FINAL CLEANUP ACTION REPORT

FORMER TRUCK CITY TRUCK STOP SITE
3216 OLD HIGHWAY 99 SOUTH
MOUNT VERNON, WASHINGTON

ECOLOGY FACILITY SITE NO. 2673/CLEANUP SITE ID 5176
PROSPECTIVE PURCHASER CONSENT DECREE NO. 15 200056 2

Prepared for
SKAGIT COUNTY
MOUNT VERNON, WASHINGTON
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Project No. 0714.03.01

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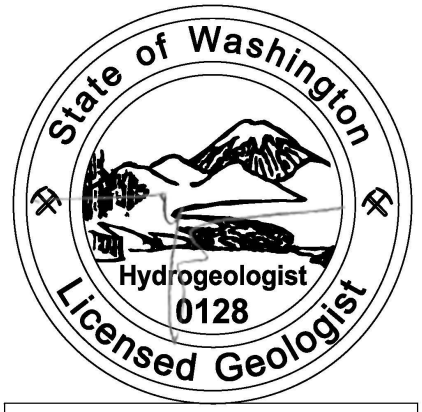
The material and data in this report were prepared under the supervision and direction of the undersigned.

MAUL FOSTER & ALONGI, INC.



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CONTENTS

TABLES AND ILLUSTRATIONS

FOLLOWING REPORT:

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

AGI	Applied Geotechnology, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
COI	chemical of interest
County	Skagit County, Washington
CUL	cleanup level
Ecology	Washington State Department of Ecology
FBI	Friedman and Bruya, Inc.
GMP	groundwater monitoring plan
IHS	indicator hazardous substance
ISBR	in-situ bioremediation
LNAPL	light nonaqueous-phase liquid
MFA	Maul Foster & Alongi, Inc.
MTC	Materials Testing & Consulting, Inc.
MTCA	Model Toxics Control Act
NWTPH	Northwest Total Petroleum Hydrocarbons
PCS	petroleum-contaminated soil
PPCD	prospective purchaser consent decree
Property	Skagit County Community Justice Center property (five parcels)
RI/FS	remedial investigation and feasibility study
Site	former Truck City Truck Stop facility at 3216 Old Highway 99 S., Mount Vernon, Washington, Ecology Facility Site No. 2673, Cleanup Site No. 5176, Prospective Purchaser Consent Decree 15 2 00056 2
TPH	total petroleum hydrocarbons
ug/L	micrograms per liter
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code
Wyser	Wyser Construction, Inc.

1 INTRODUCTION

On behalf of Skagit County, Washington (County), Maul Foster & Alongi, Inc. (MFA) has prepared this Final Cleanup Action Report that summarizes site characterization and remedial actions, and formally documents post-remedial action activities completed at the former Truck City Truck Stop facility, which is located at 3216 Old Highway 99 South, in Mount Vernon, Skagit County, Washington (Site) (see Figure 1-1). All Site-related actions are tracked by the Washington State Department of Ecology (Ecology) as Facility Site No. 2673 and Cleanup Site ID: 5176. The Site, in combination with four adjacent parcels to the south, is now occupied by the Skagit County Community Justice Center. The Skagit County Community Justice Center property (Property) comprises the following five parcels, all of which are owned by the County: parcel P29546 (parcel on which the former Truck City Truck Stop facility was located), and parcels P119262, P119263, P119265, and P119267 (Figure 1-2). The Site was developed by 1953 and operated as a truck stop and restaurant until 2014, just prior to the County's purchase in 2015. Prior to purchase of the Site parcel, the County entered into a prospective purchaser consent decree (PPCD) in January 2015 with Ecology (No. 15 2 00056 2 filed in Skagit County Superior Court). The County became the formal owner of the Site, as well as the other four parcels that comprise the Property, in February 2015.

From August to October 2015, with oversight from MFA and Ecology, Wyser Construction, Inc. (Wyser) performed structure demolition; asbestos-containing-material and regulated-universal-waste abatement; underground storage tank (UST) decommissioning and site assessment; excavation and disposal of petroleum-contaminated soil (PCS); dewatering of excavation pits; application of in-situ bioremediation (ISBR) products; and excavation backfill at the Site, as well as other tasks supporting environmental remediation of the Site. The remedial action was completed consistent with the PPCD, including the Cleanup Action Plan attached to the PPCD as Exhibit D. Complete details of the remedial action are provided in the As-Built Construction Complete Report (MFA, 2016a).

Following completion of remedial action at the Site in 2015, additional environmental-related tasks were completed based upon conditions encountered during construction of the Skagit County Jail and Community Justice Center, or to progress the Site towards full compliance with the PPCD:

- Reconnaissance groundwater investigation supporting jail facility stormwater pond construction
- UST decommissioning at the former truck wash building
- Construction stormwater retention pond dewatering
- Monitoring well installation
- Quarterly groundwater monitoring—November 2016 through August 2017

This Final Cleanup Action Report summarizes actions completed and presents the key findings associated with each of the post-remedial action tasks. Detailed data and information for each task are presented in prior-issued documents compiled for each task. Standard industry field-operating

procedures were followed for those tasks involving collecting and handling soil and reconnaissance groundwater samples; scheduling analyses; decontaminating equipment; and managing investigation-derived waste.

2 PHYSICAL SETTING, BACKGROUND, AND OVERVIEW OF SITE IMPACTS

2.1 Site Location and Former Conditions

The Site is located in section 32, township 34 north, range 4 east of the Willamette Meridian (see Figure 1-1). The Site, an 8.01-acre tax parcel (parcel number P29546), is accessed from Old Highway 99 South, adjacent to the west Property boundary (see Figure 1-2). Its surface topography is generally flat.

The Site was previously comprised of six buildings associated with the former commercial operations: a retail fuel station; truck stop and truck wash; restaurant; retail store, and office space building. Additional structures included gas station–pump islands, and a truck scale (weigh station) located in the western area of the Site, and diesel pump islands and the facility USTs located in the central area of the Site. Long-term truck parking was designated in the eastern portion of the Site. The ground surface in the western area of the Site, where fueling operations took place, was asphalt-paved, with the remainder of the Site comprised of compacted gravel surfacing. Figure 2-1 presents pre-remedial action/redevelopment site features.

2.2 Overview of Historical Operations and Impacts

The Site was developed by 1953 and operated as a truck stop and restaurant until 2014, just prior to the County's purchase in 2015. Several subsurface investigations were conducted at the Site between 1989 and 2014 to assess potential petroleum-hydrocarbon impacts related to the operation of the retail fuel station. Based upon earlier characterization efforts, Ecology completed an interim soil remedial cleanup action in 1993.

Applied Geotechnology, Inc. (AGI) conducted an assessment of the Site in 1989. AGI advanced eight borings, to approximately 15 to 20 feet below ground surface (bgs), adjacent to the then present northern, southern, and eastern UST nests; gasoline and diesel pump islands; and truck wash area. Six of the borings were completed as two-inch-diameter monitoring wells. Based upon the investigation results, AGI concluded that gasoline- and diesel-petroleum hydrocarbon contamination was present in soil and groundwater around the northern and southern UST nests, and that the potential existed for off-site migration of these chemicals of interest (COIs). Concentrations of gasoline- and diesel-range total petroleum hydrocarbons (TPH) and associated petroleum-fuel-related volatile organic compounds (VOCs)—specifically benzene, toluene, and total xylenes—were above the then current Washington State Model Toxics Control Act (MTCA) Method A cleanup levels (CULs) for unrestricted land use. Groundwater flow direction at the Site was assessed to be west to southwest (AGI, 1989).

Based upon the findings of the AGI investigation, 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 500-gallon-capacity USTs, as well as a septic tank full of waste oil— encountered during the contaminated-soil excavation activities—were also removed. Ecology concluded that, because the septic system had been used for waste-oil disposal and was connected to the facility's storm-drain system, the septic tank may have been one of the contaminant sources (Ecology, 1993). The interim action removed 6,244 cubic yards of contaminated soil and 89,991 gallons of contaminated water (generated associated with excavation dewatering). Final confirmation samples from the stockpiled soil showed gasoline-range TPH concentrations below CULs, with residual diesel-range TPH concentrations above CULs.

In 2005, an unknown volume of diesel was spilled at the Site when an unattended fuel nozzle fell out of the tank during fueling activities. The spill spread to a ditch (known as Maddox Creek), which is located adjacent to and west of the Site and flows south, parallel to Old Highway 99 South to Hickox Road. The spill went unreported until an Ecology Spills Team traced the source back to the Site. Ecology assigned the spill Environmental Report Tracking System No. 546209. Sheen was observed in Maddox Creek. Ecology retained NRC Environmental Services to clean up the spill. Absorbent booms and pads were placed in Maddox Creek. Subsequently, Materials Testing & Consulting, Inc. (MTC) conducted sediment sampling in Maddox Creek, in the vicinity of the Site, to assess whether residual contamination remained in Maddox Creek. MTC concluded that sediments in Maddox Creek no longer appeared to be impacted by the spill at the Site.

MTC conducted an initial Phase II environmental site assessment at the Site in February 2014 and a supplemental environmental site assessment 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 located in and outside the 1993 Ecology-led excavation remediation area. MTC concluded that impacted soil at concentrations above MTCA CULs for gasoline- and diesel-range TPH existed adjacent to the truck scale (MTC, 2014).

Associated with property purchase due diligence efforts, MFA conducted on behalf of the County a remedial investigation and feasibility study (RI/FS) in 2014 that focused on further characterization of the residual impacted areas at the Site; potential off-site migration of contaminants; and addressing data gaps (MFA, 2014). The site investigation results and risk screening indicated that only TPH and select VOCs were indicator hazardous substances (IHSs) in soil and groundwater. Human exposure pathways were deemed complete for the identified IHSs in groundwater, while ecological exposure pathways were deemed incomplete.

Findings from collective historical and the 2014 subsurface investigations, as well as Ecology's interim soil remedial action, enabled MFA to conclude that historical operations related to the former USTs and gasoline pump islands were the sources of TPH and select VOC soil and groundwater contamination beneath the Site. MFA also concluded that the lateral and vertical extent of the dissolved-phase TPH plume had been delineated through completion of the RI/FS (MFA, 2014). Monitoring wells installed west of the truck scale and downgradient of the former USTs/former gasoline pump islands (along the western Site boundary of the Truck City parcel), and near the south and southwestern area of this parcel, were identified to serve as sentinel wells to the IHSs exhibited in the dissolved phase in groundwater.

2.3 2015 Remedial Action

Between August and October of 2015, MFA oversaw completion of a remedial action at the Site involving:

- Abatement of asbestos-containing-materials at the truck wash building, retail store, restaurant/café, and contractor's staging shop.

- Abatement of regulated universal wastes in the six buildings at the Site. Regulated universal wastes included mercury-containing fluorescent light tubes and thermostats, polychlorinated-biphenyl-containing light ballasts, and high-intensity discharge lights.

- Demolition of groundwater monitoring wells TC-1, TC-2, TC-3, TC-4, and TC-5 due to the proposed locations of the retention pond and Skagit County jail building footprint. Replacement of the original wells was necessary, as some of them would interfere with the proposed retention pond and/or are projected to be in the pathway of a maintenance road to be constructed in the area. Replacement monitoring wells (TC-1R, TC-2R, TC-3R, TC-4R, TC-5R, and TC-7) were constructed after the construction of the retention pond and building for the Skagit County Community Justice Center. Figure 2-1 presents the locations of these original monitoring wells and replacement wells. Overlays of proposed features for the Skagit County Community Justice Center, during this phase of work, are also shown in this figure.

- The decommissioning and removal of the Site's four diesel- and gasoline-containing fueling USTs and associated product lines; excavation and removal of PCS; groundwater dewatering activities; treatment of dewatered fluids; and application of in-situ bioremediation products to clean backfill. These activities were completed to remove and remediate PCS and petroleum-contaminated groundwater at the Site. Figure 2-1 shows the estimated extent of the remedial action conducted in 2015. Comprehensive documentation of the 2015 remedial action is presented in the As-Built Construction Complete Report (MFA, 2016a).

- Groundwater dewatering was completed during excavation and before backfilling of the excavation pits. The groundwater from the excavation was pumped into two 21,000-gallon storage tanks temporarily located in the southeast corner of the Site. Excavated groundwater was then pumped through a sediment filter and through two granular activated carbon vessels (connected in series) (MFA, 2016a) before being discharged to the City of Mount Vernon sanitary sewer system through a 4-inch-diameter polyvinyl chloride pipe to a manhole south of the Site.

- In situ bioremediation (ISBR) was completed as part of the remedial action. ISBR involved the use of enhanced aerobic biodegradation to expedite the biodegradation of TPH and VOCs in soil and groundwater by adding Regenesis Oxygen Release Compound Advanced, ORCa®) with clean backfill soil to accelerate the microbial degradation of remaining petroleum-hydrocarbon-impacted vadose zone and groundwater. The addition of a controlled-release supplemental source of oxygen enables the indigenous microorganisms (bacteria) to expedite the biodegradation process.

2.4 Geology and Hydrogeology

The Site and vicinity have been mapped as recent alluvium and artificial fill. Alluvium deposits encountered during investigations at the Site consist of floodplain sequences ranging from fluvial silty sand and well-sorted sand, to silt with intervening clay. Fill, comprising sandy gravel to gravelly silty sand, was generally present approximately three to five feet bgs at the Site prior to redevelopment, with exception to the extent of the 1993 Ecology-led remedial action excavation, which resulted in fill extending to approximately 9.5 feet bgs. Following the remedial action activities completed in 2015, the entire Site was raised approximately five feet above the prior elevation for construction of the Skagit County Community Justice Center.

The matrix of the unconfined shallow aquifer appears to be silty sand. Depth to groundwater, encountered during subsurface exploration activities, was variable throughout the Property, ranging from approximately 3.5 to 9.5 feet bgs. The static water levels at monitoring wells installed by MFA, TC-1R through TC-7, have ranged from 5.26 to 11.46 feet bgs during the four most recent quarterly groundwater-monitoring events, conducted between November 2016 and August 2017. The direction of groundwater flow at the Site during these groundwater events, based on professionally surveyed elevations at these monitoring wells, has been generally to the southwest, with tangents in the northwest area of the Site toward the southeast.

3 RECONNAISSANCE GROUNDWATER INVESTIGATION AND ABANDONED UST DECOMMISSIONING

3.1 2016 Reconnaissance Groundwater Investigation

During construction of the Skagit County Community Justice Center, the design team identified that activities associated with the installation of a stormwater detention pond to serve the facility would likely require dewatering within the direct vicinity of the 2015 remedial action. As a result, MFA conducted a groundwater investigation at the Site on June 3, 2016 to gain a better understanding of groundwater contaminant concentrations (approximately seven months after remedial action completion), as well as to define the elevation of the water table within an area of previously defined groundwater contamination. Collection and laboratory analysis of reconnaissance groundwater samples, as well as definition of the water-table elevation, was completed to support decision-making relative to dewatering activities anticipated to support the stormwater pond construction (dewatering well spacing and depths, dewatering treatment system sizing, etc.). Groundwater samples were collected from temporary borings because permanent groundwater monitoring wells could not be installed until after jail construction ground-disturbing activities were concluded.

An MFA geologist oversaw the advancement of three borings (SP1 through SP3) by direct push-drill methods within the footprint of the designed stormwater detention pond (see Figure 3-1). Each boring was advanced to 15 feet bgs, with a temporary screen placed from 10 to 15 feet bgs to collect a

reconnaissance groundwater sample. Reconnaissance groundwater sampling activities were generally conducted consistent with industry-standard sampling protocols. Groundwater samples were submitted to Friedman & Bruya, Inc. (FBI) of Seattle, Washington, under standard chain-of-custody procedures for a rushed 48-hour turn-around-time analysis. Samples were analyzed for site contaminants, using the following analytical methods:

- Gasoline-range TPH by Northwest Total Petroleum Hydrocarbons (NWTPH) Method Gx
- Diesel- and motor oil–range TPH by NWTPH Method Dx
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by U.S. Environmental Protection Agency (USEPA) Method 8021B

As indicated in Table 3-1, neither gasoline-range TPH nor BTEX were detected above laboratory detection limits (commonly referred to as "non-detects"). Diesel-range TPH was detected at 84 micrograms per liter (ug/L) and 69 ug/L in samples from borings SP1 and SP3, respectively. Diesel-range TPH was not detected above the laboratory detection limit in the sample collected from boring SP2. The detected concentrations of diesel-range TPH were both well below the associated MTCA Method A cleanup level of 500 ug/L. Analytical results also indicated that motor oil-range TPH was not detected in any of the groundwater samples (MFA, 2016b).

The reconnaissance groundwater analytical results indicated that the combined remedial action of removing bulk-source, petroleum-contaminated soil; dewatering (with treatment) during the excavation activities; and incorporation of bioremediation products in the excavation backfill during the 2015 remedial action had positively affected the remaining groundwater contamination. Complete details and data compiled for this investigation are presented in the Reconnaissance Groundwater Investigation (MFA, 2016b).

3.2 2016 Abandoned UST Decommissioning Action

During construction of the Skagit County Community Justice Center, an abandoned UST was discovered to the north of the former location of the truck wash (see Figure 3-2). According to Ecology's UST database, the UST was installed in 1978, when the Site resumed operations a fire in 1976. The UST (Site Tag No. A8119) was a single-wall, steel tank, four feet in diameter and 13 feet in length, with no connected piping. Decommissioning and site assessment activities associated with the UST, as part of its permanent closure, are presented in the associated Site Assessment report (MFA, 2016c). The site assessment was performed by a certified site assessor, consistent with the UST regulations put forth in Washington Administrative Code (WAC) 173-360 and Ecology Guidance for Site Checks and Site Assessments for Underground Storage Tanks (Ecology, 2003).

The UST was excavated and removed on June 16, 2015. Three confirmation soil samples were collected from the UST excavation pit, and one soil sample was collected beneath the associated fuel product piping (see Figure 3-2). Groundwater began to seep into the base of the excavation pit, at approximately 8.5 to 9.0 feet bgs, after the removal of the UST.

Soil samples were analyzed by FBI. All samples were analyzed for the following COIs:

- Gasoline-range organics by the NWTPH-Gx Method
- Diesel- and motor oil–range organics by the NWTPH-Dx Method
- BTEX by USEPA Method 8021B

Analytical results for all soil samples collected during the site assessment are summarized in Table 3-2. Gasoline-range hydrocarbons were identified in the sample collected beneath the product line piping, but were detected at a concentration below MTCA Method A CUL. Diesel and motor oil–range hydrocarbons were not identified in any of the confirmation samples collected within the excavation. Lead detected in the sample of the excavation base and within the stockpile characterization sample was significantly below its associated MTCA Method A CUL.

The field observations, including holes along the bottom of the UST; slight odor from the excavation; and stockpile characterization analytical results indicated that a release from the UST had occurred. However, over-excavation of all indications of PCS—seen in the resulting final laboratory analytical results of all confirmation soil samples—indicated that the petroleum impacts were localized to the area immediately adjacent to the UST (MFA, 2016c). Furthermore, laboratory analytical results confirmed that over-excavation activities had removed all PCS associated with the UST.

Approximately 72.42 tons of PCS were loaded into trucks, transported off-site, and disposed of as non-hazardous waste at the CEMEX USA facility, located at 6300 Glenwood Avenue, in Everett, Washington. Complete details and data compiled for this investigation are presented in the Former Truck Wash UST Site Assessment for Permanent Closure report (MFA, 2016c).

4 RETENTION POND DEWATERING AND REPLACEMENT MONITORING WELL INSTALLATION

4.1 Retention Pond Dewatering

During August and September 2016, the Skagit County Community Justice Center construction contractor excavated the stormwater detention pond that serves the facility. Construction constraints required that the northern portion of the detention pond, which was lined to prohibit stormwater infiltration into the subsurface, directly overlaid the prior defined groundwater contaminant plume at the Site. Design constraints also required that the detention pond extended into the water table. The construction activities were scheduled for the August/September time period to mitigate dewatering due to the summer period's historically lower water-table elevations. However, the contractor still anticipated that the dewatering effort would be significant (estimated at an extraction rate of 600 gallons per minute for up to 14 consecutive days).

Because contaminated groundwater was anticipated to be extracted during stormwater pond construction dewatering, a groundwater treatment system similar in configuration to the system used to treat excavation dewatering effluent during the 2015 remedial action was used. Due to a fee that the City of Mount Vernon would apply to dewatering activities associated with discharge of the treated

effluent to its sanitary sewer system, the County explored discharge to surface water options with Ecology's Water Quality Program. Through an administrative order process, Ecology allowed discharge of the dewatering effluent to the on-site construction stormwater facility, provided that an adequately sized treatment system was installed and sufficient treatment system effluent monitoring occurred to demonstrate continuous compliance with Ecology discharge benchmarks. Figure 4-1 shows the construction contractor's dewatering extraction point layout. The groundwater treatment system was comprised of a 20,000-gallon settling tank, four 20,000-gallon surge tanks, eight bag filters, and four 6,000-pound granular-activated carbon vessels (in a lead/lag configuration) (see Figure 4-2).

The dewatering system extracted groundwater from directly within the contaminant plume, which, with the treatment system, likely provided further treatment of the contaminant plume.

Treated water samples were submitted for a rushed 24-hour turn-around-time laboratory analysis to ensure that the treated water met Ecology's discharge benchmarks. Laboratory reports indicated no detectable concentrations of any COIs (see Appendix A).

4.2 Replacement Monitoring Well Installation

On October 31 and November 1, 2016, five monitoring wells (TC-1R, TC-3R, TC-4R, TC-5R, and TC-7) were installed at the Site using a direct push-drill rig to complete the monitoring well network requirements outlined in the GMP (MFA, 2016a) (also described below). Monitoring wells TC-1R, TC-3R, TC-4R, and TC-5R replaced former monitoring wells that were decommissioned due to their locations within the footprint of the new jail facility. Monitoring well TC-7 was installed at a location upgradient of the 2015 remedial action. The two existing wells, TC-2 and TC-6, had previously been installed during the 2014 remedial investigation. All monitoring wells were developed or, in the case of the two existing wells, redeveloped, at least 24 hours prior to sample collection.

To meet the groundwater monitoring requirements stipulated in WAC 173-340-410, groundwater monitoring activities were conducted at the following types of wells: (1) a monitoring well located upgradient of the known dissolved-phase plume; (2) monitoring wells in the confirmed dissolved-phase plume; and (3) sentry monitoring wells located beyond the leading edge of the dissolved-phase plume.

The groundwater monitoring network at the Site (see Figure 4-3) consists of the following site-specific wells:

- Upgradient well: TC-7;
- Dissolved-phase-plume monitoring wells: TC-2, TC-3R, TC-4R, and TC-5R;
- Sentry wells: TC-1R and TC-6.

Construction logs for all monitoring wells are included in Appendix B. A professional survey of these wells is provided in Appendix C.

5 POST-REMEDIAL ACTION QUARTERLY GROUNDWATER MONITORING

Post-remedial action quarterly groundwater monitoring events conducted from November 2016 through August 2017 fulfilled the quarterly groundwater-monitoring requirement specified in the GMP (MFA, 2016a). Monitoring activities were conducted as described in the GMP, and were also consistent with the monitoring requirements outlined in MTCA (WAC 173-340-410). Quarterly groundwater monitoring activities were completed to assess the water quality at the Site and effectiveness of a remedial action conducted consistent with the PPCD executed between Ecology and the County.

5.1 First Quarterly Groundwater Event—November 2016

MFA conducted the first post-remedial action quarterly groundwater monitoring event at the Site on November 3, 2016. The following summarizes key findings of the event:

- The direction of groundwater migration at the Site generally appeared to be to the southwest, with tangents in the northwest area of the Site toward the southeast (see Figure 5-1).
- Light nonaqueous-phase liquid (LNAPL) was not encountered in any monitoring wells during monitoring activities.
- Gasoline- and motor oil–range TPH, as well as BTEX, were not detected above analytical reporting limits in any monitoring network wells.
- Diesel-range TPH concentrations were detected in all monitoring wells, but at concentrations below the MTCA Method A CUL (MFA, 2016d).

Geochemical data and field parameters indicated an aerobic subsurface condition. Geochemical values collected during this groundwater event served as baseline values for comparison to the subsequent groundwater events for evaluation of the biodegradation of the dissolved-phase petroleum hydrocarbon plume at the Site (MFA, 2016d).

Water-level measurements; final field parameters; groundwater geochemical parameters; and groundwater analytical results are summarized in Tables 5-1, 5-2, 5-3, and 5-4, respectively. Further details from this groundwater event are presented in the November 2016 quarterly report (MFA, 2016d).

5.2 Second Quarterly Groundwater Event—January 2017

MFA conducted the second post-remedial action quarterly groundwater monitoring event at the Site on January 25, 2017. The following summarizes key findings of the event:

- The direction of groundwater migration at the Site generally appeared to be to the southwest, with tangents in the northwest area of the Site toward the southeast, similar to the previous quarterly event (see Figure 5-2).
- Water levels were approximately 0.5-foot higher than observed during the November 2016 event (see Table 5-1).
- LNAPL was not encountered in any monitoring wells during monitoring activities.
- Gasoline- and motor oil–range TPH, as well as BTEX, were not detected above analytical reporting limits in any monitoring network wells (see Table 5-4).
- Diesel-range TPH concentrations were detected in three monitoring wells, but at concentrations below the MTCA Method A CUL (MFA, 2017a).

Field parameters continued to indicate an aerobic subsurface condition (see Table 5-2). Further details from this groundwater event are presented in the January 2017 quarterly report (MFA, 2017a).

5.3 Third Quarterly Groundwater Event—May 2017

MFA conducted the third post-remedial action quarterly groundwater monitoring event at the Site on May 3, 2017. The following summarizes key findings of the event:

- The direction of groundwater migration at the Site appeared to be similar to the previous two quarterly events (see Figure 5-3).
- Water levels were approximately 0.1- to 0.2-foot higher than previously observed during the January 2017 event (see Table 5-1).
- LNAPL was not encountered in any monitoring wells during monitoring activities.
- Gasoline- and motor oil–range TPH, as well as BTEX, were not detected above analytical reporting limits in any monitoring network wells (see Table 5-4).
- Diesel-range TPH concentrations were detected in four monitoring wells, but at concentrations below the MTCA Method A CUL (MFA, 2017b).

Field parameters (dissolved-oxygen and oxygen-reduction potential values) and geochemical parameters collected from these wells indicated a partial transition from an aerobic to anaerobic environment at the Site. The enhanced oxygen from the in-situ bioremediation, which was applied in September 2015, appeared to have been sequentially used up by this monitoring event (based on dissolved oxygen values dropping to less than 1 milligram per liter—refer to Tables 2 and 4). However, the collective geochemical parameters (ferrous iron, manganese, and sulfate) indicated that natural attenuation processes (i.e., biological activities) were still occurring (see Table 5-2).

Further details from this groundwater event are presented in the May 2017 quarterly report (MFA, 2017b).

5.4 Fourth Quarterly Groundwater Event—August 2017

MFA conducted the fourth post-remedial action quarterly groundwater monitoring event at the Site on August 8, 2017. The following summarizes key findings of the event:

- The direction of groundwater migration at the Site appeared to be similar to the previous three quarterly events (see Figure 5-3).
- Water levels were approximately 0.98- to 1.23-feet lower than previously observed during the May 2017 event (see Table 5-1).
- LNAPL was not encountered in any monitoring wells during monitoring activities.
- Gasoline- and motor oil–range TPH, as well as BTEX, were not detected above analytical reporting limits in any monitoring network wells (see Table 5-4).
- Diesel-range TPH concentrations were detected in four monitoring wells, but at concentrations below the MTCA Method A CUL (MFA, 2017c).

The August 2017 groundwater event was the fourth quarterly monitoring event at the Site since completion of the remedial action in October 2015. It was also the fourth consecutive groundwater monitoring event without exceedances of IHSs in any monitoring network wells.

Based on the completion of and findings from the remedial action phase, as well as findings from the subsequent four consecutive quarterly groundwater monitoring events, MFA concludes that the Site meets all MTCA Method A cleanup criteria for soil and groundwater media.

Further details from this groundwater event are presented in the August 2017 quarterly report (MFA, 2017c). For each quarterly report, analytical data and the laboratory's internal quality assurance and quality control data were reviewed to assess whether they met project-specific data-quality objectives. The reviews were performed consistent with accepted USEPA procedures for evaluating laboratory analytical data (USEPA, 2017). A data validation memorandum summarizing data evaluation procedures; data usability; and deviations from specific field and/or laboratory methods for each groundwater event was included in each quarterly report. All reviewed data for the four quarterly monitoring events were considered acceptable for their intended use, with the appropriate data qualifiers assigned.

6 SUMMARY AND RECOMMENDATIONS

MFA recommends petitioning Ecology for removal of the Site from Ecology's Hazardous Sites List and issuance of a Satisfaction of Consent Decree for the Site.

LIMITATIONS

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

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

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MFA. 2016c. Former Truck Wash UST Site Assessment for Permanent Closure —Former Truck City Site, 3216 Old Highway 99 South, Mount Vernon, Washington. Maul Foster & Alongi, Inc., Bellingham, Washington. July 14.

MFA. 2016d. Quarterly Groundwater Monitoring Event—November 2016. Former Truck City Truck Stop, 3216 Old Highway 99 South, Mount Vernon, Washington. Maul Foster & Alongi, Inc., Bellingham, Washington. December 29.

MFA. 2017a. Quarterly Groundwater Monitoring Event—January 2017. Former Truck City Truck Stop, 3216 Old Highway 99 South, Mount Vernon, Washington. Maul Foster & Alongi, Inc., Bellingham, Washington. February 24.

MFA. 2017b. Quarterly Groundwater Monitoring Event—May 2017. Former Truck City Truck Stop, 3216 Old Highway 99 South, Mount Vernon, Washington. Maul Foster & Alongi, Inc., Bellingham, Washington. May 31.

MFA. 2017c. Quarterly Groundwater Monitoring Event—August 2017. Former Truck City Truck Stop, 3216 Old Highway 99 South, Mount Vernon, Washington. Maul Foster & Alongi, Inc., Bellingham, Washington. September 7.

MTC. 2014. Phase II Environmental Site Assessment, Truck City Site, 3228 Old Highway 99 South, Mount Vernon, WA 98273. Materials Testing & Consulting, Inc. March 17.

USEPA. 2017. USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review. EPA 540-R-2017-002. U.S. Environmental Protection Agency, Office of Superfund Remediation and Technology Innovation. January.

TABLES

Table 3-1
Summary of Groundwater Analytical Results
June 3, 2016 Groundwater Investigation
Former Truck City Site
Mount Vernon, Washington

Location	Sample Name	Collection Date	Chemicals of Interest					
			Benzene	Ethylbenzene	Toluene	Xylenes[a]	Gasoline TPH	Diesel TPH
Units			ug/l	ug/l	ug/l	ug/L	ug/l	ug/l
MTCA Method A Cleanup Level (ug/L)			5	700	1,000	1,000	800[b]	500
SP1	SP1-GW-8.0	06/03/2016	1 U	1 U	1 U	3 U	100 U	**84**
SP2	SP2-GW-8.0	06/03/2016	1 U	1 U	1 U	3 U	100 U	50 U
SP3	SP3-GW-8.0	06/03/2016	1 U	1 U	1 U	3 U	100 U	**69**

NOTES:

Detected results are indicated by bold font.

MTCA = Model Toxics Control Act.

TPH = total petroleum hydrocarbons.

U = Result is non-detect.

ug/L = micrograms per liter.

[a]Xylenes = Sum of m,p- and o-xylene. Non-detect results are summed at half of the non-detect value. The highest non-detect value is used when both results are non-detect.

[b]MTCA Method A cleanup level for gasoline with benzene present.

Table 3-2
Soil Sample Analytical Results
Abandoned Truck Wash UST
Skagit County
Mount Vernon, Washington

	Location:	UST EXCAVATION				STOCKPILE		
	Sample Name:	B-T5-8.5	S1-T5-7.5	S2-T5-7.5	P1-T5-4.0	ST-13	ST-14	ST-15
	Collection Date:	06/16/2016	06/16/2016	06/16/2016	06/16/2016	06/16/2016	06/16/2016	06/16/2016
	MTCA A CULs (mg/kg)							
TPH (mg/kg)								
Gasoline-Range Hydrocarbons	30[a]	2 U	2 U	2 U	**20**	**70**	**140**	**120**
Diesel-Range Hydrocarbons	2000	50 U	50 U	50 U	50 U	**170**	**1,600**	**580**
Motor-Oil-Range Hydrocarbons	2000	250 U	250 U	250 U	250 U	**2,000**	**17,000**	**7,200**
Total TPH[b]	2000	250 U	250 U	250 U	250 U	**2,170**	**18,600**	**7,780**
VOCs (mg/kg)								
Benzene	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Ethylbenzene	6	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	**0.13**	**0.14**
Toluene	7	0.02 U	0.02 U	0.02 U	0.1 U	0.1 U	**0.049**	**0.038**
Xylenes (total)	9	0.06 U	0.06 U	0.06 U	0.3 U	**0.47**	**0.71**	**0.7**
Metals (mg/kg)								
Lead	250	**1.6**	--	--	--	--	**18.5**	--

NOTES:

Detected result values are in **bold** font.

Bolded result values and gray shading are above MTCA A CULs.

-- = not analyzed.

CUL = cleanup level.

mg/kg = milligrams per kilogram.

MTCA = Model Toxics Control Act.

TPH = total petroleum hydrocarbons.

U = result is non-detect.

UST = underground storage tank.

VOC = volatile organic compound.

[a]Cleanup level for gasoline range TPH, in the presence of benzene, is 30 mg/kg. Benzene has been detected at this site.

[b]Total TPH is sum of diesel- and motor-oil-range hydrocarbon results. When both results are non-detect, the higher non-detect result is used.

Table 5-1
Water-Level Data
Quarterly Groundwater Events November 2016–August 2017
Former Truck City Truck Stop Site
Skagit County
Mount Vernon, Washington

Location	MP Elevation (feet, NAVD 88)	Measurement Date	Depth to Water (feet)	Change in Water Level (feet)[a]	Groundwater Elevation (feet, NAVD 88)
TC-1R	21.51	11/03/2016	10.88	--	10.63
		01/25/2017	10.33	0.55	11.18
		05/03/2017	10.27	0.06	11.24
		08/08/2017	11.45	-1.18	10.06
TC-2	16.99	11/03/2016	6.16	--	10.83
		01/25/2017	5.74	0.42	11.25
		05/03/2017	5.6	0.14	11.39
		08/08/2017	6.82	-1.22	10.17
TC-3R	18.02	11/03/2016	7.36	--	10.66
		01/25/2017	6.84	0.52	11.18
		05/03/2017	6.58	0.26	11.44
		08/08/2017	7.75	-1.17	10.27
TC-4R	17.10	11/03/2016	6.11	--	10.99
		01/25/2017	5.65	0.46	11.45
		05/03/2017	5.60	0.05	11.50
		08/08/2017	6.78	-1.18	10.32
TC-5R	21.62	11/03/2016	10.96	--	10.66
		01/25/2017	10.44	0.52	11.18
		05/03/2017	10.23	0.21	11.39
		08/08/2017	11.46	-1.23	10.16
TC-6	16.53	11/03/2016	5.68	--	10.85
		01/25/2017	5.36	0.32	11.17
		05/03/2017	5.26	0.10	11.27
		08/08/2017	6.45	-1.19	10.08
TC-7	19.58	11/03/2016	8.42	--	11.16
		01/25/2017	7.77	0.65	11.81
		05/03/2017	7.52	0.25	12.06
		08/08/2017	8.50	-0.98	11.08

NOTES:

-- = not applicable.

MP = measuring point. Standard MP is on the north side of the well casing.

NAVD 88 = North American Vertical Datum of 1988.

[a]Change in water level is relative to two most recent sampling events.

Table 5-2
Final Water Quality Field Parameters
Quarterly Groundwater Events November 2016–August 2017
Former Truck City Truck Stop Site
Skagit County
Mount Vernon, Washington

Location	Date	pH	Temperature (degrees C)	Conductivity (uS/cm)	DO (mg/L)	ORP	Turbidity (NTU)
TC-1R	11/03/2016	6.76	16.48	1,161	1.22	-182.0	9.74
	01/25/2017	6.33	11.83	1,319	0.64	-55.2	6.82
	05/03/2017	7.06	12.72	1,201	0.28	-54.0	11.60
	08/08/2017	8.01	17.43	1,264	0.78	-61.4	1.81
TC-2	11/03/2016	6.56	17.14	656	1.05	20.8	11.10
	01/25/2017	6.21	11.82	633	0.39	150.1	7.91
	05/03/2017	6.88	11.64	665	0.50	-51.4	8.96
	08/08/2017	7.06	17.01	544	1.12	91.9	24.10
TC-3R	11/03/2016	7.12	15.18	1,129	0.92	-106.1	19.90
	01/25/2017	6.99	9.21	901	0.36	-13.9	21.30
	05/03/2017	7.09	12.30	756	0.31	-32.4	22.70
	08/08/2017	7.51	20.26	1,003	1.98	102.8	1.03
TC-4R	11/03/2016	6.63	16.00	542	1.41	-13.8	6.17
	01/25/2017	6.50	9.92	505	0.45	187.3	6.82
	05/03/2017	7.07	11.90	492	0.83	-2.2	7.41
	08/08/2017	6.90	18.80	515	1.19	115.8	2.11
TC-5R	11/03/2016	7.49	16.09	842	0.57	-186.2	18.60
	01/25/2017	7.28	10.81	1,412	0.46	-7.0	20.60
	05/03/2017	7.21	12.95	883	0.20	-58.8	10.10
	08/08/2017	7.98	18.13	1,387	1.16	18.9	14.30
TC-6	11/03/2016	6.55	16.14	356	0.97	30.4	9.71
	01/25/2017	6.58	10.21	552	0.49	115.1	9.12
	05/03/2017	7.04	12.75	639	0.65	-54.7	9.84
	08/08/2017	7.00	16.84	537	0.91	-0.2	6.23
TC-7	11/03/2016	6.66	13.39	401	1.58	-95.1	9.22
	01/25/2017	6.77	9.58	423	0.87	89.9	19.90
	05/03/2017	6.85	13.30	456	0.22	-7.7	22.40
	08/08/2017	6.60	15.50	415	0.70	98.9	19.40

NOTES:

C = Celsius.

DO = dissolved oxygen.

mg/L = milligrams per liter.

NTU = nephelometric turbidity unit.

ORP = oxygen reduction potential.

uS/cm = microsiemens per centimeter.

Table 5-3
Groundwater Geochemical Parameters
Quarterly Groundwater Events November 2016–August 2017
Former Truck City Truck Stop Site
Skagit County
Mount Vernon, Washington

Location:	TC-1R		TC-2		TC-3R		TC-4R		TC-5R		TC-6		TC-7	
Collection Date:	11/03/2016	05/03/2017	11/03/2016	05/03/2017	11/03/2016	05/03/2017	11/03/2016	05/03/2017	11/03/2016	05/03/2017	11/03/2016	05/03/2017	11/03/2016	05/03/2017
Geochemical Parameters														
Dissolved oxygen[a] (mg/L)	1.22	0.28	1.05	0.5	0.92	0.31	1.41	0.83	0.57	0.2	0.97	0.65	1.58	0.22
Oxidation reduction potential[a] (mV)	-182	-54	20.8	-51.4	-106.1	-32.4	-13.8	-2.2	-186.2	-58.8	30.4	-54.7	-95.1	-7.7
Ferrous Iron[a] (mg/L)	2.75	3.25	--	--	--	--	--	--	0.25	1.5	--	--	--	--
Manganese (mg/L)	1.680	2.95	--	--	--	--	--	--	0.434	0.817	--	--	--	--
Methane (mg/L)	0.11	0.1	--	--	--	--	--	--	0.016	0.027	--	--	--	--
Nitrate(as Nitrogen) (mg/L)	0.025 R	190 R	--	--	--	--	--	--	0.07 R	0.183	--	--	--	--
Sulfate (mg/L)	235	450	--	--	--	--	--	--	220	202	--	--	--	--

NOTES:
-- = not analyzed.
mg/L = milligrams per liter.
mV = millivolts.
R = Result is rejected due to analysis performed outside of holding time.
[a]Measured in the field using a Hach test kit, Model IR-18C.

Table 5-4
Summary of Groundwater Analytical Results
Quarterly Groundwater Events November 2016–August 2017
Former Truck City Truck Stop Site
Skagit County
Mount Vernon, Washington

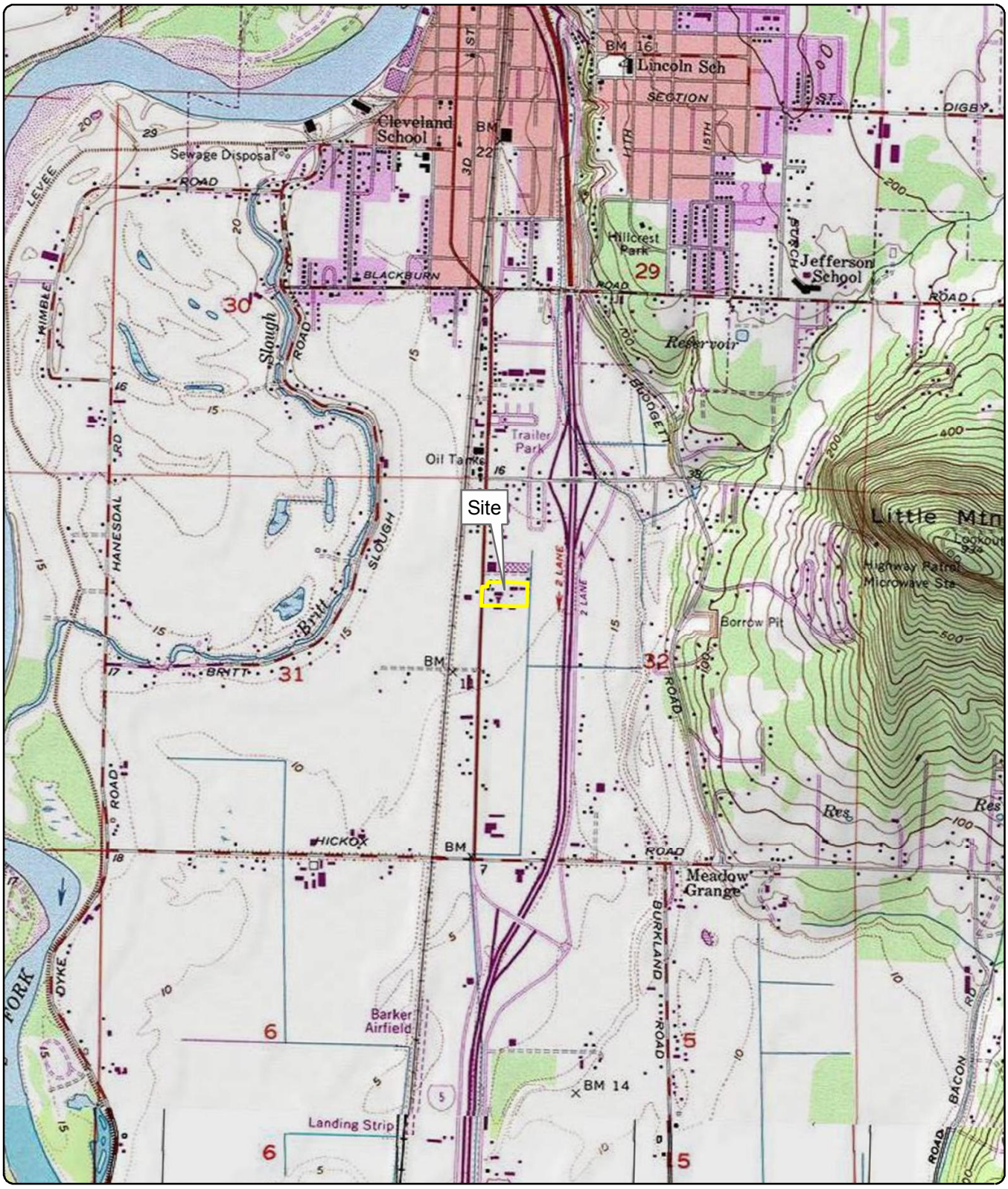
Location	Collection Date	Benzene	Ethylbenzene	Toluene	Xylenes, Total	Gasoline TPH[a]	Diesel TPH	Motor Oil TPH	Total TPH[b]
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA Method A Cleanup Level (ug/L)		5	700	1000	1000	800[a]	500	500	500
TC-1R	11/03/2016	1 U	1 U	1 U	3 U	100 U	**270**	250 U	**395**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	**140**	250 U	**265**
	5/3/2017	1 U	1 U	1 U	3 U	100 U	**120**	250 U	**245**
	8/8/2017	1 U	1 U	1 U	3 U	100 U	**380**	200 U	**480**
TC-2	11/03/2016	1 U	1 U	1 U	3 U	100 U	**54**	250 U	**179**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	5/3/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	8/8/2017	1 U	1 U	1 U	3 U	100 U	50 U	200 U	125 U
TC-3R	11/03/2016	1 U	1 U	1 U	3 U	100 U	**100**	250 U	**225**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	5/3/2017	1 U	1 U	1 U	3 U	100 U	**52**	250 U	**177**
	8/8/2017	1 U	1 U	1 U	3 U	100 U	**55**	200 U	**155**
TC-4R	11/03/2016	1 U	1 U	1 U	3 U	100 U	**55**	250 U	**180**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	5/3/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	8/8/2017	1 U	1 U	1 U	3 U	100 U	50 U	200 U	125 U
TC-5R	11/03/2016	1 U	1 U	1 U	3 U	100 U	**170**	250 U	**295**
	11/03/2016	1 U	1 U	1 U	3 U	100 U	**180**	250 U	**305**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	**55**	250 U	**180**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	**84**	250 U	**209**
	5/3/2017	1 U	1 U	1 U	3 U	100 U	**64**	250 U	**189**
	5/3/2017	1 U	1 U	1 U	3 U	100 U	**88**	250 U	**213**
	8/8/2017	1 U	1 U	1 U	3 U	100 U	**120**	200 U	**220**
	8/8/2017	1 U	1 U	1 U	3 U	100 U	**120**	200 U	**220**
TC-6	11/03/2016	1 U	1 U	1 U	3 U	100 U	**72**	250 U	**197**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	5/3/2017	1 U	1 U	1 U	3 U	100 U	50 U	250 U	150 U
	8/8/2017	1 U	1 U	1 U	3 U	100 U	50 U	200 U	125 U

Table 5-4
Summary of Groundwater Analytical Results
Quarterly Groundwater Events November 2016–August 2017
Former Truck City Truck Stop Site
Skagit County
Mount Vernon, Washington

Location	Collection Date	Benzene	Ethylbenzene	Toluene	Xylenes, Total	Gasoline TPH[a]	Diesel TPH	Motor Oil TPH	Total TPH[b]
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA Method A Cleanup Level (ug/L)		5	700	1000	1000	800[a]	500	500	500
TC-7	11/03/2016	1 U	1 U	1 U	3 U	100 U	**69**	250 U	**194**
	1/25/2017	1 U	1 U	1 U	3 U	100 U	**77**	250 U	**202**
	5/3/2017	1 U	1 U	1 U	3 U	100 U	**76**	250 U	**201**
	8/8/2017	1 U	1 U	1 U	3 U	100 U	**110**	200 U	**210**

NOTES:
Detected results are indicated by bold font.
MTCA = Model Toxics Control Act.
TPH = total petroleum hydrocarbons.
U = Result is non-detect.
ug/L = micrograms per liter.
[a]MTCA Method A cleanup level for gasoline with presence of benzene. Note: benzene was previously detected in groundwater at the Site.
[b]Sum of Diesel TPH and Motor Oil TPH. Non-detect values used at 1/2 the reporting limit value.

FIGURES



Source: US Geological Survey (1990) 7.5-minute
topographic quadrangle: Mount Vernon
Section 32, Township 34 North, Range 4 East

Figure 1-1
Site Location

Former Truck City Site
Mount Vernon, Washington

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0 1,000 2,000
Feet

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Print Date: 12/15/2015
Approved By: Yen-Vy Van
Produced By: jmiller
Project: 0714.03.01

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

Aerial Imagery Date: 2010

Legend

- Site
- Parcels

Figure 1-2
Site Parcel Map
Former Truck City Site
Mount Vernon, Washington

0 100 200
Feet

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Project: 0714.03.01 Produced By: abrasch Approved By: Yen-Vy Van Print Date: 9/19/2017
Path: X:\0714.03.01 Truck City Engineering Design Report\Projects\Remediation Action Report\Fig_1-2 Site Parcels Map.mxd

Figure 2-1
Pre-Remedial Action/ Redevelopment Site Features

Former Truck City Site
Mount Vernon, Washington

- Former USTs
- Proposed Jail Building Footprint
- Proposed Retention Pond
- Estimated Remedial Action Extent, 2015

MFA Investigation

- Existing Monitoring Well
- Decommissioned/ Removed Monitoring Well
- Proposed Replacement Monitoring Well

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 20 40
Feet

Source: Aerial photograph (2010) obtained from Esri ArcGIS Online; parcels obtained from Skagit County.

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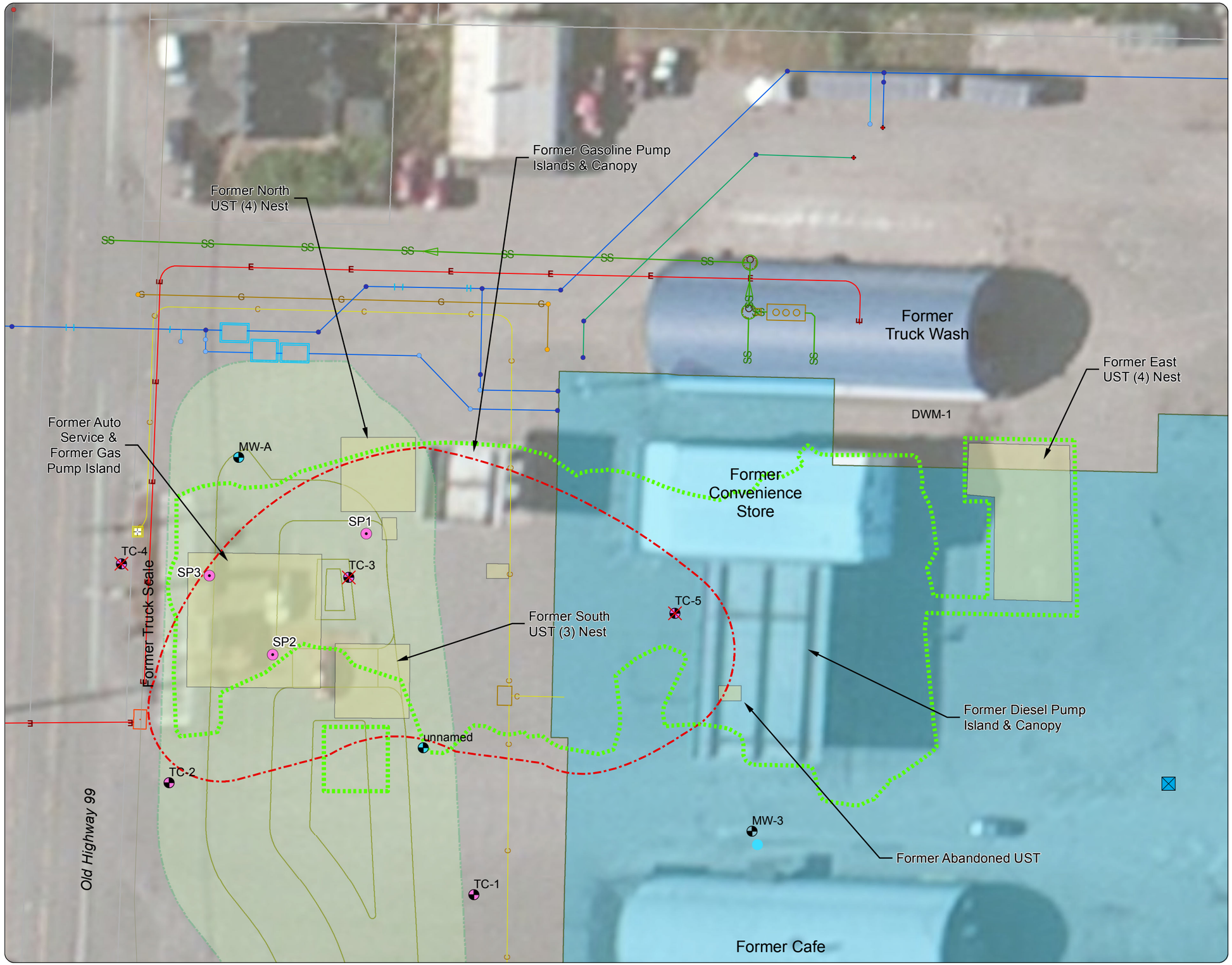
Print Date: 9/22/2017
Approved By:
Produced By: rroberts
Project: 0714.02

Figure 3-1
Skagit County Jail - Stormwater Pond Environmental Investigation

Former Truck City Site
Mount Vernon, Washington



- UST
- Parcel Boundary
- Catch Basin
- Proposed Jail Building Footprint
- Proposed Retention Pond

MFA Investigation

- Monitoring Well
- Decommissioned/ Removed Monitoring Well
- Historic Monitoring Well
- Boring For Stormwater Pond Investigation
- Estimated Remedial Action Extent, 2015
- Estimated Extent of Groundwater Plume

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.
3. Retention Pond and Building Footprint from DLR Group.

0 15 30
Feet

Source: Aerial photograph (2010) obtained from Esri ArcGIS Online; parcels obtained from Skagit County.

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Print Date: 6/6/2016
Approved By: yvan
Produced By: cwise
Project: 0714.02

Figure 3-2
Confirmation Soil Sample Locations
Abandoned Truck Wash
UST Site Assessment

Former Truck City Site
Mount Vernon, Washington

Former UST Evacuation Extent

Soil Sample Location

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 10 20
Feet

Source: Aerial photograph (2010) obtained from Esri ArcGIS Online; parcels obtained from Skagit County.

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Print Date: 9/22/2017
Approved By: yvan
Produced By: rjones
Project: 0714.03.01

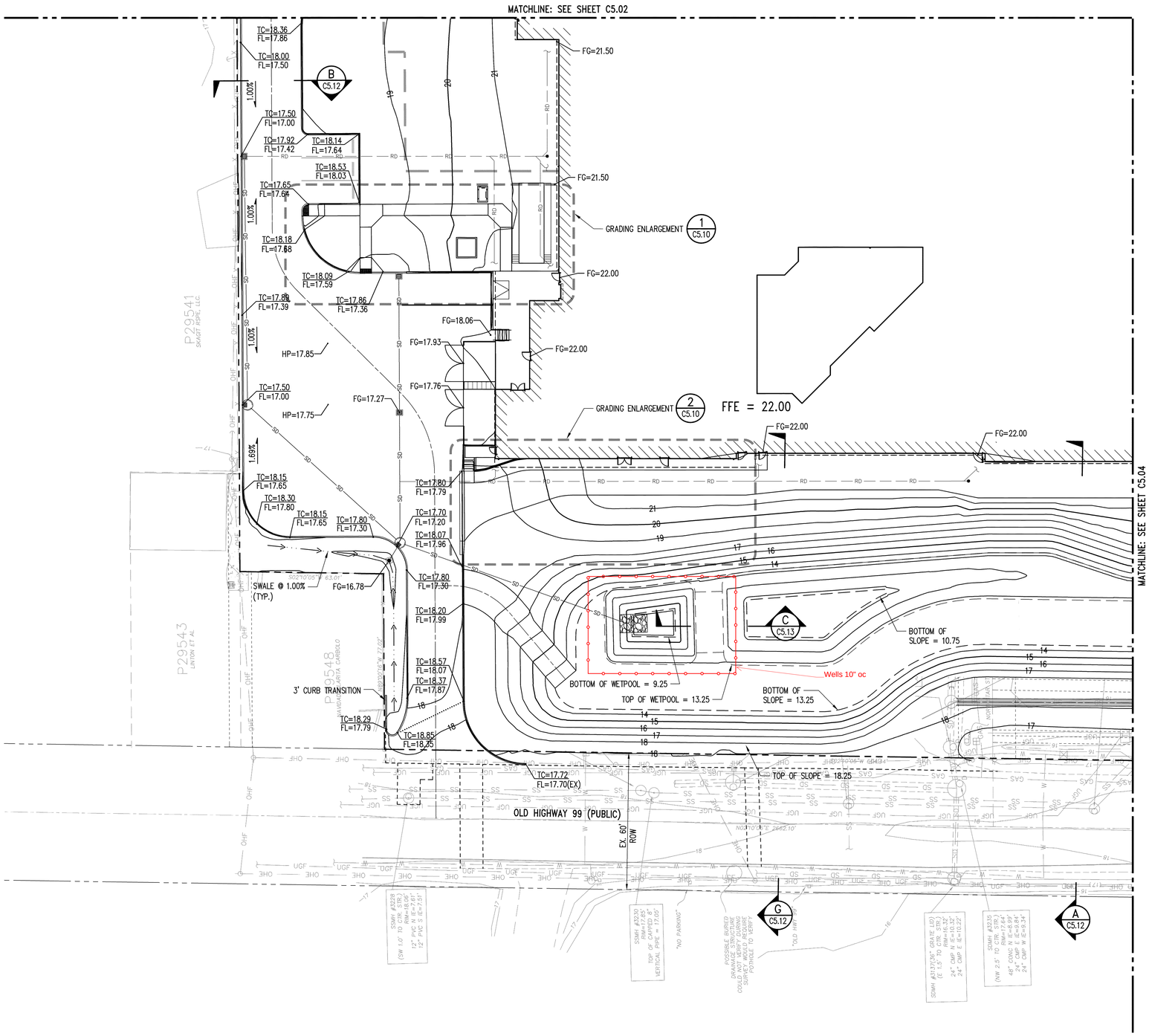


Figure 4-1
Dewatering Layout
Former Truck City Site
Mount Vernon, Washington

KEY MAP

SCALE: 1" = 200'

GRADING NOTES

1. SEE SHEETS C6.00 TO C6.04 FOR STORM DRAIN INFORMATION.
2. ALL DISTURBED AREAS NOT PERMANENTLY STABILIZED WITH PAVEMENT, COMPACTED GRAVEL, OR STRUCTURE SHALL HAVE A MINIMUM 8-INCHES OF COMPOST AMENDED SOIL. SEE LANDSCAPE PLANS.

GRADING LEGEND

— — —	PROPERTY BOUNDARY
—XX—	MAJOR CONTOUR
—XX—	MINOR CONTOUR
········	GRADE BREAK
X%	SLOPE DIRECTION ARROW
XX.XX	SPOT ELEVATION

CONFORMED SET

GRADING PLAN - NW
SKAGIT COUNTY JAIL

C5.01
73-14166-00
AUGUST 19, 2015

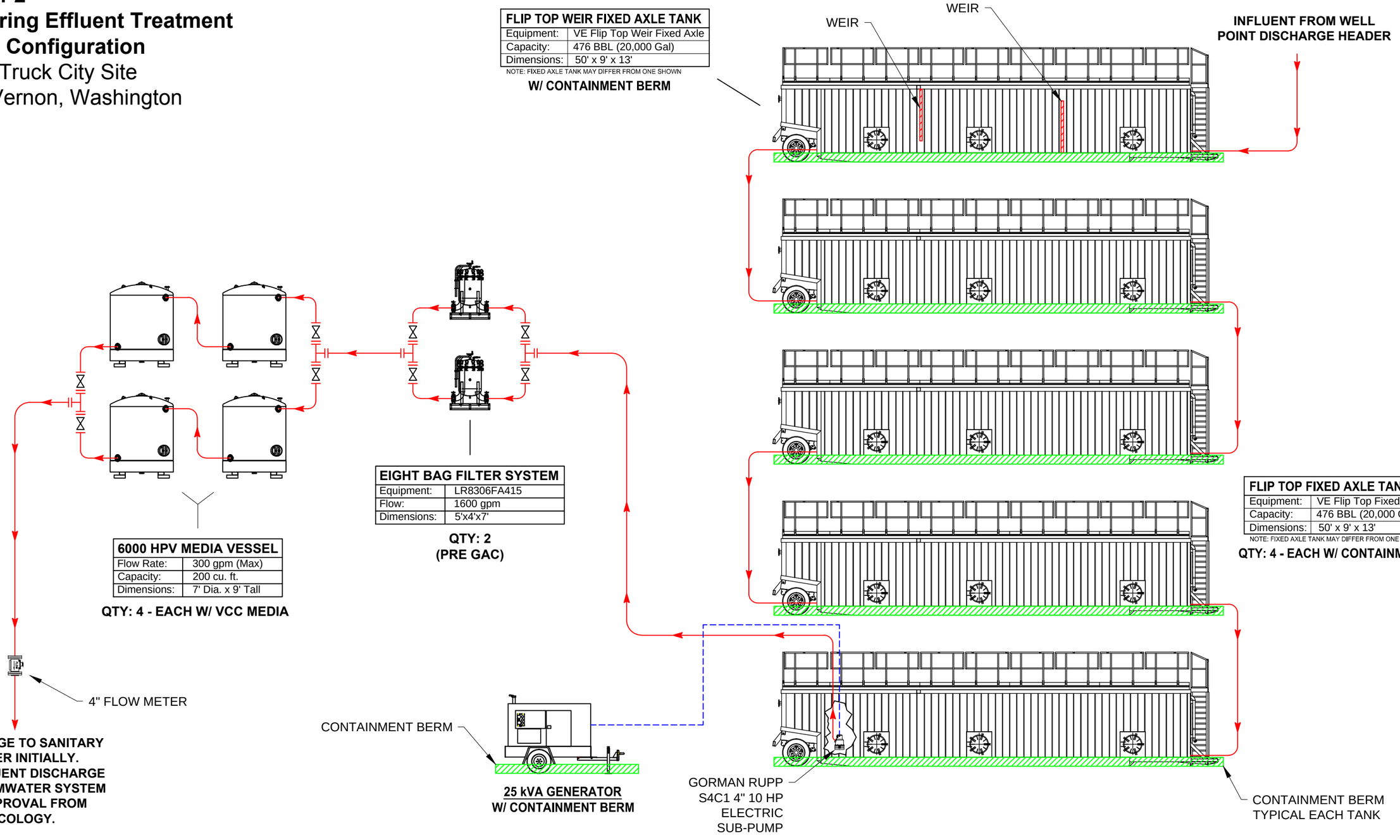
kpff
1601 5th Avenue, Suite 1600
Seattle, WA 98101
206.622.5822
www.kpff.com

Call 811 two business days before you dig

DLR Group
Architecture Engineering Planning Interiors

Source: DLR Group

Figure 4-2
Dewatering Effluent Treatment System Configuration
Former Truck City Site
Mount Vernon, Washington

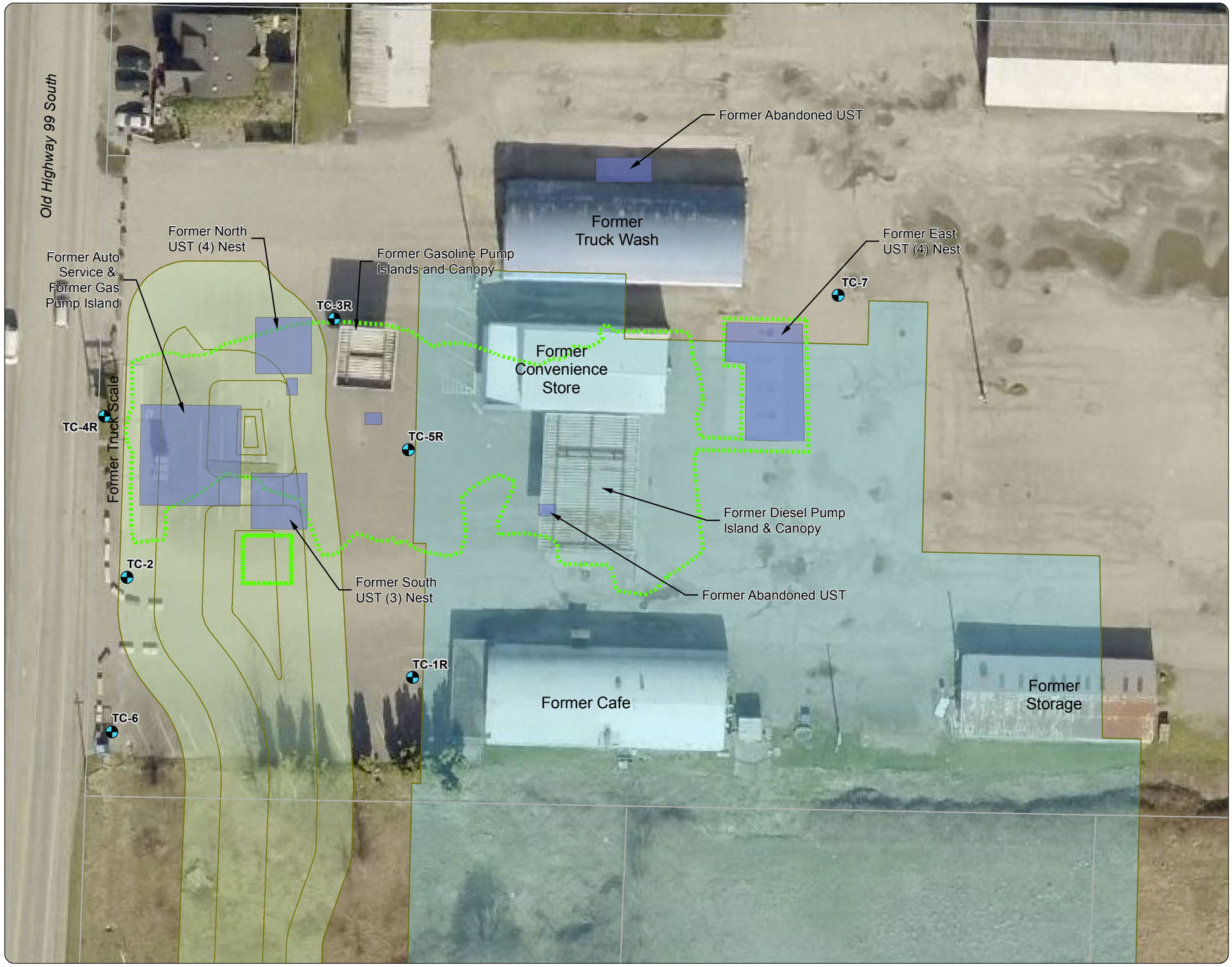


Source: Baker Corporation

SHEET SIZE: B 11" x 17"	MATERIAL:	BAKERCORP 3020 OLD RANCH PARKWAY SEAL BEACH, CA 90740-2751			
	FINISH:	TITLE: SKAGIT COUNTY JAIL PROCESS FLOW DIAGRAM			
		CUSTOMER: INTERWEST CONSTRUCTION INC.			BRANCH: SEA
		DWG BY: M. BROOKS	DATE: 02-01-16	SCALE: -	SHEET: 1 OF: 1
		CKD BY: T. FERRIS	DATE: 02-01-16	DWG No: SKF2232	REV: -

Figure 4-3
Groundwater Monitoring Well Network

Skagit County
Former Truck City Site
Mount Vernon, Washington



Legend

- Jail Building Footprint
- Stormwater Retention Pond
- Former Site Features
- Approximate Remedial Action Extent, 2015
- Monitoring Well

Notes:
1. All features of the former Truck City Site have been demolished and removed. Current site feature is the Skagit County Community Justice Center and asociated features.
2. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
3. Monitoring wells were professionally surveyed by Pacific Geomatic Services in November 2016.

0 20 40
Feet

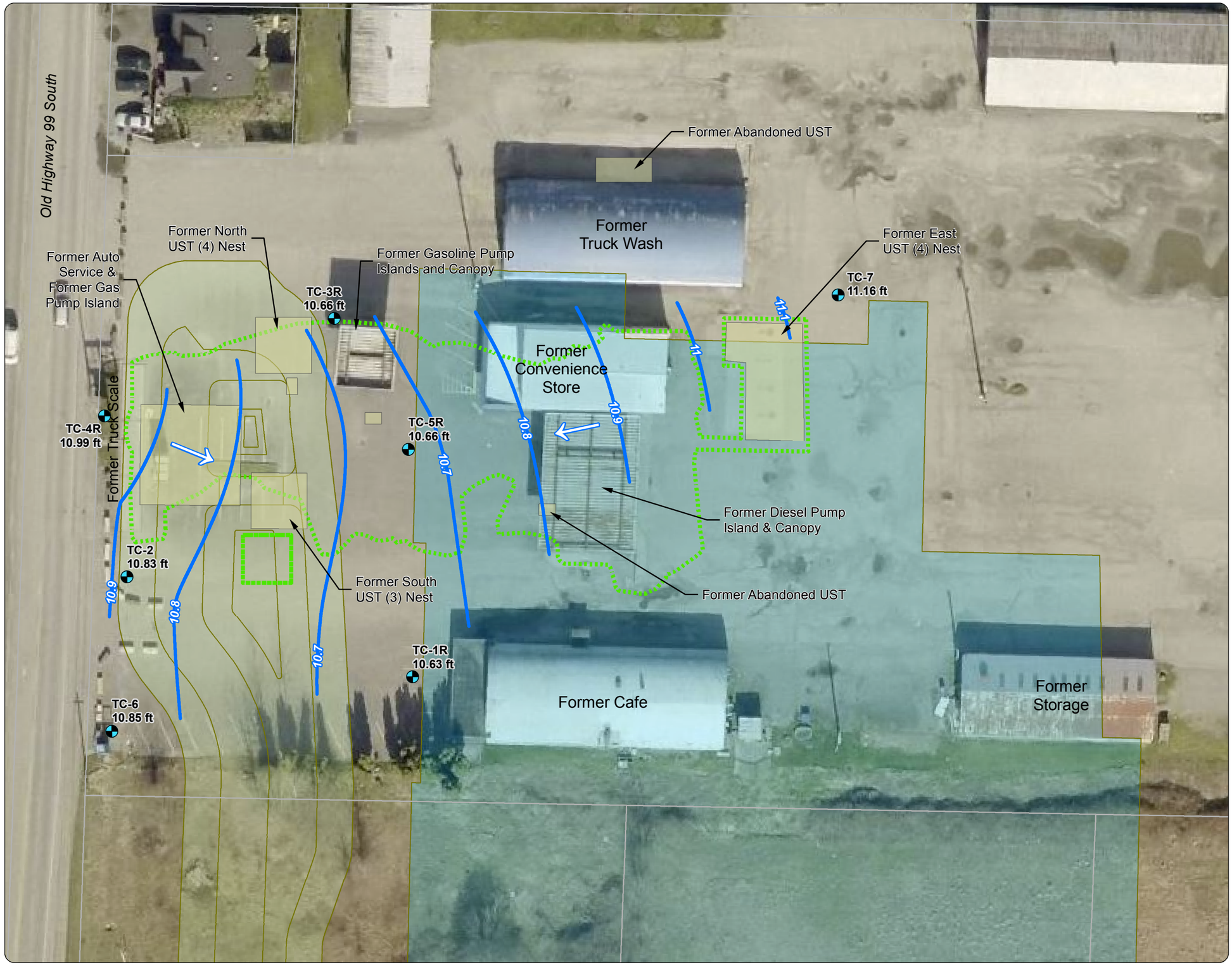
Source: Aerial photograph (2015) and parcels obtained from Skagit County.

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0714.03.01 Truck City Engineering Design Report\Projects\Fig4-3_Groundwater Monitoring Well Network.mxd
Print Date: 9/22/2017
Approved By: yvan
Produced By: rjones
Project: 0714.03.01-04

Figure 5-1
Groundwater Potentiometric Surface
November 2016

Skagit County
Former Truck City Site
Mount Vernon, Washington



Legend

- Water Level Contour
- Monitoring Well (with WLE)
- Jail Building Footprint
- Retention Pond
- Approximate Remedial Action Extent, 2015
- Groundwater Flow Direction

Notes:
1. All features of the former Truck City Site have been demolished and removed. Current site feature is the Skagit County Jail building and asociated features.
2. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
3. Monitoring wells were professionally surveyed by Pacific Geomatic Services in November 2016.
4. WLE = water level elevation.
5. UST = underground storage tank.

0 20 40
Feet

Source: Aerial photograph (2015) and parcels obtained from Skagit County.

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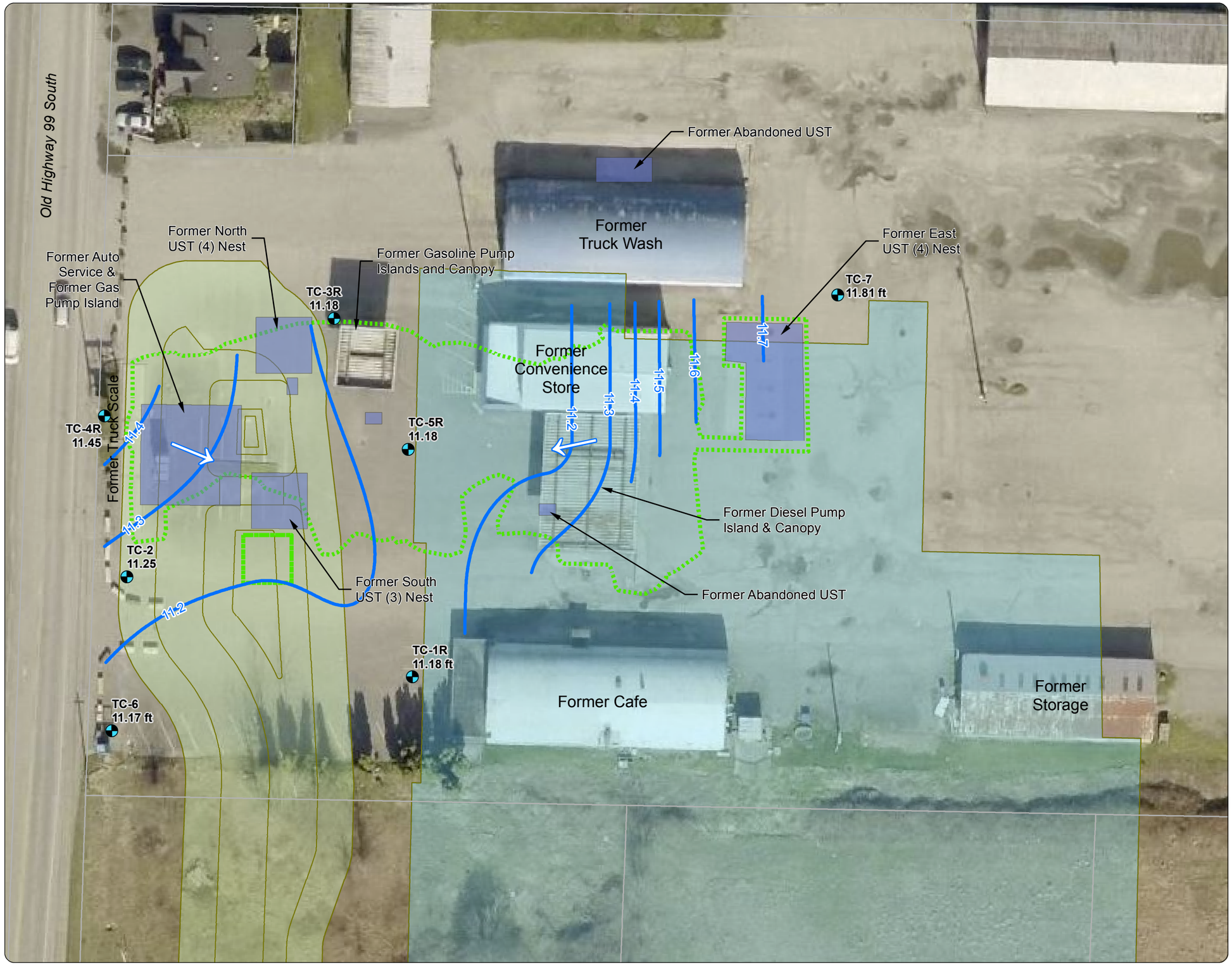
Path: X:\0714.03.01 Truck City Engineering Design Report\Projects\Quarterly GW Monitoring\Fig3_Groundwater Potentiometric Map_Nov 2016.mxd
Project: 0714.03.01-04 Produced By: njones Approved By: yvan Print Date: 12/29/2016

Figure 5-2
Groundwater Potentiometric Surface
January 2017

Skagit County
Former Truck City Site
Mount Vernon, Washington



Legend

- Jail Building Footprint
- Stormwater Retention Pond
- Former Site Features
- Approximate Remedial Action Extent, 2015
- Water Level Contour
- Monitoring Well (with WLE)
- Groundwater Flow Direction

Notes:
1. All features of the former Truck City Site have been demolished and removed. Current site feature is the Skagit County Jail building and asociated features.
2. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
3. Monitoring wells were professionally surveyed by Pacific Geomatic Services in November 2016.
4. WLE = water level elevation.
5. UST = underground storage tank.

0 20 40
Feet

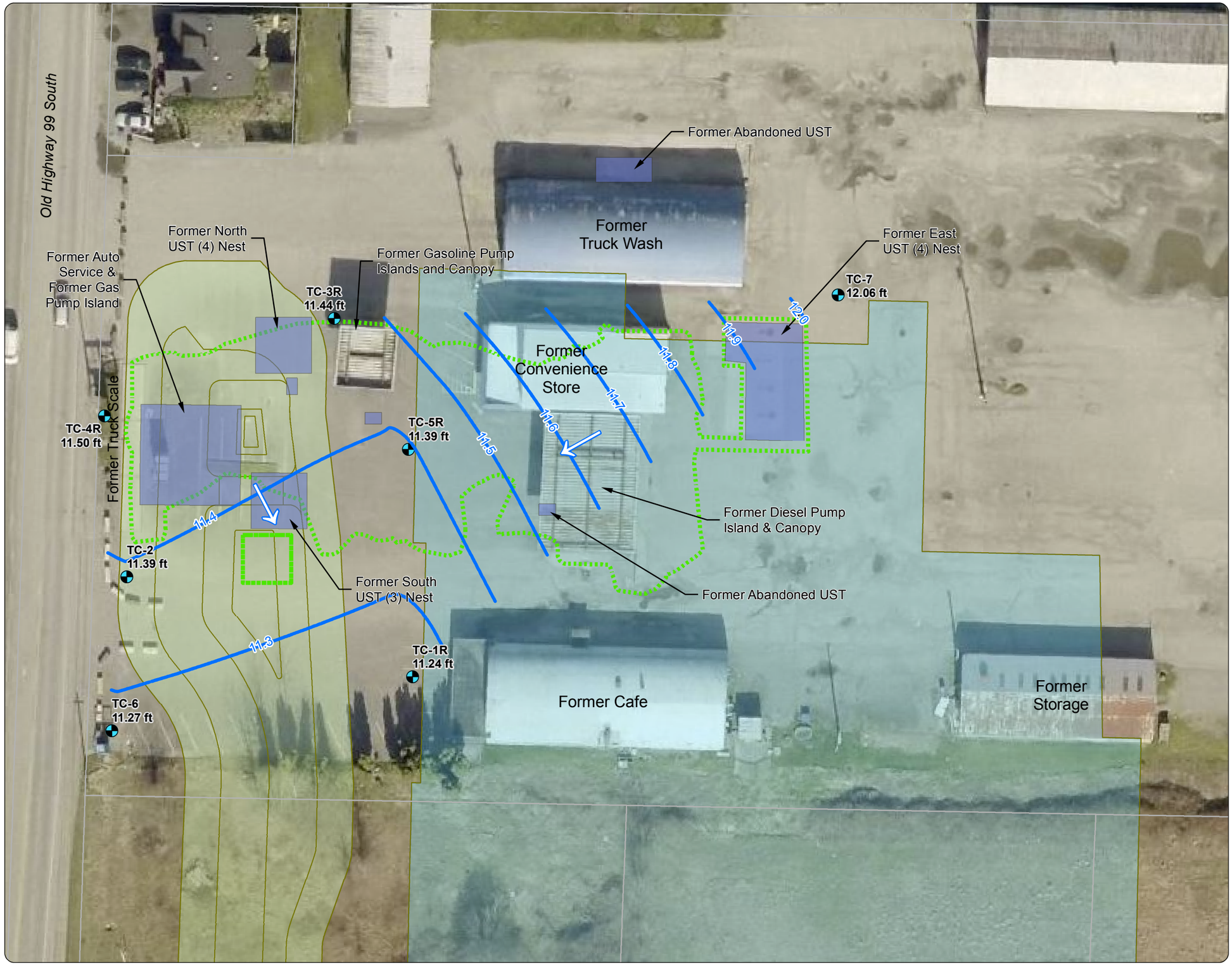
Source: Aerial photograph (2015) and parcels obtained from Skagit County.

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0714.03.01 Truck City Engineering Design Report\Projects\Quarterly GW Monitoring\Fig3_Groundwater Potentiometric Map_Jan_2017.mxd
Print Date: 2/23/2017
Approved By: yvan
Produced By: cwise
Project: 0714.03.01.04

Figure 5-3
Groundwater Potentiometric Surface
May 2017

Skagit County
Former Truck City Site
Mount Vernon, Washington



Legend

- Jail Building Footprint
- Stormwater Retention Pond
- Former Site Features
- Approximate Remedial Action Extent, 2015
- Water Level Contour
- Monitoring Well (with WLE)
- Groundwater Flow Direction

Notes:
1. All features of the former Truck City Site have been demolished and removed. Current site feature is the Skagit County Jail building and asociated features.
2. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
3. Monitoring wells were professionally surveyed by Pacific Geomatic Services in May 2017.
4. WLE = water level elevation.
5. UST = underground storage tank.

0 20 40
Feet

Source: Aerial photograph (2015) and parcels obtained from Skagit County.

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0714.03.01 Truck City Engineering Design Report\Projects\Quarterly GW Monitoring\Fig3_Groundwater Potentiometric Map_May_2017.mxd
Print Date: 5/11/2017
Approved By: yxan
Produced By: rroberts
Project: 0714.03.01-04

Figure 5-4
Groundwater Potentiometric Surface
August 2017

Skagit County
Former Truck City Site
Mount Vernon, Washington

Legend

- Jail Building Footprint
- Stormwater Retention Pond
- Former Site Features
- Approximate Remedial Action Extent, 2015
- Water Level Contour
- Monitoring Well (with WLE)
- Groundwater Flow Direction

Notes:
1. All features of the former Truck City Site have been demolished and removed. Current site feature is the Skagit County Jail building and asociated features.
2. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
3. Monitoring wells were professionally surveyed by Pacific Geomatic Services in May 2017.
4. WLE = water level elevation.
5. UST = underground storage tank.

0 20 40
Feet

Source: Aerial photograph (2015) and parcels obtained from Skagit County.

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

Path: X:\0714.03.01 Truck City Engineering Design Report\Projects\Quarterly GW Monitoring\Fig3_Groundwater Potentiometric Map_August_2017.mxd
Print Date: 8/9/2017
Approved By: yvan
Produced By: rroberts
Project: 0714.03.01-04

APPENDIX A

RETENTION POND DEWATERING LABORATORY ANALYTICAL REPORTS

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 14, 2016

Yen-Vy Van, Project Manager
Maul Foster Alongi
2815 2nd Ave, Suite 450
Seattle, WA 98121

Dear Ms Van:

Included are the results from the testing of material submitted on September 14, 2016 from the Truck City 0714.03.01, F&BI 609226 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
MFA0914R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 14, 2016 by Friedman & Bruya, Inc. from the Maul Foster Alongi Truck City 0714.03.01, F&BI 609226 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Maul Foster Alongi
609226-01	WS02-091416

All quality control requirements were acceptable.

Date of Report: 09/14/16
Date Received: 09/14/16
Project: Truck City 0714.03.01, F&BI 609226
Date Extracted: 09/14/16
Date Analyzed: 09/14/16

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
WS02-091416 609226-01	<100	97
Method Blank 06-1866 MB	<100	96

Date of Report: 09/14/16
Date Received: 09/14/16
Project: Truck City 0714.03.01, F&BI 609226
Date Extracted: 09/14/16
Date Analyzed: 09/14/16

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
WS02-091416 609226-01	<50	<250	76
Method Blank 06-1894 MB	<50	<250	77

Analysis For Volatile Compounds By EPA Method 8260C SIM

Client Sample ID:	WS02-091416	Client:	Maul Foster Alongi
Date Received:	09/14/16	Project:	Truck City 0714.03.01, F&BI 609226
Date Extracted:	09/14/16	Lab ID:	609226-01
Date Analyzed:	09/14/16	Data File:	091410.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	108	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.1
Toluene	<0.1
Ethylbenzene	<0.1
m,p-Xylene	<0.2
o-Xylene	<0.1

Analysis For Volatile Compounds By EPA Method 8260C SIM

Client Sample ID:	Method Blank	Client:	Maul Foster Alongi
Date Received:	Not Applicable	Project:	Truck City 0714.03.01, F&BI 609226
Date Extracted:	09/14/16	Lab ID:	06-1850 mb
Date Analyzed:	09/14/16	Data File:	091409.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.1
Toluene	<0.1
Ethylbenzene	<0.1
m,p-Xylene	<0.2
o-Xylene	<0.1

Date of Report: 09/14/16
Date Received: 09/14/16
Project: Truck City 0714.03.01, F&BI 609226

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	105	103	69-134	2

Date of Report: 09/14/16
Date Received: 09/14/16
Project: Truck City 0714.03.01, F&BI 609226

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	85	89	61-133	5

Date of Report: 09/14/16
Date Received: 09/14/16
Project: Truck City 0714.03.01, F&BI 609226

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	2	93	94	70-130	1
Toluene	ug/L (ppb)	2	103	102	70-130	1
Ethylbenzene	ug/L (ppb)	2	103	103	70-130	0
m,p-Xylene	ug/L (ppb)	4	104	103	70-130	1
o-Xylene	ug/L (ppb)	2	89	89	70-130	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

609226

SAMPLE CHAIN OF CUSTODY

ME 09/14/16 VI/B03

Report To Yen-Uy Van
Company Maul Foster Alongi
Address 2815 2nd Ave, Ste 540
City, State, ZIP Seattle, WA 98121
Phone 2533205378 Email yvan@maulfoster.com

SAMPLERS (signature) Carolyn Wise
PROJECT NAME Truck City
PO # 0714-03-01
REMARKS
INVOICE TO Y. Van

Page # ____ of ____

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH SAME DAY
Rush charges authorized by: Y. Van

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	BTEX by SW 8260C				Notes
						ANALYSES REQUESTED											
WS02-091416	01 A-E	9/14/16	815	W	5		X	X					X				

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Carolyn Wise	Carolyn Wise	MFA	9/14/16	1060
Received by: Nhan Phan	Nhan Phan	FEBT	9/14/16	1000
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 23, 2016

Yen-Vy Van, Project Manager
Maul Foster Alongi
2815 2nd Ave, Suite 450
Seattle, WA 98121

Dear Ms Van:

Included are the results from the testing of material submitted on September 21, 2016 from the Truck City, PO 0714.03.01-10, F&BI 609348 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
MFA0923R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 21, 2016 by Friedman & Bruya, Inc. from the Maul Foster Alongi Truck City, PO 0714.03.01-10, F&BI 609348 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Maul Foster Alongi
609348 -01	WS03-092016

All quality control requirements were acceptable.

Date of Report: 09/23/16
Date Received: 09/21/16
Project: Truck City, PO 0714.03.01-10, F&BI 609348
Date Extracted: 09/21/16
Date Analyzed: 09/21/16

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
WS03-092016 609348-01	<100	99
Method Blank 06-1912 MB	<100	99

Date of Report: 09/23/16
Date Received: 09/21/16
Project: Truck City, PO 0714.03.01-10, F&BI 609348
Date Extracted: 09/21/16
Date Analyzed: 09/21/16

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
WS03-092016 609348-01	<50	<250	106
Method Blank 06-1949 MB	<50	<250	103

Analysis For Volatile Compounds By EPA Method 8260C SIM

Client Sample ID:	WS03-092016	Client:	Maul Foster Alongi
Date Received:	09/21/16	Project:	Truck City, PO 0714.03.01-10, F&BI 609348
Date Extracted:	09/21/16	Lab ID:	609348-01
Date Analyzed:	09/21/16	Data File:	092111.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration ug/L (ppb)
BTEX	<0.6

Analysis For Volatile Compounds By EPA Method 8260C SIM

Client Sample ID:	Method Blank	Client:	Maul Foster Alongi
Date Received:	Not Applicable	Project:	Truck City, PO 0714.03.01-10, F&BI 609348
Date Extracted:	09/21/16	Lab ID:	06-1926 mb
Date Analyzed:	09/21/16	Data File:	092110.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration ug/L (ppb)
BTEX	<0.6

Date of Report: 09/23/16
Date Received: 09/21/16
Project: Truck City, PO 0714.03.01-10, F&BI 609348

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 609350-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	180	180	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	69-134

Date of Report: 09/23/16
Date Received: 09/21/16
Project: Truck City, PO 0714.03.01-10, F&BI 609348

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	92	94	63-142	2

Date of Report: 09/23/16
Date Received: 09/21/16
Project: Truck City, PO 0714.03.01-10, F&BI 609348

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	2	88	89	70-130	1
Toluene	ug/L (ppb)	2	99	98	70-130	1
Ethylbenzene	ug/L (ppb)	2	98	97	70-130	1
m,p-Xylene	ug/L (ppb)	4	98	97	70-130	1
o-Xylene	ug/L (ppb)	2	106	108	70-130	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

609348

SAMPLE CHAIN OF CUSTODY

ME 09/21/16 [redacted] 1 of 1 F04

Report To: Yen-Vy Van

Company: Maul Foster Alongi

Address: 2815 2nd Ave Ste 540

City, State, ZIP: Seattle, WA 98121

Phone: 2533205378 Email: yvan@maulfoster.com

SAMPLERS (signature): [signature]

PROJECT NAME	PO #
Truck City	0714.03.01-10
REMARKS	**INVOICE TO**
	Y. Van

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 24 hr

Rush charges authorized by: Y. Van

SAMPLE DISPOSAL
- ☒ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by ~~8021B~~ 8260C SIM - per project specs - me	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
WS03-092016	01 A-E	9/20/16	915	W	5		X	X	X								*Report BTEX as one value
																	Samples received at 3 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Carolyn Wise	MFA	9/20/16	1100
Received by:	[signature]	Nhan Phan	FeBI	9/21/16	0950
Relinquished by:					
Received by:					

APPENDIX B
FINAL BORING LOGS

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.03.01	**TC-1R**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**10/31/2016 to 10/31/2016**	Northing	
Driller/Equipment	**Holt Services, Inc./ Michael and Kyle/Geoprobe 7800**	Easting	
Geologist/Engineer	**Carolyn Wise**	Hole Depth	**15.0-feet**
Sample Method	**Direct-Push**	Outer Hole Diam	**2.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**50**	**GP**					*0.0 to 2.5 feet: SANDY GRAVEL (GW); brown; 20% sand, fine to medium grained, angular to subangular; 80% gravel, medium to coarse grained, angular to subangular; stiff; well graded; dry. (FILL)*
2									
3									*2.5 to 5.0 feet: no recovery.*
4									
5			**48**	**GP**					*5.0 to 5.8 feet: SANDY GRAVEL (GW); brown; 20% sand, fine to medium grained, angular to subangular; 80% gravel, medium to coarse grained, angular to subangular; stiff; well graded; dry. (FILL)*
6									*5.8 to 6.4 feet: SILT (ML); gray; 100% fines; stiff; dry to moist.*
7									*6.4 to 7.4 feet: POORLY GRADED SAND (SP); light brown, 5% fines; 95% sand, well sorted, very fine to fine grained; loose to medium dense; dry to moist.*
8									*7.4 to 10.0 feet: no recovery.*
9									
10	▽		**80**	**GP**					*10.0 to 11.8 feet: SANDY SILT (ML); gray; 90% fines; 10% sand, very fine to fine grained; stiff; moist.*
11	▼								
12									*11.8 to 14.0 feet: POORLY GRADED SAND (SP); gray; 100% sand, medium grained; wet.*
13									
14									*14.0 to 15.0 feet: no recovery.*
15									

Total Depth = 15.0 feet bgs.

Borehole Completion Details:
0.0 to 15.0 feet: 3.75-inch borehole.
0.0 to 1.0 feet: Concrete.
1.0 to 2.5 feet: Bentonite chips hydrated with potable water.
2.5 to 15.0 feet: 10x20 silica sand filter pack.

Monitoring Well Completion Details:
Washington State Department of Ecology Well Tag Number: BKY-357
Traffic-grade, flush-mounted, monitoring well vault.
0.0 to 4.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, riser pipe.
4.5 to 14.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, 0.010 machine slot, prepacked, well screen.
14.5 to 14.7 feet: 2-inch, schedule 40, polyvinyl chloride pipe end cap.

NOTES: *1. bgs = below ground surface. 2. GP = Geoprobe macro-core sampler. 3. Depths are relative to feet bgs.*

▽ ***Water level observed at time of drilling.*** ▼ ***Water level observed during sampling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.02.02	**TC-2**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**7/17/2014 to 7/17/2014**	Northing	
Driller/Equipment	**Holt Services, Inc./Geoprobe 7822DT**	Easting	
Geologist/Engineer	**Yen-Vy Van**	Hole Depth	**15.0-feet**
Sample Method	**Geoprobe**	Outer Hole Diam	**3.5-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0									0.0 to 0.4 feet: ASPHALT.
1–5			20	GP					0.4 to 5.0 feet: SANDY GRAVEL (GW); tan brown; 5% fines; 35% sand, fine to coarse; 60% gravel, fine to medium, subangular; medium dense; dry. (FILL)
5–6.5			100	GP					5.0 to 6.5 feet: SILTY SAND (SM); grayish brown; 35% fines; 65% sand; medium dense; moist to wet @ 6.5 feet.
6.5–10						TC2-S-6.5 PID = 2.0 ppm TC2-S-9.0			6.5 to 10.0 feet: SILT (ML); medium to dark gray; 100% fines; soft; intermittent pockets of silty clay; saturated from 7.0 to 8.0 feet, moist to wet @ 9.0 feet.
10–14.5			100	GP		TC2-S-12.0			10.0 to 14.5 feet: POORLY GRADED SAND (SP); gray; 5% fines; 95% sand, medium, well sorted; medium dense; saturated @ 11.0-14.5 feet.
14.5–15						TC2-S-15.0 PID = 0.0 ppm			14.5 to 15.0 feet: CLAY (CL); gray; 100% fines, high plasticity; soft; local wood chips; moist to wet.

NOTES: *Ecology Well ID #BIP 879. Boring completed as pre-packed 2" well.*
PID = photoionization detector.
ppm = parts per million.

▽ ***Water level observed at time of drilling.*** ▼ ***Water level observed after well development.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.03.01	**TC-3R**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**10/31/2016 to 10/31/2016**	Northing	
Driller/Equipment	**Holt Services, Inc./ Michael and Kyle/Geoprobe 7800**	Easting	
Geologist/Engineer	**Carolyn Wise**	Hole Depth	**15.0-feet**
Sample Method	**Direct-Push**	Outer Hole Diam	**2.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1–5			**62**	**GP**					*0.0 to 3.1 feet: SANDY GRAVEL WITH SILT (GW-GM); brown; 10% fines; 30% sand, fine to medium grained; 60% gravel, fine to coarse, subrounded to subangular; medium dense; well graded; dry. (FILL)* *3.1 to 5.0 feet: no recovery.*
5–10			**48**	**GP**					*5.0 to 7.4 feet: SANDY GRAVEL WITH SILT (GW-GM); brown; 10% fines; 30% sand, fine to medium grained; 60% gravel, fine to coarse, subrounded to subangular; medium dense; well graded; moist to wet. (FILL)* *@ 7.3 feet: wet.* *7.4 to 10.0 feet: no recovery.*
10–15			**68**	**GP**					*10.0 to 12.0 feet: SANDY GRAVEL WITH SILT (GW-GM); brown; 10% fines; 30% sand, fine to medium grained; 60% gravel, fine to coarse, subrounded to subangular; medium dense; well graded; wet. (FILL)* *12.0 to 13.4 feet: SANDY SILT (ML); gray; 90% fines, stiff; 10% sand, very fine; wet.* *13.4 to 15.0 feet: no recovery.*

Total Depth = 15.0 feet bgs.

Borehole Completion Details:

0.0 to 15.0 feet: 3.75-inch borehole.
0.0 to 1.0 feet: Concrete.
1.0 to 2.5 feet: Bentonite chips hydrated with potable water.
2.5 to 15.0 feet: 10x20 silica sand filter pack.

Monitoring Well Completion Details:

Washington State Department of Ecology Well Tag Number: BKY-355
Traffic-grade, flush-mounted, monitoring well vault.
0.0 to 4.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, riser pipe.
4.5 to 14.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, 0.010 machine slot, prepacked, well screen.
14.5 to 14.7 feet: 2-inch, schedule 40, polyvinyl chloride pipe end cap.

NOTES: *1. bgs = below ground surface. 2. GP = Geoprobe macro-core sampler. 3. Depths are relative to feet bgs.*

▽ ***Water level observed at time of drilling.*** ▼ ***Water level observed during sampling.***

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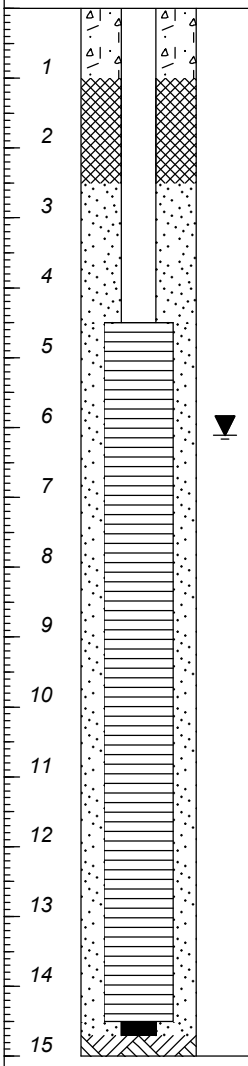
Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.03.01	**TC-4R**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**11/01/2016 to 11/01/2016**	Northing	
Driller/Equipment	**Holt Services, Inc./ Michael and Kyle/Geoprobe 7800**	Easting	
Geologist/Engineer	**Carolyn Wise**	Hole Depth	**15.0-feet**
Sample Method	**Direct-Push**	Outer Hole Diam	**2.25-inch**



Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			100	GP					0.0 to 2.5 feet: SANDY GRAVEL WITH SILT (GW-GM); dark brown and gray; 10% fines; 30% sand; 60% gravel; medium dense to dense; well graded; dry. (FILL)
2									
3									2.5 to 7.0 feet: SILTY SAND (SM); light to medium brown; 35% fines; 65% sand; local fine subangular gravel; local iron oxidation staining; dry.
4									
5			100	GP					
6	▼								
7									7.0 to 9.0 feet: SILT (ML); gray; 100% fines; medium stiff; layered silt; moist to wet @ 7.0 feet, saturated @ 7.5 to 9.0 feet.
8									
9									9.0 to 15.0 feet: POORLY GRADED SAND (SP); gray; 5% fines; 95% sand, well sorted, medium grained; moist to wet.
10			100	GP					
11									
12									
13									
14									
15									

Total Depth = 15.0 feet bgs.

Borehole Completion Details:
0.0 to 15.0 feet: 3.75-inch borehole.
0.0 to 1.0 feet: Concrete.
1.0 to 2.5 feet: Bentonite chips hydrated with potable water.
2.5 to 15.0 feet: 10x20 silica sand filter pack.

Monitoring Well Completion Details:
Washington State Department of Ecology Well Tag Number: BKY-358
Traffic-grade, flush-mounted, monitoring well vault.
0.0 to 4.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, riser pipe.
4.5 to 14.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, 0.010 machine slot, prepacked, well screen.
14.5 to 14.7 feet: 2-inch, schedule 40, polyvinyl chloride pipe end cap.

NOTES: 1. bgs = below ground surface. 2. GP = Geoprobe macro-core sampler. 3. Depths are relative to feet bgs. 4. Soil descriptions from adjacent decommissioned well, TC-4. New soil cores were not observed during the installation of TC-4R.

▼ **Water level observed during sampling.**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.03.01	**TC-5R**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**10/31/2016 to 10/31/2016**	Northing	
Driller/Equipment	**Holt Services, Inc./ Michael and Kyle/Geoprobe 7800**	Easting	
Geologist/Engineer	**Carolyn Wise**	Hole Depth	**15.0-feet**
Sample Method	**Direct-Push**	Outer Hole Diam	**2.25-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1			**60**	**GP**					*0.0 to 3.0 feet: SANDY GRAVEL (GW); gray to brown; 20% sand, fine to medium grained, angular to subangular; 80% gravel, medium to coarse, angular; stiff; well graded; moist. (FILL)*
2									
3									
4									*3.0 to 5.0 feet: no recovery.*
5			**64**	**GP**					*5.0 to 6.2 feet: SANDY GRAVEL (GW); brown; 20% sand, fine to medium grained, angular to subangular; 80% gravel, medium to coarse, angular; stiff; well graded; moist. (FILL)*
6									*6.2 to 8.2 feet: GRAVEL WITH SAND (GP); gray; 10% sand, medium to coarse grained; 90% gravel, medium to coarse grained, angular to subangular; stiff; poorly graded; dry to moist. (FILL)*
7									
8									*8.2 to 10.0 feet: no recovery.*
9									
10	▽		**56**	**GP**					*10.0 to 12.5 feet: GRAVEL WITH SAND (GP); brown; 10% sand, medium to coarse grained; 90% gravel, medium to coarse grained, angular to subangular; stiff; poorly graded; moist to wet. (FILL)*
11	▼								
12									
13									*12.5 to 12.8 feet: POORLY GRADED SAND (SP); gray; 100% sand, medium grained; soft; wet.*
14									*12.8 to 15.0 feet: no recovery.*
15									

Total Depth = 15.0 feet bgs.

Borehole Completion Details:
0.0 to 15.0 feet: 3.75-inch borehole.
0.0 to 1.0 feet: Concrete.
1.0 to 2.5 feet: Bentonite chips hydrated with potable water.
2.5 to 15.0 feet: 10x20 silica sand filter pack.

Monitoring Well Completion Details:
Washington State Department of Ecology Well Tag Number: BKY-356
Traffic-grade, flush-mounted, monitoring well vault.
0.0 to 4.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, riser pipe.
4.5 to 14.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, 0.010 machine slot, prepacked, well screen.
14.5 to 14.7 feet: 2-inch, schedule 40, polyvinyl chloride pipe end cap.

NOTES: *1. bgs = below ground surface. 2. GP = Geoprobe macro-core sampler. 3. Depths are relative to feet bgs.*

▽ ***Water level observed at time of drilling.*** ▼ ***Water level observed during sampling.***

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.02.02	**TC-6**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**7/17/2014 to 7/17/2014**	Northing	
Driller/Equipment	**Holt Services, Inc./Geoprobe 7822DT**	Easting	
Geologist/Engineer	**Yen-Vy Van**	Hole Depth	**15.0-feet**
Sample Method	**Geoprobe**	Outer Hole Diam	**3.5-inch**

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
0			100	GP					0.0 to 0.4 feet: ASPHALT.
1									0.4 to 3.0 feet: SAND with GRAVEL (SW); black brown; 10% fines; 75% sand; 15% gravel; loose; moist.
2									
3									
4						TC6-S-3.0 PID = 0.0 ppm			3.0 to 7.0 feet: SILTY SANDY CLAY (CL); light brown; 75% fines, moderate plasticity; 25% sand; medium stiff; abundant iron oxidation staining; moist to wet @ 7.0 feet.
5			100	GP					
6	▼								
7	▽					TC6-S-7.0 PID = 1.3 ppm			7.0 to 9.0 feet: SILTY CLAY (CL); gray; 100% fines, low plasticity; soft; saturated.
8									
9									9.0 to 12.5 feet: SILTY SAND (SM); gray; 35% fines; 65% sand; medium dense; saturated.
10			100	GP					
11									
12									
13						TC6-S-12.5			12.5 to 13.5 feet: POORLY GRADED SAND (SP); 10% fines; 90% sand, well sorted, medium; medium dense; saturated.
14						TC6-S-13.5			13.5 to 15.0 feet: SILTY SAND (SM); gray; 35% fines; 65% sand; medium dense; moist to wet.
15						TC6-S-15.0 PID = 28.5 ppm			

NOTES: Ecology Well ID #BIP 880. Boring completed as pre-packed 2" well.
PID = photoionization detector.
ppm = parts per million.

▽ **Water level observed at time of drilling.** ▼ **Water level observed after well development.**

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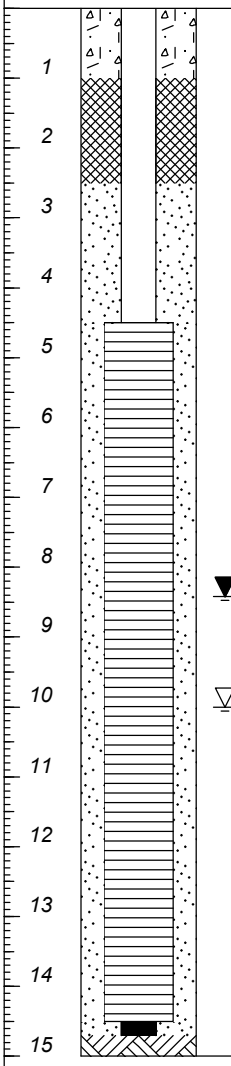
Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
0714.03.01	**TC-7**	**1 of 1**

Project Name	**Truck City Site**	TOC Elevation (feet)	
Project Location	**Mount Vernon, WA**	Surface Elevation (feet)	
Start/End Date	**11/01/2016 to 11/01/2016**	Northing	
Driller/Equipment	**Holt Services, Inc./ Michael and Kyle/Geoprobe 7800**	Easting	
Geologist/Engineer	**Carolyn Wise**	Hole Depth	**15.0-feet**
Sample Method	**Direct-Push**	Outer Hole Diam	**2.25-inch**



Depth (feet, BGS)	Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1–5		**50**	**GP**					*0.0 to 2.25 feet: WELL GRADED GRAVEL (GW); brown to gray; 20% fines; 20% sand, fine to medium; 60% gravel, coarse, angular; medium dense; dry. (FILL)*
								2.25 to 5.0 feet: no recovery.
5–10		**54**	**GP**					*5.0 to 5.5 feet: GRAVEL WITH SILT (GP); brown; 10% fines; 90% gravel, coarse, angular; medium dense; poorly graded; moist. (FILL)*
								5.5 to 7.7 feet: POORLY GRADED SAND (SP); brown to gray; 100% sand, fine, medium grained; moist.
								7.7 to 10.0 feet: no recovery.
10–15		**100**	**GP**					*10.0 to 11.0 feet: POORLY GRADED GRAVEL (GP); gray to white; 100% gravel, coarse, subangular to subrounded; loose; moist.*
								11.0 to 12.3 feet: SANDY SILT (ML); gray; 90% fines, stiff; 10% sand, very fine; wet.
								12.3 to 15.0 feet: POORLY GRADED SAND (SP); gray; 100% sand, medium, angular to subangular; loose; wet.

Total Depth = 15.0 feet bgs.

Borehole Completion Details:

0.0 to 15.0 feet: 3.75-inch borehole.
0.0 to 1.0 feet: Concrete.
1.0 to 2.5 feet: Bentonite chips hydrated with potable water.
2.5 to 15.0 feet: 10x20 silica sand filter pack.

Monitoring Well Completion Details:

Washington State Department of Ecology Well Tag Number: BKY-356
Traffic-grade, flush-mounted, monitoring well vault.
0.0 to 4.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, riser pipe.
4.5 to 14.5 feet: 2-inch diameter, schedule 40, polyvinyl chloride, 0.010 machine slot, prepacked, well screen.
14.5 to 14.7 feet: 2-inch, schedule 40, polyvinyl chloride pipe end cap.

NOTES: *1. bgs = below ground surface. 2. GP = Geoprobe macro-core sampler. 3. Depths are relative to feet bgs.*

▽ ***Water level observed at time of drilling.*** ▼ ***Water level observed during sampling.***

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APPENDIX C

MONITORING WELLS SURVEY

Pacific Geomatic Services, Inc.
Land Surveying & Mapping Services
6608 216th Street SW, Suite 304
Mountlake Terrace, Washington 98043
Tel: (425) 778-5620 Fax: (425) 775-2849
Web: www.PacGeoInc.com

Project: Skagit Jail Well Survey
Project No.: 16-030-01
Location: Mount Vernon
Client: Maul Foster & Alongi
Date: November 3, 2016

POINT	NORTHING	EASTING	ELEVATION (TOP OF PVC)	ELEVATION (TOP OF CASE)	DESCRIPTION
2003	512242.7	1275611.6	21.51'	21.85'	MW-TC-1R
2006	512284.3	1275492.3	16.99'	17.35'	MW-TC-2
2001	512392.2	1275578.9	18.02'	18.48'	MW-TC-3R
2004	512351.6	1275483.1	17.10'	17.39'	MW-TC-4R
2002	512337.6	1275609.8	21.62'	21.93'	MW-TC-5R
2000	512402.0	1275788.9	19.58'	20.12'	MW-TC-7
202	512455.1	1275502.6	N/A	18.20'	TEMPORARY BENCH MARK (SET PK NAIL & WASHER)
203	512456.5	1275700.0	N/A	17.40'	TEMPORARY BENCH MARK (SET PK NAIL & WASHER)

Reference Monument: WSDOT Monument ID 2927 (Designated GP29005-88)
Horizontal Datum: Washington State Plane, North Zone (NAD 83/11)
Vertical Datum: NAVD 88