
LIMITED PHASE II

Limited & Targeted Subsurface Investigation

Performed at:
Calhoun's Service Station
4540 Pacific Avenue
Tacoma, WA 98401

Voluntary Cleanup Program
Site No. SW-1180

December 15, 2011

Performed by:
Aerotech Environmental Consulting, Inc.
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SeaTac, Washington 98188
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PHASE II
TARGETED & TARGETED
SUBSURFACE INVESTIGATION

performed for:

Client: **Calhoun Family, LLC**
P.O. Box 1929
Tacoma, Washington 98401

Point of Contact: **Ms. Karen Calhoun**
Calhoun Family, LLC
P.O. Box 1929
Tacoma, Washington 98401

Property: **Calhoun's Service Station**
4540 Pacific Avenue
Tacoma, WA 98401

VCP Project No. SW1180

County: Pierce

County Assessor: Parcel Nos: 7470024720 and 7470024730

Commercial Activity: Retail Used Tire Store

Licensed Geologist: Michael McGowan
State of Washington License No. 1737

Project Number: No. 211 - 7002

Report Date: December 15, 2011

EXECUTIVE SUMMARY

The subject of this Limited and Targeted Phase II Subsurface Investigation¹ is comprised of two contiguous tax parcels located on the northwest corner of Pacific Avenue and South 46th Street in Tacoma, Washington. The eastern Parcel which houses the building, is approximately 0.17-acres; the western Parcel, an asphalt-paved storage yard, is approximately 0.10-acres. East 56th Street is two-thirds of a mile south; and Interstate 5 is one mile west.

The subject Property is located in a mixed-use commercial and residential area. To the north is a one-lane alley followed by single-family residences; to the south is South 46th Street followed by the Flowerland Store; to the east is Pacific Avenue followed by single-family residences; and to the west are single-family residences.

The subject Property is occupied by a tire sales and automotive repair facility operated as *Llantera Sinaloa Tire Sales & Service*.

The building is a concrete slab on grade, wood framed and sided structure facing east towards Pacific Avenue. On the south end of the east side of the building is the customer entrance into the service counter and customer waiting room. Adjoining on the north side is the two bay service shop; each bay is equipped with an in-ground hydraulic lift. A recessed floor pipe located adjoining each service bay likely served as the remote fill pipes for the underground waste oil tank located on the exterior north side of the building. Directly in front of the building to the east is the former concrete base of the pump dispenser islands. Adjoining the south side of the station building is the former location of the three underground storage tanks.

The subject Property was commercially developed prior to 1926 as the *Melvin Tveten Gasoline Station*. By 1951, the station was reconfigured as *Calhoun's Tourist Service Station*. In 1954, the existing building was demolished and a new station building constructed as *Calhoun's Richfield Oil*. In 1991, four underground tanks were removed from the Site¹; the pumps were removed in 2005. The Site currently operates as a tires sales and an automotive service business.

During the 1991 removal of the four underground tanks petroleum-impacted soils were encountered at the "fill end of the tank" (the specific tank was not identified). The tank excavation was over excavated by three feet; the bottom of the excavation to a reported fourteen feet below ground surface. A total of approximately 250 cubic yards of petroleum-impacted soils were removed from the excavation and place along the southwestern Property boundary - the dimensions were approximately 55.5 feet north to south and 43.5 feet east to west, to at least a three foot depth². Laboratory analyses of composite soil samples collected by Tacoma Pierce County Health Department ("TPCHD") personnel in the tank excavation reported "N.End Excav." (7,500 mg/kg Total Petroleum); "Middle Excav." (6,800 mg/kg); and "South End" (22 mg/kg); BTEX constituents were also elevated. On April 29, 1991, the TPCHD approved backfill of the excavation. It appears that the excavation was subsequently backfilled.

In the spring of 1992, the Site Owner Donald Calhoun was instructed by TPCHD "not to aerate" the stockpiled soils. In March of 1993, six soils samples were collected from the stockpiled soils; all sample results were below the laboratory limits of detection. The final disposition of the stockpiled soils is unknown.

In 2011 the Site entered the State of Washington Ecology Voluntary Cleanup Program; the initial Ecology determination requested Further Investigative Actions and Characterizations at the Site.

¹ Two 4,000-gallon gasoline tanks; one 6,000-gallon gasoline tank; and one 50 to 200-gallon (description varies) waste oil tank.

² A stock pile with these dimensions is approximately 268 cubic yards.

Limited & Targeted Phase II Subsurface Investigation

■ **Conclusions:**

Aerotech Environmental Consulting, Inc. performed a Limited & Targeted Phase II Subsurface Investigation in the Areas of Concern. The Subsurface Investigation revealed that elevated levels of petroleum products have entered the soil and groundwater at the subject Property. This was most likely caused by: (1) leakage from the underground storage tanks and (2) spillage and leakage from the gasoline dispensers on the pump island, during subject Property operations as a gasoline service station.

Area of Concern No.1 - Former Underground Storage Tank Locations. The original tank excavation appears to have varied from 12 to 14 feet below ground surface. Borings at the location of the former underground gasoline storage tanks revealed the presence of the gasoline contamination in the soil as high as 150 parts per million ("ppm") at SB-16-12; the gasoline Cleanup Level varies from 30 to 100 ppm. The petroleum impacts appear to be confined from approximately 10 to 18 feet below ground surface. The lateral extent of soil impact was not defined.

Area of Concern No.2 - Former Pump Island Location. The area adjoining the former dispenser island has never been excavated. Borings at the former Pump Island revealed gasoline presence in the soils between 36 and 99 ppm at depths from near surface to non-detectable concentrations at 14 feet below ground surface.

At three locations adjoining the pump island water was encountered. As water was not encountered at any other location during the Investigation, it is likely this water is actually perched within the area of the original pump island installation excavation, and may not be representative of overall Site groundwater conditions. However, gasoline concentrations from 1,500 parts per billion ("ug/L") to 12,000 ug/L were reported adjoining the island (Cleanup Level is 800 ug/L for groundwater with Benzene). Additionally, elevated benzene was also found at this location.

Area of Concern No.3 - Hydraulic Lifts. Elevated levels of the Constituents of Concern were not encountered at either boring location adjoining the hydraulic lifts.

Area of Concern No.4 - Former Underground Waste Oil Tank and Possible Remote Fill Lines. Due to the piping configuration, the exact configuration of the suspected remote fill lines could not be determined via location equipment. However, the Ground Penetrating Radar equipment indicated that the two suspected pipes ran to the north, directly towards the former location of the underground waste oil tank. Elevated levels of the Constituents of Concern were not encountered at either at the remote fill ports nor in the former location of the underground waste oil tank.

Area of Concern No.5 - Former Soil Aeration and Possible Soil Disposal Location. This area along the western Property boundary did not exhibit any subsurface indications of non-native fill material. Elevated levels of the Constituents of Concern above the Cleanup Levels were not encountered at this Areas of Concern.

Area of Concern No.6 - Possible Site Groundwater Impact. In the absence of suspected or observed near surface petroleum impacts, a subsurface boring to a depth of 40 feet below ground surface was planned. However, near surface impacts adjoining the former pump island negated the necessity for a 40 foot investigation.

TABLE of CONTENTS

Page Number:

EXECUTIVE SUMMARY 3

INTRODUCTION 6

PROJECT SCOPE OF WORK 6

SITE DESCRIPTION 11

 Site Exterior Description 11

 Site Development Description 11

 Site Observations and Reported Conditions 11

FIELD WORK 12

 Notifications - "Public" Utilities 12

 Notifications - Private Utilities Location 12

 Ground Penetrating Radar Subsurface Investigation 12

 Magnetometer Investigation 12

 Site Activities 12

 Drilling and Excavation Activities 13

 Groundwater Flow 13

 Sample Collection 13

 Sample Screening 14

 Equipment Decontamination 14

 Site Restoration 14

SUMMARY OF SAMPLE ACQUISITION 15

ANALYTICAL RESULTS 19

APPLICABLE ANALYTICAL METHODOLOGIES AND PARAMETERS 25

 Analytical Methodology 25

CONCLUSIONS. 26

STATEMENT OF THE LICENSED GEOLOGIST 28

DEFINITIONS SPECIFIC TO LIMITED & TARGETED PHASE II ASSESSMENT 29

APPENDIX 31

INTRODUCTION

Aerotech Environmental Consulting Inc., performed this Limited and Targeted Phase II Subsurface Investigation³ of the subject Property described as *Calhoun's Service Station* located at 4540 Pacific Avenue, Tacoma, Washington. The objective of this Investigation was to evaluate the condition of the subsurface soils for the Recognized Environmental Conditions in the Areas of Concern to determine if the subject Property had in fact, been impacted by that specific Recognized Environmental Condition. On November 29, 2011, Ms. Karen Calhoun, representative of Calhoun Family LLC (owner of the subject Property) engaged Aerotech Environmental Consulting, Inc. to perform a *Limited and Targeted Environmental Investigation* of the Site - the Scope of Work of said Investigation as delineated in Service Agreement No. 2011-11-29.1 on November 29, 2011.

PROJECT SCOPE OF WORK

Scope. By this Agreement and relative to environmental issues raised in the *Phase I Environmental Site Assessment* performed by Aerotech Environmental Consulting, Inc., on September 15, 2011, Project No. 211 - 5306. The Scope of Services on this Project is limited to:

SITE SUBSURFACE CHARACTERIZATION - Prior to the start of on Site boring activities, (1) a Ground Penetrating Radar Survey of the Area of Concern will be performed by properly trained third-party professionals; and (2) an on Site Utilities Locate will be performed by third-party professionals in addition to the Location Services performed the potentially affected public and private utilities.

AREA OF CONCERN NO.1: FORMER UNDERGROUND STORAGE TANK LOCATIONS - Objective to determine the likely presence of subsurface contamination originating from the former operations of three underground storage tanks located generally on the south side of the station building via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located south of the station building to South 46th Street. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

- (i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline, and (b) fuel additives;
- (ii) borings at AOC locations to be performed to an average twelve to twenty foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between six and seven;
- (iii) independent laboratory analysis of at least six soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;
- (iv) independent laboratory analysis of at two soil (or in the alternative

³ This Phase II Site Assessment is "targeted" as defined by the ASTM *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, Designation E 1903-97 (Reapproved 2002); "an assessment performed in accordance with the process described in this [E 1903-97] practice, which addresses only certain *releases* or potential *releases*, or certain *target analytes*, at a property as selected by the *User* but which does not address all *releases*, potential *releases*, and *target analytes*. [E 1903-97, § 3.1.43]"

groundwater) samples for COCs for State of Washington protocol gasoline fuel additives;

(v) independent laboratory analysis of two soil (or in the alternative groundwater) samples for COCs for RCRA TCLP Lead via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(vi) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(vii) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(viii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.2: LOCATION OF THE FORMER PUMP ISLAND –

Objective to determine the likely presence of surface and/or subsurface contamination originating from location of the original two pump dispenser located on the east side of the station building via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located along the eastern Property boundary. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

(i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline and (b) diesel fuel;

(ii) borings at AOC locations to be performed to an average four to eight foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between four and five;

(iii) independent laboratory analysis of at least four soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;

(iv) independent laboratory analysis of at least one soil (or in the alternative groundwater) samples for COCs for State of Washington protocol gasoline fuel additives;

(v) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington RCRA TCLP Lead via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(vi) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(vii) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(viii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.3: HYDRAULIC LIFTS – Objective to determine the likely presence of subsurface contamination originating from operations of the two hydraulic lifts located inside the building via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located inside the service bays. Investigation may or may not delineate the extent of contamination.

Scope of Work to include:

- (i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including hydraulic fluid;
- (ii) borings at AOC locations to be performed to an average six to eight foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between two and three;
- (iii) independent laboratory analysis of at least two soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Diesel via EPA SW-846 Method 8020;
- (iv) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington PCB's;
- (v) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;
- (vi) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;
- (vii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.4: FORMER UNDERGROUND WASTE OIL TANK and POSSIBLE REMOTE FILL LINES – Objective to determine the likely presence of subsurface contamination originating from the former location of the underground waste oil tank and possible remove fill lines located on the north exterior side of the station building a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located on the north side of the building and in the existing service bays. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

- (i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline and (b) diesel fuel;
- (ii) borings at AOC locations to be performed to an average twelve to sixteen foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between three and five;
- (iii) independent laboratory analysis of at least three soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;
- (iv) independent laboratory analysis of at least three soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Diesel via EPA SW-846 Method 8020;
- (v) independent laboratory analysis of one soil (or in the alternative groundwater) samples for COCs for Polynuclear Aromatic Hydrocarbons ("PAHs") via EPA Method 8270 SIMS;
- (vi) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington "MTCA Five Metals" via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;
- (vii) independent laboratory analysis of one sample for COCs for State of Washington protocol Chlorinated Volatile Organic Compounds by EPA Method No.SW-8260B/624 - "Short List Chlorinated Volatiles";
- (viii) analytical response time 7 business days from sample submission, report

preparation as delineated in the *Schedule* section of this Agreement;

(ix) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(x) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.5: FORMER SOIL AERATION and POSSIBLE DISPOSAL LOCATION – Objective to determine the likely presence of subsurface contamination originating from the former aeration and disposal of previously excavated petroleum-impacted soils via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located along the western Property boundary on the southern end. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

(i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline and (b) diesel fuel;

(ii) borings at AOC locations to be performed to an average four to eight foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between four and six;

(iii) independent laboratory analysis of at least four soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;

(iv) independent laboratory analysis of two soil (or in the alternative groundwater) samples for COCs for State of Washington Lead via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(v) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(vi) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(vii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.6: POSSIBLE SITE GROUNDWATER IMPACT- Objective to determine the likely presence of groundwater impacts originating from the former station operations via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located adjoining the former underground tank pit. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

(i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline, (b) diesel, and (c) fuel additives;

(ii) borings at AOC locations to be performed to an average forty foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations is one;

(iii) independent laboratory analysis of at least one soil (or in the alternative

groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;

(iv) independent laboratory analysis of at least one soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Diesel via EPA SW-846 Method 8020;

(v) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for gasoline fuel additives;

(vi) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington "MTCA Five Metals" via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(vii) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(viii) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(ix) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

SECTION I. SITE DESCRIPTION

Site Exterior Description:

The subject of this Limited and Targeted Phase II Subsurface Investigation is comprised of two contiguous tax parcels located on the northwest corner of Pacific Avenue (State Route 509) and South 46th Street in Tacoma, Washington. The eastern Parcel – which houses the building – is approximately 0.17-acres; the western Parcel – an asphalt-paved storage yard – is approximately 0.10-acres. East 56th Street is two-thirds of a mile south; Interstate 5 is one mile west; and Interstate 705 is one and one-quarter of a mile north.

The subject Property is occupied by a tire sales and automotive repair facility operated as *Llantera Sinaloa Tire Sales & Service*.

The building is a concrete slab on grade, wood framed and sided structure facing east towards Pacific Avenue. On the south end of the east side of the building is the customer entrance into the service counter and customer waiting room. Adjoining on the north side is the two bay service shop, with access to each service bay via overhead roll up doors on the east and west ends of the bays. Each bay is equipped with an in-ground hydraulic lift. A recessed floor pipe is located adjoining each service bay, the pipes appear to have been used as remote fill pipes for the former underground waste oil tank.

Directly in front of the building to the east is the concrete base of the former pump dispenser island. Adjoining the south side of the station building is a large area of patched asphalt over the former location of the three underground storage tanks. The rear of the building is surrounded by a chain link security fence; this fenced storage contains well in excess of 1,000 used tires. The remainder of the Property is a combination of concrete and asphalt-paved surfaces.

The subject Property is located in a mixed-use commercial and residential area. To the north is a one-lane alley followed by single-family residences; to the south is South 46th Street followed by the Flowerland Store; to the east is Pacific Avenue followed by single-family residences; and to the west are single-family residences.

Site Development Description:

The subject Property was commercially developed prior to 1926 as the *Melvin Tveten Gasoline Station*. By 1951, the station was reconfigured as *Calhoun's Tourist Service Station*. In 1954, the existing building was demolished and a new station building constructed as *Calhoun's Richfield Oil*. A canopy was added in 1963.

In 1991, four underground tanks were removed from the Site and petroleum-impacted soils were encountered. In 2011 the Site entered the State of Washington Ecology Voluntary Cleanup Program; the initial Ecology determination requested Further Investigative Actions and Characterizations at the Site.

In 2005 the pumps were removed. The Site is currently operated as a tires sales and automotive service business.

Site Observations and Reported Conditions:

No additional Recognized Environmental Conditions or concerns identified as potential impacts to the Property.

SECTION II. FIELD WORK

Notifications - "Public" Utilities:

Due to the developmental nature of the Site, a "public" utilities notification was performed prior to the start of work. The "public" utilities notification was performed on November 23, 2011 by Aerotech Environmental Consulting, Inc.⁴ to the Utilities Underground Location Center. Ticket number 11258856.

Notifications - Private Utilities Location:

Due to the developmental nature of the Site, a "private" utilities notification was performed prior to the start of work. The Site exterior and building interior utilities were located by personnel engaged by Aerotech Environmental Consulting, Inc, and employed by Mountain View Utilities Detection Service, Inc., of Bonney Lake, Washington on December 1, 2011, prior to the start of the on Site drilling activities.

No unanticipated or unexpected situations were discovered or encountered during the "private" locating activities.

Ground Penetrating Radar Subsurface Investigation:

A Ground Penetrating Radar Study was performed in the Areas of Concern on December 1, 2011 by an independent third-party geophysical firm.

A Ground Penetrating Radar ("GPR") Study is a geophysical methodology which uses radar pulses to reflect off of subsurface structures and thus provide an image of the subsurface conditions and The possible presence of subsurface objects. The depth of GPR Survey is determined by the electrical conductivity of the ground and the survey equipment transmitting frequency, and is limited to eight to thirteen feet below ground surface. However, the presence of significant subsurface obstructions or concrete rebar may limit the depth and effectiveness of the accuracy of the object identification. Additionally, surficial obstructions may limit the depth and effectiveness of the accuracy of the object identification.

No further Recognized Environmental Concerns or issues were revealed.

Magnetometer Investigation:

Due to the nature of the anticipated Constituents of Concern, a magnetometer investigation was also performed prior to the initiation of the Site subsurface investigation by personnel from Mountain View Location, Inc.

Site Activities:

The *Limited & Targeted Phase II Subsurface Investigation* was performed on December 1 and 2, 2011, under contract with Aerotech Environmental Consulting, Inc. All the work was performed during normal business hours. No unusual or unforeseen circumstances occurred during the Site activities.

The subsurface borings were performed by equipment owned by and operated by Licensed

⁴ Aerotech Environmental Consulting, Inc., was previously issued Contractor Identification Number 58972 by the non-profit Utilities Underground Location Center (www.callbeforeyoudig.com).

Drillers from ESN Northwest Drilling, Inc. The on Site drilling equipment was operated by personnel employed by ESN Northwest Drilling, Inc. The laboratory analytical services were performed by the ESN Northwest Chemistry Laboratories in Bellevue and Lacey, Washington.

Drilling and Excavation Activities:

Due to the nature of the Site surfaces and working spaces around the Areas of Concern, drilling operations employed both a Geoprobe® style direct push truck mounted drill rig (on December 1) and a motorized auger truck mounted drill rig (December 2) were employed for the Site work.

Groundwater Flow:

The principal aquifers in the Puget Sound Region occur in glacial drift, that along with finer grained interglacial sediments, underlies the basin lowland to depths of more than 1,00 feet. The sand and gravel units in the glacial drift form the principle aquifers. These aquifers receive ample recharge from the typically heavy precipitation characteristic of western Washington. The glacial drift in the Puget Sound region varies greatly in composition and water yielding capacity. Typically, wells in glacial drift that tap silt, clay, or till in the Region at approximately 75 to 100 feet below ground surface may have yields of 100 gallons or more per minute. Deeper wells tapping thick, saturated layers of highly permeable gravel and coarse sand, typically at depths greater than 250 feet below ground surface, can yield more than 1,000 gallons per minute. Based on topography the assumed general groundwater flow is to the north.

Sample Collection:

Samples were hand collected at locations and at depths as identified by the Aerotech Licensed Hydrogeologist. Samples were collected from two to eighteen foot depths. A total of ninety-eight discrete samples were collected on December 1 and 2, 2011. Ninety-five soil samples and three water samples were obtained.

In some situations the upper elevation sample was analyzed as being the most representative of surficial and subsurface conditions – considering the most likely source of possible contamination was surficial releases. In other locations, lower elevation samples were collected as representative of the assumed Site conditions.

Soils collected from each excavation location were physically observed for composition and odor. Samples were placed in sterile glass jars with teflon sealed lids. All sampling equipment for soil sampling, drive rods, and probes were decontaminated after each sampling point by washing with soapy distilled water and rinsing with distilled water. After washing, all external surfaces are wiped with clean paper towels. Plastic tubing is used only once.

Each sample was given a unique identifier number and placed in an iced cooler for sample preservation. A Chain of Custody recorded the collection and handling of every sample. As a result of the Site observations and recorded data, discrete soil and water samples were selected for laboratory analysis. The remaining soil samples were retained by the laboratory for analysis in the event that the groundwater or soil samples selected for laboratory analysis revealed elevated levels of constituents. Following the production of the initial Site sample results, followup laboratory analysis was requested and performed for the subject Site.

When applicable, water samples were collected from temporary wells that utilized the soil boring locations. The groundwater were collected employing the insertion of sterile, slotted tubing to screen the boring penetration at the appropriate depths. Generally, sample locations were screened at the six to ten foot below ground surface depth range. A sample screening tubing was disposed of after a single use.

Sample Screening:

The soil samples are typically collected from each excavation location were recorded and decided in a field log. The soil samples are placed in sterile glass jars with resealable Teflon lids. Each sample jar is sealed and labeled.

Equipment Decontamination:

All sample acquisition equipment was decontaminated before and after each boring to eliminate the potential for cross-contamination between subsurface borings, as required. Since sample media was primarily collected by virgin polyurethane tubes and clean latex gloves, sample equipment decontamination was not required; and all sampling equipment was single-use only.

Site Restoration:

Due to the nature of the site some boring locations required penetrating concrete slabs and asphalted areas making restoration was necessary. For boring locations on a concrete slab the boring hole was filled with bentonite slurry mixture, and the final 3 to 4 inches were filled with a cement mixture. For boring locations into an asphalt paved area the hole was filled with bentonite slurry mixture, and the final 6 to 8 inches were filled with "cold patch" asphalt - a quick set asphalt that matched the surrounding surficial conditions.

SUMMARY OF SAMPLE ACQUISITION

A total of seventeen discrete sample acquisition locations were advanced in the Areas of Concern to a maximum depth of twenty-two feet below ground surface. The following is a detailed description of each boring location, observations made during the acquisition, sampling information, and the field screening process. Please refer to the soil boring location map in the appendix for detailed soil boring locations.

Sample Acquisition Area No. SB-01 -The Former Underground Waste Oil Tank (Southeast Corner):

The Area of Acquisition was located three feet north and four feet east of the northwest corner of the building. This location was on the on the site of the former underground waster oil storage tank. The tank was covered by a concrete slab. The slab was in poor condition with numerous cracks. Boring operations revealed the site was underlain by a brown silty sand without gravel followed by a tan silty sand with occasional gravel. Gravel became less common with depth. No Petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 12 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-02 -The Former Underground Waste Oil Tank (Center):

The Area of Acquisition was located seven feet north and six feet east of the northwest corner of the building. This location was on the on the site of the former underground waste oil storage tank. The tank was covered by a concrete slab. The slab was in poor condition with numerous cracks. Boring operations revealed the site was underlain by a brown silty sand without gravel followed by a similar brown silty sand with occasional rock fragments. By the 12 foot depth there were no rock fragments only the brown silty sand. No Petroleum-like odors were detected . Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 12 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-03 - The Former Underground Waste Oil Tank (Northeast Corner):

The Area of Acquisition was located nine north and eight feet east of the northwest corner of the building. This location was on the on the site of the former underground waste oil storage tank. This tank was covered with by a concrete slab. The slab was in poor condition with numerous cracks. Boring operations revealed the site was underlain by a brown silty sand without gravel followed by a tan silty sand with occasional gravel. Gravel became less common with depth. No Petroleum-like odors were detected . Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 12 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-04 – North Hydraulic Lift:

The Area of Acquisition was located five feet south and nine feet east of the northwest corner of the building. This location was the on the site of the hydraulic lift inside garage area. The boring location was covered by a concrete slab floor. Boring operations revealed the site was underlain by a brown silty sand without gravel followed by a dark brown silty sand with occasional gravel followed by a tan silty sand with occasional gravel. No Petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 11 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-05 – South Hydraulic Lift:

The Area of Acquisition was located five north and nine feet east of the interior wall separating the garage area from the office area. This location was the on the site of the second hydraulic lift located inside the garage area. The boring location was covered with by a concrete slab floor. Boring operations revealed the site was underlain by a brown silty sand without gravel followed by a dark brown silty sand with occasional gravel followed by a tan silty sand with occasional gravel. No Petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 11 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-06 – Former Soil Aeration and Possible Disposal Location (North):

The Area of Acquisition was located three feet south and twelve feet east of the chain-link fence enclosing the tire storage area. This location was the on southwest side of the paved parking area. This area was used in a previous soil remediation action to store, aerate and possible disposal of previously excavated petroleum-impacted soils. The area was covered with asphalt. Boring operations revealed the site was underlain by a brown silty sand with gravel. No Petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 8 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-07 – Former Soil Aeration and Possible Disposal Location (Center):

The Area of Acquisition was located sixteen feet south of SB-06. This location was the on southwest side of the paved parking area. This area was used in a previous soil remediation action to store, aerate and possible disposal of previously excavated petroleum-impacted soils. The area was covered with asphalt. Boring operations revealed the site was underlain by a grey silty sand with gravel. No Petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 8 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-08 – Former Soil Aeration and Possible Disposal Location (South):

The Area of Acquisition was located sixteen feet south of SB-07. This location was the

on southwest side of the paved parking area. This area was used in a previous soil remediation action to store, aerate and possible disposal of previously excavated petroleum-impacted soils. The area is covered with asphalt. Boring operations revealed the site was underlain by a brown silty sand with gravel. No Petroleum-like odors were detected . Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 8 feet. Groundwater was not encountered.

Sample Acquisition Area No. SB-09 – Location of the Former Pump Island:

The Area of Acquisition was located fourteen feet north of SB-10 or thirteen feet east of the garage's door. This location was at the northwest corner of the former fuel pump island and was covered with concrete. Boring operations revealed the site was underlain by a grey silty sand gravel with occasional gravel. Petroleum-like odors were detected at approximately 6 feet below ground surface and continued to the 11 foot level. Groundwater was encountered at approximately the 6 foot depth. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 17 feet. Groundwater samples were collected.

Sample Acquisition Area No. SB-10 – Location of the Former Pump Island:

This location was northeast corner of the former fuel pump island and was covered with concrete. Boring operations revealed the site was underlain by a dark brown silty sand gravel with occasional gravel followed by a light brown silty sand with increasing gravel content. Petroleum-like odors were detected at approximately 14 feet below ground surface. Groundwater was encountered at approximately the 6 foot depth. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 16 feet. Groundwater samples were collected.

Sample Acquisition Area No. SB-11 – Location of the Former Pump Island:

The Area of Acquisition was located fifteen feet south of SB-10. This location was southeast corner of the former fuel pump island and was covered with concrete. Boring operations revealed the site was underlain by a brown silty sand with occasional gravel followed but a light brown silty sand with decreasing gravel with depth. No Petroleum-like odors were detected. Groundwater was encountered at approximately the 6.5 foot depth. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 17 feet. Groundwater samples were collected.

Sample Acquisition Area No. SB-12 – Location of the Former Pump Island:

The Area of Acquisition was located fourteen feet east of the southeast corner of the building. This location was at the southwest corner of the former fuel pump island and was covered with concrete. Boring operations revealed the site was underlain by a brown silty sand with occasional gravel followed but a tan light brown silty sand without gravel followed by a grey silty sand with no gravel. No petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 17 feet. No groundwater was encountered.

Sample Acquisition Area No. SB-13 – Former Underground Storage Tank Locations:

The Area of Acquisition was located fifteen feet west of SB-15. This location on the northwest perimeter of the former gasoline underground storage tanks pit and was covered with asphalt. Boring operations revealed the site was underlain by a brown silty sand with occasional gravel. No petroleum-like odors were detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 22 feet. No groundwater was encountered.

Sample Acquisition Area No. SB-14 – Former Underground Storage Tank Locations:

The Area of Acquisition was located eleven feet south and five feet east of the southeast corner of the building. This location on the northeast perimeter of the former gasoline underground storage tanks pit and was covered with asphalt. Boring operations revealed the site was underlain by a grey silty sand without gravel. At 22 feet, the point of drilling termination, a layer of gravel was encountered. A petroleum-like odor was detected at the 14 foot below ground surface. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 22 feet. No groundwater was encountered.

Sample Acquisition Area No. SB-15 – Former Underground Storage Tank Locations:

The Area of Acquisition was located five feet south and fourteen feet east of the southeast corner of the building. This location on the northern side of the former gasoline underground storage tanks pit and was covered with asphalt. Boring operations revealed the site was underlain by a brown well sorted sand that could be imported fill followed by a grey silty sand without gravel. A petroleum-like odor was detected at the 14 foot below ground surface. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 18 feet. No groundwater was encountered.

Sample Acquisition Area No. SB-16 – Former Underground Storage Tank Locations:

The Area of Acquisition was located ten feet south of SB-15. This location is approximately in the center of the former gasoline underground storage tanks pit and was covered with asphalt. Boring operations revealed the site was underlain by a brown well sorted sand that could be imported fill followed by a brown silty sand and clay mix. No petroleum-like odor was detected. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 18 feet. No groundwater was encountered.

Sample Acquisition Area No. SB-17 – Former Underground Storage Tank Locations:

The Area of Acquisition was located thirteen south of SB-16. This location is on the southern side of the former gasoline underground storage tanks pit and was covered with asphalt. Boring operations revealed the site was underlain by a brown well sorted sand that could be imported fill followed by a brown silty sand and clay mix. There was a slight petroleum-like odor detected at 14 feet below ground surface. Soil samples were collected at 2 foot intervals starting at 2 feet below ground surface with penetration terminated at 18 feet. No groundwater was encountered.

SECTION III.
ANALYTICAL RESULTS

ANALYSIS OF WATER SAMPLES:

Gasoline, Diesel & Oil (TPH) Constituents in Water:

All samples were compared to the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Gasoline Range Organics
SB-9-W	12-7-11	12,000 ug/L
SB-10-W	12-7-11	4,300 ug/L
SB-11-W	12-7-11	1,500 ug/L
MTCA Cleanup Levels		800/1,000 ug/L

* ug/L is the same as parts per billion ('ppb')

Benzene, Toluene, Ethylbenzene & Xylenes (BTEX) Constituents in Water Concentrations:

All samples were compared to the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylenes
SB-9-W	12-7-11	5.8 ug/L	1.7 ug/L	5.2 ug/L	2.3 ug/L
SB-10-W	12-7-11	2.8 ug/L	ND	2.6 ug/L	7.6 ug/L
SB-11-W	12-7-11	ND	ND	ND	ND
SB-12-W	12-7-11	ND	ND	ND	ND
MTCA Cleanup Levels		5.0 ug/L*	1,000 ug/L	700 ug/L	1,000 ug/L

* ug/L is the same as parts per billion ('ppb')

ANALYSIS OF SOIL SAMPLES:

Diesel & Oil (TPH) Constituents in Soil:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Diesel Range Organics	Lube Oil Range Organics
SB-1-12	12-5-11	ND	ND
SB-2-12	12-5-11	ND	ND
SB-3-12	12-5-11	ND	ND
SB-4-11	12-5-11	ND	ND
SB-5-8	12-5-11	ND	ND
MTCA Cleanup Levels		2,000 mg/kg	2,000 mg/kg

* mg/kg is the same as parts per million ('ppm')

Gasoline (TPH) Constituents in Soil:

All samples were compared to the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Gasoline Range Organics
SB-1-12	12-8-11	ND
SB-2-12	12-8-11	ND
SB-3-12	12-8-11	ND
SB-4-11	12-8-11	ND
SB-5-8	12-8-11	ND
SB-6-4	12-8-11	ND
SB-7-4	12-8-11	ND
SB-8-4	12-8-11	ND

SB-9-8	12-8-11	99 mg/kg
SB-9-17	12-8-11	ND
SB-10-10	12-8-11	17
SB-10-16	12-9-11	ND
SB-11-17	12-9-11	ND
SB-12-8	12-9-11	36 mg/kg
SB-12-14	12-9-11	ND
SB-13-14	12-9-11	ND
SB-14-14	12-9-11	73 mg/kg
SB-14-17.5	12-9-11	ND
SB-15-14	12-9-11	66
SB-15-18	12-9-11	ND
SB-16-12	12-9-11	150 mg/kg
SB-16-18	12-9-11	15 mg/kg
SB-17-14	12-9-11	14 mg/kg
SB-17-18	12-9-11	ND
MTCA Cleanup Levels		30 / 100 mg/kg**

* mg/kg is the same as parts per million ('ppm')

** MTCA cleanup levels for gasoline without benzene is 100 mg/kg but for gasoline with benzene cleanup levels are 30 mg/kg. Refer to sample SB-9-W.

Benzene, Toluene, Ethylbenzene & Xylenes (BTEX) Constituents in Soil Concentrations:

All samples were compared to the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylenes
SB-1-12	12-8-11	ND	ND	ND	ND
SB-2-12	12-8-11	ND	ND	ND	ND
SB-3-12	12-8-11	ND	ND	ND	ND
SB-4-11	12-8-11	ND	ND	ND	ND
SB-5-8	12-8-11	ND	ND	ND	ND
SB-6-4	12-8-11	ND	ND	ND	ND
SB-7-4	12-8-11	ND	ND	ND	ND
SB-8-4	12-8-11	ND	ND	ND	ND
SB-9-8	12-8-11	ND	ND	ND	ND
SB-10-10	12-8-11	ND	ND	ND	ND
SB-10-16	12-9-11	ND	ND	ND	ND
SB-11-17	12-9-11	ND	ND	ND	ND
SB-12-8	12-9-11	ND	ND	ND	ND
SB-12-14	12-9-11	ND	ND	ND	ND
SB-13-14	12-9-11	ND	ND	ND	ND
SB-14-14	12-9-11	ND	ND	ND	ND
SB-14-17.5	12-9-11	ND	ND	ND	ND
SB-15-14	12-9-11	ND	ND	0.14 mg/kg	0.64 mg/kg
SB-15-18	12-9-11	ND	ND	ND	0.07
SB-16-12	12-9-11	ND	ND	ND	ND
SB-16-18	12-9-11	ND	ND	ND	ND
SB-17-14	12-9-11	ND	ND	ND	ND
SB-17-18	12-9-11	ND	ND	ND	ND

MTCA Cleanup Levels		0.03 mg/kg	7.0 mg/kg	6.0 mg/kg	9.0 mg/kg
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* mg/kg is the same as parts per million ('ppm')

Analysis of Polynuclear Aromatic Hydrocarbons (PAH's) in Soil by Method 8270:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	PAHs
SB-2-12	12-7-11	ND

* mg/kg is the same as parts per million ('ppm')

Analysis of Chlorinated Volatile Organic Compounds (VOC's) in Soil by Method 8260CL:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	VOCs
SB-2-12	12-8-11	ND

* mg/kg is the same as parts per million ('ppm')

MTCA 5 Metals in Soil Concentrations by Method 6020:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Lead	Cadmium	Chromium	Arsenic	Mercury
SB-2-12	12-8-11	ND	ND	32 mg/kg**	ND	ND
MTCA Cleanup Levels		250 mg/kg	2.0 mg/kg	19 / 2,000 mg/kg	20.0 mg/kg	2.0 mg/kg

* mg/kg is the same as parts per million ('ppm')

** sample was tested for Hexavalent Chromium on 12-9-11. Please refer to the chart below.

Hexavalent Chromium in Soil Concentrations by Method SM3500Cr-D/SW846 7196A:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Hexavalent Chromium
SB-2-12	12-9-11	ND
MTCA Cleanup Levels		19 mg/kg

Analysis of Lead in Soil by Method 8260:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	Lead
SB-6-4	12-7-11	78 mg/kg
SB-9-8	12-7-11	ND
SB-15-14	12-7-11	ND
MTCA Cleanup Levels		250 mg/kg

* mg/kg is the same as parts per million ('ppm')

Analysis of Polychlorinate Biophenyls (PCB's) in Soil by Method8082:

All samples were below the most stringent State of Washington Model Toxics Control Act Method "A" Residential Unrestricted Use cleanup levels.

Sample Number	Date Analyzed	PCB's
SB-2-12	December 9, 2011	ND
MTCA Cleanup Levels		1.0 mg/kg

* mg/kg is the same as parts per million ('ppm')

APPLICABLE ANALYTICAL METHODOLOGIES AND PARAMETERS

The analysis parameters requested were chosen to provide a comprehensive characterization of the subsurface soils and/or water present at the Site Areas of Concern and to comply with State of Washington recommended analysis parameters.

Analytical Methodology:

Gasoline Range Organics

Northwest Total Petroleum Hydrocarbons (Method NWTPH-Gx)

Diesel & Oil Range Organics

State of Washington NWTPH-Dx/Dx Extended

Residual Range Organics

State of Washington NWTPH-Dx/Dx Extended

Volatile Organic Compounds

EPA Method 8260B

Laboratory Analysis:

Laboratory analysis was provided by:

ESN Northwest Chemistry Laboratory
1210 Eastside Street S.E., Suite No.200
Olympia, Washington 98501
(360) 459-4670

SECTION IV. CONCLUSIONS

■ **Conclusions:**

Aerotech Environmental Consulting, Inc. performed a Limited & Targeted Phase II Subsurface Investigation in the Areas of Concern. The Subsurface Investigation revealed elevated that levels of petroleum products have entered the soil and groundwater of the subject Property. This was most likely caused by: (1) leakage from the underground storage tanks and (2) spillage and leakage from the gasoline dispensers on the pump island, during subject Property operations as a gasoline service station.

Area of Concern No.1 - Former Underground Storage Tank Locations.

The original tank excavation appears to have varied from 12 to 14 feet below ground surface. Borings at location of the former underground gasoline storage tanks revealed the presence of the gasoline contamination in the soil as high as 150 parts per million ("ppm") at SB-16-12; the gasoline Cleanup Level varies from 30 to 100 ppm. The petroleum impacts appear to be confined from approximately 10 to 18 feet below ground surface. The lateral extent of soil impact was not defined.

Area of Concern No.2 - Former Pump Island Location. The area adjoining the former dispenser island has never been excavated. Borings at the former Pump Island revealed gasoline presence in the soils between 36 and 99 ppm at depths from near surface to non-detectable concentrations at 14 feet below ground surface.

At three locations adjoining the pump island water was encountered. As water was not encountered at any other location during the Investigation, it is likely this water is actually perched within the area of the original pump island installation excavation, and may not be representative of overall Site groundwater conditions. However, gasoline concentrations from 1,500 parts per billion ("ug/L") to 12,000 ug/L were reported adjoining the island (Cleanup Level is 800 ug/L for groundwater with Benzene). Additionally, elevated benzene was also found in this location.

Area of Concern No.3 - Hydraulic Lifts. Elevated levels of the Constituents of Concern were not encountered at either boring location adjoining the hydraulic lifts.

Area of Concern No.4 - Former Underground Waste Oil Tank and Possible Remote Fill Lines. Due to the piping configuration, the exact configuration of the suspected remote fill lines could not be determined via location equipment. However, the Ground Penetrating Radar equipment indicated that the two suspected pipes ran to the north, directly towards the former location of the underground waste oil tank. Elevated levels of the Constituents of Concern were not encountered at either at the remote fill ports nor in the former location of the underground waste oil tank.

Area of Concern No.5 - Former Soil Aeration and Possible Soil Disposal Location. This area along the western Property boundary did not exhibit any subsurface indications of non-native fill material. Elevated levels of the Constituents of Concern above the Cleanup Levels were not encountered in this Areas of Concern.

Area of Concern No.6 - Possible Site Groundwater Impact. In the absence of suspected or observed near surface petroleum impacts, a subsurface boring to a depth of 40 feet below ground surface was planned. However, near surface impacts adjoining the former pump island negated the necessity for a 40 foot investigation.

STATEMENT OF THE LICENSED GEOLOGIST

As stipulated in the Regulatory Code of the State of Washington Title 18, Chapter 18.220, the undersigned is a licensed Geologist in the State of Washington, and has met the statutory requirements of RCW § 18.220.060 for such licensing including, but not limited to, educational requirements, work and field experience, examination proficiency, and acceptance by the State Licensing Board.

The undersigned Licensed Geologist has supervised the geological work performed as described in attached Report – a majority of said work being performed by employees of the firm which employs undersigned Licensed Geologist – as delineated in RCW Title 18, Chapter 18.220, Paragraph 190.

Signature of:

Licensed Professional Geologist:
Licensed Professional Hydrogeologist:
Licensed Professional Engineering Geologist:

Michael McGowan
State of Washington License No 1737

DEFINITIONS SPECIFIC TO LIMITED & TARGETED PHASE II ASSESSMENT

Background Concentration..... the concentration of a target analyte in groundwater, surface water, air, soil gas, sediment, or soil at a referenced location near a release or potential release area under investigation, which is not attributable to the release under investigation. Background samples may contain the target analyte, due to either naturally occurring or manmade sources, but not due to the release(s) in question. (See, E 1903-97, § 3.1.3).

Phase II Environmental Site Assessment.... This practice (ASTM E 1903-97, Reapproved 2002) defines a commercially practical process for sound Phase II investigation that includes sampling and chemical testing. Such Phase II investigation is performed, at a minimum, to confirm the actual presence of contamination in environmental media at a property where prior assessment had indicated that contaminants may occur due to releases or potential releases of substances to the environment at the property, or to demonstrate prior to property acquisition that contamination by targeted analytes is absent. (See, E 1903-97, § 1.1.1).

Phase II Environmental Site Assessment Limitations..... “This practice [ASTM E1903-97, Reapproved 2002] recognizes that the *Phase II ESA* process can be applied either to an overall assessment of a property with respect to all releases and potential releases at the property, or to an evaluation targeted to a specific release or potential release. If a property-wide assessment is not necessary to meet the particular *User* objective, then the Phase II investigation process described herein should be applied to generate sound information regarding the specific question of problem to be resolved. If a Phase II investigation does not address all releases and potential releases identified at a property, the report of the assessment must be denoted as a “*Targeted Phase II*” *Environmental Site Assessment*. [E 1903-97, § 1.1.3]”

Phase II Targeted Environmental Site Assessment.... This Phase II Site Assessment is “targeted” as defined by the ASTM *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, Designation E 1903-97 (Reapproved 2002); “an assessment performed in accordance with the process described in this [E 1903-97] practice, which addresses only certain *releases* or potential *releases*, or certain *target analytes*, at a property as selected by the *User* but which does not address all *releases*, potential *releases*, and *target analytes*. [E 1903-97, § 3.1.43]”

Prior Knowledge.... “This Standard Practice [ASTM E 1903-97, Reapproved 2002] assumes ... that all reasonably ascertainable information, including but not limited to prior Phase I Environmental Site Assessment Reports, will be considered in conducting a Phase II ESA and interpreting its results. [E 1903-97, § 1.1.2].”

Targeted Analytes.... substances that have been released or potentially have been released to environmental media at the site, and which are of interest in the context of the particular Phase II ESA and its objectives, the presence of which will be sought and concentrations of which will be quantified through field screening or chemical testing. (See, E 1903-97, § 3.1.63).

REPORT ENDNOTES

1.

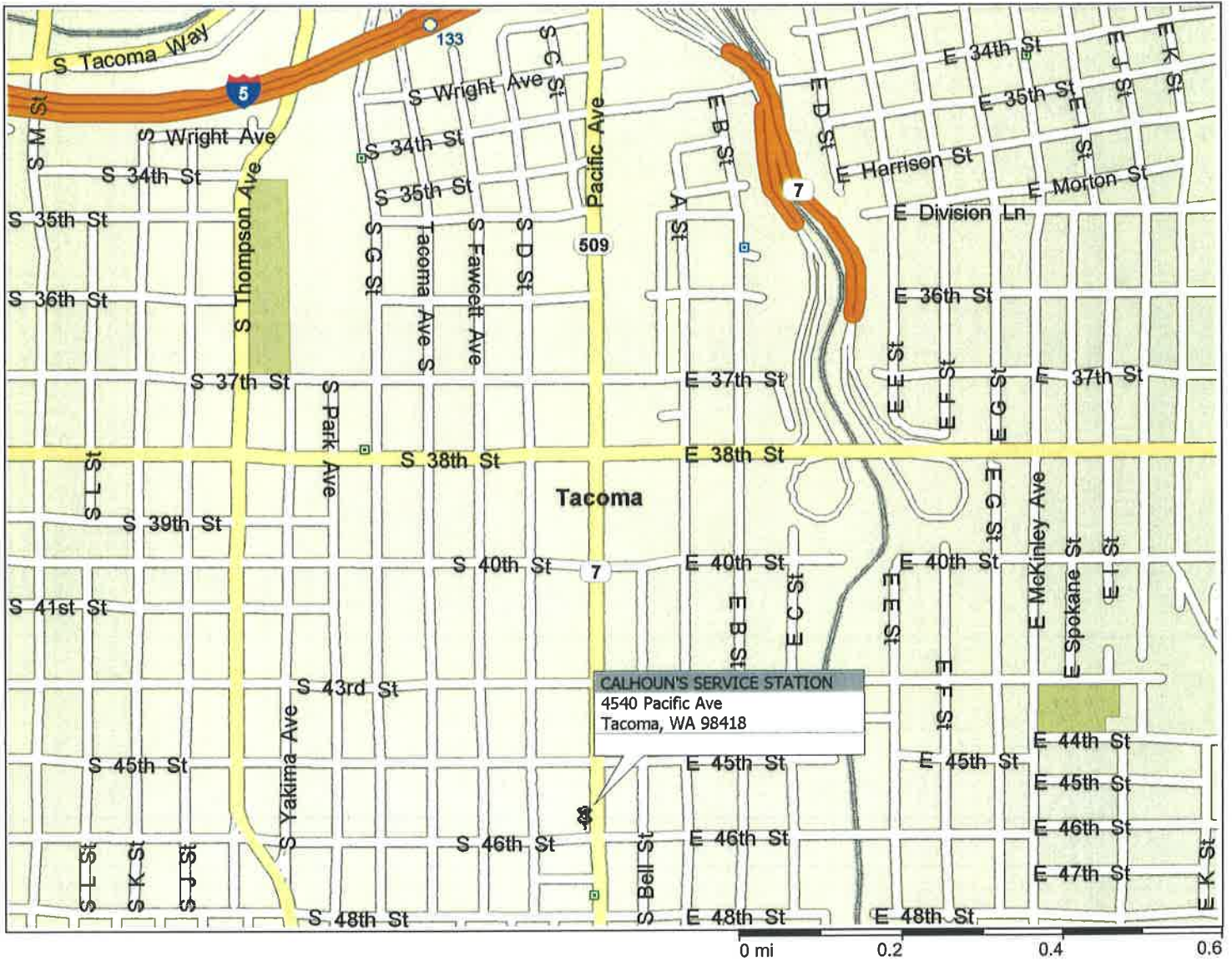
This Phase II Site Assessment is “targeted” as defined by the ASTM *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, Designation E 1903-97 (Reapproved 2002); “an assessment performed in accordance with the process described in this [E 1903-97] practice, which addresses only certain *releases* or potential *releases*, or certain *target analytes*, at a property as selected by the *User* but which does not address all *releases*, potential *releases*, and *target analytes*. [E 1903-97, § 3.1.43]”

APPENDIX

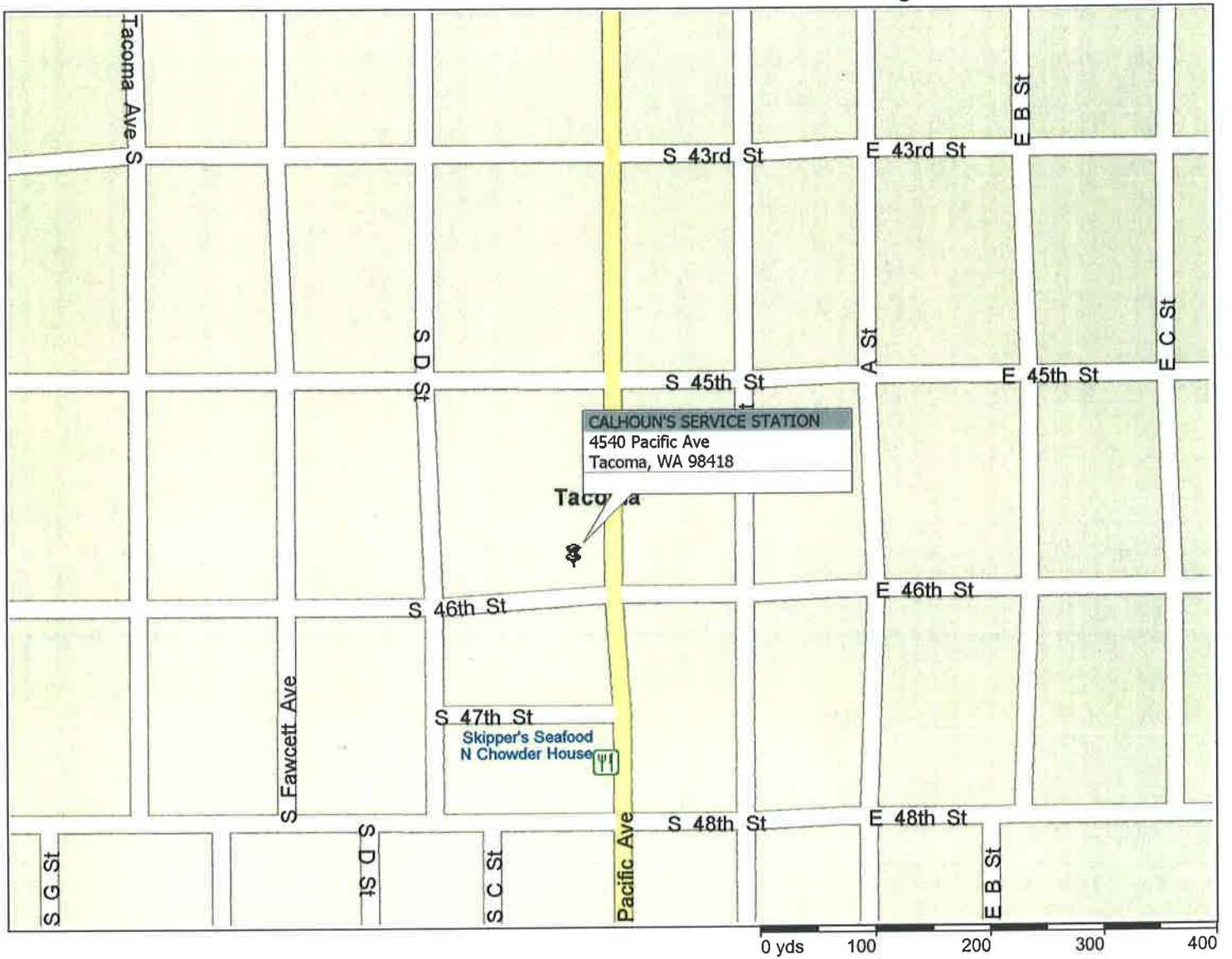
- Site Location and Photographs
- Project Contract Documents
- Project Correspondence / Boring Logs
- Analytical Results
- Chain of Custody

- Site Location and Photographs

Calhoun's Service Station - Tacoma, Washington

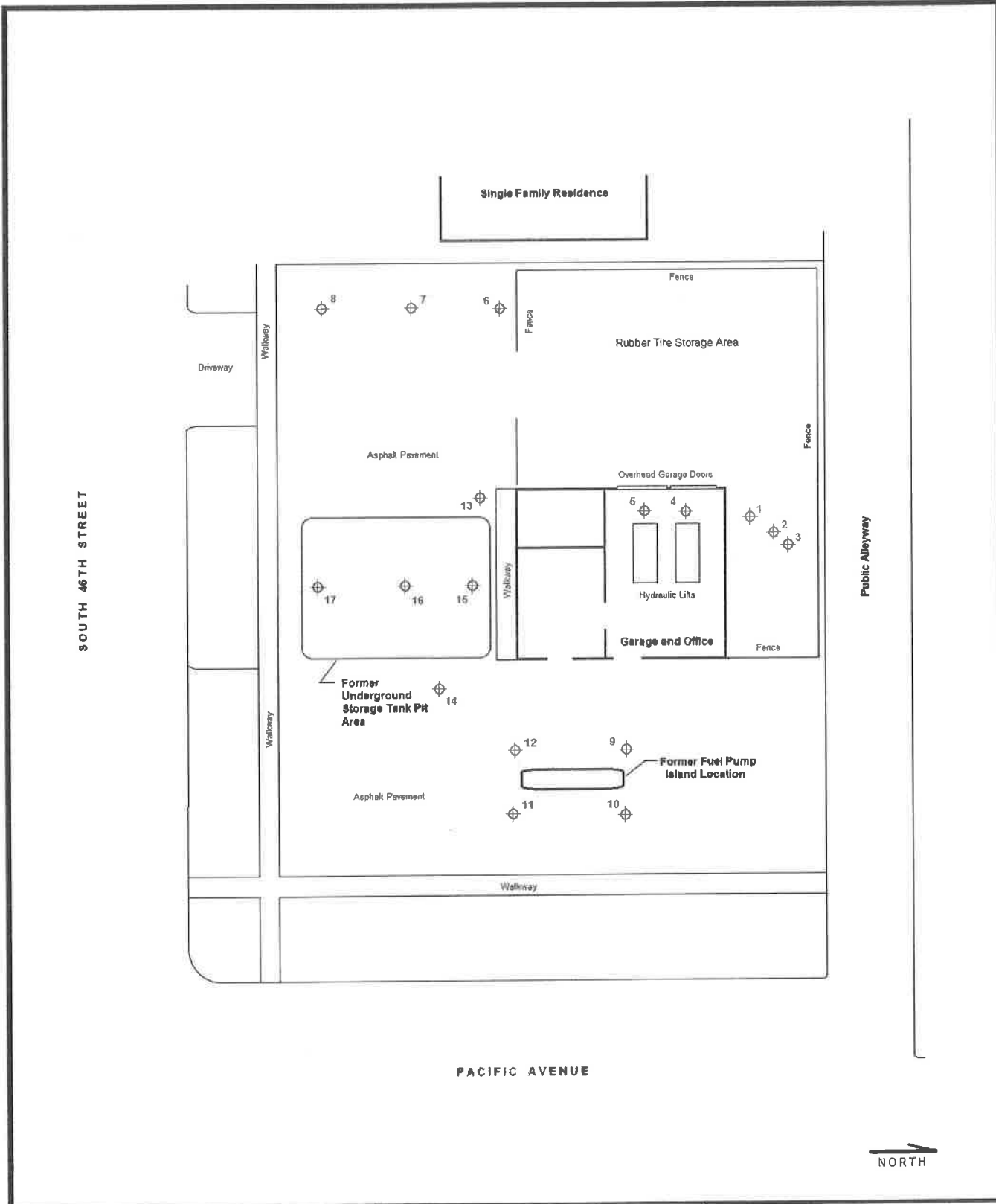


Calhoun's Service Station - Tacoma, Washington



Pushpins

 My Pushpins



Aerotech Environmental Consulting, Inc
 19600 International Blvd., Ste. 101
 Seattle, Washington

 Soil Boring Location
 5 Soil Boring Number

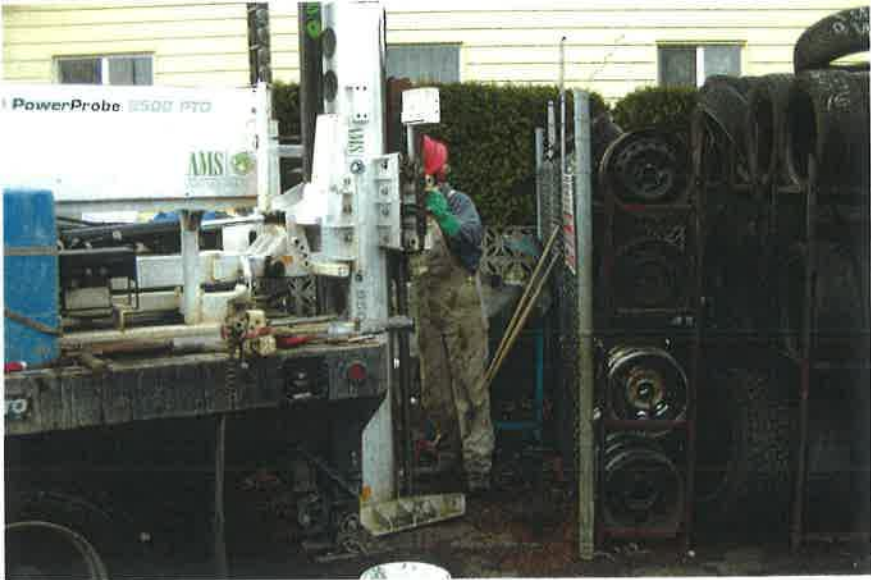
SOIL BORING LOCATION MAP
Calhoun Service Station
4540 Pacific Avenue, Tacoma, WA

Boring SB-01



Boring SB-05

Boring SB-06



Boring SB-09



Boring SB-11

Boring SB-13



Boring SB-14



Boring SB-16

Boring SB-17



- Project Contract Documents

AEROTECH ENVIRONMENTAL CONSULTING, INC.
Professional Service Agreement
Limited and Targeted
Phase II Environmental Investigation

Parties. This Agreement is made this 29th day of November, 2011 between:

CALHOUN FAMILY, LLC
P.O. Box 1929
Tacoma, Washington 98401

subsequently referred to as "Client", and Aerotech Environmental Consulting, Inc., subsequently referred to as "Aerotech".

Subject Project. By joining in this Agreement, Client retains Aerotech to provide services in regard to the Project located at and referred to as:

Callhoun's Service Station
4540 Pacific Avenue
Tacoma, Washington 98418

Scope. By this Agreement and relative to environmental issues raised in the *Phase I Environmental Site Assessment* performed by Aerotech Environmental Consulting, Inc., on November 28, 2011, Project No.211 - 5233.

Additionally, the Scope of Work follows the recommendations of the State of Washington Department of Ecology Southwest Regional Office regarding the subsurface investigation of former gasoline service stations.

The Scope of Services on this Project is limited to:

SITE SUBSURFACE CHARACTERIZATION – Prior to the start of on Site boring activities, (1) a Ground Penetrating Radar Survey of the Areas of Concern will be performed by properly trained third-party professionals; and (2) an on Site Utilities Locate will be performed by third-party professionals in addition to the Location Services performed the potentially affected public and private utilities.

AREA OF CONCERN NO.1: FORMER UNDERGROUND STORAGE TANK LOCATIONS – Objective to determine the likely presence of subsurface contamination originating from the former operations of three underground storage tanks located generally on the south side of the station building via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located south of the station building to South 46th Street. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

(i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline, and (b) fuel additives;

(ii) borings at AOC locations to be performed to an average twelve to twenty foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between six and seven;

(iii) independent laboratory analysis of at least six soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;

(iv) independent laboratory analysis of at two soil (or in the alternative groundwater) samples for COCs for State of Washington protocol gasoline fuel additives;

(v) independent laboratory analysis of two soil (or in the alternative groundwater) samples for COCs for RCRA TCLP Lead via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(vi) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(vii) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(viii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.2: LOCATION OF THE FORMER PUMP ISLAND – Objective to determine the likely presence of surface and/or subsurface contamination originating from location of the original two pump dispenser located on the east side of the station building via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located along the eastern Property boundary. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

(i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline and (b) diesel fuel;

(ii) borings at AOC locations to be performed to an average four to eight foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between four and five;

(iii) independent laboratory analysis of at least four soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;

(iv) independent laboratory analysis of at least one soil (or in the alternative groundwater) samples for COCs for State of Washington protocol gasoline fuel additives;

(v) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington RCRA TCLP Lead via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(vi) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(vii) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(viii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.3: HYDRAULIC LIFTS – Objective to determine the likely presence of

subsurface contamination originating from operations of the two hydraulic lifts located inside the building via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located inside the service bays. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

- (i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including hydraulic fluid;
- (ii) borings at AOC locations to be performed to an average six to eight foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between two and three;
- (iii) independent laboratory analysis of at least two soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Diesel via EPA SW-846 Method 8020;
- (iv) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington PCB's;
- (v) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;
- (vi) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;
- (vii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.4: FORMER UNDERGROUND WASTE OIL TANK and POSSIBLE REMOTE FILL LINES – Objective to determine the likely presence of subsurface contamination originating from the former location of the underground waste oil tank and possible remove fill lines located on the north exterior side of the station building a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located on the north side of the building and in the existing service bays. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

- (i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline and (b) diesel fuel;
- (ii) borings at AOC locations to be performed to an average twelve to sixteen foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between three and five;
- (iii) independent laboratory analysis of at least three soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;
- (iv) independent laboratory analysis of at least three soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Diesel via EPA SW-846 Method 8020;
- (v) independent laboratory analysis of one soil (or in the alternative groundwater) samples for COCs for Polynuclear Aromatic Hydrocarbons ("PAHs") via EPA Method 8270 SIMS;
- (vi) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington "MTCA Five Metals" via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

MVOC

(vii) independent laboratory analysis of one sample for COCs for State of Washington protocol Chlorinated Volatile Organic Compounds by EPA Method No. SW-8260B/624 - "Short List Chlorinated Volatiles";

(viii) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(ix) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(x) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.5: FORMER SOIL AERATION and POSSIBLE DISPOSAL LOCATION

– Objective to determine the likely presence of subsurface contamination originating from the former aeration and disposal of previously excavated petroleum-impacted soils via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located along the western Property boundary on the southern end. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

(i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline and (b) diesel fuel;

(ii) borings at AOC locations to be performed to an average four to eight foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations between four and six;

(iii) independent laboratory analysis of at least four soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;

(iv) independent laboratory analysis of two soil (or in the alternative groundwater) samples for COCs for State of Washington Lead via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;

(v) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;

(vi) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;

(vii) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

AREA OF CONCERN NO.6: POSSIBLE SITE GROUNDWATER IMPACT– Objective to determine the likely presence of groundwater impacts originating from the former station operations via a Limited and Targeted Subsurface Investigation. The Area of Concern (AOC") is located adjoining the former

underground tank pit. Investigation may or may not delineate the extent of contamination. Scope of Work to include:

- (i) soil explorations at Site AOC location to identify the existence of contamination as determined by the Scope of Work for Site-related constituents, including: (a) gasoline, (b) diesel, and (c) fuel additives;
- (ii) borings at AOC locations to be performed to an average forty foot depth below ground surface by powered drilling equipment. Total number of subsurface penetrations is one;
- (iii) independent laboratory analysis of at least one soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Gas and BTEX (Benzene, Toluene, Ethylbenzene, Xylene) via EPA SW-846 Method 8020;
- (iv) independent laboratory analysis of at least one soil (or in the alternative groundwater) samples for COCs for State of Washington protocol THP-Diesel via EPA SW-846 Method 8020;
- (v) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for gasoline fuel additives;
- (vi) independent laboratory analysis of one soil (or in the alternative groundwater) sample for COCs for State of Washington "MTCA Five Metals" via EPA SW-846 Method 6010/GFAA with prep EPA SW-846 Method 1311;
- (vii) analytical response time 7 business days from sample submission, report preparation as delineated in the *Schedule* section of this Agreement;
- (viii) a report of activities, observations, and findings will be prepared and delivered as agreed in the *Schedule* section of this Agreement;
- (ix) site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Groundwater Sampling Exclusions – It is possible that groundwater will be encountered during the subsurface boring activities; samples will be collected. As a result, groundwater well installation and permanent groundwater monitoring is excluded from the Scope of Work of this Proposal.

Potential Client Reporting Responsibilities: As a result of State of Washington requirements under the Leaking Underground Storage Tank regulation and other environmental regulations, site owners and/or operators may have responsibility for notification to local, State, or Federal agencies of suspected releases. The Client is advised to make their own determination of the necessity for reporting under applicable regulations.

Potential Waste Disposal: Site activities may produce soil spoils that will be drummed and left on-site. Management and disposal of this material is not the responsibility of Aerotech.

Client's Responsibilities: As applicable to this Agreement the Client will (i) provide all information available to Client pertinent to the Project, including previous reports and any other data, and Aerotech may rely on such information without confirmation; (ii) provide rights of access or permission to enter the property or to enter upon public or private lands as required for Aerotech to perform its services under this Agreement; (iii) designate a person to act as the Client's Key Site Manager with respect to the services to be rendered under this Agreement; (iv) where applicable identify known underground utilities and subsurface structures; and (v) to supply Aerotech a steady and sufficient source of potable water and electrical power.

Conditions: Prior to the start of work, Aerotech will contact the appropriate Utility Locating Information Service for Excavators to request identification of underground utilities located at the Site. Aerotech cannot be held responsible for utilities not identified by Service, the owner, or owner's designee. The

Scope of Work may include activities that require the use of heavy equipment which may cause damage to deciduous vegetation, shrubs, small trees, landscaped, or paved surfaces. The Scope of Work may include equipment that requires significant amounts of water for proper operation. While Aerotech will make an effort to avoid damage or impact, Aerotech cannot be held responsible for damages due to equipment operation, weight, or by water.

Representations and Warranties of Third Parties: Aerotech may rely without confirmation upon information provided by others and federal, state, and local agencies, pertinent to the project. When applicable, Aerotech will contact the Utility Locating Service prior to subsurface activities. Underground utilities not identified by the Locating Service or the Key Site Manager are not the responsibility of Aerotech.

Standard of Care/Warranty: Aerotech shall perform its services in accordance with generally accepted practices and standards prevailing in the locality of the Project current at the time the services are performed and not according to later standards.

Ownership and Use of Documents: Reports are prepared for the exclusive use by, and are the property of the Client, but may be used or referred to by Aerotech for like or similar work for others. Client shall hold harmless and indemnify Aerotech from and against any and all claims for damages arising out of, or in any way connected with, the use of reports by any person, corporation, agency or partnership not a party to this Agreement.

Successor and Assigns: Neither the Client nor Aerotech shall assign, sublet or transfer any rights under or interest in this Agreement without the written consent of the other and except to the extent that this limitation may be restricted by law. Nothing herein shall be construed to give any rights or benefits to anyone hereunder other than the Client or Aerotech.

Fee: This offer is valid for 30 days from the date of offering of this agreement. Aerotech agrees to provide the services described in this Agreement for the stipulated fee of:

Schedule of Fees:

Phase II Scope of Work:
Underground Private Utilities Locate
Ground Penetrating Radar:

Total Phase II Investigation:

Payment: Client shall pay to Aerotech the sum stipulated within 20 days of receipt of completed Report.

Schedule: Aerotech agrees to provide 2 copies of the report or document no later than 20 business days following receipt of this signed Professional Service Agreement at Aerotech offices.

Limitations: This Phase II Limited and Targeted Environmental Site Investigation is an intrusive examination of Site conditions. As such, it cannot be a full and complete assessment of every possible environmental condition. Adverse conditions may exist that could not be discovered by the Investigation; however, Aerotech has made every reasonable effort within the confines of the Scope of Work to discover and interpret the information and current conditions regarding the site within the time period available. This Assessment must not be regarded as a guarantee that no further contamination exists beyond what

may have been suspected or detected by the Investigation. Any and all liability for damages, injury, or harm, either direct, indirect, or consequential are hereby limited to the direct damages or ten times the Aerotech fee for services, whichever is smaller. In no situation, will the Aerotech liability exceed the available insurance coverage available to Aerotech, and in effect at the time of the claim.

Authorized Representative: Client designates the undersigned or another as directed, as Client's authorized representative to act in Client's behalf with respect to the services to be performed by Aerotech.

Governing Law: This Agreement made under and shall be governed by and construed and enforced under the laws of the state of Washington, County of King. By signing this Agreement, the undersigned affirms possession of the required authority to executed this Agreement on behalf of the named parties.

Authorized by:

AEROTECH ENVIRONMENTAL
CONSULTING, INC.

ATB
(Signature)

Alan T. Blotch

President

12/02/11
(Date)

Accepted by:

• CARHOUN FAMILY, LLC

[Signature]
(Signature)

Karen Callahan
(Print name)

POA for owner
(Print title)

11/2 12/1/11
(Date)

Service Agreement No. 2011-11-29.1
AEROTECH ENVIRONMENTAL CONSULTING, INC.
19600 International Blvd., Suite 101
Sea Tac, Washington 98188
Phone: (360) 710-5899
Fax: (206) 402-3473

- Project Correspondence & Boring Logs

BORING LOG #: SB-1 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St Drilling Information

Drilling Contractor: ESN

Project Number: 211-7002

Drilling Method: Geoprobe

Drillers Name: Don

Location: 4540 Pacific Avenue
Tacoma, WA

Borehole Diameter: _____

Sampler Type: _____

Event Information

Logged by: Michael W. McGowan

MW Number: _____

Boring Depth: 12 feet

Surface Elevation: _____

GW Encountered: No

Start Date: _____

Static GW Level: _____

End Date: _____

Notes:

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/ Description
2.5	2			SM	Dark Brown silty sand, no gravel (2 feet bgs). At 4' brown silty sand showing some 'clay' traits
5	4'			SM	5-10' bgs: tan silty sand with large volume of silt (6 feet). At 8 feet the same tan silty sand.
7.5	6			SM	
10	8'			SM	10-15' bgs: Tan silty sand with occasional gravel. Increase in denseness with depth. Drilling terminated at 12 feet. No groundwater encounter.
12.5	10			SM	
15	12'				
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-2 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St Drilling Information

Drilling Contractor: ESN

Project Number: 211-7002

Drilling Method: Geoprobe

Drillers Name: Don

Location: 4540 Pacific Avenue
Tacoma, WA

Borehole Diameter: _____

Sampler Type: _____

Event Information

Logged by: Michael W. McGowan

MW Number: _____

Boring Depth: 12 feet

Surface Elevation: _____

GW Encountered: No

Start Date: _____

Static GW Level: _____

End Date: _____

Notes:

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	Brown silty sand, no gravel (2 and 4 feet bgs).
5	4'			SM	
7.5	6			SM	5-10' bgs: Brown silty sand, no gravel (6 and 8 feet bgs). Increase in denseness with depth. Some rock fragments at 8 feet
10	8'			SM	
12.5	10			SM	10-12' bgs: Brown silty sand, no gravel. Increase in denseness with depth. Drilling terminated at 12 feet. No groundwater encounter.
15	12'			SM	
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-3 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St

Project Number: 211-7002

Location: 4540 Pacific Avenue
Tacoma, WA

Drilling Information

Drilling Contractor: ESN

Drilling Method: Geoprobe

Drillers Name: Don

Borehole Diameter: _____

Sampler Type: _____

Event Information

Logged by: Michael W. McGowan

Boring Depth: 12 feet

GW Encountered: No

Static GW Level: _____

Notes:

MW Number: _____

Surface Elevation: _____

Start Date: 12-1-11

End Date: 12-1-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	Brown silty sand, no gravel (2 feet bgs). Tan silty sand with a lot of silt content
5	4'			SM	5-10' bgs: Tan silty sand, some rock fragments! (6 and 8 feet bgs).
7.5	6			SM	
10	8'			SM	10-12' bgs: Tan silty sand, some rock fragments. Increase in denseness with depth. Drilling terminated at 12 feet. No groundwater encounter.
12.5	10			SM	
15	12'				
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-4 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St

Project Number: 211-7002

Location: 4540 Pacific Avenue
Tacoma, WA

Drilling Information
Drilling Contractor: ESN

Drilling Method: Geoprobe

Drillers Name: Don

Borehole Diameter:

Sampler Type:

Event Information

Logged by: Michael W. McGowan
Boring Depth: 11 feet
GW Encountered: No
Static GW Level:
Notes:

MW Number:
Surface Elevation:
Start Date: 12-1-11
End Date: 12-1-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	Brown silty sand, no gravel (2 feet bgs). Dark brown silty sand, no gravel (4 feet bgs)
5	4'			SM	
7.5	6			SM	5-10' bgs: Brown silty sand, clay like traits. Densier with depth (6 and 8 feet bgs).
10	8'			SM	10-12' bgs: Light brown silty sand, increase in denseness with depth. Drilling terminated at 11 feet. No groundwater encounter.
12.5	11			SM	
15					
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-5 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service Str Drilling Information

Drilling Contractor: ESN

Project Number: 211-7002

Drilling Method: Geoprobe

Drillers Name: Don

Location: 4540 Pacific Avenue
Tacoma, WA

Borehole Diameter: _____

Sampler Type: _____

Event Information

Logged by: Michael W. McGowan

MW Number: _____

Boring Depth: 11 feet

Surface Elevation: _____

GW Encountered: No

Start Date: 12-1-11

Static GW Level: _____

End Date: 12-1-11

Notes: _____

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	Brown silty sand, no gravel (2 and 4 feet bgs).
5	4			SM	
6	6			SM	5-10' bgs: Brown silty sand, no gravel. (6 and 8 feet bgs).
7.5	8			SM	10-12' bgs: Light brown silty sand, increase in denseness with depth. Drilling terminated at 11 feet. No groundwater encounter.
10	11			SM	
15					
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-6 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service Station Drilling Information
 Project Number: 211-7002
 Location: 4540 Pacific Avenue
Tacoma, WA

Drilling Contractor: ESN
 Drilling Method: Geoprobe
 Drillers Name: Don
 Borehole Diameter: _____
 Sampler Type: _____

Event Information

Logged by: Michael W. McGowan
 Boring Depth: 8 feet
 GW Encountered: No
 Static GW Level: _____
 Notes: _____

MW Number: _____
 Surface Elevation: _____
 Start Date: 12-1-11
 End Date: 12-1-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	Brown silty sand, occasional gravel (2 and 4 feet bgs).
5	4			SM	
6	6			SM	5-10' bgs: Brown silty sand, occasional gravel. (6 and 8 feet bgs). Drilling was terminated at 8 feet. No groundwater was encountered
7.5	8			SM	
10					10-12' bgs:
12.5					
15					
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-7 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St; **Drilling Information**

Project Number: 211-7002

Drilling Contractor: ESN

Drilling Method: Geoprobe

Drillers Name: Don

Location: 4540 Pacific Avenue
Tacoma, WA

Borehole Diameter:

Sampler Type:

Event Information

Logged by: Michael W. McGowan
Boring Depth: 8 feet
GW Encountered: No
Static GW Level:
Notes:

MW Number:
Surface Elevation:
Start Date: 12-1-11
End Date: 12-1-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	Brown silty sand, occasional gravel (2 and 4 feet bgs).
5	4			SM	
6	6			SM	5-10' bgs: Brown silty sand, occasional gravel. (6 and 8 feet bgs). Drilling was terminated at 8 feet. No groundwater was encountered
7.5	8			SM	
10					10-12' bgs:
12.5					
15					
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-8 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St; **Drilling Information**

Project Number: 211-7002

Drilling Contractor: ESN

Drilling Method: Geoprobe

Drillers Name: Don

Borehole Diameter:

Sampler Type:

Location: 4540 Pacific Avenue
Tacoma, WA

Event Information

Logged by: Michael W. McGowan
Boring Depth: 8 feet
GW Encountered: No
Static GW Level:
Notes:

MW Number:
Surface Elevation:
Start Date: 12-1-11
End Date: 12-1-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/ Description
2.5	2			SM	There was no sample recovery at 2 feet. At 4 feet there was brown silty sand intermixed with gravel)
5	4			SM	
7.5	6			SM	5-10' bgs: Light brown silty sand, occasional gravel (6 feet bgs). At 8 feet tan silty sand, no gravel. Drilling was terminated at 8 feet. No groundwater was encountered
10	8			SM	
12.5					10-12' bgs:
15					
17.5					
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-9 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St; **Drilling Information**

Project Number: 211-7002

Drilling Contractor: ESN

Drilling Method: Geoprobe

Drillers Name: Don

Borehole Diameter:

Sampler Type:

Location: 4540 Pacific Avenue
Tacoma, WA

Event Information

Logged by: Michael W. McGowan

Boring Depth: 17 feet

GW Encountered: Yes

Static GW Level:

Notes:

MW Number:

Surface Elevation:

Start Date: 12-1-11

End Date: 12-1-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	0-4' bgs: Grey silty sand with occasional gravel (2' and 4')
5	4			SM	
7.5	6			SM	5-10' bgs: Grey silty sand with occasional gravel (6' and 8'). Groundwater was at approximately 6 feet. There was a strong petroleum-like odor at approximately 6 feet
10	8			SM	
12.5	11			SM	10-14' bgs: Grey silty sand with less gravel (11' and 15'). Petroleum-like odor present but less strong
15	14			SM	
17.5	15			SM	10-15' bgs: Grey silty sand some gravel, odor is gone. Drilling terminated at 17'. Groundwater was encountered at approximately 6 feet.
20	17			SM	
22.5					20-25' bgs:
25					25-30' bgs:
27.5					

BORING LOG #: SB-10 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service St	Drilling Information
Project Number: 211-7002	Drilling Contractor: ESN
	Drilling Method: Geoprobe
	Drillers Name: Don
Location: 4540 Pacific Avenue Tacoma, WA	Borehole Diameter: _____
	Sampler Type: _____

Event Information

Logged by: Michael W. McGowan	MW Number: _____
Boring Depth: 16 feet	Surface Elevation: _____
GW Encountered: Yes	Start Date: 12-1-11
Static GW Level: _____	End Date: 12-1-11
Notes:	

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/ Description
2.5	2			SM	0-5' bgs: Dark brown silty sand with occasional gravel (2' and 4')
5	4			SM	
7.5	6			SM	5-10' bgs: Dark brown silty sand with occasional gravel, less silt more sand (6'). At 8' there was light brown silty sand with occasional gravel. Groundwater was encountered at approximately 6'
10	8			SM	
12.5	10			SM	10-15' bgs: Light brown silty with occasional gravel (10'), light brown silty sand, no gravel. There was a slight petroleum-like odor (13' and 14').
15	13			SM	
17.5	14			SM	15-20' bgs: Light brown silty sand no gravel. There was a slight petroleum-like odor. Drilling terminated at 16'. Groundwater was encountered at approximately 6 feet.
20	16			SM	
22.5					20-25' bgs:
25					25-30' bgs:
27.5					

BORING LOG #: SB-10 Page 1 of 1

AEROTECH

Project Name: <u>Calhoun's Service St</u>	Drilling Information
Project Number: <u>211-7002</u>	Drilling Contractor: <u>ESN</u>
	Drilling Method: <u>Geoprobe</u>
	Drillers Name: <u>Don</u>
Location: <u>4540 Pacific Avenue</u> <u>Tacoma, WA</u>	Borehole Diameter: _____
	Sampler Type: _____

Event Information

Logged by: <u>Michael W. McGowan</u>	MW Number: _____
Boring Depth: <u>17 feet</u>	Surface Elevation: _____
GW Encountered: <u>Yes</u>	Start Date: <u>12-1-11</u>
Static GW Level: _____	End Date: <u>12-1-11</u>
Notes:	

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	0-4' bgs: Brown silty sand with occasional gravel, there is less gravel at the 4' depth (2' and 4')
5	4			SM	
7.5	6			SP	5-10' bgs: White poorly sorted sand with occasional gravel (8'). At 8' there was brown silty sand with no gravel. Groundwater was encountered at approximately 6.5'
10	8			SM	
12.5	11			SM	10-15' bgs: Light brown silty, no gravel (11' and 14').
15	14			SM	
17.5	15			SM	15-20' bgs: Light brown silty sand some gravel. Drilling terminated at 17'. Groundwater was encountered at approximately 6.5 feet.
20	17			SM	
22.5					20-25' bgs:
25					25-30' bgs:
27.5					

BORING LOG #: SB-12 Page 1 of 1

AEROTECH	Project Name: Calhoun's Service St Project Number: 211-7002 Location: 4540 Pacific Avenue Tacoma, WA	Drilling Information Drilling Contractor: ESN Drilling Method: Geoprobe Drillers Name: Don Borehole Diameter: Sampler Type:
-----------------	--	--

Event Information

Logged by: Michael W. McGowan Boring Depth: 17 feet GW Encountered: No Static GW Level: Notes:	MW Number: Surface Elevation: Start Date: 12-1-11 End Date: 12-1-11
---	--

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	0-5' bgs: Brown silty sand with occasional gravel (2') Tan silty sand with heavy silt content (4')
5	4			SM	5-10' bgs: Dark brown silty sand with occasional gravel (6'). At 8' there w as grey silty sand no gravel. Dense.
7.5	6			SM	
10	8			SM	10-15' bgs: Grey silty sand no gravel (10', 11' and 14')
12.5	10			SM	
15	14			SM	15-20' bgs: Grey silty sand no gravel. Drilling terminated at 17'. Groundwater was not encountered.
17.5	17			SM	
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

BORING LOG #: SB-13 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service Station **Drilling Information**
Project Number: 211-7002 **Drilling Contractor:** ESN
Location: 4540 Pacific Avenue **Drilling Method:** Auger
Tacoma, WA **Drillers Name:** _____
Borehole Diameter: _____
Sampler Type: _____

Event Information

Logged by: Michael W. McGowan **MW Number:** _____
Boring Depth: 18 feet **Surface Elevation:** _____
GW Encountered: No **Start Date:** 12-2-11
Static GW Level: _____ **End Date:** 12-2-11
Notes: _____

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5	2			SM	0-5' bgs: Brown silty sand with occasional gravel (2') Brown silty sand, no gravel (4')
5	4			SM	
7.5	6			SM	5-10' bgs: Dark brown silty sand, more silt (6'). At 8' there was tan silty sand gravel
10	8			SM	
12.5	10			SM	10-15' bgs: Brown silty sand , high silt content (10'). At 14' there was brown silty sand
15	14			SM	
17.5	18			SM	15-20 ' bgs: brown silty sand, occasional gravel. Drilling terminated at 18' . Groundwater was not encountered.
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

AEROTECH

BORING LOG #: SB-14 Page 1 of 1

Project Name: Calhoun's Service Str

Project Number: 211-7002

Location: 4540 Pacific Avenue
Tacoma, WA

Drilling Information

Drilling Contractor: ESN
Drilling Method: Auger
Drillers Name: _____
Borehole Diameter: _____
Sampler Type: _____

Event Information

Logged by: Michael W. McGowan
Boring Depth: 22 feet
GW Encountered: No
Static GW Level: _____
Notes:

MW Number: _____
Surface Elevation: _____
Start Date: 12-2-11
End Date: 12-2-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5				SM	0-5' bgs: Brown silty sand with occasional gravel (4')
5	4			SM	
	6			SM	5-10' bgs: Brown silty sand, no gravel (8').
7.5				SM	
10				SM	10-15' bgs: no sample recovery at 12 feet. Grey silty sand at 14 feet. There was a slight petroleum-like odor
12.5	12				
15	14			SM	
17.5	16			SM	15-20' bgs: Grey silty sand, no gravel.
	17.5				
20	20				20-25' bgs: Grey silty sand, no gravel. At 22 feet there appeared to a layer of gravel. Drilling terminated at 22 feet due to refusal. Groundwater was not encountered
22.5	22				
25					25-30' bgs:
27.5					

BORING LOG #: SB-15 Page 1 of 1

AEROTECH

Project Name: Calhoun's Service Station Drilling Information

Project Number: 211-7002

Drilling Contractor: ESN

Drilling Method: Auger

Drillers Name: _____

Borehole Diameter: _____

Sampler Type: _____

Location: 4540 Pacific Avenue
Tacoma, WA

Event Information

Logged by: Michael W. McGowan

MW Number: _____

Boring Depth: 18 feet

Surface Elevation: _____

GW Encountered: No

Start Date: 12-2-11

Static GW Level: _____

End Date: 12-2-11

Notes: _____

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/ Description
2.5				SM	0-5' bgs: Brown silty sand with occasional gravel (4')
5	4			SM	
7.5				SM	5-10' bgs: Grey silty sand, no gravel (10', 12', and 14') There was a slight petroleum-like odor
10	10			SM	10-15' bgs: no sample recovery at 12 feet. Grey silty sand at 14 feet. There was a slight petroleum-like odor
12.5	12				
15	14			SM	
17.5	16			SM	15-20' bgs: Grey silty sand, no gravel (16' and 18') There was no odor. Drilling terminated at 18 feet. No groundwater was encountered
20	18				
22.5					20-25' bgs: Grey silty sand, no gravel. Drilling terminated at 22 feet. Groundwater was not encountered
25					25-30' bgs:
27.5					

AEROTECH

BORING LOG #: SB-17 Page 1 of 1

Project Name: Calhoun's Service St

Drilling Contractor: ESN

Project Number: 211-7002

Drilling Method: Auger

Drillers Name: _____

Location: 4540 Pacific Avenue
Tacoma, WA

Borehole Diameter: _____

Sampler Type: _____

Event Information

Logged by: Michael W. McGowan
Boring Depth: 18 feet
GW Encountered: No
Static GW Level: _____
Notes:

MW Number: _____
Surface Elevation: _____
Start Date: 12-2-11
End Date: 12-2-11

Depth (ft)	Sample Type/Number	Blow Counts	PID/FID Readings	USCS Classification	Soil Classification/Description
2.5				SM	0-5' bgs: Brown silty sand
5	4				
7.5	6			GM	5-10' bgs: Gravel (6')
	8				
10	10			SM	10-15' bgs: Brown silty sand with occasional gravel (10' and 12'). At 14' there was grey silty sand, no gravel
12.5	12				
15	14			SM	
17.5	16			SM	15-20' bgs: Grey silty sand, no gravel (16' and 18') Drilling terminated at 18 feet. No groundwater was encountered
	18				
20					20-25' bgs:
22.5					
25					25-30' bgs:
27.5					

ESN Northwest, Inc.

Site Safety Plan

**Calhoun's Service Station
4540 Pacific Avenue
Tacoma, Washington 98401**

prepared by:

**ESN Northwest, Inc.
1210 Eastside Street, Suite 200
Olympia, Washington 98501**

2011

Table of Contents

Project Specifics	2
General.....	2
Important Telephone Numbers.....	3
Hazard Evaluation.....	4-6
PPE.....	7
Accident Response Procedures.....	7
Management Commitment	8
Safety Policy Statement.....	8
Objectives of Safety and Health Program.....	9
Responsibility for Safety and Health Program.....	9
Hazard Assessment and Control	10
Hazard Assessment and Correction.....	10
Accident Investigation.....	10
Record Keeping.....	10
Equipment Monitoring and Maintenance.....	11
Safety Planning, Rules, and Work Procedures	12
Control of Potential Hazards.....	12
Safety Rules.....	12
<i>Direct Push Probe</i> Sampling Safety Practices.....	16
Spill Response.....	16
Confined Space	18
Disciplinary Action for Violating Safety Rules	18
Safety and Health Training	19
Employee / Subcontractor Acknowledgment	20

Project Specifics

General

Owner: Calhoun Family, LLC
P.O. Box 1929
Tacoma, Washington 98401

Project #: No. 211- 7002

Sub Contractor: ESN Northwest, Inc.
1210 Eastside Street SE, Suite 200
Olympia, WA 98501

Approximate Start Date: December 15, 2011

Approximate End Date: December 15, 2011

Scope of Work
to be Performed: Phase II Subsurface Investigation

Site Location: 4540 Pacific Avenue
Tacoma, Washington 98401

Primary Hazards of concern: Petroleum Constituents / drill operations

Emergency Information

Hospital Location: Varies with site location

Telephone Number: Varies with site location

MSDS Location: Inside ESN Mobile Laboratory or in Direct Push Probe

Important Telephone Numbers

Project Organization	Telephone Number	Contact
Project Manager		
HSP Preparer		
ESN Representatives		
Health and Safety Officer		
Other Important Numbers		
CHEMTREC (For emergencies involving chemicals)	800-424-9300	
National Response Center (to report a release of a substance)	800-424-8802	
Poison Control Center	800-732-6985	
Utilities Underground	800-424-5555	
ESN-NW Office	360-459-4670	

Hazard Evaluation – Chemical Hazards

The following chemical hazards are potentially present at the site:

Chemical Name	NIOSH Exposure Limit	IDLH
Benzene	.1 ppm	3000 ppm
Hydrogen Sulfide	10 ppm	300 ppm
Lead	.100 mg/m ³	700 mg/m ³
Mercury vapor	.05 mg/m ³	28 mg/m ³
Asbestos	Undetermined *	Undetermined *
Arsenic	.002 mg/m ³	100 mg/m ³
Chlorinated solvents	**	**
Dioxin	Ca	Ca
Aliphatic hydrocarbons	Ca, *	Ca, *
Simple asphixiants	**	**
Chlorine vapor	.5 ppm	30 ppm
PCB's	50 ppm	400 ppm
Photographic chemicals	**	**
Vinyl chloride	Ca	Ca
Methane	**	**
Total Recoverable Petroleum Hydrocarbons	***	***

- * Exact components vary as do exposure limits, but in most cases exposure should be limited to an absolute minimum
- ** Limited exposure not necessarily harmful. See specific container or MSDS for exposure limits and details.
- *** Exposure limit, IDLH, and Action Levels vary with level of contamination, site specific conditions, etc. One site safety officer to determine action levels to be followed based on current conditions.
- Ca** Carcinogen. NIOSH has not determined thresholds for carcinogens that will adequately protect 100% of the population. Limit exposure to lowest possible concentration.

Hazard Evaluation – Biological Hazards

The following biological hazards are potentially present at the site:

Biological Hazard Type	Exposure	Result	Preventative Measures
Rattle Snakes	Bite	Illness, Death	Leather Boots, Long Pants
Insects	Bite, Sting	Illness, Death	Long Sleeve Shirts, Long Pants, Sprays
Ticks	Bite	Lyme Disease	Long Sleeve Shirts, Long Pants, Self Examination
Poisonous Plants	Contact	Skin or Eye Irritation	Long Sleeve Shirts, Long Pants
Vermin	Bite	Rabies, Death	Leather Boots, Long Pants
Wild Dogs	Bite	Rabies, Death	Animal Repellent, Distance
Hypodermic Needles	Puncture Wound	HIV, AID's, Illness	Shovel garbage away from work area
Bats	Bite	Rabies, Death	Long Sleeve Shirts, Long Pants, Leather Gloves
Wild Geese	Bite	Illness, Rabies	Stay Away (Especially During Spring Time)

Hazard Evaluation – Industrial Hazards

The following industrial hazards are potentially present at the site:

Hazard Type	Methods to Ensure Worker Safety
Excessive Noise	If level exceeds 85 dB, workers must wear ear protection.
Slip, Trip, or Fall	Employees must be trained in proper housekeeping procedures
Power Equipment, Tools	Guards and shields installed, face shields, safety glasses used.
Electrical Shock	All equipment must be grounded and kept dry.
Fires	Fire extinguishers must be present. Smoking in designated areas only.
Explosions	Explosive gas meters used in areas used where explosive gases may be present. Unexploded ordinance may be present at depth. Use of blast shield suggested.
Mutilation from Pinch Points	Machinery must be inspected prior to use. Areas that can not be guarded must be identified, and workers made aware.
Chemical Releases	Chemical monitoring equipment must be present, and periodic testing performed by qualified personnel.
Skin and Eye Irritation	Personal protective equipment must be used if working with hazardous chemicals.
Lifting, Manual Labor	Workers must be trained and instructed in proper lifting techniques and work procedures.
Ionizing Radiation	Dosimetry, radiation surveys, and contamination surveys must be implemented.
Non-Ionizing Radiation	Safe work areas must be established and monitored.
Solar Radiation	Protective clothing or sun block
Vibration	Workers must limit exposure time and take measures to limit exposure.

Personal Protective Equipment

Generally speaking, the following levels of PPE should be used at a confirmed or potentially contaminated hazardous waste site (the exact level of protection will vary from site to site):

<u>Location</u>	<u>Job Function</u>	<u>Level of Protection</u>			
Exclusion Zone	Sampling operations	A	B	C	D
Contamination Reduction Zone	Level of protection will vary with level of decontamination necessary	A	B	C	D
Support Zone	Includes laboratory and supervisory Personnel not in direct contact with Sampling area.	A	B	C	D

Accident Response Procedures

In the event of an accident, injury or emergency:

1. Stay calm.
2. Assess the situation. Determine what should be done first. The number one priority should be rendering assistance to the injured.
3. Administer first aid or medical assistance to the victim(s) if necessary.
4. Call for medical assistance if necessary.
5. Report the incident to the site supervisor or prime contractor representative.
6. Call ESN's main office at 360-459-4670 and ask for the Health and Safety Officer. Report the incident. He or she can render assistance over the phone, and give instructions for further actions.

To report release of a substance into the environment call the National Response Center at 800-424-8802.

Management Commitment

Safety Policy Statement

Safety is a major concern to our company. ESN strongly believes that a clean, safe, and healthy environment should be provided for all employees. Every reasonable precaution is taken to provide everyone with a safe place to work. Injury prevention, however, is largely an individual responsibility, and all workers are expected to do their part to work safely.

It is ESN's intent to comply with all laws. To do this we must constantly be aware of conditions in all work areas that can produce injuries. No worker is required to work at a job he or she knows is not safe or healthful. Your cooperation in detecting hazards and, in turn, controlling them is a condition of employment. The site supervisor must immediately be informed of any situation needing correction.

ESN's goal is to have no work-related injuries. But if there is an accident or injury, we expect it to be reported immediately. Likewise, if an unsafe act or work condition is noticed, it must be reported immediately. Those workers guilty of safety violations will be reprimanded accordingly.

The following pages outline some of the obvious rules that will contribute to a safe work environment. As with any list, it may not contain every rule for safe conduct. Obviously, common sense is important. But if these rules are followed, we all can be part of a safe work environment. We are open to suggestions that will contribute to safety. Please make us aware of them and we will incorporate them into this plan if possible.

Sincerely,

Michael A. Korosec
President

Objectives for the Safety and Health Program

It is management's objective to provide a safe, clean, and tolerable place to work for all workers. Worker health and safety is of primary concern. No compromise will be made in this regard. Every effort will be put forth to ensure that all job sites are safe. It will be the responsibility of the site supervisor to ensure that these objectives are met. If they are unable to be met for any reason, then work will stop until the situation can be corrected.

Assignment of Responsibility for Safety and Health

Management

We recognize that the responsibilities for safety and health are shared. ESN Management accepts the responsibility for leadership of the safety and health program, for its effectiveness and improvement, and for providing the safeguards required to ensure safe condition.

Health and Safety Officer

The corporate Health and Safety Officer is responsible to provide all workers with the proper protective equipment to ensure safety on the job. The Health and Safety Officer may, at his or her discretion, halt work on any job in which any safety rules are not being followed. The Health and Safety Officer must also ensure that all injuries, no matter how slight, are properly reported, investigated, and documented. No accident should reoccur.

Site Supervisor

The Site Supervisor has over all control of the job site. The Site Supervisor is responsible for developing the proper attitudes toward safety and health in themselves, in those they supervise, and for ensuring that all operations are preformed with the utmost regard for the safety and health of all personnel involved, including themselves. The Site Supervisor must also be properly trained and able to administer proper aid in the event of an accident, injury, or emergency. The Site Supervisor must inform each worker of the location of the nearest medical facility, First aid, Emergency telephone, MSDS, and alert them to any known of potential hazards on the job site.

Individual Worker

While Management, the Health and Safety Officer, and the Site Supervisor are ultimately responsible for the proper implementation of any safety plan, it is up to every individual to actively participate in order to make it work. No safety plan, no matter how elaborate, can function properly without the cooperation of all concerned. Workers are responsible for wholehearted, genuine cooperation with all aspects of the safety and health program-including compliance with all rules and regulations-and for continuously practicing safety while performing their duties.

Hazard Assessment and Control

Hazard Assessment and Control

Due to the nature of the work when dealing with hazardous or potentially hazardous materials, workers may come into contact with a number of different hazards on any particular job. Prior to the commencement of any work, an initial investigation should be conducted in order to determine any hazards on the job. Any number of chemical, biological, or industrial hazards may pose a threat to any person on the job. Once the investigation is complete, the proper level of preparedness should be determined, and levels of protection outlined for any workers on the job should be specified. It should be made clear what level of protection (A, B, C, or D) should be used, and it is mandatory that all workers be trained in the proper use of all protective equipment. **(See not under “Proper Use of Personal Protective Equipment and Clothing”.)**

Accident Investigation

All occupational injuries and illnesses must be reported to the Health and Safety Officer. Before a governmental agency is notified, the Health and Safety Officer will conduct an investigation to determine the following:

- * type and severity of the accident
- * specific cause of the accident
- * who was involved in the accident
- * the extent of personal injury
- * the extent of property damage
- * steps that can be taken to assure the accident does not reoccur

The Health and Safety Officer will then determine if the accident must be reported to any governmental agency. If it is determined to be a reportable incident, it will be the responsibility of the Health and Safety Officer to complete the necessary documentation to ensure compliance all state and federal laws.

Record keeping

It is the policy of ESN to comply with all current state and federal record keeping regulations. This includes but is not limited to:

1. OSHA 200 (Log an Summary of Occupational Injuries and Illness).
2. Material Safety Data Sheets.
3. Maintaining Health Monitoring Program.
4. Employee access to personal medical and exposure records.
5. Accident investigation, documentation, and reporting.
6. Other required records or records appropriate to a given work site.

Equipment Monitoring and Maintenance

Proper Maintenance of Production Equipment

During the course of normal day to day use, tools and equipment will eventually degrade and fall into a state of disrepair if not properly maintained. Therefore, it is essential that all tools, equipment, and vehicles be inspected on a daily basis for damage. Minor repairs can be made to tools and equipment in the field. Management should be informed of any equipment that cannot be repaired in the field. All company vehicles will be maintained in accordance with an approved vehicle maintenance program, and will not be operated while in an unsafe condition.

Proper Use of Personal Protective Equipment and Clothing

1. Protective goggles or safety glasses must be worn where there is any danger of flying particles or corrosive materials or where there is a risk of eye injuries such as punctures, abrasions, contusions, or burns.
2. Only approved safety glasses, protective goggles, or other medically approved eye protection may be used in conjunction with corrective glasses or contact lenses.
3. Protective gloves, shields, and aprons must be used to guard against cuts, corrosive liquids, and chemicals.
4. Hard hat must be worn if working in areas where there is a danger of falling objects. Hard hats must be periodically inspected for damage to the shell or suspension system.
5. Appropriate foot protection must be worn where there is risk of foot injuries from hot, corrosive, poisonous substances, falling objects, or crushing, penetration actions. Steel toed or safety shoes are required.
6. Approved respirators must be stored in a location easily accessible in case of an emergency.
7. All equipment must be maintained in a sanitary condition and kept ready for use at all times.
8. Protection against the effects of occupational noise exposure must be used when sound levels exceed those of safety standards.
9. Adequate work procedures, protective clothing, and equipment must be used when cleaning up spilled toxic or otherwise hazardous materials or liquids.

****Note:**

If it should be determined that protective equipment above level “C” is required, all operations are to immediately cease. No ESN employee or representative is trained or authorized to use protection above level “C”. Call ESN’s Health and Safety Officer at 360-459-4670 immediately. Do not proceed!

Safety Planning, Rules, and Work Procedures

Control of Potential Hazards

Potential hazards can easily become deadly hazards. Before commencing work on any job site, all workers must review the Site Specific Hazard Evaluation found on pages five through seven of this document. All workers must be familiar with any and all potential hazards, and take the necessary steps to avoid an accident or injury.

All ESN employees will follow the safety protocol as determined by the prime contractor. Should ESN be the prime contractor, it will be ESN's responsibility to conduct a pre-commencement planning meeting, safety meeting, new work orientation meeting with employees assigned to the site, and daily safety meetings throughout the duration of the project.

Safety Rules

General Safety Rules

It is the duty of each and every worker in the field to obey all Company safety rules and to use all required safety equipment. The Site Supervisor will hold daily safety briefings before the commencement of work. Listed below are some general safety rules that each and every worker in the field should follow and should be addressed in every safety briefing:

1. All injuries, no matter how minor, must be reported to the site supervisor immediately.
2. All workers must learn the hazards of their job by discussing them in detail with the site supervisor.
3. When job conditions change, so do the hazards; therefore, each worker must learn to anticipate new hazards and plan their avoidance.
4. All new hazards must be brought to the attention of the site supervisor.
5. All workers must develop a daily routine of checking his/her job area, equipment, tools, instruments, and/or machinery for any potential hazards or deficiencies.
6. All defective tools, equipment and/or dangerous work conditions must be brought to the attention of the site supervisor.
7. All workers must wear all required personal protective devices.
8. Workers must not use equipment and machinery that is defective. All tools must be maintained in a good state of repair.
9. Any worker may make suggestions regarding safety to the site supervisor.
10. All workers must familiarize themselves with the location and proper use of first aid equipment.
11. Anyone known to be under the influence of alcohol or other controlled substances must be immediately reported to the site supervisor.
12. Workers must not handle or tamper with any equipment that is not within the scope of their duties or job unless they have received instructions from the site supervisor.

13. Workers must practice good housekeeping by keeping work areas neat and orderly. A “pick up as you go” method of housekeeping must be employed. Refuse must be disposed of in proper containers.
14. Smoking is permitted in designated areas only. Beware of combustible material.
15. Job sites must be adequately illuminated. If working after sun down or before sunset, lighted barricades must be used to delineate job site.
16. When working in parking lots or roadways, cones, barricades, and safety tape must be used to delineate work area from non-work area.
17. Beware of traffic. Most motorists become easily confused when driving through any type of construction or job site. When working in parking lots or roadways that are exposed to the hazards of traffic, bright colored (traffic orange) warning vests must be worn.
18. The site supervisor must be informed of any special health condition that may adversely affect the performance or safety of any worker.
19. The site supervisor must inform each worker of the nearest hospital or medical facility.

Hand Tools

Hand tool injuries can be avoided by following these five common-sense rules:

1. Select the right tool for the job.
2. Use it the correct way.
3. Make sure it is in good condition.
4. Put it away when through with it.
5. Take time to be *safe*.

Also:

1. Hand saws must be sharp and properly set.
2. The proper saw must be used for the material being cut.
3. Material being cut must be placed in a vice or held firmly in case the saw binds or sticks.
4. Hammer handles must fit tightly with no cracks or splinters.
5. Choose the correct hammer to be used for the job.
6. Tongs or pliers must be used to grasp material when possible to avoid injury.
7. Concentrate full attention to the job at hand.
8. All tools must be returned to their proper storage area immediately after use.

Portable Power-Operated Tools and Equipment

1. All power equipment must be equipped with appropriate safety guards recommended by the manufacturer.
2. All rotating or moving parts of equipment must be guarded to prevent physical contact.
3. All cord-connected, electrically-operated tools and equipment must be effectively grounded or of the approved double-insulated type.
4. Electrical extension cords and plugs must be inspected periodically for deterioration or damage.
5. Pneumatic and hydraulic hoses on power-operated tools must be inspected periodically for deterioration or damage.
6. All power-operated tools must be inspected for damage prior to use.
7. Personal protective equipment such as hard hats, safety goggles, safety shoes, and ear protectors must be used in conjunction with power-operated tools.
8. The appropriate tool for the job must be used.

Hazardous Chemical Exposures

1. Those involved in the handling of hazardous chemicals must be specially trained.
2. Workers must be aware of TWA and IDLH exposure limits of each chemical present. Limits are not to be exceeded in any circumstance.
3. Workers must know the location of MSDS applicable to the job site. See section "A", page 1, of this document for MSDS location, or ask the site supervisor for MSDS location. All ESN mobile labs and Direct Push Probes contain MSDS listings.
4. All flammable or toxic chemicals must be kept in closed containers when not in use.
5. Respirators must be stored in a convenient, clean, and sanitary condition.
6. No eating or drinking in areas where hazardous materials are present.
7. Personal protective equipment must be maintained properly and used whenever necessary, not just when convenient.

Company Vehicles

Driving a company vehicle is both a privilege and a responsibility. The following rules can assist in assuring a high degree of safety in the operation of our company vehicles:

1. Only authorized individuals are allowed to operate company vehicles. Such vehicles are for company use, and personal use must be cleared with the site supervisor.
2. No one is permitted to operate any vehicle without a proper driver's license.
3. Loose equipment in the cab of the vehicle can be deadly in the event of a sudden stop or accident. Keep the vehicle clean at all times.
4. Workers must know and obey all laws and safety rules. A vehicle is a deadly weapon when used improperly.
5. Always look before backing. Get out and walk around the back of the vehicle to be certain there is nothing in the vehicle's path.
6. Obey the rules of safe speed. Do not drive faster than is safe for the conditions at the time. Do not exceed the speed limit. Do not operate any vehicle at excessive speeds while on the job site.
7. Set the brakes and remove the keys when leaving the vehicle.
8. Never carry standing passengers on the outside of a vehicle. If passengers must ride in the bed of a truck, have them remain seated while the vehicle is in motion.
9. Drive the way you want others to drive. Be safe, courteous, and defensive.
10. All people in the vehicle are to wear seat belts. It's the law.
11. Keep in mind the size of the vehicle (especially if the vehicle is a mobile lab or large pickup).
12. In case of an accident on or off the site, never admit responsibility. Inform the job site supervisor immediately.

REMEMBER: CARELESSNESS, SPEED, AND HASTE CAN KILL. PLEASE DRIVE SAFELY!

Direct Push Probe Sampling Safety Practices

The following safety practices apply specifically to the ESN *Direct Push Probe* Sampling Platform, but also apply to similar TARGET PROBE and Geoprobe type systems:

1. Operators must be trained in the proper operation of the platform prior to beginning work.
2. The vehicle must be visually inspected prior to the commencement of work. This inspection should include controls, hoses and hydraulics (leaks, wear, etc.) and derrick / mast (cracks, stress, etc.).
3. The proper level of personal protective equipment must be used at all times. This includes but is not limited to: hard hat, eye protection, work gloves, and safety shoes or boots.
4. The sampling platform must be positioned such that it is on relatively level ground and free from overhead obstruction. The vehicle must be stabilized with leveling jacks prior to use.
5. The vehicle parking brake must be set at all times. Chock wheels if possible.
6. The underside of the vehicle must be kept clear of obstruction (weeds, debris, etc.). Contact with the vehicle exhaust system may cause a fire.
7. Underground utilities and services must be cleared prior to the commencement of any sampling operations.
8. Operators should keep clear of moving parts. Avoid pinch points.
9. Operators should adopt a “clean up as they go” work practice.
10. Unneeded tools and equipment should be stowed.
11. All tools and equipment should be properly decontaminated if it is suspected that the site is contaminated in excess of permissible exposure levels.
12. The vehicle should be re-inspected at the end of every work day as in number “2” above.

Spill Response Practices On Site

In the event that a spill occurs on site, ESN employees are to stop all drilling operations and focus all attention into cleaning up the spill. Here are some procedures to follow.

Hydraulic Spills

1. Turn the truck off immediately and locate the leak.
2. Any hydraulic leak in the rear of the vehicle will stop when the truck is turned off. If the leak is in the main hydraulic line under the truck, then turn the yellow shut-off valve off. It is located under the driver’s side door.
3. Use Nitril gloves to protect the skin from hydraulic exposure.
4. Use threaded valve caps to cap any hydraulic hose.

5. Use absorbent pads to clean up hydraulic spills.
6. Spread bentonite on the spill to absorb the hydraulic oil if there is a large quantity of oil on the ground.
7. Containerize all of the items used in cleaning up the spill, either in a trash bag or bucket, and place in a DOT approved drum.
8. Record the incident and report it to ESN's drilling manager immediately.
9. Any damage to any hydraulic hose must be repaired before continuing with drilling operations.

Gasoline/Diesel/Engine Spills

1. Stop all drilling operations and find the source of the leak.
2. Use absorbent pads to absorb the gasoline, diesel or oil.
3. Use nitril gloves to protect the skin from exposure.
4. Spread bentonite on the spill to absorb the gasoline or diesel if there is a large quantity of product on the ground.
5. Containerize all of the items used in cleaning up the spill, either in a trash bag or bucket, and place in a DOT approved drum.
6. Record the incident and report it to ESN's drilling manager immediately.

7. Confined Space

Preface

Should it be determined that a confined space entry must be made, all operations are to cease immediately. No ESN employee or representative is trained or authorized to perform a confined space entry. Call ESN's Health and Safety Officer at 360-459-4670 immediately. Do not proceed!

A confined space is defined as space that...

- * is large enough and so configured that an employee can enter it and perform assigned work.
- * has limited or restricted means for entry or exit.
- * is not designed for continuous employee occupancy.

Confined spaces are classified as...

Permit-Required Confined Space, referred to in the regulations as "permit space", is defined as a confined space that has one or more of the following characteristics:

- * Contains a hazardous atmosphere (or has the potential to contain one).
- * Contains a material that has the potential for engulfing an entrant.
- * Has an internal configuration in which an entrant could be trapped or asphyxiated. (Generally, this occurs when there are inwardly converging walls or a floor that slopes downward and tapers to a smaller cross section.)
- * Contains any other recognized serious safety or health hazard.

Non-permit space means a confined space that does not contain (or have the potential to contain) any hazards capable of causing death or serious physical harm.

Examples: Vented vaults, motor control cabinets, and dropped ceilings. Although these spaces are confined, they have natural or permanent mechanical ventilation to prevent the accumulation of substances that could create a hazardous atmosphere. And they do not present other serious hazards, such as engulfment.

It is the policy of ESN not to allow any worker to enter "Permit Required" confined spaces. No one employed by ESN is either authorized or properly trained to enter "Permit Required" confined spaces. However, there may be those on site who are properly trained to enter "Non-permit Space" spaces, and it may be necessary for them to do so. In the event that should occur, contact the ESN Health and Safety Officer for authorization prior to entering the confined space.

Disciplinary Action for Violating Safety Rules

The purpose of the company's Disciplinary Action Policy is to help promote and ensure safety on the job. The policy is not intended to punish – its main purpose is to help maintain a safe work place for all workers.

An important part of any job is to do the job safely. The rules in this safety manual have been developed to accomplish this. Workers should recognize unsafe practices brought to their attention, and correct the error to avoid possible serious injury.

Injuries often result when short-cuts are used instead of prescribed procedures. It is the policy of ESN that no amount of increased production compensates for the risk of injury to employees taking unauthorized short-cuts.

Certain rule violations are so serious that they could result in the immediate dismissal of any worker from the job. Repeated violations cannot and will not be tolerated.

Management may choose to use forms of discipline that are less severe than termination in certain cases. Examples of less severe forms of discipline include verbal warnings, written warnings, probationary action, and demotion. Written warnings become a permanent part of an employee's file. ESN reserves the right to terminate an employee at any time, should it be determined that an employee is guilty of committing an act considered life threatening. It is the policy of this company to enforce all safety rules. No one in the company is exempt from following safe work practices. The goal is to never have an employee injured on the job.

Safety and Health Training

First and for most, it is ESN's contention to provide all field personnel with a level of training that is suitable for the type of work being done. ESN recognizes the fact that to be effective, training must be "on going" in nature, and will make provisions to provide all ESN employees with appropriate on going training on a regular basis.

Supervisors

The Site Supervisor is expected to have training over and above that of the average employee. Training requirements for The Site Supervisors are:

1. The Site Supervisor must be physically able to perform the work at hand.
2. The Site Supervisor must have completed a certified OSHA 40 Hour Hazardous Waste Health and Safety course, have annual 8 Hour Refresher courses (per CFR 1910.120), and have completed at least 8 hours of supervisor training.
3. The Site Supervisor must have completed a certified course in CPR and first aid.
4. The Site Supervisor must be part of a properly maintained and documented Medical Surveillance Program.

Employees

Because of the nature of environmental assessment, workers are required to have special qualifications in order to fulfill this objective. Those include but are not necessarily limited to:

1. All workers are to be physically able to perform the work at hand.
2. All workers are to have completed a certified OSHA 40 Hour Hazardous Waste Health and Safety course. Workers must have 8 Hour Refresher courses annually (per CFR 1910.120).
3. All workers are to be part of a properly maintained and documented Medical Surveillance Program
4. All workers are to make the Site Supervisor aware of any personal deficiencies that he or she may have that may prevent the safe completion of the work.

- Analytical Results

ESN NORTHWEST CHEMISTRY LABORATORY

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lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	12/5/2011	12/5/2011	135	nd	nd
SB-1-12	12/5/2011	12/5/2011	129	nd	nd
SB-2-12	12/5/2011	12/5/2011	141	nd	nd
SB-3-12	12/5/2011	12/5/2011	132	nd	nd
SB-4-11	12/5/2011	12/5/2011	133	nd	nd
SB-5-8	12/5/2011	12/5/2011	126	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

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Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	118
LCS	12/5/2011	12/8/2011	115%	109%	107%	106%	102%	115
LCSD	12/5/2011	12/8/2011	141%	134%	134%	132%	—	109
SB-1-12	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	118
SB-1-12 Duplicate	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	120
SB-2-12	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	117
SB-3-12	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	120
SB-6-4	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	122
SB-7-4	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	116
SB-8-4	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	119
SB-9-8	12/5/2011	12/8/2011	nd	nd	nd	nd	99	118
SB-9-17	12/5/2011	12/8/2011	nd	nd	nd	nd	nd	118
SB-10-10	12/5/2011	12/8/2011	nd	nd	nd	nd	17	120
SB-10-16	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	123
SB-10-16 Duplicate	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	121
SB-11-17	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	119
SB-12-8	12/5/2011	12/9/2011	nd	nd	nd	nd	36	121
SB-12-14	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	121
SB-13-14	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	119
SB-14-14	12/5/2011	12/9/2011	nd	nd	nd	nd	73	125
SB-14-17 1/2	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	118
SB-15-14	12/5/2011	12/9/2011	nd	nd	0.14	0.64	66	122
SB-15-18	12/5/2011	12/9/2011	nd	nd	nd	0.07	nd	122
SB-16-12	12/5/2011	12/9/2011	nd	nd	nd	nd	150	121
SB-16-18	12/5/2011	12/9/2011	nd	nd	nd	nd	15	127
SB-17-14	12/5/2011	12/9/2011	nd	nd	nd	nd	14	124
SB-17-18	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	115
SB-17-18 Duplicate	12/5/2011	12/9/2011	nd	nd	nd	nd	nd	117
Reporting Limits			0.02	0.05	0.05	0.15	10	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%

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Analysis of Gasoline Range Organics, BTEX in Water by Method NWTPH-Gx/8260

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	12/7/2011	nd	nd	nd	nd	nd	124
LCS	12/7/2011	98%	111%	101%	106%	106%	112
LCSD	12/7/2011	103%	106%	104%	108%	--	108
SB-9-W	12/7/2011	5.8	1.7	5.2	2.3	12,000	123
SB-10-W	12/7/2011	2.8	nd	2.6	7.6	4300	121
SB-11-W	12/7/2011	nd	nd	nd	nd	1500	115
Trip Blank	12/7/2011	nd	nd	nd	nd	nd	127
Reporting Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%

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Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260

Analytical Results

8260B Chlorinated, mg/kg	MTH BLK	LCS	LCSD	SB-2-12	
Matrix	Soil	Soil	Soil	Soil	
Date extracted	Reporting	12/05/11	12/05/11	12/05/11	12/05/11
Date analyzed	Limits	12/08/11	12/08/11	12/08/11	12/08/11
Dichlorodifluoromethane	0.05	nd		nd	
Chloromethane	0.05	nd		nd	
Vinyl chloride	0.05	nd		nd	
Chloroethane	0.05	nd		nd	
Trichlorofluoromethane	0.05	nd		nd	
1,1-Dichloroethene	0.05	nd	118%	148%	
Methylene chloride	0.02	nd		nd	
trans-1,2-Dichloroethene	0.05	nd		nd	
1,1-Dichloroethane	0.05	nd		nd	
cis-1,2-Dichloroethene	0.05	nd		nd	
2,2-Dichloropropane	0.05	nd		nd	
Chloroform	0.05	nd		nd	
Bromochloromethane	0.05	nd		nd	
1,1,1-Trichloroethane	0.05	nd		nd	
1,2-Dichloroethane (EDC)	0.05	nd		nd	
1,1-Dichloropropene	0.05	nd		nd	
Carbon tetrachloride	0.05	nd		nd	
Trichloroethene (TCE)	0.02	nd	122%	150%	
1,2-Dichloropropane	0.05	nd		nd	
Bromodichloromethane	0.05	nd		nd	
cis-1,3-Dichloropropene	0.05	nd		nd	
trans-1,3-Dichloropropene	0.05	nd		nd	
1,1,2-Trichloroethane	0.05	nd		nd	
1,3-Dichloropropane	0.05	nd		nd	
Dibromochloromethane	0.05	nd		nd	
Tetrachloroethene (PCE)	0.02	nd		nd	
Chlorobenzene	0.05	nd	110%	134%	
1,1,1,2-Tetrachloroethane	0.05	nd		nd	
1,1,2,2-Tetrachloroethane	0.05	nd		nd	
1,2,3-Trichloropropane	0.05	nd		nd	
2-Chlorotoluene	0.05	nd		nd	
4-Chlorotoluene	0.05	nd		nd	
1,3-Dichlorobenzene	0.05	nd		nd	
1,4-Dichlorobenzene	0.05	nd		nd	
1,2-Dichlorobenzene	0.05	nd		nd	
1,2-Dibromo-3-Chloropropane	0.05	nd		nd	
1,2,4-Trichlorobenzene	0.05	nd		nd	
Hexachloro-1,3-butadiene	0.05	nd		nd	
1,2,3-Trichlorobenzene	0.05	nd		nd	

Surrogate recoveries

Dibromofluoromethane	111%	111%	110%	114%
Toluene-d8	116%	106%	106%	112%
4-Bromofluorobenzene	118%	115%	109%	117%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
 Acceptable Recovery limits: 65% TO 135%
 Acceptable RPD limit: 35%

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Analysis of Polynuclear Aromatic Hydrocarbons in Soil by Method 8270

Analytical Results

		MTH BLK	LCS	SB-2-12	MS	MSD	RPD
Date extracted	Reporting	12/07/11	12/07/11	12/07/11			
Date analyzed	Limits	12/07/11	12/07/11	12/07/11			
Moisture, %	(mg/kg)			13%			
Acenaphthene	0.02	nd	124%	nd	75%	91%	19%
Acenaphthylene	0.02	nd	126%	nd			
Anthracene	0.02	nd	129%	nd			
Benzo(a)anthracene*	0.02	nd	130%	nd			
Benzo(a)pyrene*	0.02	nd	127%	nd			
Benzo(b)fluoranthene*	0.02	nd	104%	nd			
Benzo(ghi)perylene	0.02	nd	96%	nd			
Benzo(k)fluoranthene*	0.02	nd	99%	nd			
Chrysene*	0.02	nd	96%	nd			
Dibenzo(a,h)anthracene†	0.02	nd	96%	nd			
Fluorene	0.02	nd	128%	nd			
Fluoranthene	0.02	nd	132%	nd			
Indeno(1,2,3-cd)pyrene*	0.02	nd	95%	nd			
Naphthalene	0.02	nd	112%	nd			
1-Methylnaphthalene	0.02	nd		nd			
2-Methylnaphthalene	0.02	nd		nd			
Phenanthrene	0.02	nd	109%	nd			
Pyrene	0.02	nd	137%	nd	75%	88%	16%
Total Carcinogens				nd			
Surrogate recoveries:							
2-Fluorobiphenyl		54%	66%	53%	48%	57%	
p-Terphenyl-d 14		67%	78%	70%	60%	74%	

Notes: MS/MSD analysis were performed on the sample of different SDG

Data Qualifiers and Analytical Comments

- * - Carcinogenic Analyte
- nd - not detected at listed reporting limits
- na - not analyzed
- C - coelution with sample peaks
- M - matrix interference
- J - estimated value
- Results reported on dry-weight basis
- Acceptable Recovery limits: 50% TO 150%
- Acceptable RPD limit: 35%

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Analysis of Polychlorinated Biophenyls in Soil by Method 8082

Sample Description		Method Blank	SB-2-12
Date Prepared		12/9/2011	12/9/2011
Date Analyzed	RL	12/9/2011	12/9/2011
	(mg/kg)	(mg/kg)	(mg/kg)
PCB-1016	0.1	nd	nd
PCB-1221	0.1	nd	nd
PCB-1232	0.1	nd	nd
PCB-1242	0.1	nd	nd
PCB-1248	0.1	nd	nd
PCB-1254	0.1	nd	nd
PCB-1260	0.1	nd	nd
Total		0.0	0.0
TCMX		88	91
DCBP		86	78

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (TCMX) AND (DCBP): 65% - 135%

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QA/QC Data - Analysis of Polychlorinated Biphenyls in Soil by Method 8082

Sample Description:							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	(%)
PCB-1016	1.0	0.91	91	1.0	0.94	94	3.2
PCB-1260	1.0	0.88	88	1.0	0.89	89	1.1
TCMX		82			82		
DCBP		86			86		

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
PCB-1016	1.0	0.93	93
PCB-1260	1.0	0.94	94
TCMX		91	
DCBP		86	

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-150%
 ACCEPTABLE RPD IS 50%

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Total Metals in Soil by EPA-6020 Series

Sample Number	Date Analyzed	Lead (Pb) (mg/kg)	Cadmium (Cd) (mg/kg)	Chromium (Cr) (mg/kg)	Arsenic (As) (mg/kg)	Mercury (Hg) (mg/kg)
Method Blank	12/8/2011	nd	nd	nd	nd	nd
SB-2-12	12/8/2011	nd	nd	32	nd	nd
SB-2-12 Duplicate	12/8/2011	nd	nd	36	nd	nd
Reporting Limits		5.0	1.0	5.0	5.0	0.5

"nd" Indicates not detected at listed detection limits.

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QA/QC Data - Total Metals EPA-6020

Sample Number: QC Batch							
	Matrix Spike			Matrix Spike Duplicate			RPD (%)
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
Lead	78	85	109	81	84	104	5.0
Cadmium	78	80	103	81	79	98	5.0
Chromium	78	83	106	81	83	102	3.8
Arsenic	78	90	115	81	90	111	3.8
Mercury	7.8	10.4	133	8.1	10.1	125	6.7

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Lead	100		0
Cadmium	100		0
Chromium	100		0
Arsenic	100		0
Mercury	10		0

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%

ACCEPTABLE RPD IS 35%

M - Matrix Spike recovery failed due to matrix interference.

ESN NORTHWEST CHEMISTRY LABORATORY

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Analysis of Total Lead in Soil by Method 6020

Sample Number	Date Prepared	Date Analyzed	Lead (Pb) (mg/kg)
Method Blank	12/7/2011	12/8/2011	nd
SB-6-4	12/7/2011	12/8/2011	78
SB-6-4 Duplicate	12/7/2011	12/8/2011	78
SB-9-8	12/7/2011	12/8/2011	nd
SB-15-14	12/7/2011	12/8/2011	nd
Reporting Limit			5.0

"nd" Indicates not detected at listed detection limits.

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QA/QC Data - Analysis of Total Metals in Soil by Method 6020

Sample Number: QC Batch

	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
Lead (Pb)	78	85	109	81	84	104	4.96

Laboratory Control Sample

	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Lead (Pb)	100	100	100

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%
 ACCEPTABLE RPD IS 35%



SPECTRA Laboratories

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12/12/2011

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Olympia, WA 98501
Attn: Julie Woods

Project: Aerotech-Calhoon's Service
Client ID: SB-2-12
Sample Matrix: Soil
Date Sampled: 12/01/2011
Date Received: 12/09/2011
Spectra Project: 2011120204
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Hexavalent Chromium	<0.1	mg/Kg	SW846 7196A

SPECTRA LABORATORIES


Steve Hibbs, Laboratory Manager
a5/mkw

Page 1 of 1



SPECTRA Laboratories

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December 12, 2011

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Olympia, WA 98501

Units: mg/kg
Spectra Project: 2011120204
Applies to Spectra #'s 1

QUALITY CONTROL RESULTS

Hexavalent Chromium in Soil/Solid - Method SM 3500 Cr-D/ SW846 7196A

Method Blank

Date Digested: 11/1/2011

Date Analyzed: 12/12/2011

Hexavalent Chromium

Method Blank
< 0.1

Blank Spike (LCS)

Date Digested: 11/1/2011

Date Analyzed: 12/12/2011

	Spike Added	LCS Conc.	LCS %Rec
Hexavalent Chromium	0.1	0.096	96.0

LCS Recovery limits 75-120%

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Date Digested: 12/12/2011

Date Analyzed: 12/12/2011

Sample Spiked: 2011120204-1

	Sample Conc.	Spike Conc.	MS Conc.	MS %Rec	MSD Conc.	MSD %Rec	RPD
Hexavalent Chromium	0.000	0.1	0.085	85.0	0.086	86.0	1.2

Recovery Limits 75-125%

RPD Limit 20

SPECTRA LABORATORIES



Steven G. Hibbs
Laboratory Manager

- Chain of Custody

CHAIN-OF-CUSTODY RECORD

CLIENT: Arch
 ADDRESS: 19000 Interchange Blvd # 101 Seattle
 PHONE: 425-644-719 - 5899 FAX:
 CLIENT PROJECT #: _____ PROJECT MANAGER: MUMM

DATE: 12-1-11 PAGE 1 OF 4
 PROJECT NAME: Carlson's Service Station
 LOCATION: 4540 Pacific Highway Tacoma
 COLLECTOR: MUMM DATE OF COLLECTION: _____

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - DIESEL & OIL	TPH - GASOLINE	VOC 8260	PAH'S 8270	PCB'S 8092	PCRA 8 Metals	PCB 8 Metals	Asbestos-PLM	DRO suite	DRO suite	WQ suite	Total Number of Containers	Laboratory Note Number	NOTES
1. SB-1-2	2		Soil	2 (Gals)															
2. SB-1-4	4																		
3. SB-1-6	4																		
4. SB-1-8	8																		
5. SB-1-10	10					X	X												
6. SB-1-12	12					X	X												
7. SB-2-4	4																		
8. SB-2-6	6																		
9. SB-2-8	8																		
10. SB-2-10	10					X	X												
11. SB-2-12	12					X	X												
12. SB-3-2	2																		
13. SB-3-4	4																		
14. SB-3-6	6																		
15. SB-3-8	8																		
16. SB-3-10	10																		
17. SB-3-12	12					X	X												
18.																			

RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____ DATE/TIME _____

RELINQUISHED BY (Signature) MUMM DATE/TIME 12-1-11 4:45 RECEIVED BY (Signature) _____ DATE/TIME _____

SAMPLE DISPOSAL INSTRUCTIONS: _____

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS _____

CHAIN OF CUSTODY SEALS Y/N/A _____

SEALS INTACT? Y/N/A _____

RECEIVED GOOD COND./COLD _____

NOTES: _____

Turn Around Time: 24 HR 48 HR 5 DAY

CHAIN-OF-CUSTODY RECORD

CLIENT: Protech
 ADDRESS: 19600 Inverholland Blvd, # 101, SeaTac
 PHONE: 425-686-0032 FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: MWM

DATE: 2-1-11 PAGE 2 OF 4
 PROJECT NAME: 4540 Pacific Ave
 LOCATION: Tacoma WA
 COLLECTOR: MWM DATE OF COLLECTION: 2-1-11

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														NOTES	Total Number of Containers	Laboratory Note Number								
					TPH-HCD	TPH-DIESEL & OIL	BTEX	VOC 8260CL	VOC 8260	Semivol 8270	PCB's 8270	CL Pesticides 8082	RCRA 8 Metals	MTCA 8 Metals	Pb	Asbestos-PLM	GRO Sulfate	DRO Sulfate				WFO Sulfate	TCB						
1. SB-4-2	2		Soil	2 Jar's																									
2. SB-4-4	4		"	2 Jar's																									
3. SB-4-6	6		"	"																									
4. SB-4-8	8		"	"																									
5. SB-4-11	11		"	"																									
6. SB-5-2	2		"	"																									
7. SB-5-4	4		"	"																									
8. SB-5-8	8		"	"																									
9. SB-5-11	11		"	"																									
10. SB-6-2	2		"	"																									
11. SB-6-4	4		"	"																									
12. SB-6-6	6		"	"																									
13. SB-6-8	8		"	"																									
14. SB-7-2	2		"	"																									
15. SB-7-4	4		"	"																									
16. SB-7-6	6		"	"																									
17. SB-7-8	8		"	"																									
18. SB-8-4	4		"	"																									
RELINQUISHED BY (Signature) <u>MWM</u>					RECEIVED BY (Signature) _____					DATE/TIME <u>12-1-11 4:45</u>					LABORATORY NOTES:														
RELINQUISHED BY (Signature) _____					RECEIVED BY (Signature) _____					DATE/TIME _____					TOTAL NUMBER OF CONTAINERS _____														
_____					_____					_____					CHAIN OF CUSTODY SEALS Y/N/A _____														
_____					_____					_____					SEALS INTACT? Y/N/A _____														
_____					_____					_____					RECEIVED GOOD COND./COLD _____														
_____					_____					_____					NOTES: _____														

CHAIN-OF-CUSTODY RECORD

CLIENT: Aerotech
 ADDRESS: 19000 Invt. Bldg. Seatac #101
 PHONE: 425-475-0861 - 0032 FAX:
 CLIENT PROJECT #: _____ PROJECT MANAGER: MWM

DATE: 12-1-11 PAGE 4 OF 4
 PROJECT NAME: 4540 Pacific Ave
 LOCATION: Tacoma
 COLLECTOR: MWM DATE OF COLLECTION: 12-1-11

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TRHGD	TPH - DIESEL & OIL	BTEX	VOC 280C	SemVol 270	PCB's 270	GL Pesticides 201	MTCA 5 Metals	TPS	Asbestos-PLM	DRO suite	MO suite	LABORATORY Note Number
1. SB-10-16	10		Soil	1 gal		X	X	X										
2. SB-10-17	X		wash															
3. SB-11-7	2		Soil	1 gal														
4. SB-11-7	4																	
5. SB-11-6	0																	
6. SB-11-8	8																	
7. SB-11-11	11																	
8. SB-11-14	14																	
9. SB-11-17	17																	
10. SB-11-10	X		wash															
11. SB-12-2	2		Soil	1 gal														
12. SB-12-4	4		Soil															
13. SB-12-6	6																	
14. SB-12-8	8																	
15. SB-12-10	10																	
16. SB-12-11	11																	
17. SB-12-14	14																	
18. SB-12-17	17																	

RELINQUISHED BY (Signature): _____ DATE/TIME: _____ RECEIVED BY (Signature): _____ DATE/TIME: _____

RELINQUISHED BY (Signature): _____ DATE/TIME: _____ RECEIVED BY (Signature): _____ DATE/TIME: _____

SAMPLE DISPOSAL INSTRUCTIONS

ESN DISPOSAL @ \$2.00 each Return Pickup

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS: _____

CHAIN OF CUSTODY SEALS Y/N: _____

SEALS INTACT? Y/N: _____

RECEIVED GOOD COND./COLD: _____

NOTES: _____

Turn Around Time: 24 HR 48 HR 5 DAY

CHAIN-OF-CUSTODY RECORD

CLIENT: Arotech
 ADDRESS: 19000 International Blvd #101 Sector
 PHONE: 425-808-3200 FAX: 0032
 CLIENT PROJECT #: _____ PROJECT MANAGER: MWSM

DATE: 12-2-11 PAGE 1 OF 1
 PROJECT NAME: 4540 Paradise Ave
 LOCATION: Tacoma WA
 COLLECTOR: MWSM DATE OF COLLECTION: 12-2-11

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES												NOTES	Total Number of Containers	Laboratory Note Number
					TH-HCHO	TPH-DIESEL & OIL	BTEX	VOC 8260	VOC 8270	PCBs 8270	PCBs 8082	PCBs 8081	MTCA 5 Metals	Asbestos-PLM	DRO Suite	DRO Suite			
1. SB-13-2	2		Soil	1 Jar															
2. SB-13-4	4		'	'															
3. SB-13-6	6		'	'															
4. SB-13-8	8		'	'															
5. SB-13-10	10		'	'															
6. SB-13-14	14		'	'															
7. SB-13-18	18		'	'															
8. SB-14-4	4		'	'															
9. SB-14-8	8		'	'															
10. SB-14-14	14		Soil	2 Jars		X													
11. SB-14-16	16		Soil	2 Jars		X													
12. SB-14-17h	17h		Soil	1 Jar		X													
13. SB-15-4	4		'	'															
14. SB-15-10	10		'	'															
15. SB-15-12	12		'	'															
16. SB-15-14	14		'	'		X													
17. SB-15-16	16		'	'		X													
18. SB-15-18	18		'	'		X													

RELINQUISHED BY (Signature) _____ DATE/TIME _____ RECEIVED BY (Signature) _____ DATE/TIME _____
 RECEIVED BY (Signature) MWJ DATE/TIME 12-2-11 5:15
 RECEIVED BY (Signature) [Signature] DATE/TIME 12-2-11
 SAMPLE DISPOSAL INSTRUCTIONS: ESN DISPOSAL @ \$2.00 each Return Pickup
 LABORATORY NOTES: _____
 TOTAL NUMBER OF CONTAINERS _____
 CHAIN OF CUSTODY SEALS Y/NNA _____
 SEALS INTACT? Y/NNA _____
 RECEIVED GOOD COND./COLD _____
 NOTES: _____
 Turn Around Time: 24 HR 48 HR 5 DAY

CHAIN-OF-CUSTODY RECORD

CLIENT: Aerotech
 ADDRESS: 19600 International Blvd #101 Seattle
 PHONE: 425-686-6032 FAX: _____
 CLIENT PROJECT #: _____ PROJECT MANAGER: MWJM

DATE: 12-2-11 PAGE 2 OF 2
 PROJECT NAME: 4540 Pacific Ave
 LOCATION: Tacoma, WA
 COLLECTOR: Michil Wmja DATE OF COLLECTION: 12-2-11

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES												Total Number of Containers	Laboratory Note Number	NOTES
					TPH - DIESEL & OIL	BTEX	VOC 8260CL	Semivol 8270	PCB's 8270	GL pesticides 8082	MTC&S Metals	PCB's 8082	PCBs 8270	PAH's 8270	PCRA & Metals	Asbestos-PLM			
1. SB-16-6	6		Soil	11g															
2. SB-16-10	10		'	'	X														
3. SB-16-12	12		'	'	X														
4. SB-16-14	14		'	'															
5. SB-16-16	16		'	'	X														
6. SB-16-18	18		'	'	X														
7. SB-17-14	14		'	'	X														
8. SB-17-16	16		'	'	X														
9. SB-17-18	18		'	'	X														
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			
16.																			
17.																			
18.																			

RELINQUISHED BY (Signature) [Signature] **DATE/TIME** 12-2-11 5:15

RECEIVED BY (Signature) [Signature] **DATE/TIME** 12-2-11

RECEIVED BY (Signature) [Signature] **DATE/TIME** 12-2-11

SAMPLE DISPOSAL INSTRUCTIONS
 ESN DISPOSAL @ \$2.00 each Return Pickup

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS _____
 CHAIN OF CUSTODY SEALS Y/N/NA _____
 SEALS INTACT? Y/N/NA _____
 RECEIVED GOOD COND./COLD _____
 NOTES: _____

Turn Around Time: 24 HR 48 HR 5 DAY