FOCUSED SITE ASSESSMENT WORK PLAN

TRUCK CITY SITE PROPERTY

Prepared for
SKAGIT COUNTY
MOUNT VERNON, WASHINGTON
July 8, 2014
Project No. 0714.02.02

MAUL FOSTER ALONGI

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The material and data in this plan were prepared under the supervision and direction of the undersigned.

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ACRONYMS AND ABBREVIATIONS

AEG	Associated Environmental Group, LLC
AGI	Applied Geotechnology, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
COI	chemical of interest
the County	Skagit County, Washington
CSM	conceptual site model
CUL	cleanup level
DRO	diesel-range organics
Ecology	Washington State Department of Ecology
ESA	environmental site assessment
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
MTC	Materials Testing & Consulting, Inc.
MTCA	Model Toxics Control Act
NWTPH	Northwest Total Petroleum Hydrocarbon
PAH	polycyclic aromatic hydrocarbon
the Property	Truck City parcel and four adjoining undeveloped parcels to the south in Mt. Vernon, Washington
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
SAP	sampling and analysis plan
TPH	total petroleum hydrocarbons
TPH-HCID	total petroleum hydrocarbon identification
Truck City parcel	Skagit County parcel P29546
ug/L	micrograms per liter
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

1 INTRODUCTION

Maul Foster & Alongi, Inc. (MFA) has prepared this focused site assessment work plan for Skagit County, Washington (the County) to further characterize the nature and extent of environmental impacts at the proposed county jail property in Mount Vernon, Washington (Figure 1). The proposed county jail property comprises the following five parcels (collectively referred to in this plan as the Property): Skagit County parcels P29546 (Truck City parcel) and four adjoining undeveloped parcels to the south P119262, P119263, P119265, and P119267 (Figure 1). The parcels are owned by various parties, and the County is in negotiation to acquire them. The Truck City parcel is commercially occupied by a gas station, truck stop and truck wash, restaurant, and small retail store. The remaining parcels on the Property are undeveloped rural grassland.

The Truck City parcel was developed by 1953 and operated as a truck stop and restaurant until the truck stop burned in 1976. The parcel was redeveloped to its current configuration in 1978, and operations have not changed since then.

Multiple subsurface investigations have been conducted at the Truck City parcel: Applied Geotechnology, Inc. (AGI) in 1989, Associated Environmental Group, LLC (AEG) in 2005, and Materials Testing & Consulting, Inc. (MTC) in February and March 2014. The Washington State Department of Ecology (Ecology) completed a soil interim remedial action in 1993. Subsurface conditions at the Property (soil and groundwater media) have been documented as adversely impacted by total petroleum hydrocarbons (TPH) in the gasoline and diesel ranges; associated petroleum fuel volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and total xylenes (BTEX); and arsenic. Elevated concentrations of these chemicals of interest (COIs), i.e., concentrations above Ecology Model Toxics Control Act (MTCA) Method A cleanup levels (CULs) for unrestricted land uses, have been documented primarily at the central and western areas of the Truck City parcel.

1.1 Regulatory Framework

This work plan has been developed to further assess the nature and extent of contamination at the Property. The focused site assessment will be conducted in general accordance with guidance put forth in MTCA (Washington Administrative Code 173-340). This work plan will support development of a prospective purchaser consent decree.

1.2 Purpose and Objectives

The purpose of the focused site assessment is to generate data to further characterize the nature and extent of contaminants at the Truck City parcel of the Property to allow for risk screening and to support an evaluation of potential cleanup actions. Additionally, an assessment of potential migration of COIs to adjoining and inferred downgradient areas to the west and southwest in the right-of-way (ROW) of Old Highway 99 South (adjacent west of the Property) will be completed.

Adjoining parcels to the south of the Truck City parcel will also be assessed. The activities outlined in this work plan are also intended to support the following project objectives:

- Development of a conceptual site model (CSM) and data quality objectives for site characterization
- Further characterization of the nature and extent of hazardous substances in environmental media above MTCA CULs and potential sources of contamination
- Evaluation of potential risk to current and reasonably likely future human receptors on the Property
- Evaluation of potential cleanup options for impacted media at the Property

1.3 Work Plan Organization

This document is organized as follows:

- ***Section 2*** discusses background information and the physical setting of the Property.
- ***Section 3*** describes the preliminary CSM.
- ***Section 4*** discusses the site assessment scope of work.
- ***Section 5*** describes the project management plan.

The following appendices are attached:

- Appendix A—sampling and analysis plan (SAP). The SAP consists of a field sampling plan and a quality assurance project plan.
- Appendix B—analytical results from the 1989 AGI Hydrocarbon Contamination Assessment; 1993 Ecology Interim Action Cleanup; 2005 AEG investigation; and 2014 MTC investigations.

Standard field operating procedures for collecting soil and reconnaissance groundwater samples, scheduling analyses, cleaning equipment, and managing waste are described in the SAP (Appendix A). If procedures differ from the SAP, the deviations will be documented in the subsequent site characterization report. The SAP addresses practices related to the handling and disposal of investigation-derived waste. The SAP's quality assurance project plan component defines the laboratory and field analytical quality procedures and the quality assurance and quality control requirements for sampling and analysis.

2 BACKGROUND AND PHYSICAL SETTING

The background and physical setting information summarized below for the Property has been obtained from a site visit, interviews with County staff, and reports from previous investigations.

2.1 Site Description

The Property is located in section 32, township 34 north, range 4 east, of the Willamette Meridian. The Property comprises five rectangular parcels: Truck City parcel, an 8.01-acre tax parcel (parcel number P29546); two 1.0-acre tax parcels (parcel numbers P119262 and P119263); a 1.75-acre tax parcel (parcel number P119265); and a 1.88-acre tax parcel (parcel number P119267) (see Figure 1). The Property's surface topography is generally flat. Access to the Property is from Old Highway 99 South, adjacent to the west of the Property.

The Property is currently zoned "Commercial/Limited Industrial District" (C-L). The Truck City parcel contains six buildings associated with the commercial operations of the gas station, truck stop and truck wash, restaurant, and retail store (Figure 2). Five of the buildings—the contractor's staging shop, office space, truck wash building, retail store, and restaurant/café—were constructed in 1978. The building currently used for storage was constructed in 1957.

The gas station pump islands, fueling facilities, and truck scale (weigh station) are located in the western area of the Truck City parcel. The diesel pump islands and the Truck City parcel's current operational underground storage tanks (USTs) are located in the central area of the parcel, adjacent south of the truck wash building. Long-term truck parking is designated in the east area of the parcel.

Fifteen USTs were formerly identified at this parcel. Historical UST nests include the northern UST and southern UST nests, which had housed four USTs and three USTs, respectively (Figure 2). These USTs were decommissioned and removed in 1993 during Ecology's interim remedial action. The USTs had a capacity of 5,000 gallons each. The current and only operational UST nest at this facility is the eastern UST nest, which houses three 5,000-gallon gasoline USTs and one 15,000-gallon diesel UST. This UST system was upgraded in 1998. Two 500-gallon USTs, located between the diesel pump islands and the gasoline pump islands, and a former septic tank, used as a waste oil tank, were also decommissioned and removed during the interim removal action (Figure 2). Additionally, a UST, of unknown size and presumably a former heating oil tank, was located beneath the retail store footprint. This UST reportedly was decommissioned in place.

The Property lies in the floodplain of the Skagit River. Topography of the immediate vicinity slopes slightly to the west toward Britt Slough and the Skagit River, located approximately 0.5 and 1.5 miles west, respectively, of the Property. Topography to the east of the Property, within approximately 0.75 mile, rises toward the west flank of Little Mountain.

2.2 Site History

Archival records indicate that the vicinity once was generally rural farmland with local residences. The Property was developed by 1953 and operated as a truck stop and restaurant until the truck stop burned in 1976. The parcel was redeveloped to its current configuration in 1978, and operations have not changed since then. Several subsurface investigations were conducted at the Property between 1989 and 2014. Ecology completed a soil remedial cleanup action in 1993.

AGI conducted a hydrocarbon assessment of the Property in 1989. AGI advanced eight borings, to approximately 15 to 20 feet below ground surface (bgs), adjacent to the northern, southern, and eastern UST nests; gasoline and diesel pump islands; and truck wash area. Six of the borings were completed as 2-inch diameter monitoring wells where well development and groundwater sampling activities were completed. AGI also established an arbitrary benchmark to use as an arbitrary datum for assessment of groundwater flow direction. AGI concluded that soil and groundwater gasoline and diesel petroleum hydrocarbon contamination was present around the northern and southern UST nests, and the potential exists for off-site migration of these COIs. Detected concentrations of gasoline- and diesel-range TPH and associated petroleum fuel VOCs, specifically benzene, toluene, and total xylenes, are above Ecology's current MTCA Method A CULs. Groundwater flow direction at the Property was assessed to be west to southwesterly (see AGI's 1989 report in Appendix B).

Ecology conducted an interim action cleanup in 1993. Seven USTs, 5,000 gallons in capacity each and located in the northern and southern UST nests, were decommissioned and removed along with associated product lines. Two additional 500-gallon-capacity USTs; as well as a septic tank full of waste oil, were encountered during the contaminated-soil-excavation activities and were also removed. Ecology reported that, because the septic system had been used for waste oil disposal and was connected to the parcel's storm drain system, the septic tank may be one of the major contaminant sources at this parcel (see Ecology's 1993 report in Appendix B). The interim action removed 6,244 cubic yards of contaminated soil and 89,991 gallons of contaminated water (see Appendix B). The impacted soil was placed on an on-site treatment pad in the northeastern area of the Property for aeration and biodegradation. Final confirmation samples from the stockpiled soil showed detections of gasoline-range TPH below CULs, with residual diesel-range TPH concentrations above CULs. The USTs were reported to be in good condition, with no holes. However, impacted soil was apparent in the excavation pit (sidewalls and base of the excavation). A petroleum sheen was also observed in groundwater that had seeped into the pit. Ecology also reported the presence of free product in the form of fuel seeps from the excavation sidewalls (see Appendix B). Monitoring wells installed in the excavation area by AGI were destroyed during excavation activities. Ecology concluded that groundwater contamination at the Property likely would be an ongoing issue.

AEG conducted a site characterization of the Property in 2005. Eleven borings were advanced via a direct-push-probe drilling rig to depths ranging from approximately 5 to 8 feet bgs. The borings were placed in the perimeters north, east, and south of the pump islands and UST nests. Shallow soil and groundwater samples were collected at all borings. Analytical results for all samples indicated no detectable presence of petroleum hydrocarbons (see AEG's 2005 report in Appendix B).

MTC conducted an initial Phase II environmental site assessment (ESA) in February 2014 and a supplemental ESA in March 2014. Eleven borings were advanced, via a direct-push-probe drilling rig, to a maximum depth of 15 feet bgs. The borings were placed at locales in and outside of the former excavation remediation area. Soil samples were collected from all borings for laboratory analyses. One groundwater sample was collected from a boring placed south of the former UST nests in the western area of the Truck City parcel. MTC assessed the condition of several remaining monitoring wells at the Property and concluded that most wells were inaccessible or unusable (see MTC's February 2014 report in Appendix B). A secondary groundwater sample was collected from an existing well located north of the truck scale. Three surficial soil samples were also collected at

adjoining parcels to the south. MTC concluded that localized residual petroleum-contaminated soil, below MTCA Method A CULs, remained in the remediated area. However, impacted soil, at concentrations above MTCA CULs for gasoline- and diesel-range TPH, were documented adjacent to the truck scale (see MTC's March 2014 report in Appendix B). Laboratory analytical results for the two groundwater samples indicated no detectable TPH in the gasoline and diesel ranges or associated VOCs, specifically BTEX.

2.3 Geology and Hydrogeology

The Property and vicinity have been mapped as recent alluvium and artificial fill. Alluvium deposits consist of fluvial sand, silt, and gravel with minor lacustrine deposits. AGI reported the presence of fill to approximately 3.5 feet bgs, underlain by a floodplain sequence ranging from silty sand, silt, organic clay, and peat to a depth of approximately 8.5 feet bgs. Sand, ranging from fine- to coarse-grained, was logged from approximately 8.5 to 18 feet bgs (see AGI's report in Appendix B).

Groundwater was encountered at a depth ranging from approximately 5.5 to 7.5 feet bgs during subsurface investigations conducted by AGI, AEG, and MTC. Ecology reported that groundwater seepage was observed at approximately 6.5 feet bgs during excavation activities (see Appendix B).

The direction of shallow groundwater flow can be highly variable because of the presence of varying depth to shallow unconfined groundwater at the Property and in the vicinity. Therefore, no definite statement can be made regarding the direction of shallow groundwater flow without groundwater elevations from multiple, established monitoring wells. However, based on surface topography and regional discharge points, the direction of local and regional groundwater flow in the area appears to be west-southwest, toward Britt Slough and the Skagit River. At its closest point, Britt Slough is located approximately 0.5 mile west of the Property. Additionally, AGI reported that groundwater flow direction at the Property, based on water levels measured from installed monitoring wells, ranged from west to southwesterly. Groundwater elevations reported by AGI were based on an arbitrary established datum.

3 PRELIMINARY CONCEPTUAL SITE MODEL

A CSM describes potential chemical sources, release mechanisms, environmental transport processes, exposure routes, and receptors. The primary purpose of the CSM is to describe pathways by which human and ecological receptors could be exposed to site-related chemicals. A complete exposure pathway consists of four necessary elements: (1) a source and mechanism of chemical release to the environment, (2) an environmental transport medium for a released chemical, (3) a point of potential contact with the impacted medium (referred to as the exposure point), and (4) an exposure route (e.g., soil ingestion) at the exposure point. The potential release mechanisms and pathways are described below.

3.1 Potential Sources and Release Mechanisms

Based on documented historical uses, prior site characterization investigations, Ecology observations of site conditions and activities, and anecdotal evidence obtained during site reconnaissance activities and stakeholder interviews, it appears that the following site-related historical activities and sources may have contributed to contamination of environmental media at the Property:

- Fuel operations involving gasoline and diesel pump islands and associated product lines
- Operation and use of up to 15 USTs, containing gasoline, diesel, and heating oil
- Operation of a truck scale and former associated automobile services

Current and historical operation of the truck wash area may also contribute to adverse impact at the Property. Similarly, ongoing operation of the current fueling and UST system may also pose potential environmental concerns to the Property.

These historical and current operations and potential associated release mechanisms are likely to have resulted in contaminant releases to surface and subsurface media (soil and groundwater).

3.2 Fate and Transport Processes

Contaminant releases to the surface or subsurface have the potential to migrate laterally and vertically to the water table, resulting in impacts to subsurface soil and dissolved-phase impacts to shallow groundwater (if present) beneath the Property. VOCs associated with petroleum hydrocarbons present in the surface and subsurface may also partition to the vapor phase in the subsurface soil media and, after migration, via the dissolved phase of groundwater contamination.

Contaminant vapors partitioned from contaminated soil and groundwater could result in impacts to indoor or outdoor air quality.

3.3 Potential Exposure Scenarios

Depending on the extent of impacts at the Property, the following are potentially current or future exposure pathways:

- Incidental ingestion of and dermal contact with chemicals in surface and/or subsurface soil and groundwater
- Inhalation of fugitive dusts generated from surface and/or subsurface soil
- Inhalation of outdoor air vapors that have emanated from soil or groundwater
- Inhalation of indoor air vapors from groundwater and/or subsurface soil due to vapor intrusion into the buildings

These potential exposure pathways will be evaluated further upon completion of the site characterization.

3.4 Potential Receptors

The following current and future human and ecological receptors may potentially be exposed to chemicals originating from the Property:

- Occupational workers on site
- Construction and trench workers
- Off-site residents

4 SCOPE OF WORK

This section describes the objectives and scope of work for the site assessment. The field investigations will be conducted in general accordance with the methods and protocol described in the SAP (see Appendix A).

4.1 Site Assessment Objectives

Site assessment objectives as they relate to hazardous substances potentially present at the Property include the following:

- Identification and characterization of hazardous-substance source areas at the Property. Source areas will be characterized through a review of historical information and the results of previously conducted investigations and by the collection of environmental samples for observation, field screening, and chemical analyses.
- Evaluation of contaminant migration pathways at the Property. Key elements relevant to contaminant migration include, but are not limited to, preferential migration pathways and volatilization of TPH and VOCs.
- Further determination of the nature, extent, and distribution of hazardous substances in environmental media at the Property.
- Identification of current and reasonably likely future human and ecological receptors that may be exposed to hazardous substances at the Property. Relevant contaminant migration pathways and the nature, extent, and distribution of hazardous substances in affected media will be considered in this evaluation.
- Evaluation, via risk screening, of the risk to human health and the environment from releases of hazardous substances at the Property.
- Generation or use of data of sufficient quality for site characterization and risk screening at the Property.

- Development of the information necessary to evaluate and design source control and remedial action measures to address contaminant releases from the Property, if deemed necessary.

The proposed site assessment scope of work is intended to meet these objectives as they relate to the COIs identified in the next section.

4.2 Environmental Conditions

Elevated concentrations of gasoline-range (470 to 715 milligrams per kilogram [mg/kg]) and diesel-range (13,000 mg/kg) TPH, at concentrations above the Ecology MTCA Method A CULs, were identified in soil collected by AGI from borings advanced adjacent to the northern and southern UST nests and former gasoline pump islands in the western area of the Truck City parcel. Soil samples were collected from 9 to 12.5 feet bgs. Groundwater samples, collected from the same borings, showed elevated VOCs. Elevated concentrations of benzene (870 to 6,800 micrograms per liter [ug/L]), toluene (11,000 ug/L), and total xylenes (10,000 ug/L) were reported (AGI, 1989).

Ecology also reported elevated concentrations of these COIs during soil excavation/remedial action activities: gasoline-range TPH (497 to 10,132 mg/kg), benzene (1,412 to 19,124 mg/kg), toluene (1,599 to 20,631 mg/kg), ethylbenzene (2,340 to 19,221 mg/kg), and total xylenes (19,187 to 112,879 mg/kg) were exhibited in soil samples collected from the excavation pit (see Ecology's 1993 report in Appendix B). Laboratory analytical results of groundwater samples collected from the excavation pit also exhibited elevated gasoline-range TPH and BTEX. The impacted soil and groundwater media are associated with historical features at the Property.

Additional historical features at the Property that are potential source areas have not been investigated. Proposed investigation locations are near potential historical sources of impacts. The potential historical and current sources of impacts on the Property include:

- Area to the west (inferred downgradient), adjacent to the current eastern UST nest
- Areas west and southwest, adjacent to the former northern and southern UST nests
- Areas west and southwest, adjacent to the truck scale and former automobile services/former gasoline pump islands
- Areas west and southwest, adjacent to the current gasoline and diesel pump islands and truck wash
- Areas west and southwest, adjacent to the former septic tank system
- Eastern area of the parcel

These potential sources of impacts are summarized in the attached table, along with the corresponding COIs that may be associated with each potential source, and will be evaluated during the site assessment. Figure 3 presents proposed boring locations at the Truck City parcel. Figure 4

presents proposed borings at adjoining southern parcels and off-site areas. Actual locations may be adjusted based on field conditions.

4.2.1 Utility Locate

. Prior to subsurface exploration, a public utility locate will be requested and a private utility locate contractor will attempt to locate on-site utilities, including the orientation of any water and sewer mains or side sewer lines at the Property. Sampling locations may be adjusted based on information obtained from the utility locates.

4.2.2 Traffic Control

A traffic-control plan will be submitted to the City of Mount Vernon prior to subsurface exploration. A private traffic-control contractor will provide coordination and traffic control using flaggers and traffic signs throughout investigative work conducted at off-site locales adjacent west and south of the Property along the ROW of Old Highway 99 South.

4.2.3 Soil

MFA will conduct an investigation of the lateral and vertical extent of COI impacts to soil within the property boundaries and in a limited off-site area to the west-southwest along the Old Highway 99 South ROW. The investigation will be in general accordance with the methodology outlined in the SAP. Soil cores will be advanced from ground surface to the boring completion depth.

Soil samples will be screened using a photoionization meter or an organic vapor monitor. Visual and olfactory observations will also be recorded. The attached table summarizes the anticipated range of sampling depths. If there is field evidence of impacts, the sampling depths may be altered. Soil samples will be collected from the vadose zone and at or near the bottom of the boreholes for assessment of the vertical extent of potential impact.

Selected soil samples from borings TC-1 through TC-6 (which will be completed as established 2-inch diameter monitoring wells in the western area of the Property) will be collected to further evaluate the extent of historical source impacts to the subsurface. These samples will be analyzed for the following COIs (refer to the attached table):

- Diesel-range TPH and residual-range TPH by Northwest Total Petroleum Hydrocarbon (NWTPH)-Dx Extended Method
- Gasoline-range TPH by NWTPH-Gx
- VOCs associated with petroleum fuel, specifically BTEX) by U.S. Environmental Protection Agency (USEPA) 8021B
- VOCs associated with former automobile services by USEPA 8260C

- Resource Conservation and Recovery Act (RCRA) metals (including arsenic, selenium, barium, cadmium, chromium, silver, mercury, and lead) associated with former automobile services by USEPA 6020 series
- Polycyclic aromatic hydrocarbons (PAHs), associated with former automobile services, by USEPA 8270

Soil samples from borings TCBH-1 through TCBH-6 (which will not be completed as monitoring wells) will be collected at locales of potential environmental concern. These locales were not investigated previously. These samples will be analyzed for the following COIs:

- Diesel-range TPH and residual-range TPH by NWTPH-Dx Extended
- Gasoline-range TPH by NWTPH-Gx
- VOCs associated with petroleum fuel, specifically BTEX, by USEPA 8021B

Note: if indications of soil and/or groundwater impact is present at boring TCBH-2, potentially at levels above MTCA CULs, MFA will advance a boring (TCBH-15) directly west and offsite of the Truck Stop parcel (inferred downgradient) of TCBH-2 (refer to Figure 4).

Soil samples from borings TCBH-7 through TCBH-9 (which will not be completed as monitoring wells) will be advanced off site in the Old Highway 99 South ROW. These samples will be analyzed for the following COIs:

- Diesel-range TPH and residual-range TPH by NWTPH-Dx Extended
- Gasoline-range TPH by NWTPH-Gx
- VOCs associated with petroleum fuel, specifically BTEX, by USEPA 8021B

Soil samples from borings TCBH-10 through TCBH-14 (which will not be completed as monitoring wells) will be advanced at the southern parcels adjacent to the Truck City parcel. These samples will be analyzed for the following COIs:

- petroleum hydrocarbon identification (TPH-HCID) by NWTPH-HCID
- VOCs associated with petroleum fuel, specifically BTEX, by USEPA 8021B

Follow-up analyses will depend on the type of petroleum hydrocarbons identified at these borings and may include the following analytes (Table 1 in the SAP):

- Gasoline-range TPH by NWTPH-Gx
- Diesel- and residual oil-range TPH by NWTPH-Dx Extended

Additionally, laboratory analyses for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) may be considered at areas of the site where nonaqueous phase liquids (NAPL) are present. At these locations, TPH fractions are needed in accordance with

Ecology MTCA Cleanup Regulations. For Method B and Method C CULs, the fractionated approach must be used to collect and analyze the presence and concentration of TPH to obtain analytical results for the hydrocarbon phase partitioning. The EPH and VPH analyses provide a toxicological-based approach to characterize and evaluate risks posed by petroleum impacts.

Soil analytical results will be compared to MTCA Method A CULs for unrestricted land use. In the event that chemicals detected are not included in the Method A list, or the Property is determined to be complex (e.g., multiple chemicals of potential concern), then MTCA Method B soil CULs for unrestricted land use may be used.

4.2.4 Groundwater

MFA will collect reconnaissance groundwater samples from borings TCBH-1 through TCBH-11 to evaluate the potential presence of COIs. Groundwater sampling will be conducted using the methods and protocol outlined in the SAP (Appendix A). Laboratory analyses for groundwater samples from these borings will be similar to the analyses designated for soil:

- Diesel-range and residual-range TPH by NWTPH-Dx Extended
- Gasoline-range TPH by NWTPH-Gx
- TPH-HCID by NWTPH-HCID (at borings TCBH-6, TCBH-10, and TCBH-11)
- VOCs associated with petroleum fuel, specifically BTEX, by USEPA 8021B

Follow-up analyses may depend on the type of petroleum hydrocarbons identified and may be similar to the analysis scheduled for soil. Similarly, VPH and EPH laboratory analyses will be considered at areas of the site where NAPL are present.

At borings that will be completed as established monitoring wells, TC-1 through TC-6, MFA will collect groundwater samples a minimum of 24 hours after completion of monitoring well development.

Selected groundwater samples from areas with confirmed historical petroleum fuel releases, including areas in the vicinity of borings TC-1, TC-3, and TC-5, will be analyzed for COIs outlined in Ecology MTCA Cleanup Table 830-1, Required Testing for Petroleum Releases:

- Table 830-1, Required Testing for Petroleum Releases, Gasoline Range Organics (GRO) suite, which includes gasoline-range TPH, BTEX, hexane, dibromoethane, 1-2 ethylene dibromide, dichloroethane, 1-2 ethylene dichloride, methyl tertiary-butyl ether, total lead, naphthalenes, and volatile petroleum hydrocarbons
- Table 830-1, Required Testing for Petroleum Releases, Diesel Range Organics (DRO) suite, which includes diesel- and residual oil-range TPH, BTEX, carcinogenic PAHs, naphthalenes, and extractable petroleum hydrocarbons
- RCRA metals (including arsenic, selenium, barium, cadmium, chromium, silver, mercury, and lead) by USEPA 6020 series

To evaluate the potential biodegradation process, selected groundwater samples from TC-1 and TC-3 will also be analyzed for the following geochemical parameters to prescreen for the presence of electron acceptors:

- Nitrate by USEPA 353.2
- Manganese by USEPA 6020A
- Ferrous iron by USEPA ApplEnvMic7-87-1536
- Sulfate by ASTM D516-02
- Methane by RSK 175

Groundwater analytical results will be compared to MTCA Method A groundwater CULs. In the event that chemicals detected are not included in the Method A list, or the Property is determined to be complex (e.g., multiple chemicals of potential concern), then MTCA Method B groundwater CULs for unrestricted land use may be used.

4.3 Risk Screening

MFA will assess the potential risk that the COIs pose to human health and to ecological receptors. The risk screening will be completed in accordance with MTCA guidance for the potentially complete pathways identified in the preliminary CSM.

5 PROJECT MANAGEMENT PLAN

The following describes the roles of key personnel on the project.

Mr. Marc Estvold will be the project director for the County. Mr. Estvold will be kept informed of the status of the project and of project activities. He will be provided with data, reports, and other project-related documents prepared by MFA before their submittal to Ecology. Mr. Estvold will be responsible for communicating with the property owner, will participate in discussions with Ecology, and will coordinate on-site activities with the property owners and MFA.

Mr. Jim Darling will be the principal planner and will be responsible for managing the overall site assessment and for communication of project status to the project director and the Ecology project manager. Mr. Darling will review data, reports, and other project-related documents prepared by MFA before their submittal to the County or to Ecology.

Mr. Justin Clary will be the principal engineer. Mr. Clary will review data, reports, and other project-related documents prepared by MFA before their submittal to the County or to Ecology. Mr. Clary will also assist project staff with technical issues.

Ms. Yen-Vy Van will be the project manager for MFA. Ms. Van will be responsible for technical assistance to assigned staff; assist with resolution of technical or logistical challenges that may be

encountered during the investigation; assist with field activities and write and review reports; and participate in discussions with Ecology at the request of the County. She will also coordinate with project task leaders, communicate with Mr. Estvold, and be responsible for allocating the resources necessary to ensure that the objectives of the site assessment are met.

Mr. Kyle Roslund will assist with field activities and will write and review reports.

Ms. Madi Novak will perform the baseline human health and ecological risk screening and will be involved with overall data management. Ms. Novak will participate in discussions with Ecology at the request of the County.

5.1 Schedule

The following is the anticipated site assessment schedule:

Task	Start Date	Completion Time Frame (calendar weeks)
Complete work plan	Week of June 23, 2014.	1.5
Ecology work plan/SAP review	Week of July 7, 2014.	1
Fieldwork	After receipt of Ecology's comments and approval of the work plan. Time frame includes fieldwork and laboratory analyses and appropriate follow-up analysis. Tentatively scheduled for week of July 14, 2014.	6
Draft site assessment report	After completion of fieldwork and receipt of final data packages.	3
Final site assessment report	Receipt of Ecology comments on draft site assessment report.	2

The time frames for the work to be performed may change, based on changes to the scope of work and issues involving site access, and subject to subcontractor availability and Ecology approval.

LIMITATIONS

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

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

The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not, therefore, be construed as a guarantee of the absence of such materials on the site.

Environmental conditions that cannot be identified by visual observation may exist at the site. Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminants inside buildings, or contaminant concentrations that are not of current environmental concern may not be reflected in this document.

TABLE

Table
Potential Source Areas and Chemicals of Interest
Truck City Site Property
Mt. Vernon, Washington

Potential Source Area[a]	Sample Identification	Sample Type	Soil Sample Collection Depth (feet bgs)	Number of Samples (Soil)	Number of Samples (GW)	Chemicals of Interest in Soil[b,c,d]	Chemicals of Interest in GW[c,d,e]
West side of site: downgradient of former gasoline pump island, two former UST nests, and current diesel pump island	TC-1	Monitoring Well	2 to 15	2	1	TPH-Gx/TPH-Dx Ext/VOC/PAH	Table 830-1 GRO, Table 830-1 DRO, VOC, nitrate, manganese, iron II, sulfate, and methane
West side of site: adjacent to and downgradient of former gasoline pump island and two former UST nests	TC-2	Monitoring Well	2 to 15	2	1	TPH-Gx/TPH-Dx Ext/BTEX/RCRA 8 metals	TPH-Gx/TPH-Dx Ext/BTEX/RCRA 8 metals
West side of site: former gasoline pump island, former auto repair services, and two former UST nests	TC-3	Monitoring Well	2 to 15	2	1	TPH-Gx/TPH-Dx Ext/VOC/RCRA 8 metals	Table 830-1 GRO, VOC, RCRA 8 metals, nitrate, manganese, iron II, sulfate, and methane
West side of site: former gasoline pump island, former auto repair services, and two former UST nests	TC-4	Monitoring Well	2 to 15	2	1	TPH-Gx/TPH-Dx Ext/BTEX/PAH	TPH-Gx/TPH-Dx Ext/BTEX/PAH
Central-west side of site: downgradient of current diesel pump island and adjacent to former septic tank system	TC-5	Monitoring Well	2 to 15	2	1	TPH-Dx Ext/ BTEX	Table 830-1 DRO
Adjacent to western property boundary of site, downgradient locale of former USTs and pump islands	TC-6	Monitoring Well	2 to 15	2	1	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX

Table
Potential Source Areas and Chemicals of Interest
Truck City Site Property
Mt. Vernon, Washington

Potential Source Area[a]	Sample Identification	Sample Type	Soil Sample Collection Depth (feet bgs)	Number of Samples (Soil)	Number of Samples (GW)	Chemicals of Interest in Soil[b,c,d]	Chemicals of Interest in GW[c,d,e]
West side of site: former gasoline pump island and former southern UST nest	TCBH-1	Boring	2 to 16	2	1	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX
West side of site: former gasoline pump island and former northern UST nest	TCBH-2	Boring	2 to 16	2	1	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX
West side of site: former gasoline pump island and former northern UST nest	TCBH-3	Boring	2 to 16	2	1	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX
Central-west side of site: adjacent downgradient of current gasoline and diesel UST nest	TCBH-4	Boring	2 to 16	2	1	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX
Central-west side of site: adjacent downgradient of truck-washing area	TCBH-5	Boring	2 to 16	2	1	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX/PAH
East side of site, upgradient of fueling operations	TCBH-6	Boring	2 to 16	1	1	TPH-HCID/BTEX	TPH-HCID/BTEX
Off-property, downgradient west and southwest of site (west side of Old Hwy 99 South Right-of-Way)	TCBH-7 through TCBH-9	Boring	2 to 16	6	3	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX
Adjacent south of Truck City parcel	TCBH-10 and TCBH-11	Boring	2 to 16	4	2	TPH-HCID/BTEX	TPH-HCID/BTEX
Adjoining parcels south of Truck City parcel	TCBH-12 through TCBH-14	Boring	2 to 12	3		TPH-HCID/BTEX	

Table
Potential Source Areas and Chemicals of Interest
Truck City Site Property
Mt. Vernon, Washington

Potential Source Area[a]	Sample Identification	Sample Type	Soil Sample Collection Depth (feet bgs)	Number of Samples (Soil)	Number of Samples (GW)	Chemicals of Interest in Soil[b,c,d]	Chemicals of Interest in GW[c,d,e]
Off-property, downgradient west of site (west side of Old Hwy 99 South Right-of-Way), if TCBH-2 is impacted.	TCBH-15	Boring	2 to 16	6	3	TPH-Gx/TPH-Dx Ext/BTEX	TPH-Gx/TPH-Dx Ext/BTEX

NOTES:
bgs = below ground surface.
BTEX = benzene, toluene, ethylbenzene, and xylenes.
cPAH = polycyclic aromatic hydrocarbons, analysis by USEPA Method 8270C selective ion monitoring.
DRO = diesel-range organics.
EDB =1,2-dibromoethane.
EDC = 1,2-dichloroethane.
EPH = extractable petroleum hydrocarbons.
GRO = gasoline-range petroleum hydrocarbons.
HCID = hydrocarbon identification.
HVOC = halogenated volatile organic compounds.
MTBE = methyl-tert-butylether.
PCB = polychlorinated biphenyls, analysis by USEPA Method 8082.
RRO = residual-range organics.
SVOC = semivolatile organic compound.
TPH-D = diesel-range and residual-range petroleum hydrocarbons, analysis by Northwest Method NWTPH-Dx.
Table 830-GRO includes TPH-Gx, BTEX, hexane, EDB, EDC, MTBE, naphthalenes, and VPH.
Table 830-DRO includes TPH-Dx Extended, BTEX, naphthalenes, cPAH, and EPH.
TPH-Dx Ext = total petroleum hydrocarbons—diesel- and lube-oil range.
TPH-HCID = total petroleum hydrocarbon identification.
USEPA = U.S. Environmental Protection Agency.
UST = underground storage tank.
VOC = volatile organic compound.
VPH = volatile petroleum hydrocarbon.

[a]Potential sources and source area locations are approximated from previous investigation reports and anecdotal evidence.

[b]Soil samples to be analyzed for GRO and VOCs, including EDB, EDC, and MTBE, will be collected using the USEPA 5035 method.

[c]Followup analyses for GRO detections may include VOCs (including n-hexane, BTEX, EDB, MTBE, EDC, and naphthalene), cPAHs, lead, and VPH.

[d]Followup analyses for HCID analysis may include GRO, DRO, and/or RRO, total metals, VOCs, SVOCs, cPAHs; VPH; EPH; and/or PCBs.

[e]Analysis for specified geochemical parameters (nitrate, manganese, iron II, sulfate, and methane) to be conducted on samples from selected borings.

FIGURES

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County.

Aerial Imagery Date: 1999

Legend

- Site
- Parcels

Figure 1
Site Parcels

Truck City Site
Mount Vernon, Washington

0 100 200
Feet

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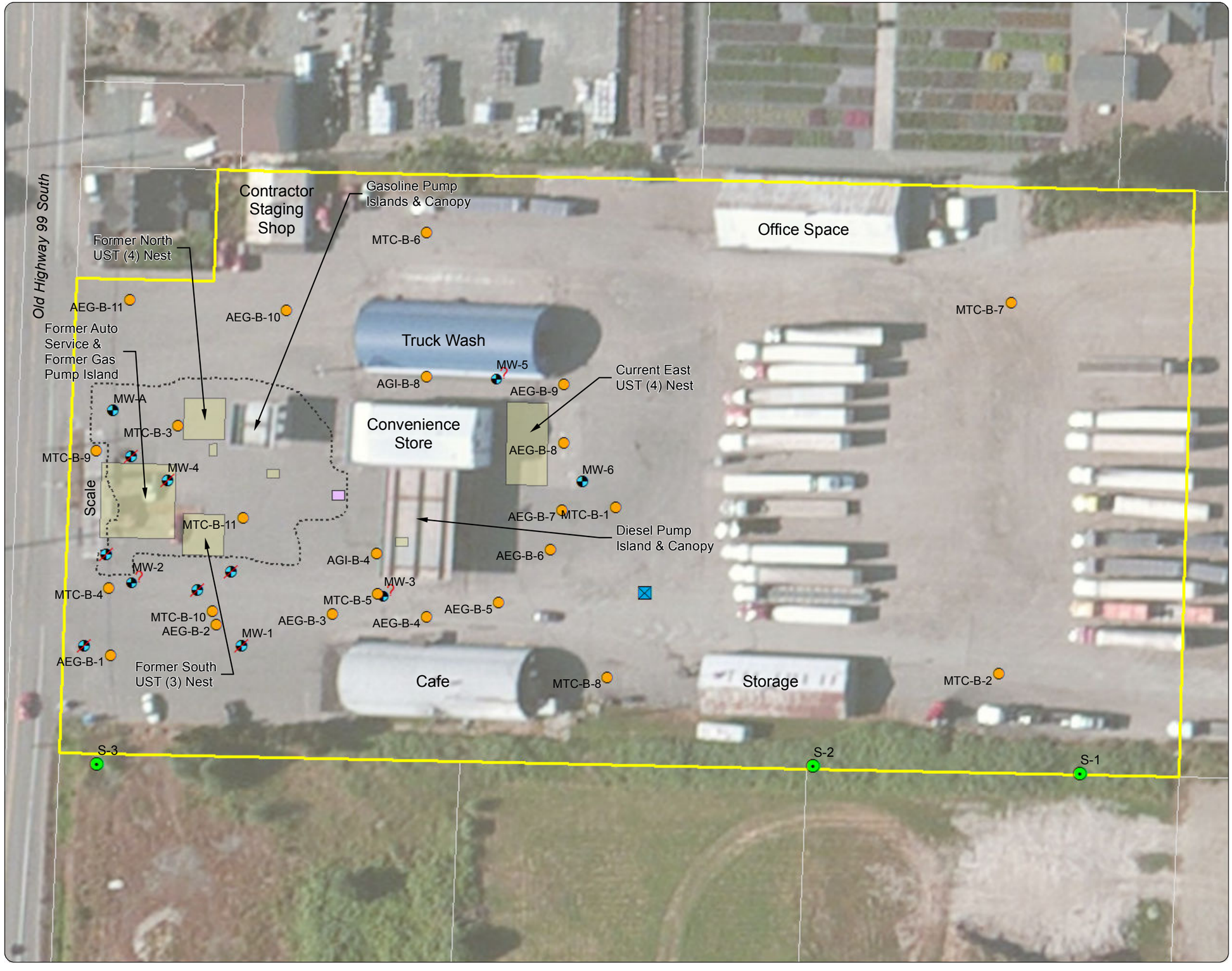
Path: X:\P0994.01 Marc L Estvold Inc\Projects\Fig_1 Parcel Map.mxd
Print Date: 6/26/2014
Approved By:
Produced By: jschane
Project:

Figure 2
Site Features

Truck City Site
Mount Vernon, Washington



Legend

Previous Investigation

- Hand Auger - Surface Sediment Sample
- Soil Borings

Monitoring Well

- Active
- Inactive
- Uncertain Status
- Former Soil Excavation Area
- USTs
- Septic System
- Catch Basin
- Site Boundary
- Parcel Boundary

Aerial Imagery Date: 2010

Notes:
1. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
2. The locations of all features are approximate.

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County

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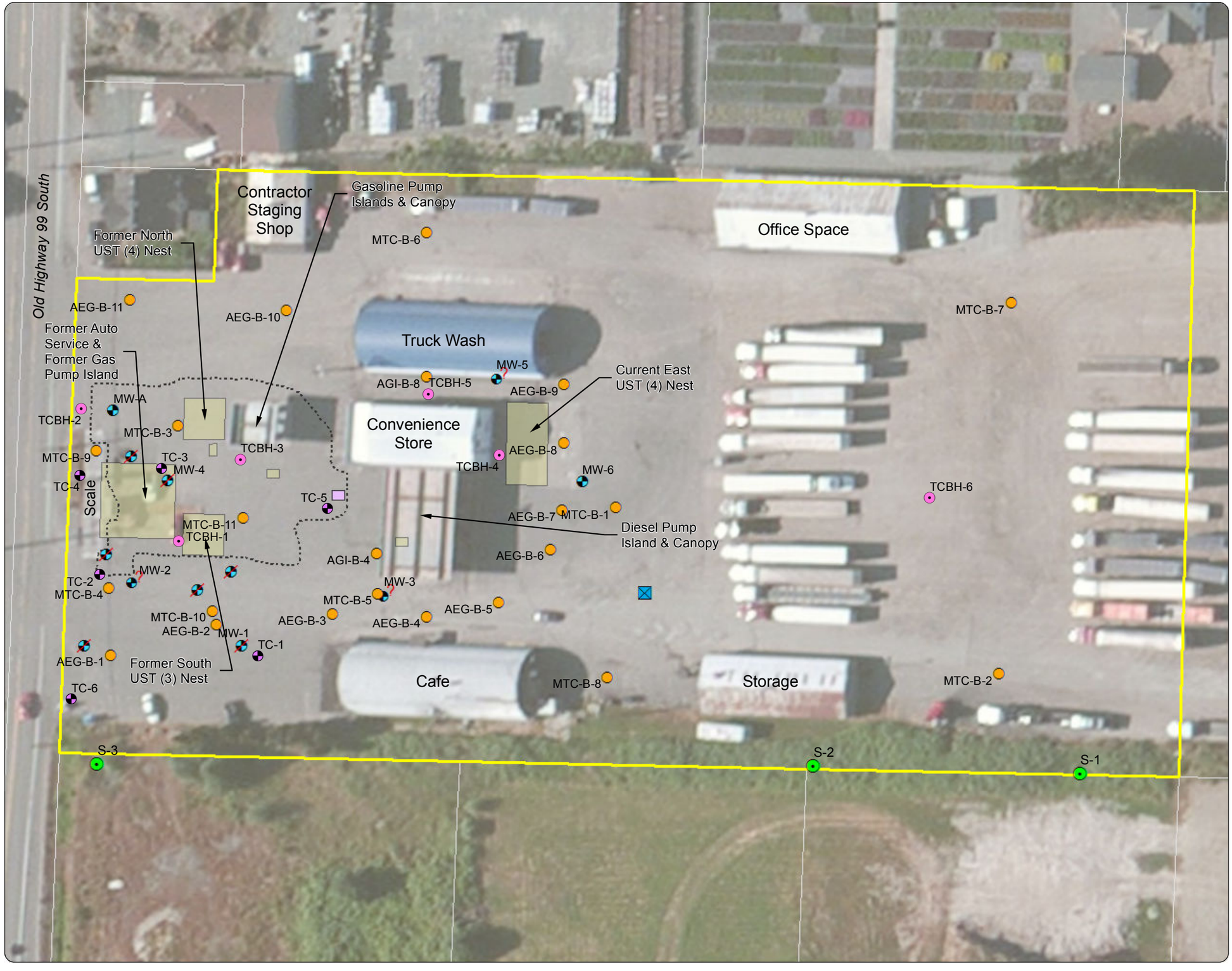

Figure 3
Proposed Subsurface Investigation - Truck City Parcel

Truck City Site
Mount Vernon, Washington

Legend

Proposed MFA Investigation
- Boring
- Monitoring Well

Previous Investigation
- Hand Auger - Surface Sediment Sample
- Soil Borings

Monitoring Well
- Active
- Inactive
- Uncertain Status

- Former Soil Excavation Area
- USTs
- Septic System
- Catch Basin
- Site Boundary
- Parcel Boundary

Aerial Imagery Date: 2010

Notes:
1. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
2. The locations of all features are approximate.

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County

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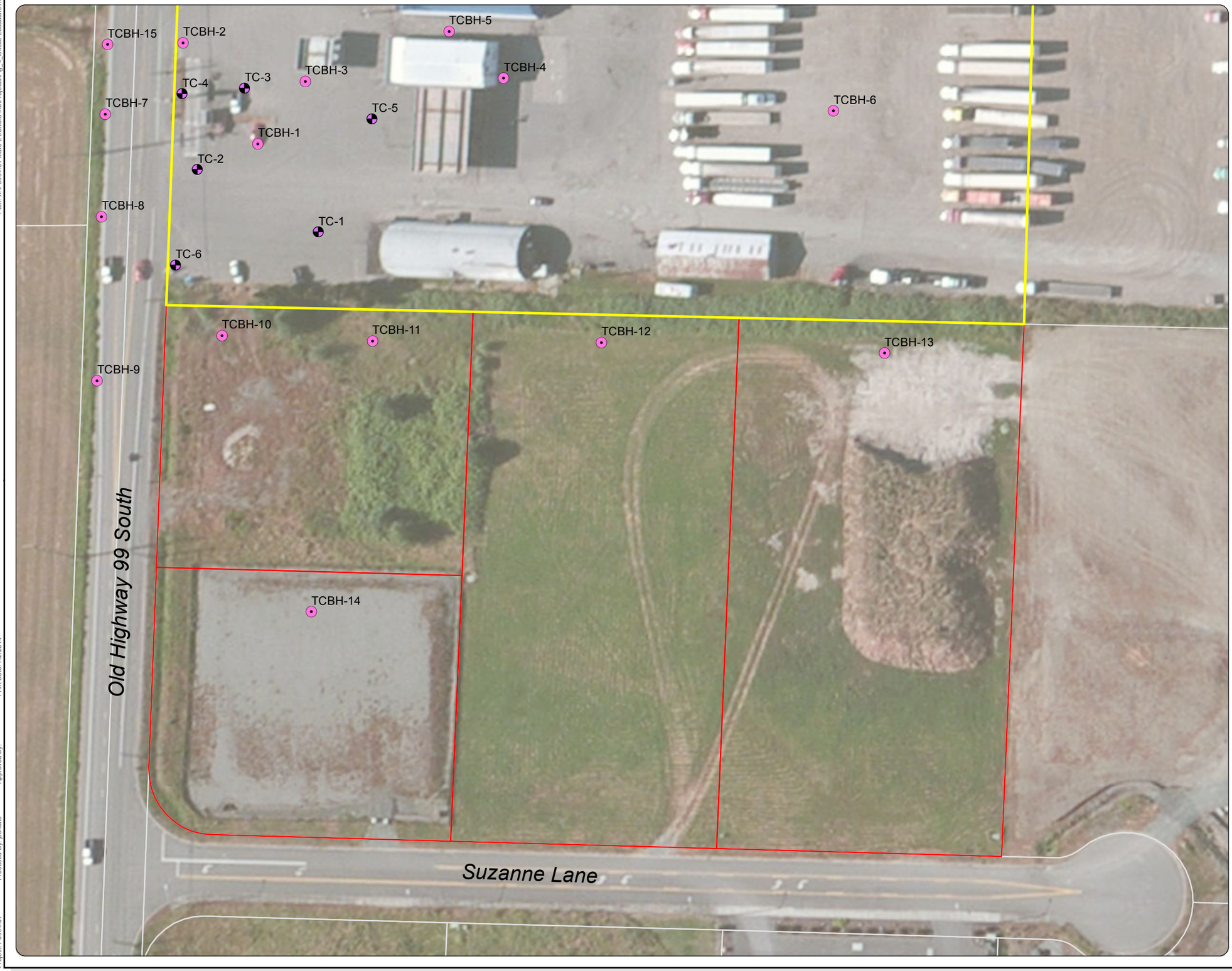

Figure 4
Proposed Subsurface Investigation - Offsite and Southern Parcels

Truck City Site
Mount Vernon, Washington

Legend

Proposed MFA Investigation

- Boring
- Monitoring Well
- Truck City Parcel
- Southern Parcels
- Parcel Boundary

Aerial Imagery Date: 2010

Notes:
1. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
2. The locations of all features are approximate.

0 30 60
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County

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Print Date: 7/2/2014
Approved By:
Produced By: jschane
Project: P0994.01

APPENDIX A

SAMPLING AND ANALYSIS PLAN

APPENDIX B

APPLIED GEOTECHNOLOGY, INC. 1989 HYDROCARBON CONTAMINATION ASSESSMENT

WASHINGTON STATE DEPARTMENT OF ECOLOGY 1993 INTERIM ACTION CLEANUP

ASSOCIATED ENVIRONMENTAL GROUP, LLC 2005 SITE CHARACTERIZATION

MATERIALS TESTING & CONSULTING, INC. 2014 PHASE II ESA AND SUPPLEMENTAL