path: X:\0879.01 City of SeaTac\Projects\Fig4_Groundwater PCE Results.mxd
Print Date: 9/17/2014
Approved By: ywan
Produced By: rmarconn
Project: 0879.01.02

Figure 5
Conceptual Site Model of Potential Exposure Pathways
Bette Brite Cleaners Site
South 154th Street Transit-Oriented Development
SeaTac, Washington



Notes:

Primary pathway →
Potential pathway - - →
Potentially Complete exposure route ✓
Incomplete exposure route Ø
Insignificant exposure route I

APPENDIX A

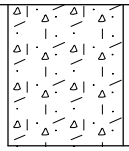
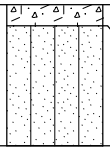
BORING LOGS

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-1**	**1 of 1**

Project Name	**City of SeaTac**	TOC Elevation (feet)	
Project Location	**S 154th St. SeaTac, Washington**	Surface Elevation (feet)	
Start/End Date	**06/03/14 to 06/03/14**	Northing	
Driller/Equipment	**ESN Northwest/Limited Access Rig**	Easting	
Geologist/Engineer	**Y. Van**	Hole Depth	**2.0-feet**
Sample Method	**AMS Power Probe 9100P**	Outer Hole Diam	**2.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**100**	**SS**		**CSTB1-S-2.0**			*0.0 to 0.3 feet: CONCRETE.* *0.3 to 2.0 feet: SILTY SAND (SM); grayish brown; 15% gravel, fine to coarse, subrounded; 15% fines; 70% sand; medium density; dry to moist.*
2									

NOTES: *Drilling refusal at 2.0 feet. Split spoon sampler and drive head stuck at 2.0 to 4.0 feet bgs. Abandoned both.*
PID = photoionization detector.
ppm = parts per million.
bgs = below ground surface.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-2**	**1 of 1**

Project Name	**City of SeaTac**	TOC Elevation (feet)	
Project Location	**S 154th St. SeaTac, Washington**	Surface Elevation (feet)	
Start/End Date	**06/03/14 to 06/03/14**	Northing	
Driller/Equipment	**ESN Northwest/Limited Access Rig**	Easting	
Geologist/Engineer	**Y. Van**	Hole Depth	**4.0-feet**
Sample Method	**AMS Power Probe 9100P**	Outer Hole Diam	**2.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**100**	**SS**		**CSTB2-S-2.0 PID - 0.2 ppm**			*0.0 to 0.3 feet: CONCRETE.*
									0.0 to 2.0 feet: POORLY GRADED SAND (SP); grayish brown; 20% gravel, fine to medium, subrounded; 80% sand; medium density; damp.
2									
3			**100**	**SS**		**CSTB2-S-4.0 PID = 0.1 ppm**			*2.0 to 4.0 feet: SILTY SAND (SM); grayish brown; 10% gravel; 60% sand; 30% fines; very compacted and dense; potentially weathered glacial till; moist.*
4									

NOTES: *Drilling refusal at 4.0 feet. Split spoon sampler and drive head stuck at 3.0 to 5.0 feet bgs. Abandoned both.*
PID = photoionization detector.
ppm = parts per million.
bgs = below ground surface.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-3**	**1 of 1**

Project Name	**City of SeaTac**	TOC Elevation (feet)	
Project Location	**S 154th St. SeaTac, Washington**	Surface Elevation (feet)	
Start/End Date	**06/03/14 to 06/03/14**	Northing	
Driller/Equipment	**ESN Northwest/Limited Access Rig**	Easting	
Geologist/Engineer	**Y. Van**	Hole Depth	**2.0-feet**
Sample Method	**Hard Drive Steel Probe**	Outer Hole Diam	**2.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**100**	**SS**		**CSTB3-S-2.0 PID = 0.1 ppm**			*0.0 to 0.3 feet: CONCRETE.*
2									*0.5 to 2.0 feet: POORLY GRADED SAND (SP); gray; 15% gravel, well sorted, subrounded, small to medium; 80% sand, medium; 5% fines; minor silt; moist.*

NOTES: *Drilling refusal at 2.0 feet. Sloughing of gravel caused by pea gravel.*
PID = photoionization detector.
ppm = parts per million.

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-4**	**1 of 1**

Project Name	***City of SeaTac***	*TOC Elevation (feet)*	
Project Location	***S 154th St. SeaTac, Washington***	*Surface Elevation (feet)*	
Start/End Date	***06/03/14 to 06/003/14***	*Northing*	
Driller/Equipment	***ESN Northwest/Hand Steel Probe***	*Easting*	
Geologist/Engineer	***Y. Van***	*Hole Depth*	***2.0-feet***
Sample Method	***Hand Steel Probe***	*Outer Hole Diam*	***2.25-inch***

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			***100***	***SS***		***CSTB4-S-2.0 PID = 0.0 ppm***			*0.0 feet: CONCRETE.*
									0.5 feet: SILTY CLAYEY SAND (SC); gray; 10% gravel, subrounded; 30% fines, low plasticity; 60% sand, fine to medium; moist.
2									

NOTES: *Drilling refusal at 2.0 feet bgs.*
PID = photoionization detector.
ppm = parts per million.
bgs = below ground surface.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-5**	**1 of 2**

Project Name	**City of SeaTac**	TOC Elevation (feet)	
Project Location	**S 154th St. SeaTac, Washington**	Surface Elevation (feet)	
Start/End Date	**06/02/14 to 06/02/14**	Northing	
Driller/Equipment	**Holt Drilling Services Inc./B-59 Hollow Stem Auger**	Easting	
Geologist/Engineer	**Y. Van/ K. Roslund**	Hole Depth	**36.5-feet**
Sample Method	**B-59 Hollow Stem Auger**	Outer Hole Diam	**8.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0.0 to 0.2 feet: ASPHALT; dry.
5			**75**	**SS**		**CSTB5-S-6.0**	**14, 14, 12,**		5.0 to 6.5 feet: POORLY GRADED SAND (SP); grayish brown; 20% gravel, subrounded; 70% sand, medium, subrounded; 10% fines; moist.
						PID = 0.2 ppm			
10			**100**	**SS**		**CSTB5-S-11.0**	**13, 42, 50-6"**		10.0 to 11.5 feet: POORLY GRADED SAND with SILT (SP-SM); grayish brown; 25% gravel, subrounded; 60% sand, medium, subrounded; 15% fines; moist.
						PID = 0.1 ppm			
15			**100**	**SS**		**CSTB5-S-16.0**	**50-6"**		15.0 to 15.5 feet: POORLY GRADED SAND (SP); grayish brown; 20% gravel, subrounded; 70% sand, medium, subrounded; 10% fines, soft; moist.
						PID = 0.0 ppm			

NOTES: PID = photoionization detector.
ppm = parts per million.
Temporary screen installed 25-35 ft.

▽ **Water level observed while drilling.**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	CST B-5	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			100	SS		CSTB5-S-20.5 PID = 0.0 ppm	50-6"		20.0 to 20.5 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 70% sand, fine to medium, subrounded; 20% fines; trace clay; moist. @ 19 feet; drilling becomes difficult.
23			100	SS		CSTB5-S-23.5 PID = 0.1 ppm	30, 50-4"		22.5 to 23.5 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 75% sand, medium, subrounded; 15% fines; trace clay; moist.
26			100	SS		CSTB5-S-26.0 PID = 0.0 ppm	31, 50-5.5"		25.0 to 26.0 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 70% sand, medium, subrounded to subangular; 20% fines; moist.
28	▽								
31			100	SS		CSTB5-S-31.0 PID = 0.3 ppm	24, 38, 50-5"		30.0 to 31.5 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 70% sand, medium, subrounded to subangular; 20% fines; wet.
36			100	SS		CSTB5-S-36.0	15, 50-4"		35.0 to 36.5 feet: POORLY GRADED SAND (SP); grayish brown; 45% gravel, subrounded; 50% sand, coarse, subrounded; 5% fines; wet.

NOTES: PID = photoionization detector.
ppm = parts per million.
Temporary screen installed 25-35 ft.

▽ **Water level observed while drilling.**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	CST B-6	1 of 2

Project Name	City of SeaTac	TOC Elevation (feet)	
Project Location	S 154th St. SeaTac, Washington	Surface Elevation (feet)	
Start/End Date	06/02/14 to 06/02/14	Northing	
Driller/Equipment	Holt Drilling Services, Inc./B-59 Hollow Stem Auger	Easting	
Geologist/Engineer	Y. Van/ K. Roslund	Hole Depth	35.0-feet
Sample Method	B-59 Hollow Stem Auger	Outer Hole Diam	8.25-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1									0.0 to 0.2 feet: ASPHALT; dry.
5			100	SS		PID = 0.0 ppm	11, 19, 36		5.0 to 6.5 feet: CLAYEY SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, fine to medium; trace clay; PID = 0.0 ppm; moist.
8			100	SS		CST-B6-S-8.0 PID = 0.1 ppm	7, 11, 17		7.5 to 9.0 feet: CLAYEY SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, fine to medium; moist.
13			100	SS		CST-B6-S-14.0 PID = 0.0 ppm	30, 50-5"		12.5 to 14.0 feet: CLAYEY SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, fine to medium; moist.
17			100	SS		CST-B6-S-17.0 PID 0.1 ppm			17.0 to 18.5 feet: CLAYEY SAND W/ GRAVEL (SC); grayish brown; 15% gravel, subrounded; 30% fines, low to moderate plasticity; 55% sand, fine to medium; moist.

NOTES: PID = photoionization detector.
ppm = parts per million.
Temporary screen installed 25-35 ft.

▽ **Water level observed while drilling.**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	CST B-6	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			100	SS		CST-B6-S-21.5 PID = 0.1 ppm	27, 50-3"		20.0 to 21.5 feet: CLAYEY SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, fine to medium; trace clay; moist.
22									
23									
24									
25			100	SS			50-4"		25.0 to 26.5 feet: SILTY SAND (SM): grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, fine to medium; trace clay; moist.
26	▽					CST-B6-S-26.5 PID = 0.1 ppm			
27									
28									
29									
30			100	SS			22, 50-3"		30.0 to 31.5 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, fine to medium; wet.
31						CST-B6-S-31.5 PID = 0.5 ppm			
32									
33									
34									
35									

NOTES: *PID = photoionization detector.*
ppm = parts per million.
Temporary screen installed 25-35 ft.

▽ ***Water level observed while drilling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-7**	**1 of 2**

Project Name	**City of SeaTac**	TOC Elevation (feet)	
Project Location	**S 154th St. SeaTac, Washington**	Surface Elevation (feet)	
Start/End Date	**06/02/14 to 06/03/14**	Northing	
Driller/Equipment	**Holt Drilling Services Inc./B-59 Hollow Stem Auger**	Easting	
Geologist/Engineer	**Y. Van/ K. Roslund**	Hole Depth	**30.9-feet**
Sample Method	**B-59 Hollow Stem Auger**	Outer Hole Diam	**8.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1									0.0 to 0.2 feet: ASPHALT; dry.
2									
3									
4									
5				SS		CSTB7-S-4.5 PID = 5.4 ppm			4.5 to 5.0 feet: SILTY SAND (SM); grayish brown; 15% gravel, subrounded; 65% sand; 20% fines; trace clay; moist.
6									
7									
8									
9									
10									10.0 to 11.5 feet: SILTY SAND (SM); grayish brown; 10% gravel; 65% sand; 25% fines; trace clay; moist.
11									
12			100	SS		CSTB7-S-11.7 PID = 0.0 ppm	50-6"		
13									
14									
15									
16									
17				SS		CSTB7-S-17.0 PID = 1.2 ppm			17.0 to 17.5 feet: POORLY GRADED SAND (SP); grayish brown; 15% gravel, fine to medium, subrounded; 75% sand, well-sorted; 10% fines; moist.
18									
19									
20									

NOTES: *PID = photoionization detector.*
ppm = parts per million.
Temporary screen installed 20-30 ft.

▽ ***Water level observed while drilling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	CST B-7	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			100	SS		CSTB7-S-21.5	31, 50-5"		20.0 to 21.5 feet: SILTY SAND (SM); grayish brown; 15% gravel, subrounded; 65% sand, fine to medium, subrounded; 20% fines; minor iron staining present; moist.
22									
23			100	SS			28, 50-4"		22.5 to 24.0 feet: SILTY SAND (SM); grayish brown; 10% gravel; 65% sand; 25% fines; moist.
24						CSTB7-S-24.0 PID = 0.0 ppm			
25	▽		100	SS		CSTB7-S-25.0 PID = 0.1 ppm	25, 50-5"		25.0 to 26.5 feet: SILTY SAND (SM); 10% gravel, 70% sand, well sorted, 20% fines; solvent-like odor; wet.
26									
27									
28									
29									
30			100	SS		CSTB7-S-30.5 PID = 0.4 ppm	35, 50-5"		30.0 to 30.9 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 70% sand; 20% fines; moist.

NOTES: PID = photoionization detector.
ppm = parts per million.
Temporary screen installed 20-30 ft.

▽ **Water level observed while drilling.**

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	**CST B-8**	**1 of 2**

Project Name	**City of SeaTac**	TOC Elevation (feet)	
Project Location	**S 154th St. SeaTac, Washington**	Surface Elevation (feet)	
Start/End Date	**06/03/14 to 06/03/14**	Northing	
Driller/Equipment	**Holt Drilling Services Inc./B-59 Hollow Stem Auger**	Easting	
Geologist/Engineer	**K. Roslund**	Hole Depth	**30.9-feet**
Sample Method	**B-59 Hollow Stem Auger**	Outer Hole Diam	**8.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0.0 to 0.5 feet: ASPHALT.
5			**70**	**SS**		**CSTB8-S-6.5** **PID = 0.5 ppm**	**11, 18, 6**		5.0 to 6.5 feet: WELL GRADED SAND with SILT (SW-SM); grayish brown; 10% gravel, subrounded to subangular; 10% fines; 80% sand, medium to fine, subrounded; moist.
10			**100**	**SS**		**CSTB8-S-11.5** **PID = 0.0 ppm**	**4, 7, 11**		10.0 to 11.5 feet: CLAY WITH SAND OR GRAVEL (CL); medium brown with mottled orange staining; 10% gravel, subrounded; 20% sand, fine, subrounded; 70% fines, hard, medium plasticity; moist.
15			**100**	**SS**		**CSTB8-S-16.5** **PID = 0.0 ppm**	**14, 35, 32**		15.0 to 16.5 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 20% fines; 70% sand, subrounded, medium to fine; no clay impacts, large cobble-decomposed granite at back of sample; moist.

NOTES: *PID = photoionization detector.*
ppm = parts per million.
Temporary screen installed 20-30 ft.

▽ ***Water level observed while drilling.***

GBLWC W:\GINT\GINTW\PROJECTS\0879.01\CSTB5-CSTB8.GPJ 7/31/14

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0879.01.02	CST B-8	2 of 2

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21			100	SS		CSTB8-S-21.0 PID = 0.0 ppm	32, 50-5"		20.0 to 21.0 feet: SILTY SAND (SM); grayish brown with some iron staining; 15% gravel, subrounded; 25% fines; 60% sand, medium to fine, subrounded; moist.
22									
23			100	SS			26, 50-5.5"		22.5 to 25.0 feet: SILTY SAND (SM); grayish brown with iron staining; 10% gravel, subrounded; 25% fines; 65% sand, medium, subrounded; wet.
24						CSTB8-S-23.0 PID = 0.0 ppm			
25	▽		100	SS			50-6"		25.0 to 25.5 feet: SILTY SAND (SM); grayish brown; 10% gravel, subrounded; 25% fines, medium plasticity; 65% sand, medium to fine, subrounded; trace clay; wet.
26						CSTB8-S-25.3 PID = 0.1 ppm			
27									
28									
29									
30			100	SS			24, 50-5"		30.0 to 30.9 feet: SILTY SAND (SM); grayish brown; 15% gravel, subrounded; 20% fines; 65% sand, subrounded, medium to fine; wet.
						CSTB8-S-30.5 PID = 0.2 ppm			

NOTES: PID = photoionization detector.
ppm = parts per million.
Temporary screen installed 20-30 ft.

▽ **Water level observed while drilling.**

GBLWC W:\GINT\GINTW\PROJECTS\0879.01\CSTB5-CSTB8.GPJ 7/31/14

APPENDIX B

GEOPHYSICAL SURVEY

Global Geophysics

P. O. Box 2229
Redmond, WA 98053
Tel: 425-890-4321
Fax: 360-805-0259

June 2, 2014 Our Ref.: 104-0528.000

Maul Foster & Alongi, Inc.
411 1st Avenue S., Suite 610
Seattle, WA 98104

Attention: Ms.Yen-Vy Van

RE: REPORT ON THE GEOPHYSICAL SURVEY AT A PROPERTY IN SEATAC, WA

Dear Ms. Van:

Global Geophysics conducted electromagnetic survey on May 28th, 2014 at a property at the corner of S. 154th St. and International Blvd., SeaTac, WA. The proposed objective of the geophysical investigation was to assist in locating underground storage tank.

METHODOLOGY AND INSTRUMENTATION

EM61 was used for this study. The following paragraphs describe the method and field procedure.

Time Domain Electromagnetic (EM61)

The time-domain electromagnetic system is capable of detecting buried metal objects. It transmits a pulsed electromagnetic field into the ground, which induces eddy currents in buried metallic objects. These eddy currents generate secondary electromagnetic fields that are detected by the system. The time duration or decay rate, of the secondary EM field is related to the electrical conductivity characteristics of the buried object.

A four-channel (gate) high sensitivity metal detector, Geonics EM61 Mk2, will be used to collect the data along the same traverses as the GPR. The low channel number (1) represents anomalies produced by shallow objects and the high channel number (4) represents anomalies produced by deeper objects. The subsurface depth range is from approximately 1 to 15 feet. The data will be stored digitally and downloaded after the survey for analysis and mapping

RESULTS

The EM response data is contoured and presented in Figure 1. The surface features and two EM anomalies are shown in this Figure. The two EM anomalies are the EM response from buried metal objects.

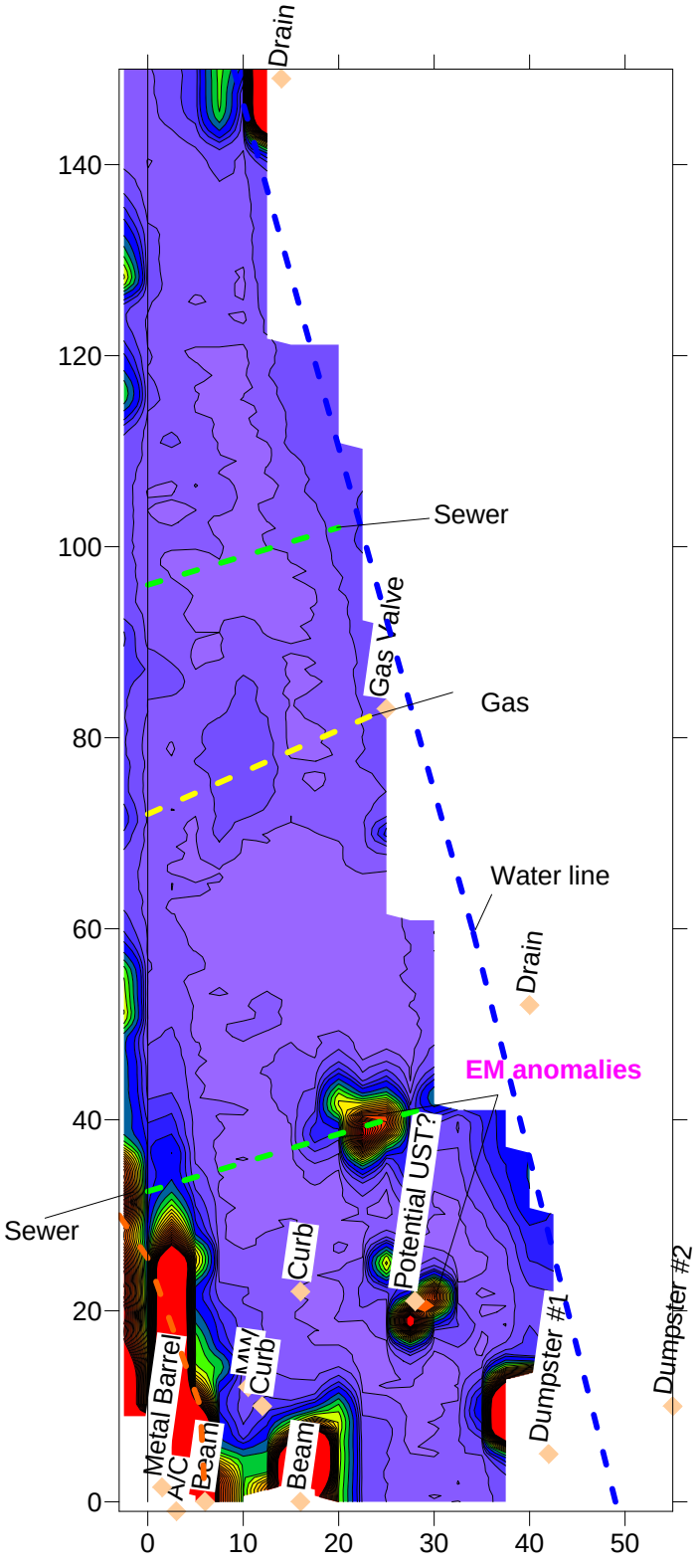
LIMITATIONS OF THE GEOPHYSICAL METHOD

Global geophysics services are conducted in a manner consistent with the level of care and skill ordinarily exercised by other members of the geophysical community currently practicing under similar conditions subject to the time limits and financial and physical constraints applicable to the services. EM is a remote sensing geophysical method that may not detect all subsurface conditions due to the limitations of the methods, soil conditions, size of the features and their depths.

Sincerely,

Global Geophysics

John Liu, Ph.D., R.G.
Principal Geophysicist



0ft 20ft 40ft

PROJECT

UST Locate
SeaTac, WA

TITLE

EM61 Data Contour Plan

Global Geophysics
P. O. Box 2229
Redmond, WA, 98073-2229
Tel: 425-890-4321

PROJECT NO.: 104-0528.000			FILE No.
DESIGN	--		SCALE AS SHOWN REV.
CADD	JL		
CHECK	JL		**FIGURE 1**
REVIEW	--		

APPENDIX C

ALTA LAND TITLE SURVEY

ALTA/ACSM LAND TITLE SURVEY

NW 1/4 OF THE SW 1/4, SEC. 22, T. 23 N., R. 4 E., W.M.
CITY OF SEA-TAC, KING COUNTY, WASHINGTON

LEGAL DESCRIPTION
ORDER NO. 1365934

(PER COMMITMENT FOR TITLE INSURANCE ISSUED BY CHICAGO TITLE INSURANCE COMPANY ORDER NO. 1365934, DATED JUNE 3, 2013 AT 8:00 A.M.)

THE SOUTH 50 FEET OF LOT 5, EXCEPT THE WEST 90 FEET THEREOF; AND
THE NORTH 2 FEET OF THE EAST 175.8 FEET OF LOT 6,
ALL IN BLOCK 1, THIRD ADDITION TO ADAMS HOME TRACTS, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 15 OF PLATS, PAGE 17, IN KING COUNTY, WASHINGTON;

TOGETHER WITH LOT 5, BLOCK 1, THIRD ADDITION TO ADAMS HOME TRACTS, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 15 OF PLATS, PAGE 17, IN KING COUNTY, WASHINGTON;
EXCEPT THE WEST 144 FEET THEREOF; AND
EXCEPT THE SOUTH 50 FEET THEREOF.

SPECIAL EXCEPTIONS
ORDER NO. 1365934

(PER COMMITMENT FOR TITLE INSURANCE ISSUED BY CHICAGO TITLE INSURANCE COMPANY FILE NO.: 1365934 DATED: JUNE 3, 2013 AT 8:00 A.M.)

A 1. EASEMENT AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
BETWEEN: PACIFIC SOUTH CENTER ASSOCIATES
AND: MARGARET SAETY, IMOGENE HUBBARD AND PATRICIA OSBORN
RECORDED : JULY 15, 1986
RECORDING NUMBER: 8607150559
REGARDING : PARKING, INGRESS, EGRESS, SEWAGE LINE AND ADDITIONAL PURPOSES

B AMENDED EASEMENT AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
BY: HERITAGE PACIFIC LIMITED
SOUTHCENTER ASSOCIATES, LLC
AND BETWEEN: MARGARET SAETY, IMOGENE HUBBARD AND BOYD KNEELAND
RECORDED : JULY 25, 2003
RECORDING NO.: 200307250312O

C 2 . MATTERS DISCLOSED BY SURVEY RECORDED UNDER RECORDING NUMBER 200804099000004, AS FOLLOWS:
A) BUILDING ON PREMISES HEREIN LIES 0 . 0 7 ' NORTH OF BOUNDARY ONTO PROPERTY ADJOINING ON THE NORTHWEST;
B) PORTION OF STEEL PIPE LIES WESTERLY OF BOUNDARY LINE ONTO PROPERTY ADJOINING ON THE NORTHWEST;
C) CONCRETE WALL NOT CONFORMING TO WESTERLY LINE;
D) OVERHEAD UTILITY LINE APPARENTLY SERVING PREMISES HEREIN CROSSES NORTHEASTERLY PORTION OF PROPERTY ADJOINING ON THE NORTHWEST.

D 3. PAYMENT OF THE REAL ESTATE EXCISE TAX, IF REQUIRED.
THE PROPERTY DESCRIBED HEREIN IS SITUATED WITHIN THE BOUNDARIES OF LOCAL TAXING AUTHORITY OF CITY OF SEATAC. PRESENT RATE IS 1.78%.

ANY CONVEYANCE DOCUMENT MUST BE ACCOMPANIED BY THE OFFICIAL WASHINGTON STATE EXCISE TAX AFFIDAVIT. THE APPLICABLE EXCISE TAX MUST BE PAID AND THE AFFIDAVIT APPROVED AT THE TIME OF THE RECORDING OF THE CONVEYANCE DOCUMENTS.

(NOTE: A DEED EXEMPT FROM EXCISE TAX IS STILL SUBJECT TO THE $5.00 TECHNOLOGY FEE AND AN ADDITIONAL $5.00 AFFIDAVIT PROCESSING FEE).

E 4. GENERAL AND SPECIAL TAXES AND CHARGES, PAYABLE FEBRUARY 15, DELINQUENT IF FIRST HALF UNPAID ON MAY 1, SECOND HALF DELINQUENT IF UNPAID ON NOVEMBER 1 OF THE TAX YEAR (AMOUNTS DO NOT INCLUDE INTEREST AND PENALTIES) :
YEAR : 2013
TAX ACCOUNT NUMBER: 004300-0020-05
LEVY CODE : 2212
ASSESSED VALUE-LAND: $ 562,700.00
ASSESSED VALUE-IMPROVEMENTS: $ 813,000.00
GENERAL & SPECIAL TAXES:
BILLED: $ 19,961.67
PAID: $ 9,980.84
UNPAID: $ 9,980.83

F 5. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:
GRANTOR : IMOGENE FRANKLIN HUBBARD, MARGARET FRANKLIN SAETY, BOYD FRANKLIN KNEELAND, AND JOHN F. SHERWOOD, EXECUTOR OF THE ESTATE OF DORIS B. FRANKLIN
TRUSTEE: PACIFIC NORTHWEST TITLE INSURANCE COMPANY OF WASHINGTON
BENEFICIARY: THREE AND S , INC. , DBA PANCAKE CHEF, A WASHINGTON CORPORATION
AMOUNT : $ 93,953.52
DATED : SEPTEMBER 1, 2002
RECORDED : JANUARY 3, 2003
RECORDING NUMBER: 20030103002837
LOAN NUMBER: NOT DISCLOSED

THE AMOUNT NOW SECURED BY SAID DEED OF TRUST AND THE TERMS UPON WHICH THE SAME CAN BE DISCHARGED OR ASSUMED SHOULD BE ASCERTAINED FROM THE HOLDER OF THE INDEBTEDNESS SECURED.

G 6. DEED OF TRUST AND THE TERMS AND CONDITIONS THEREOF:
GRANTOR : IMOGENE FRANKLIN HUBBARD, MARGARET FRANKLIN SAETY, BOYD FRANKLIN KNEELAND, AND JOHN F. SHERWOOD, EXECUTOR OF THE ESTATE OF DORIS B. FRANKLIN
TRUSTEE : PACIFIC NORTHWEST TITLE INSURANCE COMPANY OF WASHINGTON
BENEFICIARY: THREE AND S, INC. , DBA PANCAKE CHEF, A WASHINGTON CORPORATION
AMOUNT : $ 31,516.60
DATED : SEPTEMBER 1, 2002
RECORDED : JANUARY 3, 2003
RECORDING NUMBER: 20030103002838
LOAN NUMBER: NOT DISCLOSED

THE AMOUNT NOW SECURED BY SAID DEED OF TRUST AND THE TERMS UPON WHICH THE SAME CAN BE DISCHARGED OR ASSUMED SHOULD BE ASCERTAINED FROM THE HOLDER OF THE INDEBTEDNESS SECURED.

H 7. LEASE AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
LESSOR: MARGARET FRANKLIN SAETY, IMOGENE FRANKLIN HUBBARD, AND BOYD FRANKLIN KNEELAND
LESSEE: LOREN T. SISLEY AND RACHEL G. SISLEY, HUSBAND AND WIFE, DOING BUSINESS AS THE PANCAKE CHEF RESTAURANT
FOR A TERM ENDING: FEBRUARY 28, 2011, WITH TERMS OF RENEWAL
RECORDED : JUNE 23, 2004
RECORDING NUMBER: 20040623001001

I AMENDMENT AND/OR MODIFICATION OF LEASE:
RECORDED : JUNE 23, 2004
RECORDING NUMBER: 20040623001002

J THE LESSEE'S INTEREST IN SAID LEASE IS NOW HELD OF RECORD BY:
ASSIGNEE : THREE S, INC., A WASHINGTON CORPORATION, DOING BUSINESS AS THE PANCAKE CHEF RESTAURANT
RECORDED : JULY 15, 2004
RECORDING NUMBER: 20040715002385

SPECIAL EXCEPTIONS (CONT'D)
ORDER NO. 1365934

L 8. UNRECORDED LEASEHOLDS, IF ANY, RIGHTS OF VENDORS AND HOLDERS OF SECURITY INTERESTS ON PERSONAL PROPERTY INSTALLED UPON SAID PROPERTY AND RIGHTS OF TENANTS TO REMOVE TRADE FIXTURES AT THE EXPIRATION OF THE TERM.

MATTERS INCLUDING BUT NOT LIMITED TO MORTGAGES, DEEDS OF TRUST, ASSIGNMENT OF LEASES GIVEN AS SECURITY, FINANCING STATEMENTS AND OTHER SECURITY INTERESTS AFFECTING THE RIGHTS OF LESSEES ONLY.

K 9. THE EFFECT, IF ANY, OF CONDEMNATION ACTION:
FILED IN: KING COUNTY SUPERIOR COURT
CAUSE NUMBER: 07-2-07470-8

RESULTS WILL FOLLOW BY SUPPLEMENTAL COMMITMENT

M 10. MATTERS RELATING TO PROBATE FOR DORIS B. FRANKLIN, DECEASED:
FILED IN: KING COUNTY SUPERIOR COURT
CAUSE NUMBER: PCE 222420

SAID PROBATE HAS NOT YET BEEN EXAMINED BY THIS COMPANY. RESULTS WILL FOLLOW BY SUPPLEMENTAL COMMITMENT.

N 11. TITLE IS DERAIGNED IN PART PURSUANT TO DEED FROM IMOGENE FRANKLIN HUBBARD, INDIVIDUALLY AND AS TRUSTEE OF THE IMOGENE FRANKLIN HUBBARD REVOCABLE TRUST DATED SEPTEMBER 20, 1997, BOYD FRANKLIN KNEELAND, AS SOLE SUCCESSOR TO PATRICIA FRANKLIN KNEELAND, AND BARBARA SMITH, AS TRUSTEE OF THE MARGARET FRANKLIN SAETY REVOCABLE TRUST DATED JANUARY 5, 1997, AS AMENDED AUGUST 26, 2005, RECORDED OCTOBER 5, 2010, UNDER RECORDING NUMBER 201010050000806. THE RECORDS DISCLOSE THE FOLLOWING MATTERS SHOWN IN PARAGRAPH(S) 12 AND 13.

O 12. RIGHT, TITLE AND INTEREST OF PATRICIA FRANKLIN KNEELAND, CO-GRANTEE IN DEED RECORDED UNDER RECORDING NUMBER 7512310509. DEED RECORDED UNDER RECORDING NUMBER 201010050000806 WAS MADE IN PART BY BOYD FRANKLIN KNEELAND, AS SOLE SUCCESSOR TO SAID PATRICIA FRANKLIN KNEELAND. WE FIND NO DISPOSITION OF THE INTEREST OF PATRICIA FRANKLIN KNEELAND OF RECORD IN KING COUNTY, WASHINGTON.

X 13. NUMEROUS MATTERS AGAINST PERSONS/ENTITIES WITH NAMES SIMILAR TO PATRICIA FRANKLIN KNEELAND, THE EFFECT OF WHICH DEPENDS UPON IDENTITY WITH SAID PERSONS/ENTITIES.

PLEASE HAVE THE CONFIDENTIAL INFORMATION STATEMENT(S) ATTACHED TO THIS COMMITMENT COMPLETED AND RETURNED TO THIS OFFICE IN A TIMELY MANNER IN ORDER FOR THE COMPANY TO MAKE A FINAL DETERMINATION AS TO THE EFFECT OF SAID MATTERS.

P 14. TERMS AND CONDITIONS OF THE LIMITED LIABILITY COMPANY AGREEMENT FOR 15201 MILITARY ROAD SOUTH, LLC, A WASHINGTON LIMITED LIABILITY COMPANY.

Q NOTE: A COPY OF THE LIMITED LIABILITY COMPANY AGREEMENT, AND AMENDMENTS THERETO, IF ANY, MUST BE SUBMITTED.

R 15. ANY CONVEYANCE OR MORTGAGE BY 15201 MILITARY ROAD SOUTH, LLC, A WASHINGTON LIMITED LIABILITY COMPANY, MUST BE EXECUTED IN ACCORDANCE WITH THE LIMITED LIABILITY COMPANY AGREEMENT AND BY ALL THE MEMBERS, OR EVIDENCE MUST BE SUBMITTED THAT CERTAIN DESIGNATED MANAGERS/MEMBERS HAVE BEEN AUTHORIZED TO ACT FOR THE LIMITED LIABILITY COMPANY.

S 16. ACCORDING TO THE WASHINGTON STATE CORPORATION DIVISION'S RECORDS DATED JUNE 7, 2013, THE ANNUAL FEES FOR 15201 MILITARY ROAD SOUTH, LLC, A WASHINGTON LIMITED LIABILITY COMPANY DUE ON APRIL 30, 2013, HAVE NOT BEEN PAID AND THE COMPANY IS SUBJECT TO ADMINISTRATIVE DISSOLUTION. EVIDENCE MUST BE FURNISHED THAT SAID COMPANY IS IN GOOD STANDING PRIOR TO CLOSING.

T 17. THE LEGAL DESCRIPTION IN THIS COMMITMENT IS BASED ON INFORMATION PROVIDED WITH THE APPLICATION AND THE PUBLIC RECORDS AS DEFINED IN THE POLICY TO ISSUE. THE PARTIES TO THE FORTHCOMING TRANSACTION MUST NOTIFY THE TITLE INSURANCE COMPANY PRIOR TO CLOSING IF THE DESCRIPTION DOES NOT CONFORM TO THEIR EXPECTATIONS.

U NOTE 1:
ANY MAP FURNISHED WITH THIS COMMITMENT IS FOR CONVENIENCE IN LOCATING THE LAND INDICATED HEREIN WITH REFERENCE TO STREETS AND OTHER LAND. NO LIABILITY IS ASSUMED BY REASON OF RELIANCE THEREON.

V NOTE 2:
EFFECTIVE JANUARY 1, 1997, DOCUMENT FORMAT AND CONTENT REQUIREMENTS HAVE BEEN IMPOSED BY WASHINGTON LAW. FAILURE TO COMPLY WITH THE FOLLOWING REQUIREMENTS MAY RESULT IN REJECTION OF THE DOCUMENT BY THE COUNTY RECORDER OR IMPOSITION OF A $50.00 SURCHARGE.

FOR DETAILS OF THESE STATEWIDE REQUIREMENTS PLEASE VISIT THE KING COUNTY RECORDER'S OFFICE WEBSITE AT WW.KINGCOUNTY.GOV/BUSINESS/RECORDERS.ASPX AND SELECT ONLINE FORMS AND DOCUMENT STANDARDS.

THE FOLLOWING MAY BE USED AS AN ABBREVIATED LEGAL DESCRIPTION ON THE DOCUMENTS TO BE RECORDED TO COMPLY WITH THE REQUIREMENTS OF RCW 65.04. SAID ABBREVIATED LEGAL DESCRIPTION IS NOT A SUBSTITUTE FOR A COMPLETE LEGAL DESCRIPTION WHICH MUST ALSO APPEAR IN THE BODY OF THE DOCUMENT:

PTN LOTS 5-6 BLOCK 1 VOLUME 15 PLATS PG 17.

LEGAL DESCRIPTION
FILE NO. NCS-613456-WA1:

(PER COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY FILE NO. NCS-613456-WA1, DATED JUNE 06, 2013 AT 7:30 A.M.)

PARCEL A:

THAT PORTION OF LOTS 4 AND 5, BLOCK 2, ADAMS HOME TRACTS NO. 3, ACCORDING TO PLAT RECORDED IN VOLUME 15 OF PLATS, PAGE 17, RECORDS OF KING COUNTY, WASHINGTON, LYING WEST OF PRIMARY STATE HIGHWAY NO. 1 AND SOUTH OF A LINE DRAWN PARALLEL TO AND A DISTANCE OF 65 FEET SOUTHERLY FROM THE SOUTH LINE OF SOUTH 152ND STREET.

PARCEL B:

THAT PORTION OF LOT 5, BLOCK 2, THIRD ADDITION TO ADAMS HOME TRACTS, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 15 OF PLATS, PAGE 17, IN KING COUNIY, WASHINGTON, LYING WESTERLY OF THE WESTERLY LINE OF STATE HIGHWAY NO. 1 AND NORTH OF A LINE 65 SOUTH (AS MEASURED AT RIGHT ANGLES) OF AND PARALLEL WITH THE SOUTH LINE OF SOUTH 152ND STREET.

SPECIAL EXCEPTIONS
FILE NO. NCS-613456-WA1

(PER COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY FILE NO.: NCS-613456-WA1 DATED: JUNE 06, 2013 AT 7:30 A.M.)

1. LIEN OF THE REAL ESTATE EXCISE SALES TAX AND SURCHARGE UPON ANY SALE OF SAID PREMISES, IF UNPAID. AS OF THE DATE HEREIN, THE EXCISE TAX RATE FOR THE CITY OF SEATAC IS AT 1.78%.
LEVY/AREA CODE: 2243

FOR ALL TRANSACTIONS RECORDED ON OR AFTER JULY 1,2005:
- A FEE OF $10.00 WILL BE CHARGED ON ALL EXEMPT TRANSACTIONS;
- A FEE OF $5.00 WILL BE CHARGED ON ALL TAXABLE TRANSACTIONS IN ADDITION TO THE EXCISE TAX DUE.

2. GENERAL TAXES FOR THE YEAR 2013.
TAX ACCOUNT NO.: 004300-0093-07
AMOUNT BILLED: $ 1,847.07
AMOUNT PAID: $ 923.54
AMOUNT DUE: $ 923.53
ASSESSED LAND VALUE: $ 86,700.00
ASSESSED IMPROVEMENT VALUE: $ 33,300.00

(AFFECTS PARCEL A)

3. GENERAL TAXES FOR THE YEAR 2013.
TAX ACCOUNT NO.: 04300-0100-08
AMOUNT BILLED: $ 2,814.00
AMOUNT PAID: $ 1,407.00
AMOUNT DUE: $ 1,407.00
ASSESSED LAND VALUE: $ 183,300.00
ASSESSED IMPROVEMENT VALUE: $ 0.00

(AFFECTS PARCEL B)

4. EVIDENCE OF THE AUTHORITY OF THE INDIVIDUAL(S) TO EXECUTE THE FORTHCOMING DOCUMENT FOR MP TRIANGLE LLC, A WASHINGTON LIMITED LIABILITY COMPANY, COPIES OF THE CURRENT OPERATING AGREEMENT SHOULD BE SUBMITTED PRIOR TO CLOSING.

5. TITLE TO VEST IN AN INCOMING OWNER WHOSE NAME IS NOT DISCLOSED. SUCH NAME MUST BE FURNISHED TO US SO THAT A NAME SEARCH MAY BE MADE.

6. UNRECORDED LEASEHOLDS, IF ANY, RIGHTS OF VENDORS AND SECURITY AGREEMENT ON PERSONAL PROPERTY AND RIGHTS OF TENANTS, AND SECURED PARTIES TO REMOVE TRADE FIXTURES AT THE EXPIRATION OF THE TERM.

SURVEYORS NOTES:

1. ALL UNDERGROUND UTILITY LOCATIONS ARE BASED ON OBSERVED EVIDENCE OF STRUCTURES AND PAINT MARKS SET BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED.

2. ALL DIMENSIONS TO STRUCTURES SHOWN HEREON ARE MEASURED AT RIGHT ANGLES TO THE PROPERTY LINES.

PARCEL AREAS:

APN 0043000020: 18,762 SQ.FT. (0.43 ACRES)

APN 0043000093: 1,518 SQ.FT. (0.03 ACRES)

APN 0043000100: 3,819 SQ.FT. (0.09 ACRES)

HORIZONTAL DATUM:

THE HORIZONTAL DATUM FOR THIS SURVEY IS NAD 83(11), WASHINGTON STATE PLANE NORTH, BASED ON THE WASHINGTON STATE REFERENCE NETWORK (WSRN) AND WSDOT MONUMENT ID 3172 (DESIGNATION: RIVERTON).

VERTICAL DATUM:

THE VERTICAL DATUM FOR THIS SURVEY IS NAVD 88, BASED ON THE WASHINGTON STATE REFERENCE NETWORK (WSRN) AND PUBLISHED ELEVATIONS FOR WSDOT MONUMENT ID 6423 (DESIGNATION: IS17199) AND WSDOT MONUMENT ID 3172 (DESIGNATION: RIVERTON).

ELEVATION (IS17199): 268.26 FEET
ELEVATION (RIVERTON): 363.78 FEET

STATISTICS:

EQUIPMENT: TRIMBLE VX SPATIAL STATION
TRIMBLE R10 GNSS SYSTEM
METHODOLOGY: FIELD TRAVERSE AND NETWORK RTK
MEETS OR EXCEEDS SURVEY STANDARD AS PER:
WAC 332-130-050
WAC 332-130-090
WAC 332-130-100
ALL SURVEY WORK OCCURRED IN MAY JUNE OF 2014

REFERENCES:

(P) THIRD ADDITION TO ADAMS HOME TRACTS, VOL. 15 PAGE 17
(R1) RECORD OF SURVEY RECORDING NO. 8606279008
(R2) RECORD OF SURVEY RECORDING NO. 200804099000004
(R3) RECORD OF SURVEY RECORDING NO. 8304079007
(R4) RECORD OF SURVEY RECORDING NO. 20040416900010
(R5) RECORD OF SURVEY RECORDING NO. 200701180000O3
RECORD OF SURVEY RECORDING NO. 200308139000003
RECORD OF SURVEY RECORDING NO. 9310089007

CERTIFICATION:

TO THE CITY OF SEATAC, A WASHINGTON MUNICIPAL CORPORATION, CHICAGO TITLE INSURANCE COMPANY, FIRST AMERICAN TITLE INSURANCE COMPANY, AND MAUL FOSTER & ALONGI, INC.:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS (NONE) OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JULY 9, 2014.

DATE OF PLAT OR MAP: JULY 14, 2014

7/14/14

KERREL D. BELL, PLS #29286

REVISIONS			
REV.	DESCRIPTION	BY	DATE
1	REVISED BOREHOLE NAMES IN TABLE	JNM	07/14/2014

PACIFIC GEOMATIC SERVICES, INC.
LAND SURVEYING & MAPPING SERVICES
QUALITY SERVICE - CREATIVE SOLUTIONS
6608 216TH STREET SW, STE. 304
MOUNTLAKE TERRACE, WA 98043
PHONE:(425) 778-5620 FAX:(425) 775-2849
WEB: www.PacGeoInc.com
PGS / INC

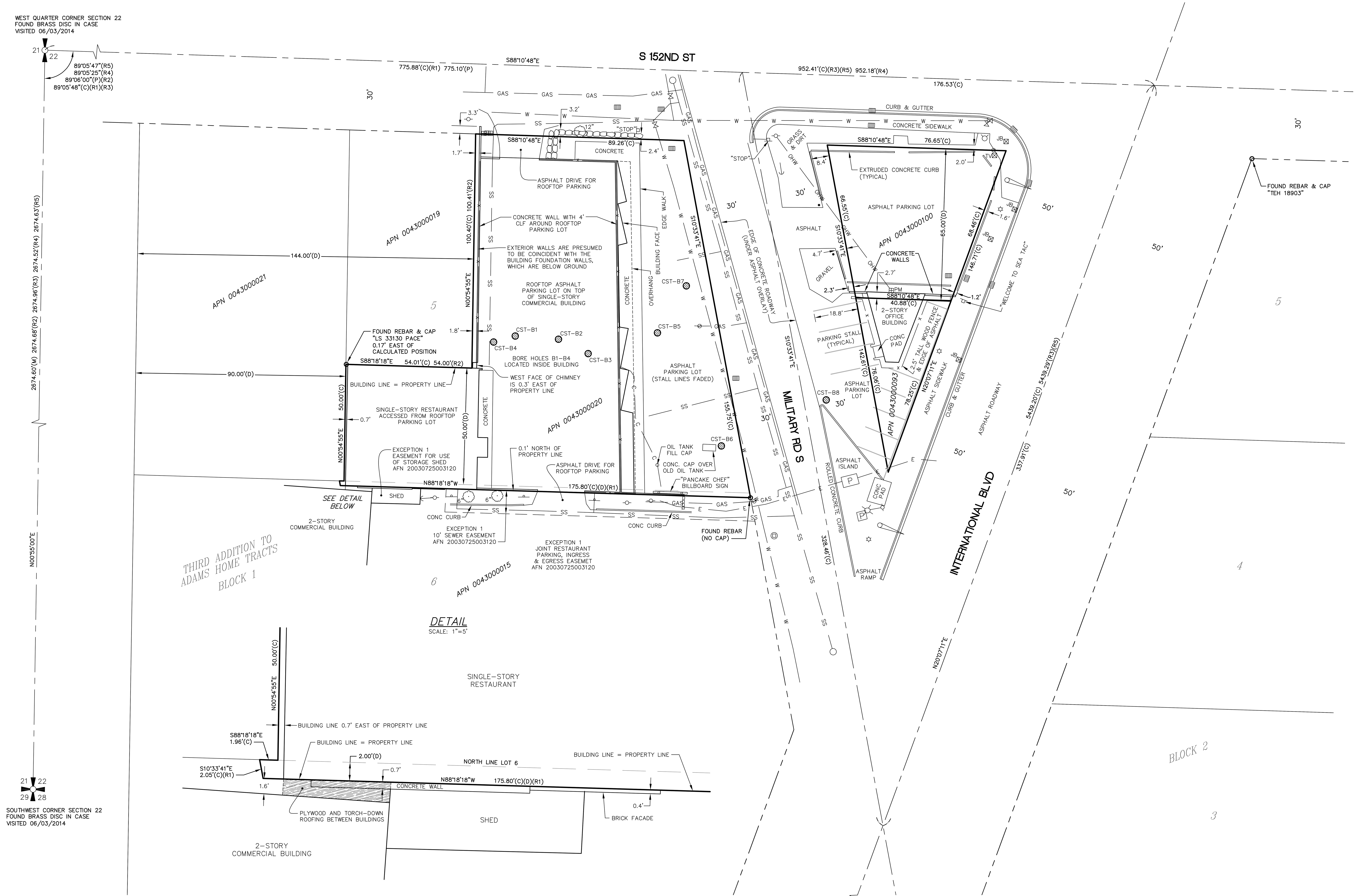
SHEET TITLE: ALTA/ACSM LAND TITLE SURVEY SEATAC, WA

CLIENT: MAUL FOSTER & ALONGI, INC. SEATTLE, WA

DRAWN BY: JNM | CHECKED BY: KDB
SCALE: N/A
DATE: 07/09/2014
JOB NUMBER: 14-028-01 | SHEET: 1 OF 2

ALTA/ACSM LAND TITLE SURVEY

NW 1/4 OF THE SW 1/4, SEC. 22, T. 23 N., R. 4 E., W.M.
CITY OF SEA-TAC, KING COUNTY, WASHINGTON



BOREHOLES:

BOREHOLE	NORTHING	EASTING	ELEVATION
CST-B1	173628.1	1280355.5	337.55
CST-B2	173626.7	1280374.1	337.53
CST-B3	173620.6	1280386.8	337.51
CST-B4	173625.5	1280346.3	337.53
CST-B5	173629.5	1280416.4	336.47
CST-B6	173581.0	1280443.8	335.55
CST-B7	173649.6	1280428.8	335.90
CST-B8	173600.7	1280488.7	334.40

LEGEND:

- BOREHOLE
- CATCH BASIN
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- WATER METER
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- P — POWER VAULT
- JB — POWER JUNCTION BOX
- PM — POWER METER
- STREET LIGHT
- UTILITY POLE
- GUY ANCHOR
- TV — TV RISER
- TRAFFIC SIGNAL POLE
- METAL SIGN POST
- WOOD SIGN POST
- BOLLARD
- ROCKERY
- DECIDUOUS TREE
- OHW — OVERHEAD WIRE
- E — UNDERGROUND ELECTRIC LINE
- C — UNDERGROUND COMMUNICATIONS LINE
- W — UNDERGROUND WATER LINE
- SS — UNDERGROUND SANITARY SEWER
- (M) MEASURED BY PGS, INC.
- (C) CALCULATED BY PGS, INC.
- (D) DISTANCE OR ANGLE PER DEED
- (P) DISTANCE OR ANGLE PER PLAT
- (R#) DISTANCE OR ANGLE PER REFERENCE (SEE REFERENCES SHEET 1 OF 2)

REVISIONS

REV.	DESCRIPTION	BY	DATE
1	REVISED BOREHOLE NAMES IN TABLE	JNM	07/14/2014

7/14/14

KEDREL D. DEAN, STATE OF WASHINGTON, 29286, REGISTERED PROFESSIONAL LAND SURVEYOR

PACIFIC GEOMATIC SERVICES, INC.
LAND SURVEYING & MAPPING SERVICES
QUALITY SERVICE - CREATIVE SOLUTIONS
6608 216TH STREET SW, STE. 304
MOUNTLAKE TERRACE, WA 98043
PHONE:(425) 778-5620 FAX:(425) 775-2849
WEB: www.PacGeoInc.com
PGS INC

SHEET TITLE: ALTA/ACSM LAND TITLE SURVEY SEATAC, WA	DRAWN BY: JNM / CHECKED BY: KDB
	SCALE: 1" = 20'
CLIENT: MAUL FOSTER & ALONGI, INC. SEATTLE, WA	DATE: 07/09/2014
	JOB NUMBER: 14-028-01 / SHEET: 2 OF 2

APPENDIX D

FIELD SAMPLING DATA SHEETS

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of SeaTac	**Sample Location**	CST-B5		
Project #	0879.01.02	**Sampler**	RD		
Project Name	SeaTac S. 154th TOD	**Sampling Date**	6/2/2014		
Sampling Event	June 2014	**Sample Name**	CSTB5-GW-27.0		
Sub Area		**Sample Depth**	27		
FSDS QA:	CRW 7/28/14	**Easting**		**Northing**		**TOC**	

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
6/2/2014	14:15	35		26.3		8.7	

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**EH**	**Turbidity**
(2) Peristaltic Pump	2:18:00 PM	0.2	0.4	6.79	17.3	532	4.75	-136.1	
	2:24:00 PM	0.6	0.4	6.92	20.03	537	7.03	-89.9	
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	2:26:00 PM	VOA-Glass	5	No
			Amber Glass	1	No
			White Poly	2	No
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	8	

General Sampling Comments

Well was not recharging. Only able to collect 2 sets of parameters. Turbidity meter was not working, therefore no turbidity measurements.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of SeaTac	**Sample Location**	CST-B6
Project #	0879.01.02	**Sampler**	YV
Project Name	SeaTac S. 154th TOD	**Sampling Date**	6/2/2014
Sampling Event	June 2014	**Sample Name**	CSTB6-GW-25.4
Sub Area		**Sample Depth**	25.4
FSDS QA:	CRW 7/28/14	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
6/2/2014	15:30	35		25.4		9.6	

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**EH**	**Turbidity**
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	5:15:00 PM	VOA-Glass	5	No
			Amber Glass	3	No
			White Poly	2	No
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	10	

General Sampling Comments

Let boring sit for about 20 minutes. Driller developed temporary well in order to remove some of the fines in the groundwater. Did not collect groundwater parameters at this site; well was not recharging.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of SeaTac	**Sample Location**	CST-B7
Project #	0879.01.02	**Sampler**	RD/CW
Project Name	SeaTac S. 154th TOD	**Sampling Date**	6/3/2014
Sampling Event	June 2014	**Sample Name**	CSTB7-GW-30.0
Sub Area		**Sample Depth**	30
FSDS QA:	CRW 7/28/14	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
6/3/2014	11:10	35		24.5		10.5	

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**EH**	**Turbidity**
(2) Peristaltic Pump	11:46:00 AM	0.2	0.4	7.64	18.6	409	9.75	-112.5	
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	11:50:00 AM	VOA-Glass	4	No
			Amber Glass	3	No
			White Poly	2	No
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	9	

General Sampling Comments

Well was not recharging. Purge began at 11:10. At 11:15, stopped purge because water level dropped to 33.0 ft. bgs. Began pumping again at 11:40 to allow sufficient time to recharge before second purge. Well was still not recharging.

Signature _____

Maul Foster & Alongi, Inc.

400 E. Mill Plain Blvd, Suite 400, Vancouver, WA 98660 (360) 694-2691 Fax. (360) 906-1958

Water Field Sampling Data Sheet

Client Name	City of SeaTac	**Sample Location**	CST-B8
Project #	0879.01.02	**Sampler**	RD/CW
Project Name	SeaTac S. 154th TOD	**Sampling Date**	6/3/2014
Sampling Event	June 2014	**Sample Name**	CSTB8-GW-20.0
Sub Area		**Sample Depth**	30
FSDS QA:	CRW 7/28/14	**Easting**	**Northing**	**TOC**

Hydrology/Level Measurements

					(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
Date	**Time**	**DT-Bottom**	**DT-Product**	**DT-Water**	**DTP-DTW**	**DTB-DTW**	**Pore Volume**
6/3/2014	11:10	35		25		10	

(0.75" = 0.023 gal/ft) (1" = 0.041 gal/ft) (1.5" = 0.092 gal/ft) (2" = 0.163 gal/ft) (3" = 0.367 gal/ft) (4" = 0.653 gal/ft) (6" = 1.469 gal/ft) (8" = 2.611 gal/ft)

Water Quality Data

Purge Method	**Time**	**Purge Vol (gal)**	**Flowrate l/min**	**pH**	**Temp (C)**	**E Cond (uS/cm)**	**DO (mg/L)**	**EH**	**Turbidity**
(2) Peristaltic Pump									
Final Field Parameters									

Methods: (1) Submersible Pump (2) Peristaltic Pump (3) Disposable Bailer (4) Vacuum Pump (5) Dedicated Bailer (6) Inertia Pump (7) Other (specify)

Water Quality Observations:

Turbidity meter broken. Water level meter broken.

Sample Information

Sampling Method	**Sample Type**	**Sampling Time**	**Container Code/Preservative**	**#**	**Filtered**
(2) Peristaltic Pump	Groundwater	3:54:00 PM	VOA-Glass	5	No
			Amber Glass	3	No
			White Poly	2	No
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	10	

General Sampling Comments

Water level meter was broken. Well was having difficulty recharging. Since there was no way to monitor the water level to ensure that enough water remained to collect parameters followed by sample, we proceeded to collect the sample without parameters.

Signature _____

APPENDIX E

LABORATORY ANALYTICAL REPORTS

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 12, 2014

Jackie Gruber
Maul Foster & Alongi, Inc.
411 First Avenue S., Suite 610
Seattle, WA 98104

Re: Analytical Data for Project 0879.01.02
Laboratory Reference No. 1406-006

Dear Jackie:

Enclosed are the analytical results and associated quality control data for samples submitted on June 2, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

Case Narrative

Samples were collected on June 2, 2014 and received by the laboratory on June 2, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260C Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-S-8.0**					
Laboratory ID:	06-006-05					
Diesel Range Organics	**ND**	29	NWTPH-Dx	6-6-14	6-6-14	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				
Client ID:	**CST B6-S-31.5**					
Laboratory ID:	06-006-06					
Diesel Range Organics	**ND**	28	NWTPH-Dx	6-6-14	6-6-14	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-6-14	6-6-14	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-006-05									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*67* *85*	*50-150*			

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-GW-27.0**					
Laboratory ID:	06-006-04					
Dichlorodifluoromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Chloromethane	ND	6.5	EPA 8260C	6-6-14	6-6-14	
Vinyl Chloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromomethane	ND	2.2	EPA 8260C	6-6-14	6-6-14	
Chloroethane	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Trichlorofluoromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Acetone	ND	25	EPA 8260C	6-6-14	6-6-14	
Iodomethane	ND	9.5	EPA 8260C	6-6-14	6-6-14	
Carbon Disulfide	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Methylene Chloride	ND	5.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,2-Dichloroethene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Methyl t-Butyl Ether	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Vinyl Acetate	ND	5.0	EPA 8260C	6-6-14	6-6-14	
2,2-Dichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,2-Dichloroethene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Butanone	ND	25	EPA 8260C	6-6-14	6-6-14	
Bromochloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Chloroform	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1,1-Trichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Carbon Tetrachloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloropropene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Benzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Trichloroethene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Dibromomethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromodichloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Chloroethyl Vinyl Ether	ND	5.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,3-Dichloropropene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Methyl Isobutyl Ketone	ND	10	EPA 8260C	6-6-14	6-6-14	
Toluene	ND	5.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,3-Dichloropropene	ND	1.0	EPA 8260C	6-6-14	6-6-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-GW-27.0**					
Laboratory ID:	06-006-04					
1,1,2-Trichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Tetrachloroethene	140	1.0	EPA 8260C	6-6-14	6-6-14	
1,3-Dichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Hexanone	ND	10	EPA 8260C	6-6-14	6-6-14	
Dibromochloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromoethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Chlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1,1,2-Tetrachloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Ethylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
m,p-Xylene	ND	2.0	EPA 8260C	6-6-14	6-6-14	
o-Xylene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Styrene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromoform	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Isopropylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1,2,2-Tetrachloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
n-Propylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Chlorotoluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
4-Chlorotoluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,3,5-Trimethylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
tert-Butylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trimethylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
sec-Butylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,3-Dichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
p-Isopropyltoluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,4-Dichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
n-Butylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromo-3-chloropropane	ND	5.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Hexachlorobutadiene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Naphthalene	ND	5.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*118*	*62-122*				
Toluene-d8	*119*	*70-120*				
4-Bromofluorobenzene	*113*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0606W2					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloromethane	ND	1.3	EPA 8260C	6-6-14	6-6-14	
Vinyl Chloride	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromomethane	ND	0.43	EPA 8260C	6-6-14	6-6-14	
Chloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Acetone	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Iodomethane	ND	1.9	EPA 8260C	6-6-14	6-6-14	
Carbon Disulfide	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methylene Chloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Vinyl Acetate	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Butanone	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Bromochloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloroform	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Benzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Trichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Dibromomethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromodichloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Toluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0606W2					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Tetrachloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Hexanone	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Dibromochloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Ethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
m,p-Xylene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
o-Xylene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Styrene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromoform	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Isopropylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
n-Propylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
n-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Hexachlorobutadiene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Naphthalene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*62-122*				
Toluene-d8	*107*	*70-120*				
4-Bromofluorobenzene	*104*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0606W2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**8.92**	**8.83**	10.0	10.0	89	88	63-142	1	17	
Benzene	**9.60**	**9.75**	10.0	10.0	96	98	78-125	2	15	
Trichloroethene	**8.86**	**8.74**	10.0	10.0	89	87	80-125	1	15	
Toluene	**9.86**	**9.76**	10.0	10.0	99	98	80-125	1	15	
Chlorobenzene	**9.49**	**9.27**	10.0	10.0	95	93	80-140	2	15	
Surrogate:										
Dibromofluoromethane					*107*	*103*	*62-122*			
Toluene-d8					*107*	*107*	*70-120*			
4-Bromofluorobenzene					*101*	*101*	*71-120*			

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-S-23.5**					
Laboratory ID:	06-006-02					
Dichlorodifluoromethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Chloromethane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
Vinyl Chloride	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Bromomethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Chloroethane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
Trichlorofluoromethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Iodomethane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
Methylene Chloride	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
(trans) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
2,2-Dichloropropane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
(cis) 1,2-Dichloroethene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Bromochloromethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Chloroform	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,1,1-Trichloroethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Carbon Tetrachloride	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloropropene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloroethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Trichloroethene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloropropane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Dibromomethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Bromodichloromethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
2-Chloroethyl Vinyl Ether	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
(cis) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
(trans) 1,3-Dichloropropene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-S-23.5**					
Laboratory ID:	06-006-02					
1,1,2-Trichloroethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Tetrachloroethene	0.016	0.00093	EPA 8260C	6-4-14	6-4-14	
1,3-Dichloropropane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Dibromochloromethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromoethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Chlorobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,1,1,2-Tetrachloroethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Bromoform	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Bromobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,1,2,2-Tetrachloroethane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichloropropane	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
2-Chlorotoluene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
4-Chlorotoluene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,3-Dichlorobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,4-Dichlorobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,2-Dichlorobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromo-3-chloropropane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trichlorobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Hexachlorobutadiene	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichlorobenzene	ND	0.00093	EPA 8260C	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*65-129*				
Toluene-d8	*104*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-S-31.0**					
Laboratory ID:	06-006-03					
Dichlorodifluoromethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Chloromethane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
Vinyl Chloride	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Bromomethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Chloroethane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
Trichlorofluoromethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Iodomethane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
Methylene Chloride	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
(trans) 1,2-Dichloroethene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
2,2-Dichloropropane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
(cis) 1,2-Dichloroethene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Bromochloromethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Chloroform	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,1,1-Trichloroethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Carbon Tetrachloride	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloropropene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloroethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Trichloroethene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloropropane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Dibromomethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Bromodichloromethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
2-Chloroethyl Vinyl Ether	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
(cis) 1,3-Dichloropropene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
(trans) 1,3-Dichloropropene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-S-31.0**					
Laboratory ID:	06-006-03					
1,1,2-Trichloroethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Tetrachloroethene	0.037	0.00095	EPA 8260C	6-4-14	6-4-14	
1,3-Dichloropropane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Dibromochloromethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromoethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Chlorobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,1,1,2-Tetrachloroethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Bromoform	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Bromobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,1,2,2-Tetrachloroethane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichloropropane	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
2-Chlorotoluene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
4-Chlorotoluene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,3-Dichlorobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,4-Dichlorobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,2-Dichlorobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromo-3-chloropropane	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trichlorobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Hexachlorobutadiene	ND	0.0047	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichlorobenzene	ND	0.00095	EPA 8260C	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*65-129*				
Toluene-d8	*104*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-S-8.0**					
Laboratory ID:	06-006-05					
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Chloromethane	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Vinyl Chloride	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Bromomethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Chloroethane	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Acetone	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Iodomethane	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Carbon Disulfide	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Methylene Chloride	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Methyl t-Butyl Ether	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Vinyl Acetate	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
2-Butanone	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Bromochloromethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Chloroform	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Benzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Trichloroethene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Dibromomethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Bromodichloromethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
2-Chloroethyl Vinyl Ether	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Methyl Isobutyl Ketone	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Toluene	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-S-8.0**					
Laboratory ID:	06-006-05					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Tetrachloroethene	0.0033	0.0011	EPA 8260C	6-4-14	6-4-14	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
2-Hexanone	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Dibromochloromethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Chlorobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Ethylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
m,p-Xylene	ND	0.0021	EPA 8260C	6-4-14	6-4-14	
o-Xylene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Styrene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Bromoform	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Isopropylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Bromobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
n-Propylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
2-Chlorotoluene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
4-Chlorotoluene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,3,5-Trimethylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
tert-Butylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trimethylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
sec-Butylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
p-Isopropyltoluene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
n-Butylbenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromo-3-chloropropane	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Hexachlorobutadiene	ND	0.0053	EPA 8260C	6-4-14	6-4-14	
Naphthalene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*100*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-S-31.5**					
Laboratory ID:	06-006-06					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chloromethane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromomethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chloroethane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Acetone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Iodomethane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Carbon Disulfide	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Methylene Chloride	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Vinyl Acetate	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Butanone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Bromochloromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chloroform	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Benzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Trichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Dibromomethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Toluene	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-S-31.5**					
Laboratory ID:	06-006-06					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Tetrachloroethene	0.010	0.0010	EPA 8260C	6-4-14	6-4-14	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Hexanone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Ethylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
m,p-Xylene	ND	0.0020	EPA 8260C	6-4-14	6-4-14	
o-Xylene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Styrene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromoform	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Isopropylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
n-Propylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
tert-Butylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
sec-Butylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
n-Butylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Naphthalene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*108*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0604S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chloromethane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromomethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chloroethane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Acetone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Iodomethane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Carbon Disulfide	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Methylene Chloride	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Vinyl Acetate	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Butanone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Bromochloromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chloroform	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Benzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Trichloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Dibromomethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Toluene	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0604S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Tetrachloroethene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Hexanone	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Chlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Ethylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
m,p-Xylene	ND	0.0020	EPA 8260C	6-4-14	6-4-14	
o-Xylene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Styrene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromoform	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Isopropylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Bromobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
n-Propylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
tert-Butylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
sec-Butylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
n-Butylbenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-4-14	6-4-14	
Naphthalene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*104*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0604S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0438**	**0.0450**	0.0500	0.0500	88	90	56-141	3	15	
Benzene	**0.0476**	**0.0478**	0.0500	0.0500	95	96	70-121	0	15	
Trichloroethene	**0.0490**	**0.0491**	0.0500	0.0500	98	98	74-118	0	15	
Toluene	**0.0474**	**0.0479**	0.0500	0.0500	95	96	75-120	1	15	
Chlorobenzene	**0.0462**	**0.0468**	0.0500	0.0500	92	94	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*104*	*101*	*65-129*			
Toluene-d8					*105*	*103*	*77-122*			
4-Bromofluorobenzene					*103*	*100*	*73-124*			

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-GW-27.0**					
Laboratory ID:	06-006-04					
Nitrate	**1.5**	0.050	EPA 353.2	6-4-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Nitrate	**ND**	0.050	EPA 353.2	6-4-14	6-5-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-038-01								
	ORIG	DUP							
Nitrate	**3.86**	**3.90**	NA	NA	NA	NA	1	16	
MATRIX SPIKE									
Laboratory ID:	06-038-01								
	MS		MS		MS				
Nitrate	**8.34**		4.00	3.86	112	84-119	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0605W1								
	SB		SB		SB				
Nitrate	**2.28**		2.00	NA	114	86-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

SULFATE
ASTM D516-07

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-GW-27.0**					
Laboratory ID:	06-006-04					
Sulfate	**15**	10	ASTM D516-07	6-4-14	6-10-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

SULFATE
ASTM D516-07
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Sulfate	**ND**	5.0	ASTM D516-07	6-4-14	6-10-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-006-04								
	ORIG	DUP							
Sulfate	**15.1**	**14.7**	NA	NA	NA	NA	3	10	
MATRIX SPIKE									
Laboratory ID:	06-006-04								
	MS		MS		MS				
Sulfate	**36.6**		20.0	15.1	108	82-123	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Sulfate	**10.0**		10.0	NA	100	91-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-GW-27.0**					
Laboratory ID:	06-006-04					
Chloride	**63**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Chloride	**ND**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-016-01								
	ORIG	DUP							
Chloride	**21.7**	**21.5**	NA	NA	NA	NA	1	11	
MATRIX SPIKE									
Laboratory ID:	06-016-01								
	MS		MS		MS				
Chloride	**78.7**		50.0	21.7	114	94-126	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Chloride	**52.9**		50.0	NA	106	94-124	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

DISSOLVED METHANE
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B5-GW-27.0**					
Laboratory ID:	06-006-04					
Methane	**27**	1.5	RSK 175	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

DISSOLVED METHANE
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0605W1					
Methane	**ND**	0.50	RSK 175	6-5-14	6-5-14	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0605W1										
	SB	SBD	SB	SBD		SB	SBD				
Methane	**3.78**	**3.85**	4.42	4.42	N/A	**86**	**87**	75-125	2	25	

Date of Report: June 12, 2014
Samples Submitted: June 2, 2014
Laboratory Reference: 1406-006
Project: 0879.01.02

% MOISTURE

Date Analyzed: 6-4-14

Client ID	Lab ID	% Moisture
CST B5-S-23.5	06-006-02	9
CST B5-S-31.0	06-006-03	10
CST B6-S-8.0	06-006-05	13
CST B6-S-31.5	06-006-06	10

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 12 2014
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
CSTB5-GW-27.0	Water	14-A008248	CONV

Your sample was received on Thursday, June 5, 2014. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young
Laboratory Manager

Project #: 0879.01.02

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project #: 0879.01.02
All results reported on an as received basis.

Date Received: 06/05/14
Date Reported: 6/12/14

AMTEST Identification Number **14-A008248**
Client Identification **CSTB5-GW-27.0**
Sampling Date **06/02/14, 14:26**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.1	mg/l		0.1	EPA 376.2	AB	06/11/14

Aaron W. Young
Laboratory Manager

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample number: 14-A008248

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
14-A008248	Total Sulfide	mg/l	< 0.1	0.57	0.50	114.00 %
14-A008248	Total Sulfide	mg/l	< 0.1	0.66	0.50	132.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Sulfide	mg/l	0.57	0.66	15.

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Sulfide	mg/l	0.50	0.52	104. %

BLANKS

ANALYTE	UNITS	RESULT
Total Sulfide	mg/l	< 0.1

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 06-006

Subcontract Laboratory: AmTest Laboratories

Turnaround Request: 1 Day 2 Day 3 Day (Standard)

Project Manager: David Baumeister

Attention: Aaron Young

email: dbaumeister@onsite-env.com

13600 NE 126th Pl Kirkland, WA 98034

Project Number: 0879.01.02

Phone Number: (425) 885-1664

Other: _____

Project Name: _____

Date/Time: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
5248	CSTB5-GW-27.0	6/2/14	1426	W	1	Sulfide

Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	6/5/14	1625	
Received by:	Amtest	6/5/14	11:25	
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

T = 16.9°C

Analytical Resources, Incorporated
Analytical Chemists and Consultants

4 June 2014

David Baumeister
OnSite Environmental, Inc.
14648 NE 95th
Redmond, WA 98052

RE: Client Project: SeaTac S. 154th TOD; Lab ID 1406-006
ARI Job No: YM18

Dear David:

Please find enclosed the chain-of-custody (COC) record and the final results for the sample from the project referenced above. Analytical Resources, Inc. (ARI) accepted one water sample on June 2, 2014. The sample was analyzed for ferrous iron as requested.

A matrix spike (MS) was prepared and analyzed in conjunction with this sample. The percent recovery for ferrous iron was high following the analysis of the MS. Since the percent recovery for ferrous iron was within acceptable QC limits for the corresponding LCS, it was concluded that the sample matrix was the cause of the high MS recovery. No corrective actions were taken.

A matrix duplicate (MD) was prepared and analyzed in conjunction with this sample. The RPD for ferrous iron was high following the analysis of the MD. Since the percent recovery for ferrous iron was within acceptable QC limits for the corresponding LCS, it was concluded that a lack of sample homogeneity was the cause of the high RPD. No corrective actions were taken.

An electronic copy of these reports will remain on file at ARI. Should you have any questions, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file YM18

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Y'M14

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Company: ONSITE ENVIRONMENTAL
Project Number: (MFA 0879.01.02)
Project Name: SEATAC S. 154th TOD
Project Manager: D. BAUMEISTER
Sampled by: Y. VAN / MFA

Turnaround Request (in working days) (Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ ________ (other)

Laboratory Number:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Ferrous Iron					% Moisture
	CST B5-GW-27.0	6/2/14	1426	GW	1																	X					

	Signature	Company	Date	Time
Relinquished	[signature]	MFA	6/2/14	1600
Received	Jacob Hamer	SPEEDY 144	6/2/14	1600
Relinquished	[signature]	SPEEDY 144	6/2/14	1645
Received	[signature]	ARI	6-2-14	1615
Relinquished				
Received				

Reviewed/Date

Reviewed/Date

Comments/Special Instructions

Chromatograms with final report ☒

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ ________

YM18 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: USE

Project Name: Seattle 7 154th Toll

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YM15

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry)	3.4	
Time: _____		

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 10497952

Cooler Accepted by: TJ Date: 6-2-11 Time: 1615

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI.	NA		

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

13

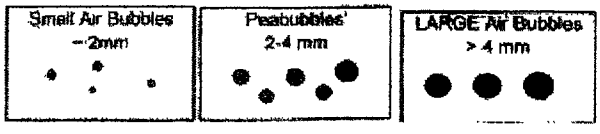
Samples Logged by: _____ Date: 6-2-11 Time: 1670

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YM18
Client: OnSite Environmental, Inc.
Project Event: 0879.01.02
Project Name: Seatac S. 154th TOD

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	CSTB5-GW-27.0	YM18A	14-10544	Water	06/02/14 14:26	06/02/14 16:15

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

SAMPLE RESULTS-CONVENTIONALS
YM18-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/04/14

Project: Seatac S. 154th TOD
Event: 0879.01.02
Date Sampled: 06/02/14
Date Received: 06/02/14

Client ID: CSTB5-GW-27.0
ARI ID: 14-10544 YM18A

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	06/02/14 060214#1	SM3500 FeD	mg/L	0.800	1.42

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YM18-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/04/14

Project: Seatac S. 154th TOD
Event: 0879.01.02
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Ferrous Iron	SM3500 FeD	06/02/14	mg/L	< 0.040 U	

LAB CONTROL RESULTS-CONVENTIONALS
YM18-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/04/14

Project: Seatac S. 154th TOD
Event: 0879.01.02
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Ferrous Iron SM3500 FeD	ICVL	06/02/14	mg/L	0.492	0.500	98.4%

REPLICATE RESULTS-CONVENTIONALS
YM18-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/04/14

Project: Seatac S. 154th TOD
Event: 0879.01.02
Date Sampled: 06/02/14
Date Received: 06/02/14

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YM18A Client ID: CSTB5-GW-27.0						
Ferrous Iron	SM3500 FeD	06/02/14	mg/L	1.42	1.04	30.9%

MS/MSD RESULTS-CONVENTIONALS
YM18-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/04/14

Project: Seatac S. 154th TOD
Event: 0879.01.02
Date Sampled: 06/02/14
Date Received: 06/02/14

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YM18A Client ID: CSTB5-GW-27.0							
Ferrous Iron	SM3500 FeD	06/02/14	mg/L	1.42	11.9	8.00	131.0%

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: MFA
Project Number: 0879.01.02
Project Name: Seatac S. 154th TOD
Project Manager: Jackie Gruber
Sampled by: RD, KS, YV

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 06-006

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx EXT. ✓	Volatiles 8260C ✓	Halogenated Volatiles 8260C ✓	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	NITRATE/NITRITE/CL ✓	FERROUS IRON * ✓	SULFIDE ✓	METHANE ✓	HOLD	% Moisture
Hold 1	CST B5-S-20.5	6/2/14	0923	S	5						X															X	X
2	CST B5-S-23.5	6/2/14	1000	S	5						X																X
3	CST B5-S-31.0	6/2/14	1041	S	5						X																X
4	CST B5-GW-27.0	6/2/14	1426	GW	6					X												X	X	X	X		
5	CST B6-S-8.0	6/2/14	1343	S	5				X	X																	X
6	CST B6-S-31.5	6/2/14	1510	S	5				X	X																	X

	Signature	Company	Date	Time
Relinquished		MFA	6/2/2014	1600
Received		SPECTRUM ANS	6/2/14	1600
Relinquished		SPECTRUM ANS	6/2/14	1721
Received		CRC	6/2/14	1721
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
* Sent directly to ARI on 6/2/14. DB

Chromatograms with final report ☒

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☒ _____

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 12, 2014

Jackie Gruber
Maul Foster & Alongi, Inc.
411 First Avenue S., Suite 610
Seattle, WA 98104

Re: Analytical Data for Project 0879.01.02
Laboratory Reference No. 1406-016

Dear Jackie:

Enclosed are the analytical results and associated quality control data for samples submitted on June 3, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

Case Narrative

Samples were collected on June 2 and 3, 2014 and received by the laboratory on June 3, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	6-6-14	6-6-14	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	6-6-14	6-6-14	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-024-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*75* *80*	*50-150*			

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Acetone	ND	5.0	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Carbon Disulfide	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	1.0	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Vinyl Acetate	ND	1.0	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Butanone	ND	5.0	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Benzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-5-14	6-5-14	
Toluene	ND	1.0	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	31	0.20	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Hexanone	ND	2.0	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Ethylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
m,p-Xylene	ND	0.40	EPA 8260C	6-5-14	6-5-14	
o-Xylene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Styrene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Isopropylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
n-Propylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
n-Butylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Naphthalene	ND	1.0	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*62-122*				
Toluene-d8	*110*	*70-120*				
4-Bromofluorobenzene	*108*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Acetone	ND	5.0	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Carbon Disulfide	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	1.0	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Vinyl Acetate	ND	1.0	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Butanone	ND	5.0	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Benzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-5-14	6-5-14	
Toluene	ND	1.0	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Hexanone	ND	2.0	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Ethylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
m,p-Xylene	ND	0.40	EPA 8260C	6-5-14	6-5-14	
o-Xylene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Styrene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	1.0	EPA 8260C	6-5-14	6-5-14	
Isopropylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-5-14	6-5-14	
n-Propylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
n-Butylbenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Naphthalene	ND	1.0	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*62-122*				
Toluene-d8	*103*	*70-120*				
4-Bromofluorobenzene	*103*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0605W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**10.0**	**9.23**	10.0	10.0	100	92	63-142	8	17	
Benzene	**10.8**	**9.93**	10.0	10.0	108	99	78-125	8	15	
Trichloroethene	**9.72**	**8.95**	10.0	10.0	97	90	80-125	8	15	
Toluene	**11.0**	**10.2**	10.0	10.0	110	102	80-125	8	15	
Chlorobenzene	**10.3**	**10.0**	10.0	10.0	103	100	80-140	3	15	
Surrogate:										
Dibromofluoromethane					*104*	*103*	*62-122*			
Toluene-d8					*105*	*105*	*70-120*			
4-Bromofluorobenzene					*102*	*100*	*71-120*			

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-21.5**					
Laboratory ID:	06-016-02					
Dichlorodifluoromethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-21.5**					
Laboratory ID:	06-016-02					
1,1,2-Trichloroethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.012	0.00087	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0043	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.00087	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*99*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-24.0**					
Laboratory ID:	06-016-03					
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-24.0**					
Laboratory ID:	06-016-03					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.0098	0.0011	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*106*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-25.0**					
Laboratory ID:	06-016-04					
Dichlorodifluoromethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-25.0**					
Laboratory ID:	06-016-04					
1,1,2-Trichloroethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.011	0.00091	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0046	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.00091	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*104*	*77-122*				
4-Bromofluorobenzene	*100*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-30.5**					
Laboratory ID:	06-016-05					
Dichlorodifluoromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-S-30.5**					
Laboratory ID:	06-016-05					
1,1,2-Trichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.011	0.00097	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0048	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*65-129*				
Toluene-d8	*105*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B1-S-2.0**					
Laboratory ID:	06-016-06					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B1-S-2.0**					
Laboratory ID:	06-016-06					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.037	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*65-129*				
Toluene-d8	*101*	*77-122*				
4-Bromofluorobenzene	*99*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B2-S-2.0**					
Laboratory ID:	06-016-07					
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B2-S-2.0**					
Laboratory ID:	06-016-07					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.0029	0.0011	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0053	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*65-129*				
Toluene-d8	*110*	*77-122*				
4-Bromofluorobenzene	*105*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B2-S-4.0**					
Laboratory ID:	06-016-08					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B2-S-4.0**					
Laboratory ID:	06-016-08					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.029	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0052	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*105*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B3-S-2.0**					
Laboratory ID:	06-016-09					
Dichlorodifluoromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B3-S-2.0**					
Laboratory ID:	06-016-09					
1,1,2-Trichloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.0042	0.0011	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0055	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0011	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*102*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*105*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B4-S-2.0**					
Laboratory ID:	06-016-10					
Dichlorodifluoromethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B4-S-2.0**					
Laboratory ID:	06-016-10					
1,1,2-Trichloroethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.015	0.00094	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0047	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.00094	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*65-129*				
Toluene-d8	*104*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

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Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	

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Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0605S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0454**	**0.0440**	0.0500	0.0500	91	88	56-141	3	15	
Benzene	**0.0480**	**0.0478**	0.0500	0.0500	96	96	70-121	0	15	
Trichloroethene	**0.0496**	**0.0500**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0477**	**0.0469**	0.0500	0.0500	95	94	75-120	2	15	
Chlorobenzene	**0.0475**	**0.0469**	0.0500	0.0500	95	94	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*101*	*102*	*65-129*			
Toluene-d8					*99*	*99*	*77-122*			
4-Bromofluorobenzene					*99*	*98*	*73-124*			

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
Nitrate	**1.2**	0.050	EPA 353.2	6-4-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Nitrate	**ND**	0.050	EPA 353.2	6-4-14	6-5-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-038-01								
	ORIG	DUP							
Nitrate	**3.86**	**3.90**	NA	NA	NA	NA	1	16	
MATRIX SPIKE									
Laboratory ID:	06-038-01								
	MS		MS		MS				
Nitrate	**8.34**		4.00	3.86	112	84-119	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0605W1								
	SB		SB		SB				
Nitrate	**2.28**		2.00	NA	114	86-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

SULFATE
ASTM D516-07

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
Sulfate	**17**	5.0	ASTM D516-07	6-4-14	6-10-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

SULFATE
ASTM D516-07
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Sulfate	**ND**	5.0	ASTM D516-07	6-4-14	6-10-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-006-04								
	ORIG	DUP							
Sulfate	**15.1**	**14.7**	NA	NA	NA	NA	3	10	
MATRIX SPIKE									
Laboratory ID:	06-006-04								
	MS		MS		MS				
Sulfate	**36.6**		20.0	15.1	108	82-123	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Sulfate	**10.0**		10.0	NA	100	91-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
Chloride	**22**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Chloride	**ND**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-016-01								
	ORIG	DUP							
Chloride	**21.7**	**21.5**	NA	NA	NA	NA	1	11	
MATRIX SPIKE									
Laboratory ID:	06-016-01								
	MS		MS		MS				
Chloride	**78.7**		50.0	21.7	114	94-126	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Chloride	**52.9**		50.0	NA	106	94-124	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

DISSOLVED METHANE
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B6-GW-25.4**					
Laboratory ID:	06-016-01					
Methane	**2.6**	0.50	RSK 175	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

DISSOLVED METHANE
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0605W1					
Methane	**ND**	0.50	RSK 175	6-5-14	6-5-14	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0605W1										
	SB	SBD	SB	SBD		SB	SBD				
Methane	**3.78**	**3.85**	4.42	4.42	N/A	**86**	**87**	75-125	2	25	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-016
Project: 0879.01.02

% MOISTURE

Date Analyzed: 6-5-14

Client ID	Lab ID	% Moisture
CST B7-S-21.5	06-016-02	8
CST B7-S-24.0	06-016-03	8
CST B7-S-25.0	06-016-04	11
CST B7-S-30.5	06-016-05	8
CST B1-S-2.0	06-016-06	6
CST B2-S-2.0	06-016-07	5
CST B2-S-4.0	06-016-08	8
CST B3-S-2.0	06-016-09	5
CST B4-S-2.0	06-016-10	8

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 12 2014
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
CSTB6-GW-25.4	Water	14-A008247	CONV

Your sample was received on Thursday, June 5, 2014. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young
Laboratory Manager

Project #: 0879.01.02

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project #: 0879.01.02
All results reported on an as received basis.

Date Received: 06/05/14
Date Reported: 6/12/14

AMTEST Identification Number **14-A008247**
Client Identification **CSTB6-GW-25.4**
Sampling Date **06/02/14, 17:15**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.1	mg/l		0.1	EPA 376.2	AB	06/11/14

Aaron W. Young
Laboratory Manager

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample number: 14-A008247

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
14-A008248	Total Sulfide	mg/l	< 0.1	0.57	0.50	114.00 %
14-A008248	Total Sulfide	mg/l	< 0.1	0.66	0.50	132.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Sulfide	mg/l	0.57	0.66	15.

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Sulfide	mg/l	0.50	0.52	104. %

BLANKS

ANALYTE	UNITS	RESULT
Total Sulfide	mg/l	< 0.1

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 06-016

Subcontract Laboratory: AmTest Laboratories

Turnaround Request: 1 Day 2 Day 3 Day (Standard)

Project Manager: David Baumeister

Attention: Aaron Young

email: dbaumeister@onsite-env.com

13600 NE 126th Pl Kirkland, WA 98034

Project Number: 0879.01.02

Phone Number: (425) 885-1664

Other: _____

Project Name: _____

Date/Time: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
8247	CSTBG-GW-25.4	6/2/14	1715	W	1	Sulfide

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:		OnSite Env	6/5/14	11:25	
Received by:		Amtest	6/5/14	11:25	
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

T = 16.9°C

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: MFA
Project Number: 0879.01.02
Project Name: Seatac S. 154th TOC
Project Manager: Jackie Gruber
Sampled by: YV, KR, RD, CW

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 06-016

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx ext	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	ferrous iron	nitrate/SO4/Cl	sulfide	methane		% Moisture
1	CST B6-GW-25.4	6/2/14	1715	GW	9				X	X												X	X	X	X		
2	CST B7-S-21.5	6/2/14	1725	S	5						X																
3	CST B7-S-24.0	6/3/14	0810	S	5						X																
4	CST B7-S-25.0	6/3/14	0828	S	5						X																
5	CST B7-S-30.5	6/3/14	0847	S	5						X																
6	CST B1-S-2.0	6/3/14	0950	S	5						X																
7	CST B2-S-2.0	6/3	1010	S	5						X																
8	CST B2-S-4.0	6/3	1032	S	5						X																
9	CST B3-S-2.0	6/3	1240	S	5						X																
10	CST B4-S-2.0	6/3	1315	S	5						X																

	Signature	Company	Date	Time
Relinquished	[signature]	MFA	6/3/14	1530
Received	[signature]	Spdy	11	11
Relinquished	11	11	11	1630
Received	[signature]	CRE	6/3/14	1630
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☒

Data Package: Standard ☒ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☒ _____

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 12, 2014

Jackie Gruber
Maul Foster & Alongi, Inc.
411 First Avenue S., Suite 610
Seattle, WA 98104

Re: Analytical Data for Project 0879.01.02
Laboratory Reference No. 1406-017

Dear Jackie:

Enclosed are the analytical results and associated quality control data for samples submitted on June 3, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

Case Narrative

Samples were collected on June 3, 2014 and received by the laboratory on June 3, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be 1discussed in detail below.

Halogenated Volatiles EPA 8260C Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	6-4-14	6-4-14	
Lube Oil Range Organics	**ND**	0.44	NWTPH-Dx	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	6-4-14	6-4-14	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	6-4-14	6-4-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	05-254-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*99* *102*	*50-150*			

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
Dichlorodifluoromethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Chloromethane	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Vinyl Chloride	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Bromomethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Chloroethane	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Trichlorofluoromethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Acetone	ND	10	EPA 8260C	6-6-14	6-6-14	
Iodomethane	ND	3.0	EPA 8260C	6-6-14	6-6-14	
Carbon Disulfide	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Methylene Chloride	ND	2.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,2-Dichloroethene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Methyl t-Butyl Ether	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Vinyl Acetate	ND	2.0	EPA 8260C	6-6-14	6-6-14	
2,2-Dichloropropane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
(cis) 1,2-Dichloroethene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
2-Butanone	ND	10	EPA 8260C	6-6-14	6-6-14	
Bromochloromethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Chloroform	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,1,1-Trichloroethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Carbon Tetrachloride	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloropropene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Benzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloroethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Trichloroethene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloropropane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Dibromomethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Bromodichloromethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
2-Chloroethyl Vinyl Ether	ND	2.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,3-Dichloropropene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Methyl Isobutyl Ketone	ND	4.0	EPA 8260C	6-6-14	6-6-14	
Toluene	ND	2.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,3-Dichloropropene	ND	0.40	EPA 8260C	6-6-14	6-6-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
1,1,2-Trichloroethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Tetrachloroethene	66	0.40	EPA 8260C	6-6-14	6-6-14	
1,3-Dichloropropane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
2-Hexanone	ND	4.0	EPA 8260C	6-6-14	6-6-14	
Dibromochloromethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromoethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Chlorobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,1,1,2-Tetrachloroethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Ethylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
m,p-Xylene	ND	0.80	EPA 8260C	6-6-14	6-6-14	
o-Xylene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Styrene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Bromoform	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Isopropylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Bromobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,1,2,2-Tetrachloroethane	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichloropropane	ND	0.56	EPA 8260C	6-6-14	6-6-14	
n-Propylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
2-Chlorotoluene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
4-Chlorotoluene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,3,5-Trimethylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
tert-Butylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trimethylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
sec-Butylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,3-Dichlorobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
p-Isopropyltoluene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,4-Dichlorobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2-Dichlorobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
n-Butylbenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromo-3-chloropropane	ND	2.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trichlorobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Hexachlorobutadiene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Naphthalene	ND	2.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichlorobenzene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*62-122*				
Toluene-d8	*97*	*70-120*				
4-Bromofluorobenzene	*103*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0606W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Vinyl Chloride	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromomethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Acetone	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Iodomethane	ND	1.5	EPA 8260C	6-6-14	6-6-14	
Carbon Disulfide	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methylene Chloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Vinyl Acetate	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Butanone	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Bromochloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloroform	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Benzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Trichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Dibromomethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromodichloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Toluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0606W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Tetrachloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Hexanone	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Dibromochloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Ethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
m,p-Xylene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
o-Xylene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Styrene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromoform	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Isopropylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichloropropane	ND	0.28	EPA 8260C	6-6-14	6-6-14	
n-Propylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
n-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Hexachlorobutadiene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Naphthalene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*62-122*				
Toluene-d8	*101*	*70-120*				
4-Bromofluorobenzene	*100*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0606W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**9.94**	**8.58**	10.0	10.0	99	86	63-142	15	17	
Benzene	**8.78**	**8.87**	10.0	10.0	88	89	78-125	1	15	
Trichloroethene	**9.35**	**8.85**	10.0	10.0	94	89	80-125	5	15	
Toluene	**9.56**	**9.05**	10.0	10.0	96	91	80-125	5	15	
Chlorobenzene	**9.38**	**9.21**	10.0	10.0	94	92	80-140	2	15	
Surrogate:										
Dibromofluoromethane					*100*	*101*	*62-122*			
Toluene-d8					*101*	*98*	*70-120*			
4-Bromofluorobenzene					*98*	*100*	*71-120*			

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B8-S-23.0**					
Laboratory ID:	06-017-02					
Dichlorodifluoromethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B8-S-23.0**					
Laboratory ID:	06-017-02					
1,1,2-Trichloroethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.030	0.0015	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0073	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0015	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*65-129*				
Toluene-d8	*104*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B8-S-21.0**					
Laboratory ID:	06-017-03					
Dichlorodifluoromethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B8-S-21.0**					
Laboratory ID:	06-017-03					
1,1,2-Trichloroethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.011	0.00084	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0042	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.00084	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B8-S-30.5**					
Laboratory ID:	06-017-04					
Dichlorodifluoromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	0.0023	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B8-S-30.5**					
Laboratory ID:	06-017-04					
1,1,2-Trichloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	0.068	0.00097	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0049	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.00097	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*107*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloromethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Vinyl Chloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Iodomethane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
Methylene Chloride	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chloroform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Trichloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromomethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromodichloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0605S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Tetrachloroethene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Dibromochloromethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Chlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromoform	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Bromobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
2-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
4-Chlorotoluene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	6-5-14	6-5-14	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	6-5-14	6-5-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

HALOGENATED VOLATILES EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0605S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0454**	**0.0440**	0.0500	0.0500	91	88	56-141	3	15	
Benzene	**0.0480**	**0.0478**	0.0500	0.0500	96	96	70-121	0	15	
Trichloroethene	**0.0496**	**0.0500**	0.0500	0.0500	99	100	74-118	1	15	
Toluene	**0.0477**	**0.0469**	0.0500	0.0500	95	94	75-120	2	15	
Chlorobenzene	**0.0475**	**0.0469**	0.0500	0.0500	95	94	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*101*	*102*	*65-129*			
Toluene-d8					*99*	*99*	*77-122*			
4-Bromofluorobenzene					*99*	*98*	*73-124*			

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

DISSOLVED METHANE
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
Methane	**1.3**	0.50	RSK 175	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

DISSOLVED METHANE
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0605W1					
Methane	**ND**	0.50	RSK 175	6-5-14	6-5-14	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0605W1										
	SB	SBD	SB	SBD		SB	SBD				
Methane	**3.78**	**3.85**	4.42	4.42	N/A	**86**	**87**	75-125	2	25	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
Nitrate	**1.8**	0.050	EPA 353.2	6-4-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Nitrate	**ND**	0.050	EPA 353.2	6-4-14	6-5-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-006-04								
	ORIG	DUP							
Nitrate	**1.47**	**1.49**	NA	NA	NA	NA	1	16	
MATRIX SPIKE									
Laboratory ID:	06-006-04								
	MS		MS		MS				
Nitrate	**3.85**		2.00	1.47	119	84-119	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Nitrate	**2.30**		2.00	NA	115	86-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

SULFATE
ASTM D516-07

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
Sulfate	**15**	5.0	ASTM D516-07	6-4-14	6-10-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

SULFATE
ASTM D516-07
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Sulfate	**ND**	5.0	ASTM D516-07	6-4-14	6-10-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-006-04								
	ORIG	DUP							
Sulfate	**15.1**	**14.7**	NA	NA	NA	NA	3	10	
MATRIX SPIKE									
Laboratory ID:	06-006-04								
	MS		MS		MS				
Sulfate	**36.6**		20.0	15.1	108	82-123	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Sulfate	**10.0**		10.0	NA	100	91-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CST B7-GW-30.0**					
Laboratory ID:	06-017-01					
Chloride	**22**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Chloride	**ND**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-016-01								
	ORIG	DUP							
Chloride	**21.7**	**21.5**	NA	NA	NA	NA	1	11	
MATRIX SPIKE									
Laboratory ID:	06-016-01								
	MS		MS		MS				
Chloride	**78.7**		50.0	21.7	114	94-126	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Chloride	**52.9**		50.0	NA	106	94-124	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 3, 2014
Laboratory Reference: 1406-017
Project: 0879.01.02

% MOISTURE

Date Analyzed: 6-5-14

Client ID	Lab ID	% Moisture
CST B8-S-23.0	06-017-02	12
CST B8-S-21.0	06-017-03	10
CST B8-S-30.5	06-017-04	12

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 12 2014
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
CSTB7-GW-30.0	Water	14-A008246	CONV

Your sample was received on Thursday, June 5, 2014. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young
Laboratory Manager

Project #: 0879.01.02

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project #: 0879.01.02
All results reported on an as received basis.

Date Received: 06/05/14
Date Reported: 6/12/14

AMTEST Identification Number **14-A008246**
Client Identification **CSTB7-GW-30.0**
Sampling Date **06/03/14, 11:50**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.1	mg/l		0.1	EPA 376.2	AB	06/11/14

Aaron W. Young
Laboratory Manager

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample number: 14-A008246

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
14-A008248	Total Sulfide	mg/l	< 0.1	0.57	0.50	114.00 %
14-A008248	Total Sulfide	mg/l	< 0.1	0.66	0.50	132.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Sulfide	mg/l	0.57	0.66	15.

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Sulfide	mg/l	0.50	0.52	104. %

BLANKS

ANALYTE	UNITS	RESULT
Total Sulfide	mg/l	< 0.1

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 06-017

Subcontract Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Date/Time: _____

Turnaround Request:

1 Day 2 Day 3 Day

Standard

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 0879.01.02

Project Name: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
8246	CSTB7-GW-300	6/3/14	1150	W	1	Sulfide

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:		OnSite Env	6/5/14	1125	
Received by:		Amtest	6/5/14	1125	
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

T = 16.9 °C

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: MFA
Project Number: 0879.01.02
Project Name: CITY SEATAC S. 154th ST. TOD
Project Manager: J. GRUBER
Sampled by: R. DEGENS, K. ROSKUND, Y. VAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days)
(TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 06-017

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx Ext.	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	METHANE	NO3/SO4/Cl	SULFIDE			% Moisture
1	CST B7-GW-30.0	6/3/14	1150	GW	9				X	X												X	X	X			
2	CST B8-S-23.0	6/3/14	1203	S	5						X																20
3	CST B8-S-21.0	6/3/14	1150	S	5						X																25
4	CST B8-S-30.5	6/3/14	1130	S	5						⊗																⊗

	Signature	Company	Date	Time
Relinquished		MFA	6/3/14	1530
Received	Van	Spdy	11	11
Relinquished	11	11	11	1630
Received		CORE	6/3/14	1630
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
⊗ Added 6/5/14. DB (STA)

Chromatograms with final report ☒

Data Package: Standard ☒ Level III ☐ Level IV ☐
Electronic Data Deliverables (EDDs) ☒ _____

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 12, 2014

Jackie Gruber
Maul Foster & Alongi, Inc.
411 First Avenue S., Suite 610
Seattle, WA 98104

Re: Analytical Data for Project 0879.01.02
Laboratory Reference No. 1406-031

Dear Jackie:

Enclosed are the analytical results and associated quality control data for samples submitted on June 4, 2014.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

Case Narrative

Samples were collected on June 3, 2014 and received by the laboratory on June 4, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	6-9-14	6-9-14	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	6-9-14	6-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0609W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	6-9-14	6-9-14	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	6-9-14	6-9-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-032-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*78*	*76*	*50-150*			

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

VOLATILES EPA 8260C
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
Dichlorodifluoromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Chloromethane	ND	6.5	EPA 8260C	6-6-14	6-6-14	
Vinyl Chloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromomethane	ND	2.2	EPA 8260C	6-6-14	6-6-14	
Chloroethane	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Trichlorofluoromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Acetone	ND	25	EPA 8260C	6-6-14	6-6-14	
Iodomethane	ND	9.5	EPA 8260C	6-6-14	6-6-14	
Carbon Disulfide	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Methylene Chloride	ND	5.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,2-Dichloroethene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Methyl t-Butyl Ether	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Vinyl Acetate	ND	5.0	EPA 8260C	6-6-14	6-6-14	
2,2-Dichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,2-Dichloroethene	4.3	1.0	EPA 8260C	6-6-14	6-6-14	
2-Butanone	ND	25	EPA 8260C	6-6-14	6-6-14	
Bromochloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Chloroform	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1,1-Trichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Carbon Tetrachloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloropropene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Benzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Trichloroethene	3.2	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Dibromomethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromodichloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Chloroethyl Vinyl Ether	ND	5.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,3-Dichloropropene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Methyl Isobutyl Ketone	ND	10	EPA 8260C	6-6-14	6-6-14	
Toluene	ND	5.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,3-Dichloropropene	ND	1.0	EPA 8260C	6-6-14	6-6-14	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
1,1,2-Trichloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Tetrachloroethene	180	1.0	EPA 8260C	6-6-14	6-6-14	
1,3-Dichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Hexanone	ND	10	EPA 8260C	6-6-14	6-6-14	
Dibromochloromethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromoethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Chlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1,1,2-Tetrachloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Ethylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
m,p-Xylene	ND	2.0	EPA 8260C	6-6-14	6-6-14	
o-Xylene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Styrene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromoform	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Isopropylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Bromobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,1,2,2-Tetrachloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
n-Propylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2-Chlorotoluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
4-Chlorotoluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,3,5-Trimethylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
tert-Butylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trimethylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
sec-Butylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,3-Dichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
p-Isopropyltoluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,4-Dichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
n-Butylbenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromo-3-chloropropane	ND	5.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Hexachlorobutadiene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Naphthalene	ND	5.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichlorobenzene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*117*	*62-122*				
Toluene-d8	*115*	*70-120*				
4-Bromofluorobenzene	*112*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0606W2					
Dichlorodifluoromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloromethane	ND	1.3	EPA 8260C	6-6-14	6-6-14	
Vinyl Chloride	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromomethane	ND	0.43	EPA 8260C	6-6-14	6-6-14	
Chloroethane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Trichlorofluoromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Acetone	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Iodomethane	ND	1.9	EPA 8260C	6-6-14	6-6-14	
Carbon Disulfide	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methylene Chloride	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methyl t-Butyl Ether	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Vinyl Acetate	ND	1.0	EPA 8260C	6-6-14	6-6-14	
2,2-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Butanone	ND	5.0	EPA 8260C	6-6-14	6-6-14	
Bromochloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chloroform	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,1-Trichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Carbon Tetrachloride	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Benzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Trichloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Dibromomethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromodichloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Toluene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260C	6-6-14	6-6-14	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0606W2					
1,1,2-Trichloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Tetrachloroethene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3-Dichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Hexanone	ND	2.0	EPA 8260C	6-6-14	6-6-14	
Dibromochloromethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromoethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Chlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Ethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
m,p-Xylene	ND	0.40	EPA 8260C	6-6-14	6-6-14	
o-Xylene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Styrene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromoform	ND	1.0	EPA 8260C	6-6-14	6-6-14	
Isopropylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Bromobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichloropropane	ND	0.20	EPA 8260C	6-6-14	6-6-14	
n-Propylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
2-Chlorotoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
4-Chlorotoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
tert-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
sec-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,3-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
p-Isopropyltoluene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,4-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
n-Butylbenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Hexachlorobutadiene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Naphthalene	ND	1.0	EPA 8260C	6-6-14	6-6-14	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260C	6-6-14	6-6-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*62-122*				
Toluene-d8	*107*	*70-120*				
4-Bromofluorobenzene	*104*	*71-120*				

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0606W2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**8.92**	**8.83**	10.0	10.0	89	88	63-142	1	17	
Benzene	**9.60**	**9.75**	10.0	10.0	96	98	78-125	2	15	
Trichloroethene	**8.86**	**8.74**	10.0	10.0	89	87	80-125	1	15	
Toluene	**9.86**	**9.76**	10.0	10.0	99	98	80-125	1	15	
Chlorobenzene	**9.49**	**9.27**	10.0	10.0	95	93	80-140	2	15	
Surrogate:										
Dibromofluoromethane					*107*	*103*	*62-122*			
Toluene-d8					*107*	*107*	*70-120*			
4-Bromofluorobenzene					*101*	*101*	*71-120*			

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

DISSOLVED METHANE
RSK 175

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
Methane	**3.4**	0.50	RSK 175	6-5-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

DISSOLVED METHANE
RSK 175
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0605W1					
Methane	**ND**	0.50	RSK 175	6-5-14	6-5-14	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0605W1										
	SB	SBD	SB	SBD		SB	SBD				
Methane	**3.78**	**3.85**	4.42	4.42	N/A	**86**	**87**	75-125	2	25	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
Nitrate	**6.0**	0.10	EPA 353.2	6-4-14	6-5-14	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Nitrate	**ND**	0.050	EPA 353.2	6-4-14	6-5-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-006-04								
	ORIG	DUP							
Nitrate	**1.47**	**1.49**	NA	NA	NA	NA	1	16	
MATRIX SPIKE									
Laboratory ID:	06-006-04								
	MS		MS		MS				
Nitrate	**3.85**		2.00	1.47	119	84-119	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Nitrate	**2.30**		2.00	NA	115	86-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

SULFATE
ASTM D516-07

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
Sulfate	**29**	10	ASTM D516-07	6-4-14	6-10-14	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

SULFATE
ASTM D516-07
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Sulfate	**ND**	5.0	ASTM D516-07	6-4-14	6-10-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-006-04								
	ORIG	DUP							
Sulfate	**15.1**	**14.7**	NA	NA	NA	NA	3	10	
MATRIX SPIKE									
Laboratory ID:	06-006-04								
	MS		MS		MS				
Sulfate	**36.6**		20.0	15.1	108	82-123	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Sulfate	**10.0**		10.0	NA	100	91-114	NA	NA	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSTB8-GW-20.0**					
Laboratory ID:	06-031-01					
Chloride	**13**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Date of Report: June 12, 2014
Samples Submitted: June 4, 2014
Laboratory Reference: 1406-031
Project: 0879.01.02

CHLORIDE
SM 4500-Cl E
QUALITY CONTROL

Matrix: Water
Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0604F1					
Chloride	**ND**	2.0	SM 4500-Cl E	6-4-14	6-4-14	

Analyte	Result		Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE									
Laboratory ID:	06-016-01								
	ORIG	DUP							
Chloride	**21.7**	**21.5**	NA	NA	NA	NA	1	11	
MATRIX SPIKE									
Laboratory ID:	06-016-01								
	MS		MS		MS				
Chloride	**78.7**		50.0	21.7	114	94-126	NA	NA	
SPIKE BLANK									
Laboratory ID:	SB0604F1								
	SB		SB		SB				
Chloride	**52.9**		50.0	NA	106	94-124	NA	NA	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 12 2014
On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister

Dear David Baumeister:

Enclosed please find the analytical data for your project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
CSTB8-GW-20.0	Water	14-A008245	CONV

Your sample was received on Thursday, June 5, 2014. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to conact me.

Sincerely,

Aaron W. Young
Laboratory Manager

Project #: 0879.01.02

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

On-Site Environmental
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project #: 0879.01.02
All results reported on an as received basis.

Date Received: 06/05/14
Date Reported: 6/12/14

AMTEST Identification Number **14-A008245**
Client Identification **CSTB8-GW-20.0**
Sampling Date **06/03/14, 15:54**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Sulfide	< 0.1	mg/l		0.1	EPA 376.2	AB	06/11/14

Aaron W. Young
Laboratory Manager

Am Test Inc.
13600 NE 126th PL
Suite C
Kirkland, WA, 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

QC Summary for sample number: 14-A008245

MATRIX SPIKES

SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
14-A008248	Total Sulfide	mg/l	< 0.1	0.57	0.50	114.00 %
14-A008248	Total Sulfide	mg/l	< 0.1	0.66	0.50	132.00 %

MATRIX SPIKE DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE + SPK	MSD VALUE	RPD
Spike	Total Sulfide	mg/l	0.57	0.66	15.

STANDARD REFERENCE MATERIALS

ANALYTE	UNITS	TRUE VALUE	MEASURED VALUE	RECOVERY
Total Sulfide	mg/l	0.50	0.52	104. %

BLANKS

ANALYTE	UNITS	RESULT
Total Sulfide	mg/l	< 0.1

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 · (425) 883-3881

Laboratory Reference #: 06-031

Subcontract Laboratory: AmTest Laboratories

Turnaround Request:

Project Manager: David Baumeister

Attention: Aaron Young

1 Day 2 Day 3 Day

Standard

email: dbaumeister@onsite-env.com

13600 NE 126th Pl Kirkland, WA 98034

Project Number: 0879.01.02

Phone Number: (425) 885-1664

Other: _____

Project Name: _____

Date/Time: _____

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
8245	CSTB8-GW-20.0	6/3/14	1554	W	1	Sulfide

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:		OSE	6/5/14	1125	
Received by:		AmTest	6/5/14	1125	
Relinquished by:					
Received by:					
Relinquished by:					
Received by:					

T = 16.9°C

Analytical Resources, Incorporated
Analytical Chemists and Consultants

9 June 2014

David Baumeister
OnSite Environmental, Inc.
14648 NE 95th
Redmond, WA 98052

RE: Client Project: 0879.01.02; Lab ID 1406-031
ARI Job No: YM48

Dear David:

Please find enclosed the chain-of-custody (COC) record and the final results for the sample from the project referenced above. Analytical Resources, Inc. (ARI) accepted one water sample on June 4, 2014. The sample was analyzed for ferrous iron as requested.

This analysis proceeded without incident of note.

An electronic copy of these reports will remain on file at ARI. Should you have any questions, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file YM48

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

YM48

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Bureau Veritas Use Only
Bureau Veritas Lab Project No.

BUREAU VERITAS 1828

Bureau Veritas North America, Inc.

Detroit Lab	Atlanta Lab	Chicago Lab
22345 Roethel Drive	3380 Chastain Meadows Pky, Ste 300	95 Oakwood Road
Novi, MI 48375	Kennesaw, GA 30144	Lake Zurich, IL 60047
(800) 806-5887	(800) 252-9919	(888) 576-7522
(248) 344-1770	(770) 499-7500	(847) 726-3320
Fax (248) 344-2655	Fax (770) 499-7511	Fax (847) 726-3323

RUSH ANALYSIS
CONTACT LAB IN ADVANCE
Need Results by: __/__/__
Charges Authorized? ☐ Yes ☐ No
(if yes, initial here) ____
☐ Email Results ☐ Fax

REPORT RESULTS TO

Name: Yen-Vy Van | Client Job. No. 0879.01.02
Company: Maul Foster & Alongi | Dept.
Mailing Address: 411 1st Ave South, Suite 611
City, State, Zip: Seattle, WA 98104
Telephone No. (206) 858-7618 | Fax No.

BILLING/INVOICE INFORMATION

☐ PO # ____ ☒ Call for Credit Card Information ☐ Direct Bill
Name: ~~Maul~~ Yen-Vy Van
Company: Maul Foster & Alongi
Address: 411 1st Ave South, Suite 611
City, State, Zip: Seattle WA 98104

Special Instructions and/or specific regulatory requirements: (method, limit of detection, etc.)
include chromatograms w/ final report Standard data package w/ electronic data deliverables.
* Explanation of Preservation

Soils: Which state are these from? ~~WA~~ NA

Waters: ☐ Drinking Water ☒ Groundwater ☐ Wastewater

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request. Enter a 'P' if Preservative added.*)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	Ferrous Iron								FOR LAB USE ONLY
~~CSS~~ CST B8-GW-20.0	6/3/14	1554	GW	—	1	X								

CHAIN OF CUSTODY

Collected by: (print) | Collector's Signature:
Relinquished by: [signature] | Date/Time 6/4/2013 12:30 | Received by: [signature] | Date/Time 6/4/14 1230PM
Relinquished by: [signature] | Date/Time 6/4/14 1330 | Received by: Van #24 | Date/Time 6/4/14
Method of Shipment: | Received at Lab by: [signature] | Date/Time 6/4/14 1430

Authorized by: Date
(Client Signature MUST Accompany Request)

Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Relinquished Van 6/4 14:30

LABORATORY COPY

Page 1 of 1

YM48 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client Onsite Project Name: _____

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier (Hand Delivered) Other: Speedy

Assigned ARI Job No: _____ Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry): 4.6

Time: 1430

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 6/4/14 Time: 1430

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?	Bubble Wrap Wet Ice (Gel Packs) (Baggies) Foam Block Paper Other _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	NO
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	(YES)	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI..	(NA)		_____

Was Sample Split by ARI: (NA) YES Date/Time _____ Equipment: _____ Split by: _____

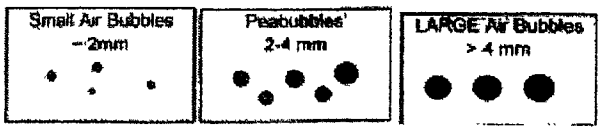
Samples Logged by AV Date: 6/4/14 Time: 1435

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YM48
Client: OnSite Environmental, Inc.
Project Event: 0879.01.02
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	CSTB8-GW-20.0	YM48A	14-10680	Water	06/03/14 15:54	06/04/14 14:30

YM48 : 060004

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Duplicate RPD is not within established control limits

B — Reported value is less than the CRDL but ≥ the Reporting Limit

N — Matrix Spike recovery not within established control limits

NA — Not Applicable, analyte not spiked

H — The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible

L — Analyte concentration is ≤5 times the Reporting Limit and the replicate control limit defaults to ±1 RL instead of the normal 20% RPD

Organic Data

U — Indicates that the target analyte was not detected at the reported concentration

* — Flagged value is not within established control limits

B — Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.

J — Estimated concentration when the value is less than ARI's established reporting limits

D — The spiked compound was not detected due to sample extract dilution

E — Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
S	Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
NA	The flagged analyte was not analyzed for
NR	Spiked compound recovery is not reported due to chromatographic interference
NS	The flagged analyte was not spiked into the sample
M	Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
Y	The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
EMPC	Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" **(Dioxin/Furan analysis only)**
C	The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
P	The analyte was detected on both chromatographic columns but the quantified values differ by ≥40% RPD with no obvious chromatographic interference
X	Analyte signal includes interference from polychlorinated diphenyl ethers. **(Dioxin/Furan analysis only)**
Z	Analyte signal includes interference from the sample matrix or perfluorokerosene ions. **(Dioxin/Furan analysis only)**

Geotechnical Data

A	The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
F	Samples were frozen prior to particle size determination
SM	Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
SS	Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
W	Weight of sample in some pipette aliquots was below the level required for accurate weighting

SAMPLE RESULTS-CONVENTIONALS
YM48-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/09/14

Project: NA
Event: 0879.01.02
Date Sampled: 06/03/14
Date Received: 06/04/14

Client ID: CSTB8-GW-20.0
ARI ID: 14-10680 YM48A

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	06/04/14 060414#1	SM3500 FeD	mg/L	0.800	5.56

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
YM48-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/09/14

Project: NA
Event: 0879.01.02
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Ferrous Iron	SM3500 FeD	06/04/14	mg/L	< 0.040 U	

LAB CONTROL RESULTS-CONVENTIONALS
YM48-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/09/14

Project: NA
Event: 0879.01.02
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Ferrous Iron SM3500 FeD	ICVL	06/04/14	mg/L	0.477	0.500	95.4%

REPLICATE RESULTS-CONVENTIONALS
YM48-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/09/14

Project: NA
Event: 0879.01.02
Date Sampled: 06/03/14
Date Received: 06/04/14

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: YM48A Client ID: CSTB8-GW-20.0						
Ferrous Iron	SM3500 FeD	06/04/14	mg/L	5.56	5.00	10.6%

MS/MSD RESULTS-CONVENTIONALS
YM48-OnSite Environmental, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 06/09/14

Project: NA
Event: 0879.01.02
Date Sampled: 06/03/14
Date Received: 06/04/14

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: YM48A Client ID: CSTB8-GW-20.0							
Ferrous Iron	SM3500 FeD	06/04/14	mg/L	5.56	15.0	8.00	118.0%

REQUEST FOR LABORATORY ANALYTICAL SERVICES

06-031

For Bureau Veritas Use Only
Bureau Veritas Lab Project No.

Bureau Veritas North America, Inc.

Detroit Lab
22345 Roethel Drive
Novi, MI 48375
(800) 806-5887
(248) 344-1770
Fax (248) 344-2655

Atlanta Lab
3380 Chastain Meadows Pky, Ste 300
Kennesaw, GA 30144
(800) 252-9949
(770) 499-7500
Fax (770) 499-7511

Chicago Lab
95 Oakwood Road
Lake Zurich, IL 60047
(888) 376-7522
(847) 726-3320
Fax (847) 726-3323

RUSH ANALYSIS
CONTACT LAB IN ADVANCE
Need Results by: ____/____/____
Charges Authorized? ☐ Yes ☐ No
(if yes, initial here) _____
☐ Email Results ☐ Fax

REPORT RESULTS TO

Name	Yen-Vy Van
Company	Maul Foster & Alongi
Mailing Address	411 1st Ave South, Suite 611
City, State, Zip	Seattle, WA 98104
Telephone No.	(206) 858-7618
Fax No.	
Client Job. No.	0879.01.02
Dept.	

BILLING/INVOICE INFORMATION

☐ PO # _____ ☒ Call for Credit Card Information ☐ Direct Bill

Name	Yen-Vy Van
Company	Maul Foster & Alongi
Address	411 1st Ave South, Suite 611
City, State, Zip	Seattle, WA 98104

Special instructions and/or specific regulatory requirements:
(method, limit of detection, etc.)
Include chromatograms w/ final report. Standard data package w/ electronic data deliverables.

* Explanation of Preservation

Soils: Which state are these from? ~~WA~~ NA

Waters:
☐ Drinking Water
☒ Groundwater
☐ Wastewater

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request. Enter a 'P' if Preservative added.*)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	NWTPH-Dx ext	Volatiles 8260C	methane	NO_3/SO_4/Cl sulfide	FOR LAB USE ONLY
CSTB8-GW-20.0	6/3/14	1554	GW	-	9	X	X	X	X	

CHAIN OF CUSTODY

Collected by:	(print)	Collector's Signature:	
Relinquished by:	Date/Time 6/4/14, 1230	Received by:	Date/Time 6/4/14 1230 pm
Relinquished by:	Date/Time 6/4/14 1345	Received by:	Date/Time
Method of Shipment:		Received at Lab by:	Date/Time
Authorized by:	Date	Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)	

(Client Signature **MUST** Accompany Request)

Page ____ of ____

LABORATORY COPY

APPENDIX F

DATA VALIDATION MEMORANDA

DATA QUALITY ASSURANCE/QUALITY CONTROL REVIEW

PROJECT NO. 0879.01.02 | JUNE 24, 2014 | SEATAC S. 154TH STREET TOD

This report reviews the analytical results for groundwater and soil samples collected by the Maul Foster & Alongi, Inc. project team on the City of SeaTac South 154th Street located at 15209 Military Road, South SeaTac, Washington. The samples were collected in June 2014.

Onsite Environmental Incorporated (OES) in Redmond, Washington, AMTEST Laboratories (AMTEST) in Kirkland, Washington, and Analytical Resources, Incorporated (ARI) in Redmond, Washington, performed the analyses. OES report numbers 1406-006, 1406-016, 1406-017, and 1406-031 were reviewed. Subbed analyses and associated report results from AMTEST and ARI are attached to OES reports. Data validation tracking sheets documenting the review of each analysis for all laboratory reports are attached. Tracking sheets are to be referenced when further understanding of specific validation assessment is needed. The analyses performed are listed below.

Analysis	Reference
Volatile Organic Compounds	USEPA 8260C
Halogenated Volatiles	USEPA 8260C
Diesel- and Lube-Oil-Range Hydrocarbons	NWTPH-Dx
Nitrate (as Nitrogen)	USEPA 353.2
Chloride	SM 4500CL-E
Sulfate	ASTM D516-07
Dissolved Methane	RSK 175
Sulfide	USEPA 376.2
Ferrous Iron	SM3500 FeD

ASTM = American Society for Testing and Materials.
NWTPH = Northwest Total Petroleum Hydrocarbons.
SM = Standard Methods for the Examination of Water and Wastewater.
USEPA = U.S. Environmental Protection Agency.

DATA QUALIFICATIONS

Analytical results were evaluated according to applicable sections of USEPA procedures (USEPA, 2008, 2010) and appropriate laboratory and method-specific guidelines (AMTEST, 2014; ARI, 2014; OES, 2014; USEPA, 1986). Data validation procedures were modified, as appropriate, to accommodate quality control requirements for methods not specifically addressed by the functional guidelines (e.g., NWTPH-Dx).

The data are considered acceptable for their intended use, with the appropriate data qualifiers assigned.

HOLDING TIMES, PRESERVATION, AND SAMPLE STORAGE

Holding Times

Extractions and analyses were performed within the recommended holding time criteria.

Preservation and Sample Storage

The samples were preserved and stored appropriately.

BLANKS

Method Blanks

Laboratory method blank analyses were performed at the required frequencies. For purposes of data qualification, the method blanks were associated with all samples prepared in the analytical batch. If an analyte was detected in a sample and in the associated method blank, the sample result was qualified if the concentration was less than five times the method blank concentration. All method blank results were non-detect.

Trip Blanks

Trip blanks were not required for this sampling event.

Equipment Rinsate Blanks

Equipment rinsate blanks were not required for this sampling event, as all samples were collected using dedicated, single-use equipment.

SURROGATE RECOVERY RESULTS

The samples were spiked with surrogate compounds to evaluate laboratory performance on individual samples. All surrogate recoveries were within acceptance limits.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

Matrix spike/matrix spike duplicate (MS/MSD) results are used to evaluate laboratory precision and accuracy. All MS/MSD samples were extracted and analyzed at the required frequency. Except for minor exceedances, all recoveries were within acceptance limits for percent recovery and relative percent differences (RPDs).

LABORATORY DUPLICATE RESULTS

Duplicate results are used to evaluate laboratory precision. All duplicate samples were extracted and analyzed at the required frequency. Except for a minor lab duplicate exceedance associated with the analysis of ferrous iron, all laboratory duplicate RPDs were within acceptance limits. No qualifications were necessary, as the exceedance was minor.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE RESULTS

A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) is spiked with target analytes to provide information on laboratory precision and accuracy. The LCS/LCSD samples were extracted and analyzed at the required frequency. All LCS/LCSD analytes were within acceptance limits for percent recovery and RPDs.

REPORTING LIMITS

OES, AMTEST, and ARI used routine reporting limits for non-detect results.

DATA PACKAGE

The data packages were reviewed for transcription errors, omissions, and anomalies. None were found.

REFERENCES

AMTEST. 2014. Quality assurance manual. AMTEST Laboratories, Kirkland, Washington.

ARI. 2014. Quality assurance manual. Analytical Resources, Incorporated, Redmond, Washington.

OES. 2014. Quality assurance manual. Onsite Environmental Incorporated, Redmond, Washington.

USEPA. 1986. Test methods for evaluating solid waste: physical/chemical methods. EPA-530/SW-846. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. September (revision 6, February 2007).

USEPA. 2008. USEPA contract laboratory program, national functional guidelines for organics data review. EPA 540/R-08/01. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response. June.

USEPA. 2010. USEPA contract laboratory program national functional guidelines for inorganic superfund data review. EPA 540/R-10/011. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.

DATA VALIDATION TRACKING

PROJECT NO. 0879.01.02 | JUNE 24, 2014 | SEATAC S. 154TH TOD

This document tracks Stage 2A validation completion for the data validation memo and analysis indicated below.

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-006
Analysis	VOCs – 8260C/ Halogenated Volatiles

Reviewer	BTF
Date	6/24/2014
Page	1

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓	VOCs stored -7 and -20 deg C (pre-weighed vials)	
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓/ ✓	All ND	
	LCS/LCSD %	✓/ ✓	5 analytes in spiking soln	
	LCS/LCSD RPD	✓/ ✓	5 analytes in spiking soln	
	Lab Dup RPD	NA		
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓/ ✓		
	MDL	NA	None requested	
	Surrogates	✓/ ✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B5-S-20.5	**CST B6-S-31.5**		
CST B5-S-23.5			
CST B5-S-31.0			
CST B5-GW-27.0			
CST B6-S-8.0			

Comments:
Samples Collected 6/2/2014
Full VOCs on GW Samples and Halogenated VOCs on Soil Samples

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-006
Analysis	NWTPH-Dx

Reviewer	BTF
Date	6/24/2014
Page	2

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA		
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓		
	LCS/LCSD %	NA		
	LCS/LCSD RPD	NA		
	Lab Dup RPD	✓	All NDs	
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA		
	Reporting Limit	✓		
	MDL		None requested	
	Surrogates	✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B5-S-20.5	**CST B6-S-31.5**		
CST B5-S-23.5			
CST B5-S-31.0			
CST B5-GW-27.0			
CST B6-S-8.0			

Comments:
Samples Collected 6/2/2014

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-006
Analysis	EPA 353.2 / ASTM D516-07 / SM 4500CL-E / RSK 175

Reviewer	BTF
Date	6/24/2014
Page	3

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓ / ✓ / ✓ / ✓	All ND	
	LCS/LCSD %	✓ / ✓ / ✓ / ✓	LCS only for nitrate, chloride, sulfate	
	LCS/LCSD RPD	NA / NA / NA / ✓	LCS only for nitrate, chloride, sulfate	
	Lab Dup RPD	✓ / ✓ / ✓ / NA	Not assoc w/ project samples. No dup methane analysis.	
	MS/MSD %	✓ / ✓ / ✓ / NA	MS only, no MS methane analysis	
	MS/MSD RPD	NA		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B5-S-20.5	CST B6-S-31.5		
CST B5-S-23.5			
CST B5-S-31.0			
CST B5-GW-27.0			
CST B6-S-8.0			

Comments:
Samples Collected 6/2/2014
Nitrate (as nitrogen), chloride, sulfate, dissolved methane in water

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-006 / 14-A008248
Analysis	Sulfide EPA 376.2

Reviewer	BTF
Date	6/24/2014
Page	4

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	All ND	
	LCS/LCSD %	✓	Standard Reference Materials	
	LCS/LCSD RPD	NA	No LCSD	
	Lab Dup RPD	NA		
	MS/MSD %	✓		
	MS/MSD RPD	✓		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B5-S-20.5	CST B6-S-31.5		
CST B5-S-23.5			
CST B5-S-31.0			
CST B5-GW-27.0			
CST B6-S-8.0			

Comments:
Samples Collected 6/2/2014
AM Test Inc. - Sulfide

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-006 / YM18A
Analysis	SM3500 FeD

Reviewer	BTF
Date	6/24/2014
Page	5

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	ND	
	LCS/LCSD %	✓		
	LCS/LCSD RPD	NA	No LCSD	
	Lab Dup RPD	No	Minor exceedance (30.9%)	
	MS/MSD %	✓	Minor exceedance (131%)	
	MS/MSD RPD	NA	No MSD	
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B5-S-20.5	CST B6-S-31.5		
CST B5-S-23.5			
CST B5-S-31.0			
CST B5-GW-27.0			
CST B6-S-8.0			

Comments:
Samples Collected 6/2/2014
Analytical Resources, Incorporated—Ferrous Iron

DATA VALIDATION TRACKING

PROJECT NO. 0879.01.02 | JUNE 24, 2014 | SEATAC S. 154TH TOD

This document tracks Stage 2A validation completion for the data validation memo and analysis indicated below.

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-016
Analysis	VOCs – 8260C/ Halogenated Volatiles

Reviewer	BTF
Date	6/24/2014
Page	1

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓/ ✓	All ND	
	LCS/LCSD %	✓/ ✓	5 analytes in spiking soln	
	LCS/LCSD RPD	✓/ ✓	5 analytes in spiking soln	
	Lab Dup RPD	NA		
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓/ ✓		
	MDL	NA	None requested	
	Surrogates	✓/ ✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B6-GW-25.4	**CST B1-S-2.0**		
CST B7-S-21.5	**CST B2-S-2.0**		
CST B7-S-24.0	**CST B2-S-4.0**		
CST B7-S-25.0	**CST B3-S-2.0**		
CST B7-S-30.5	**CST B4-S-2.0**		

Comments:
Samples Collected 6/2/2014
Full VOCs on GW Samples and Halogenated VOCs on Soil Samples

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-016
Analysis	NWTPH-Dx

Reviewer	BTF
Date	6/24/2014
Page	2

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA		
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓		
	LCS/LCSD %	NA		
	LCS/LCSD RPD	NA		
	Lab Dup RPD	✓	All NDs	
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA		
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B6-GW-25.4	CST B1-S-2.0		
CST B7-S-21.5	CST B2-S-2.0		
CST B7-S-24.0	CST B2-S-4.0		
CST B7-S-25.0	CST B3-S-2.0		
CST B7-S-30.5	CST B4-S-2.0		

Comments:
Samples Collected 6/2/2014

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-016
Analysis	EPA 353.2 / ASTM D516-07 / SM 4500CL-E / RSK 175

Reviewer	BTF
Date	6/24/2014
Page	3

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓ / ✓ / ✓ / ✓	All ND	
	LCS/LCSD %	✓ / ✓ / ✓ / ✓	LCS only for nitrate, chloride, sulfate	
	LCS/LCSD RPD	NA / NA / NA / ✓	LCS only for nitrate, chloride, sulfate	
	Lab Dup RPD	✓ / ✓ / ✓ / NA	Not assoc w/ project samples, no dup in methane analysis	
	MS/MSD %	✓ / ✓ / ✓ / NA	MS only, no MS methane analysis	
	MS/MSD RPD	NA	MS only, no MS methane analysis	
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B6-GW-25.4	CST B1-S-2.0		
CST B7-S-21.5	CST B2-S-2.0		
CST B7-S-24.0	CST B2-S-4.0		
CST B7-S-25.0	CST B3-S-2.0		
CST B7-S-30.5	CST B4-S-2.0		

Comments:
Samples Collected 6/2/2014
Nitrate (as nitrogen), chloride, sulfate, dissolved methane in water

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-016 / 14-A008247
Analysis	Sulfide EPA 376.2

Reviewer	BTF
Date	6/24/2014
Page	4

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	All ND	
	LCS/LCSD %	✓	Standard Reference Materials	
	LCS/LCSD RPD	NA	No LCSD	
	Lab Dup RPD	NA		
	MS/MSD %	No	MS 132% recovery (minor)	
	MS/MSD RPD	✓		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B5-S-20.5	CST B6-S-31.5		
CST B5-S-23.5			
CST B5-S-31.0			
CST B5-GW-27.0			
CST B6-S-8.0			

Comments:
Samples Collected 6/2/2014
AM Test Inc.—Sulfide

DATA VALIDATION TRACKING

PROJECT NO. 0879.01.02 | JUNE 24, 2014 | SEATAC S. 154TH TOD

This document tracks Stage 2A validation completion for the data validation memo and analysis indicated below.

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-017
Analysis	VOCs – 8260C/ Halogenated Volatiles

Reviewer	BTF
Date	6/24/2014
Page	1

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓/ ✓	All ND	
	LCS/LCSD %	✓/ ✓	5 analytes in spiking soln	
	LCS/LCSD RPD	✓/ ✓	5 analytes in spiking soln	
	Lab Dup RPD	NA		
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓/ ✓		
	MDL	NA	None requested	
	Surrogates	✓/ ✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B7-GW-30.0			
CST B8-S-23.0			
CST B8-S-21.0			
CST B8-S-30.5			

Comments:
Samples Collected 6/3/2014
Full VOCs on GW Samples and Halogenated VOCs on Soil Samples

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-017
Analysis	NWTPH-Dx

Reviewer	BTF
Date	6/24/2014
Page	2

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA		
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓		
	LCS/LCSD %	NA		
	LCS/LCSD RPD	NA		
	Lab Dup RPD	✓	All NDs	
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA		
	Reporting Limit	✓		
	MDL		None requested	
	Surrogates	✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B7-GW-30.0			
CST B8-S-23.0			
CST B8-S-21.0			
CST B8-S-30.5			

Comments:
Samples Collected 6/3/2014

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-017
Analysis	EPA 353.2 / ASTM D516-07 / SM 4500CL-E / RSK 175

Reviewer	BTF
Date	6/24/2014
Page	3

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓	Halogenated VOCs stored -7 and -20 deg C (pre-weighed vials)	
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓ / ✓ / ✓ / ✓	All ND	
	LCS/LCSD %	✓ / ✓ / ✓ / ✓	LCS only for nitrate, chloride, sulfate	
	LCS/LCSD RPD	NA / NA / NA / ✓	LCS only for nitrate, chloride, sulfate	
	Lab Dup RPD	✓ / ✓ / ✓ / NA	Not assoc w/ project samples, no dup in methane analysis	
	MS/MSD %	✓ / ✓ / ✓ / NA	MS only, no MS methane analysis	
	MS/MSD RPD	NA	MS only, no MS methane analysis	
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B7-GW-30.0			
CST B8-S-23.0			
CST B8-S-21.0			
CST B8-S-30.5			

Comments:
Samples Collected 6/3/2014
Nitrate (as nitrogen), chloride, sulfate, dissolved methane in water

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-017 / 14-A008246
Analysis	Sulfide EPA 376.2

Reviewer	BTF
Date	6/24/2014
Page	4

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	All ND	
	LCS/LCSD %	✓	Standard Reference Materials	
	LCS/LCSD RPD	NA	No LCSD	
	Lab Dup RPD	NA		
	MS/MSD %	No	MS 132% recovery (minor)	
	MS/MSD RPD	✓		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B7-GW-30.0			
CST B8-S-23.0			
CST B8-S-21.0			
CST B8-S-30.5			

Comments:
Samples Collected 6/3/2014
AM Test Inc.—Sulfide

DATA VALIDATION TRACKING

PROJECT NO. 0879.01.02 | JUNE 24, 2014 | SEATAC S. 154TH TOD

This document tracks Stage 2A validation completion for the data validation memo and analysis indicated below.

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-031
Analysis	VOCs – 8260C

Reviewer	BTF
Date	6/24/2014
Page	1

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	All ND	
	LCS/LCSD %	✓	5 analytes in spiking soln	
	LCS/LCSD RPD	✓	5 analytes in spiking soln	
	Lab Dup RPD	NA		
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B8-GW-20.0			

Comments:
Samples Collected 6/3/2014
Full VOCs on GW Samples

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-031
Analysis	NWTPH-Dx

Reviewer	BTF
Date	6/24/2014
Page	2

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA		
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓		
	LCS/LCSD %	NA		
	LCS/LCSD RPD	NA		
	Lab Dup RPD	✓	All NDs	
	MS/MSD %	NA		
	MS/MSD RPD	NA		
General	Dilution	NA		
	Reporting Limit	✓		
	MDL		None requested	
	Surrogates	✓		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B8-GW-20.0			

Comments:
Samples Collected 6/3/2014

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-031
Analysis	EPA 353.2 / ASTM D516-07 / SM 4500CL-E / RSK 175

Reviewer	BTF
Date	6/24/2014
Page	3

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓	Halogenated VOCs stored -7 and -20 deg C (pre-weighed vials)	
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓ / ✓ / ✓ / ✓	All ND	
	LCS/LCSD %	✓ / ✓ / ✓ / ✓	LCS only for nitrate, chloride, sulfate	
	LCS/LCSD RPD	NA / NA / NA / ✓	LCS only for nitrate, chloride, sulfate	
	Lab Dup RPD	✓ / ✓ / ✓ / NA	Not assoc w/ project samples, no dup in methane analysis	
	MS/MSD %	✓ / ✓ / ✓ / NA	MS only, no MS methane analysis	
	MS/MSD RPD	NA	MS only, no MS methane analysis	
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B8-GW-20.0			

Comments:
Samples Collected 6/3/2014
Nitrate (as nitrogen), chloride, sulfate, dissolved methane in water

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-031 / 14-A008245
Analysis	Sulfide EPA 376.2

Reviewer	BTF
Date	6/24/2014
Page	4

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓		
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	All ND	
	LCS/LCSD %	✓	Standard Reference Materials	
	LCS/LCSD RPD	NA	No LCSD	
	Lab Dup RPD	NA		
	MS/MSD %	✓	MS 132% recovery (minor)	
	MS/MSD RPD	✓		
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B8-GW-20.0			

Comments:
Samples Collected 6/3/2014
AM Test Inc.—Sulfide

Data Validation Memo	DVM_1406-006_1406-016_1406-017_1406-031
Lab Report	1406-031 / YM48
Analysis	SM3500 FeD

Reviewer	BTF
Date	6/24/2014
Page	5

	Validation Area	Acceptable ✓/NA/No	Comments	Q
Sample	Temperature	✓	4.6 deg C upon check-in at ARI	
	Holding Time	✓		
	Trip Blank	NA	No indication on COC of TB collected	
	Field/Eq. Blank	NA		
	Field Dup RPD	NA		
Calibr.	CCB	NA		
	ICV	NA	Not reported by lab	
	CCV	NA	Not reported by lab	
Batch	Method Blank	✓	ND	
	LCS/LCSD %	✓		
	LCS/LCSD RPD	NA	No LCSD	
	Lab Dup RPD	✓		
	MS/MSD %	✓		
	MS/MSD RPD	NA	No MSD	
General	Dilution	NA	Dilution not indicated	
	Reporting Limit	✓		
	MDL	NA	None requested	
	Surrogates	NA		
Dioxins	Labeled Analog	NA		
	EMPC	NA		
	2378-TCDF Conf	NA		

Samples reviewed: Sample IDs bolded were analyzed for method evaluated on current page.			
CST B8-GW-20.0			

Comments:
Samples Collected 6/3/2014
Analytical Resources, Incorporated—Ferrous Iron

APPENDIX G

TERRESTRIAL ECOLOGICAL EVALUATION

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

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

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

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation. You still need to submit your evaluation as part of your cleanup plan or report.

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

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: Betty Brite Cleaners	
Facility/Site Address: 15209 Military Rd S, SeaTac, WA 98188-2141	
Facility/Site No:	VCP Project No.:

Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.			
Name: Yen-Vy Van		Title: Senior Hydrogeologist	
Organization: Maul Foster Alongi, Inc.			
Mailing address: 411 First Avenue S., Suite 610			
City: Seattle	State: WA	Zip code: 98104	
Phone: 253-320-5378	Fax:	E-mail: yvan@maulfoster.com	

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

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

☐ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☒ No *If you answered **"NO,"** then answer **Question 5** below.*

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

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

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

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

☒ Area of soil contamination at the Site is not more than 350 square feet.

☒ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

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

☒ No potential exposure pathways from soil contamination to ecological receptors.

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

☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☒ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

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

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

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

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

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

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

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

- ☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- ☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

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

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

4. What was the result of those evaluations?

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

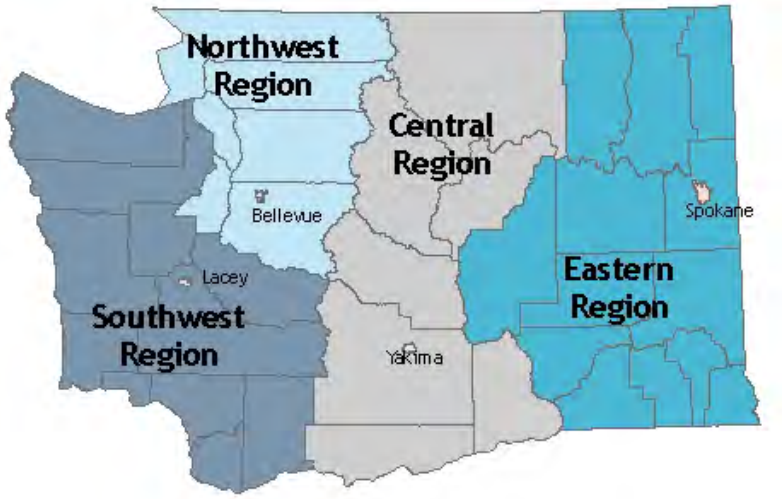
5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

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

☒ No

Step 4: SUBMITTAL

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



Northwest Region: Attn: Sara Nied 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: Mark Dunbar 15 W. Yakima Ave., Suite 200 Yakima, WA 98902
Southwest Region: Attn: Scott Rose P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: Patti Carter N. 4601 Monroe Spokane WA 99205-1295