

Tiki Car Wash Bellevue, Washington

Remedial Investigation Report Draft

Prepared for



Washington State Department of Ecology
Toxics Cleanup Program
Northwest Regional Office
Shoreline, Washington

Prepared by



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April 2023

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1.0 Introduction

1.1 Objectives

This report documents the activities and findings of a remedial investigation (RI) into the nature and extent of petroleum impacts at the Tiki Car Wash Site in Bellevue, Washington (Figure 1). The RI was performed by Leidos, Inc. (Leidos), on behalf of the Washington State Department of Ecology (Ecology). This report is intended to fulfill the requirements of the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) (WAC 173-340-350[7] and WAC 173-340-430[7]). Detailed scope and data quality objectives for this RI are presented in the March 2022 Work Plan/Sampling and Analysis/Quality Assurance Project Plan (Leidos 2022).

1.2 Site Background

The Tiki Property is occupied by an operating retail gasoline station and drive-through car wash at 11909 NE 8th Street, Bellevue, Washington. The gas station and car wash at the Tiki Property were constructed in 1971. Three underground storage tanks (USTs) were installed at that time and a fourth UST was installed in 1979. The Tiki Property has been owned by Tiki Enterprises, Inc. since 1973.

The property is bordered to the north by NE 8th Street, to the east by a Bartell Drug Store to the west by a car dealership (Infinity of Bellevue) and to the south by a paved entrance road and a parking lot owned by TRF.

In 1993, Ecology and Tiki Enterprises, Inc. entered Consent Decree No. 93-2077106 in Superior Court of the State of Washington for King County. The consent decree identified the work that was required to be performed in a phased approach. Phase I was a Remedial Investigation and Feasibility Study (RI/FS), Phase II was development of a Cleanup Action Plan (CAP) and Phase III consisted of the implementation of the Cleanup Action Plan.

In 1994, Hart Crowser oversaw a soil removal of approximately 34 tons of petroleum contaminated soil from a strip along the western boundary of the Bartell Drugs parking lot just east of the station (Figure 1). This effort was done on behalf of the owner of the Bartell property.

An air sparging and soil vapor extraction (AS/SVE) soil and groundwater remediation system was installed in 1995 by Ecology as part of an interim action along the west and south edges of the Tiki Property. The system reportedly was prone to shutdowns due to water accumulation in the system's knockout drum. Operation of the AS/SVE system was eventually discontinued in 1996 due to a lack of funding. Confirmation soil or groundwater samples were not collected to assess the effectiveness of this phase of the cleanup action after operation of the remediation system was discontinued. Subsequent groundwater sampling indicated that the remediation had minimal effect on the contamination levels.

In February 2007, EA Engineering installed seven monitoring wells (MW-30, MW-31, MW-32, MW-33, MW-34, MW-35 and MW-36) at the Site and on adjacent properties to better delineate distribution of contaminants in this area, to provide compliance monitoring at

property boundaries, and to enable the application of enhanced fluid recovery (EFR) technology at the site (EA 2007).

In 2008 an EFR test was completed on the Site by placing a vacuum on selected wells. This study indicated that in this limited test 100 pounds of petroleum vapors were removed.

No additional remedial actions to date have been conducted at the Tiki Car Wash Site by Ecology or other parties.

2.0 Remedial Investigation Activities

The current portion of the RI described in this report included installation of soil borings and groundwater wells, and collection of soil and groundwater and vapor samples. Remedial investigation activities are detailed in the following sections.

2.1 Soil Borings

As summarized in the Site background, remedial investigation activities have been ongoing since 1993. These investigations included soil borings on and off the property. The following soil borings along with the current soil borings are depicted on Figure 2, and include the following:

- Soil borings GP-1 through GP-12 were installed in 2006 by EA Engineering.
- Soil borings HC-1 through HC-8 were installed on the Bartell Drugs parking lot by Hart Crowser on behalf of the Bartell property owner.

The current investigation was designed to fully delineate the contamination plume and close any data gaps from previous investigations. Four soil borings (along with five additional borings completed as monitoring wells) were completed during this portion of the RI. Soil borings SB-1, SB-2, SB-3, and SB-5 were completed using a direct-push drill rig. Proposed boring SB-4 was not installed due to issues accessing that boring location. Soil borings MW-37 through MW-41 were completed using a combination direct-push and hollow-stem auger drill rig. This activity is summarized as follows:

- Borings SB-1 and SB-2 are located near the northwest corner of the station property. These borings were used to delineate the northwest limits of the contaminated soil plume.
- Soil boring SB-3 is located along the northern property line between Tiki Car Wash and Bartell Drugs. This boring is placed to delineate the northeastern edge of the soil plume.
- Soil boring SB-4, located on the Infiniti of Bellevue property near the western property line with Tiki, was not installed due to concerns of safely accessing that location. The location of the parking structure made that location unworkable.
- Soil boring SB-5 is located on the station property. This boring was specifically placed to be out of the traffic pattern for the pump islands and the car wash and was used to assess conditions on the station property.

Soils samples were also collected from the groundwater monitoring well borings MW-37 through MW-41.

- MW-37 and MW-39 were sited to delineate the eastern edge of the impacted soil plume.
- MW-38, MW-40 and MW-41 were sited to delineate the southern boundary of the soil plume.

Boring logs are presented as Appendix A.

2.1.1 Soil Sample Chemical Analyses

Soil samples collected were analyzed for the following parameters:

- Gasoline-range organics by Ecology Method NWTPH-Gx.
- Diesel- range organics by Ecology Method NWTPH-Dx: and
- Benzene, toluene, ethylbenzene, and xylenes (BTEX), ethylene dibromide (EDB), and ethylene dichloride (EDC); by United States Environmental Protection Agency (USEPA) Method 8260D.

Soil sample analytical results are summarized in Table 1 and Figure 3.

All soil samples were analyzed by Eurofins Lancaster Laboratories, Inc. in Lancaster, Pennsylvania. Complete laboratory reports are presented as Appendix B.

2.2 Groundwater Monitoring Wells

Groundwater monitoring wells were installed in borings MW-37 through MW-41 (Figure 2). As discussed in Section 3.2, the Site groundwater flow direction is to the south and southwest.

Monitoring wells MW-37 and MW-39 are located in the Bartell Drugs parking lot. These wells were placed to evaluate the groundwater impacts to the east of the Tiki property. MW-39 was installed after groundwater sample results from MW-37 exceeded MTCA Method A cleanup levels.

Monitoring wells MW-38, MW-40 and MW-41 are located downgradient of impacted well MW-30, in the adjacent parking lot. These wells are used to delineate the downgradient extent of the groundwater plume.

No monitoring wells were proposed inside the Infiniti of Bellevue parking garage due to low ceiling clearance. In addition, no wells were proposed to the north (upgradient) of MW-34 due to utilities and safety issues with drilling in the NE 8th Street right of way.

All monitoring wells were constructed in accordance with the Minimum Standards for Construction and Maintenance of Wells (Chapter 173-160 WAC). Monitoring well construction diagrams are provided on the boring logs in Appendix A.

2.2.1 Monitoring Well Installation and Development

A hybrid direct-push/hollow-stem auger drill rig was used to install the monitoring wells. All monitoring wells were completed at a depth of approximately 12 to 15 feet below ground surface (bgs). The wells are constructed with two-inch diameter blank PVC well casing that is attached

to 9 to 10 feet of 0.010-inch slotted well screen. The annular space around the slotted well screen is filled with #2/12 Monterey sand that extends above the top of the well screen. One to two feet of hydrated bentonite chips were placed above the sand as an annular sealant. The monitoring wells were finished with a concrete surface seal and a flush-grade steel well monument. Well construction details are presented in Table 2.

Following construction, the monitoring wells were developed by removing a minimum of ten well volumes of water from the well. Water was pumped to the surface using an electrically driven centrifugal pump that was decontaminated after use at each well. In most cases, the groundwater removed from the wells showed a marked decrease in turbidity as the development process was nearing completion.

2.2.2 Monitoring Well Sampling

Low-flow purge and sample methods were used to collect groundwater samples from the monitoring wells. Prior to sampling, water level measurements were obtained with a decontaminated electronic water-level meter and recorded to the nearest 0.01 foot to determine groundwater surface elevations. In addition to gathering data for potentiometric surface mapping, the water level measurements were used to monitor the amount of well drawdown during purging. In most cases, the amount of well drawdown was minimized to less than approximately five percent of the water column height, as measured in the well prior to purging.

A peristaltic pump was used to purge and sample the monitoring wells. During purging, groundwater was routed through a low-flow cell, which allowed temperature, dissolved oxygen, pH, specific conductance, and turbidity to be monitored and recorded at 3- to 5-minute intervals. Purging was considered complete when the parameters stabilized within the following limits for three successive readings: temperature $\pm 1^{\circ}\text{C}$, pH ± 1 unit, specific conductance $\pm 10\%$, and dissolved oxygen or turbidity $\pm 10\%$.

Groundwater samples were collected by slowly pumping water from the well directly into labeled and pre-preserved sample bottles. The groundwater samples were then placed in a cooler chest and iced to maintain a temperature of 4°C until custody was transferred to the analytical laboratory.

2.2.3 Groundwater Chemical Analyses

Groundwater samples were analyzed for the following:

- Gasoline-range hydrocarbons by Ecology Method NWTPH-Gx.
- BTEX, EDB, EDC, and methyl tertiary-butyl ether (MTBE) by USEPA Method 8260D. Groundwater sample analytical results are summarized in Table 3 and Figure 4.

2.3 Vapor Probe Installation and Sampling

Following the completion of the soil borings, groundwater well installation and sampling, and in discussions with Ecology, the data was evaluated to determine if a vapor investigation was necessary. Based on the distance of contamination from buildings, a decision was made to complete a vapor intrusion investigation in the service station store building.

2.3.1 Sub-Slab Soil Vapor Probe Installation

One sub-slab vapor point was installed in the service station convenience store building (Figure 2).

To install the sub-slab vapor probe, a rotary hammer drill was used to create a “shallow” (approximately 1 inch deep) “outer” hole that partially penetrated the slab. Next, a smaller diameter “inner” hole was drilled through the remainder of the slab and into the sub-slab material approximately 3 inches. Drilling into the sub-slab material created an open cavity that would prevent obstruction of the probe by small pieces of gravel. The probe tubing was cut a length to ensure that the tubing did not reach the bottom of the hole, in order to avoid obstruction with sub-slab material.

2.3.2 Vapor Sampling

Vapor samples were collected from three locations: the sub-slab vapor point, indoor air and outdoor ambient air.

The sub slab sample was collected over a 10-minute period at a flow rate of approximately 167 ml/min. The sample was collected in 100-percent certified and pre-evacuated 1-liter Summa® canisters supplied by Eurofins Air Toxics Laboratories (Air Toxics). Each Summa® canister was supplied with an analytical test report certifying the canister is “clean” to concentrations below the respective method reporting limits (MRLs). Each canister was equipped with a pre-calibrated flow controller sampling train to allow collection of the desired sample. The sampling train was checked for leaks by capping the timers, then turning the canister valve on and off momentarily. The sampling train maintained a stable vacuum for 5 minutes; therefore, the equipment was assumed to be functional. Prior to collecting the samples, the Summa® canister ID numbers were recorded in the field notebook along with the initial canister vacuum levels.

For indoor air sampling, a 6-liter 100-percent certified Summa® canister was placed in the store building at a location near the soil vapor point. The sample inlet was positioned at approximately 4 feet above floor level to provide a sample representative of the breathing zone. In order to mimic the anticipated daily exposure by inhalation, the sampling duration was 8 hours at a flow rate of less than 11.5 ml/min.

An outdoor ambient air sample was collected concurrently with the indoor air sampling. A 6-liter 100-percent certified Summa® canister was placed 4 feet above grade, at an upwind location, near the indoor air sample location. The outdoor ambient air sampling was collected at a flow rate of 11.5 ml/min.

Indoor and outdoor air samples were submitted to Air Toxics and analyzed for the following:

- Gasoline-range hydrocarbons, BTEX, and naphthalene by USEPA Method TO-15.

Sub-slab soil vapor samples were submitted to Air Toxics and analyzed for the following:

- Gasoline, BTEX and naphthalene by USEPA Modified Method TO-15 low level; and
- Oxygen, helium, methane, nitrogen, and carbon dioxide by ASTM D 1946.

Outdoor and indoor air and sub-slab soil vapor sample analytical results are summarized in Table 4 and data are presented in Appendix B.

3.0 Geology and Hydrogeology

3.1 Geology

Boring logs are presented in Appendix A and Site cross sections are depicted in Figures 5 through 7.

Field investigations indicate that, in the upper 15 feet bgs, the Site is underlain by silty sand, silt, and sandy silt, with varying amounts of fine to coarse gravel. These lithologies grade laterally and vertically into each other and are not distinguished on the cross sections. A zone of silty clay was also found at boring SB-5 in the upper 11 feet bgs. During drilling, dense material was first encountered at depths ranging from approximately 7 to 12 feet bgs in many borings. Most borings reached refusal at depths of approximately 9 to 15 feet bgs. The soil material from near-surface to the depth of drilling is glacial till, which is weathered to varying degrees in the upper depths and increases in density downward. At the lower depths, the compaction is significant enough to cause refusal, and this very dense till horizon is depicted in the cross sections.

In addition, a thin zone of fill material is present in the upper few feet but is often not easily distinguished from weathered till and so is not depicted in the cross sections. However, the fill in the UST basin is shown.

3.2 Hydrogeology

The regional water table is not present within at least the upper 15.5 feet bgs at the Site. Groundwater beneath the Site is perched on top of the very dense till layer and is situated within the more weathered till material. The perched groundwater surface is located at approximately 5 feet bgs. A portion of the UST basin is below this perched groundwater surface. Based on groundwater level measurements and groundwater contamination patterns, the local flow direction is toward the south to southwest. A groundwater potentiometric map is presented as Figure 8.

4.0 Data Analysis and Interpretation

4.1 Nature and Extent of Soil Impacts

The soil sample results from this investigation are presented in Table 1 and Figure 3. The overall extent of soil contamination (exceeding MTCA Method A cleanup levels) is depicted in Figure 9.

Gasoline-range hydrocarbons and benzene are the most widespread hydrocarbons present in soil at the Site, occurring across most of the service station property and extending downgradient across the alleyway to the parking lot of the neighboring TRF property. In addition, soil impacts extend westward to the parking area of the neighboring Infiniti property. Soil contamination was detected from approximately 5 feet bgs to the top of the very dense glacial till layer at approximately 15 feet bgs (Figures 6 and 7).

Soil sample results from boring MW-38 exceeded the MTCA Method A cleanup level for GRO (1,520 mg/kg at 6.5 feet bgs) and benzene (101 µg/kg at 14 feet bgs). Soil sample results from MW-40 and MW-41 were all below MTCA Method A cleanup levels, indicating that the southerly soil impacts are limited to the area around MW-38.

4.2 Nature and Extent of Groundwater Impacts

Groundwater analytical data are presented in Table 3 and depicted in Figure 4. The overall extent of groundwater contamination (exceeding MTCA Method A cleanup levels) is presented in Figure 10.

Groundwater contamination exceeding MTCA Method A cleanup levels has been consistently detected across the Tiki Car Wash property. The exceedances extend westward to the Infiniti of Bellevue property (MW-6) and eastward to the Bartell Drug parking lot (MW-37). Southward the contamination extends under the paved alleyway and on to the northernmost section of the TRF parking lot. Samples from monitoring well MW-38 contained BTEX constituents and gasoline-range organics exceeding cleanup levels. In this well, benzene was detected at concentrations as high as 5,750 µg/l and GRO up to 98,800 µg/l. Groundwater monitoring well MW-40 was installed cross-gradient from MW-38, and MW-41 was installed downgradient of MW-38, to delineate the southerly extent of the groundwater plume. Sample results from wells MW-40 and MW-41 were below MTCA Method A cleanup levels.

4.3 Nature and Extent of Soil Vapor Impacts

Sub-slab, indoor, and outdoor ambient air samples were collected in and around the convenience store building. Vapor sampling results are summarized in Table 4. Laboratory reports are presented as Appendix A.

Concentrations of petroleum constituents in sub-slab sample were all below their respective MTCA Method B soil gas screening levels in the building. In addition, concentrations of petroleum constituents in ambient air and indoor air samples were similar in constituents and concentrations. The indoor air detections appear to be the result of the convenience store being located adjacent to the active gasoline pumps and heavy automobile traffic in the area.

5.0 Conceptual Site Model

In order to more fully understand the relationships between hydrocarbon-impacted soil and groundwater, affected environmental media, indoor media, and human receptors, a conceptual site model was developed. MTCA defines a conceptual site model as “a conceptual understanding of a site that identifies potential or suspected sources of hazardous substances, types and concentrations of hazardous substances, potentially impacted media, and actual and potential exposure pathways and receptors.” These components will be discussed in the sections below, as an introduction to presenting the conceptual site model.

5.1 Contaminants of Concern

MTCA defines a contaminant as “any hazardous substance that does not occur naturally or occurs at greater than natural background levels.” Contaminants of concern (COCs) include those hazardous substances that are known to be present at a site, or which are suspected to be present based on information regarding the nature of a known release or past operations at a site.

Sampling data from past environmental investigations and cleanup actions have confirmed the presence of the following COCs for each of the impacted media at the site:

COCs	Groundwater	Soil	Soil Gas
Benzene	•	•	•
Toluene	•	•	•
Ethylbenzene	•	•	•
Total Xylenes	•	•	•
Gasoline-range Hydrocarbons	•	•	•

5.2 Current and Potential land Use

Current land use at the Site is an active gas station, car wash and convenience store. The neighboring properties include parking lots, a Bartell Drug store, a car rental facility and the parking garage for Infiniti of Bellevue (car dealer). Site use is not expected to change in the foreseeable future.

5.3 Exposure Pathways and Potential Receptors

Impacted media at the Site includes soil, groundwater, and soil vapor. MTCA (WAC 173-340-200) defines an exposure pathway as “the path a hazardous substance takes or could take from a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from a site.” Primary exposure pathways are those routes that are known to be currently transporting petroleum contaminants to or within a certain medium (such as soil impacts to groundwater). Secondary exposure pathways are those routes that: (a) have transported contaminants in the past but may not be currently (such as releases from USTs); or (b) may transport contaminants in the future, but do not currently. Precluded exposure pathways are those that are not possible at any time based on physical evidence and are therefore considered closed pathways.

Petroleum constituents have been detected in soil, groundwater, and soil vapor samples collected at the Site. Therefore, soil, groundwater, and soil vapor are impacted media but may also be

considered secondary contaminant sources. The potential exposure pathways associated with each medium/source are discussed below, along with the rationale for excluding or including that pathway.

The Site history indicates that the primary sources of potential impacts would have been from discharges of petroleum products to subsurface soils via leaks or spills. Based on this history and on the current and potential future land uses at the Site and in the surrounding area, potential exposure pathways and receptors were evaluated.

5.3.1 Potential Soil Exposure Pathways

Soil impacts range from as shallow as 5 feet bgs to as deep as 15.5 feet bgs. Soil and soil vapor could become an exposure pathway to future workers or residents if construction and/or development activities expose impacted soil. The impacted soil is considered to be a potential direct-contact exposure pathway. Currently, access to the Site soils is restricted by pavement; however, the potential exists for construction workers to contact impacted soil.

A summary of the potential soil exposure pathways at the Site is presented in the table below.

Potential Soil Exposure Pathways	Applicability
Ingestion/Dermal Contact	Secondary: The area of soil impacted by COCs at the Site is currently from approximately 5 to 15 ft bgs. The current potential for ingestion or dermal contact is limited. However, potential ingestion or dermal contact exposure are possible for future workers performing excavation, site assessment, or subsurface utility work at the Site.
Hazardous Substances Leaching from Soil to Groundwater	Primary: Soil contamination in contact with groundwater has resulted in concentrations of dissolved-phase petroleum contamination in groundwater.

5.3.2 Potential Groundwater Exposure Pathways

The local perched aquifer is not used for domestic supply and is not expected to be used for domestic supply in the future. Ecology's Water Well Log database contains no records of any domestic-use wells within at least one mile radius of the Site.

A summary of the potential groundwater exposure pathways at the Site is presented in the table below.

Potential Groundwater Exposure Pathways	Applicability
Ingestion/Household Contact	Precluded: The aquifer is potable; however, the shallow aquifer is not a source of drinking water in the vicinity of the Site.
Incidental Exposure Resulting from Site Development or Utility Construction	Secondary: Because groundwater is encountered at a depth of 5-10 ft bgs, groundwater could be encountered during routine Site development or utility construction activities.
Groundwater to Surface Water	Precluded: The nearest surface water source is Lake Bellevue locate over 750 feet upgradient to the north of the Site.

The primary pathways of concern are the groundwater to drinking water pathways.

5.3.3 Potential Soil Vapor Exposure Pathways

Currently the Site is paved and contains one occupied commercial building on the property. Adjacent properties are outside of the plume area. Based on the concentrations observed in the sub-slab and ambient air samples, soil vapor to indoor air does not represent a potential exposure pathway at this time.

Potential Vapor Exposure Pathways	Applicability
Soil to Soil Vapor to Indoor Air	Precluded: Concentrations of COCs in sub-slab vapor samples were below screening levels. Detected indoor air concentrations are likely from outdoor ambient air sources, and sub-slab soil gas is not contributing an incremental risk to indoor air.
Groundwater to Indoor Air	Precluded: Concentrations of COCs in sub-slab samples were below screening levels. Detected indoor air concentrations are likely from outdoor ambient air sources, and sub-slab soil gas is not contributing an incremental risk to indoor air.

The soil vapor to indoor air and groundwater to vapor indoor air pathways have been precluded. At this time there is no incremental risk of vapor intrusion from the subsurface to indoor air for the onsite building based on the vapor intrusion assessment results.

5.3.4 Terrestrial Ecology Evaluation

In addition to evaluation of human health risk, MTCA (WAC 173-340-7490) requires that one of the following actions be taken following the release of hazardous substances to the soil at a site to determine the potential impacts to terrestrial organisms at the site:

- Documentation of an exclusion from any further terrestrial ecological evaluation (TEE) using the criteria in WAC 173-340-7491.
- Completion of a simplified TEE as specified in WAC 173-340-7492.
- Completion of a site-specific TEE as specified in WAC 173-340-7493.

A site may be excluded from the requirement for a TEE if any of the following criteria are met at the site:

- All soil impacted with hazardous substances is, or will be, located below the point of compliance established under WAC 173-340-7490(4).
- All soil impacted with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil impacts. There is less than 0.25 acre of contiguous undeveloped land on or within 500 ft of any area of the site impacted with chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene.
- There is less than 1.5 acres of contiguous undeveloped land on the site or within 500 ft of any area of the site, and the impacts at the site do not include any of the contaminants listed in the preceding bullet.

MTCA defines “contiguous undeveloped land” as an area of land that is not divided into smaller areas by highways, extensive paving or structures that are likely to reduce the potential use of the overall area by wildlife. This Site meets the TEE criteria because there is less than 1.5 contiguous acres of undeveloped land on the site or within 500 feet of the site and the contamination is limited to petroleum and petroleum byproducts.

5.4 Cleanup Standards

Cleanup standards consist of: (1) cleanup levels that are protective of human health and the environment, and (2) the point of compliance at which the cleanup levels must be met. Under MTCA (WAC 173-340-200), a cleanup level means “the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions.” Cleanup levels, in combination with points of compliance, typically define the area or volume of soil, water, air, or sediment at a site that must be cleaned up. The current potential receptors and development of the site-specific cleanup levels are presented below. Final cleanup standards will be established during preparation of the Feasibility Study and the Cleanup Action Plan (CAP).

5.4.1 Preliminary Cleanup Levels

Soil

MTCA provides three approaches for establishing soil cleanup levels: Method A, Method B, and Method C.

Method A may be used on sites involving relatively few hazardous substances or where cleanup actions may be routine. Under Method A, cleanup levels are determined by the most stringent criteria specified under state and federal laws and Table 720-1, 740-1, and 745-1 of MTCA.

Method B is the universal method for determining cleanup levels at all sites. For sites impacted by petroleum mixtures, Method B cleanup levels are determined by using the fractionated analytical approach for petroleum. This approach involves testing of the samples to determine the petroleum composition. Cleanup levels must consider the measured or predicted ability of the fractions to migrate from one medium to other media. When multiple exposure pathways are identified for a single media, the most stringent cleanup level is selected.

Method C is predominantly applied at industrial sites. Method C uses cleanup levels that are protective of human health and the environment for specific industrial site uses and conditions.

Because the potential contaminants of concern at the Site are limited to petroleum products and petroleum additives, and the Site is located in an area that is zoned for commercial and residential, it is appropriate to use Method A or Method B soil cleanup levels. Because Site conditions do not meet any of the criteria of WAC 173-340-741(2), a terrestrial evaluation is not required, nor do soil cleanup levels need to be protective of terrestrial ecological receptors.

Cleanup levels will be further discussed in the Feasibility Study and the CAP. Preliminary soil cleanup levels for the Site are based on MTCA Method A values for unrestricted land use.

Groundwater

Groundwater cleanup levels are to be based on estimates of the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future site use. Under MTCA 173-340-720, drinking water is the beneficial use requiring the highest groundwater quality. Therefore, exposure to contaminants through ingestion and other domestic uses represents the reasonable maximum exposure for all sites unless the groundwater at the site can be demonstrated to be not potable.

Preliminary groundwater cleanup levels for this Site are as follows:

Parameter	Cleanup Level (µg/L)	Applicable State and Federal Law
Benzene	5	MTCA Method A Cleanup Levels for Groundwater
Ethylbenzene	700	MTCA Method A Cleanup Levels for Groundwater
Toluene	1,000	MTCA Method A Cleanup Levels for Groundwater
Xylenes (total)	1,000	MTCA Method A Cleanup Levels for Groundwater
Gasoline-Range Hydrocarbons	800	MTCA Method A Cleanup Levels for Groundwater

5.4.2 Point of Compliance

An evaluation of the appropriate point of compliance for cleanup levels for the Site is presented in the table below.

Determination of Point of Compliance for Cleanup Levels

Potential Exposure Pathway	MTCA defined point of compliance	Applicability to Site	Site-specific Point of Compliance
Human direct contact	Throughout the Site from ground surface to 15 ft bgs.	Applicable. Although the Site is predominantly paved, subsurface soil could be potentially disturbed during utility or future building activities.	Surface to 15 ft bgs.
Ecological	Point of compliance to 6 ft bgs with institutional controls to prevent disturbance of subsurface soils.		Surface to 6 ft bgs.

Soil

Based on the results presented above, the point of compliance for the Site will be based on the potential for direct contact by both humans and ecological receptors and will be discussed further in the Feasibility Study.

Groundwater

The point of compliance for groundwater cleanup levels will be based on the protection of groundwater as drinking water and will be discussed further in the Feasibility Study.

6.0 Remedial Investigation Summary

As detailed in this report, soils and groundwater beneath the Site have been impacted by the historical service station operations. Previous cleanup efforts appear to have had a minimal effect on reducing contamination. As part of this RI, the horizontal and vertical extent of soil and groundwater impacts have been further delineated and the potential for vapor intrusion into the on-property building has been evaluated and determined not to be a risk.

Soil impacts are present across the majority of the station property and extend southward across the paved alley/entrance road on to the neighboring parking lot. Soil impacts also extend a short distance westward to the neighboring car dealership parking lot. Groundwater contamination extends south and southwest from the property also to the neighboring TRF parking lot and a short distance to the east to the Bartell Drug property. In order to address this Site contamination, remedial alternatives will be screened and evaluated in the Feasibility Study Report.

7.0 References

- EA Engineering, Science and Technology, Inc. (EA) 2008. Enhanced Fluid Recovery Pilot Test Report, Tiki Car Wash, Bellevue, Washington. Dated November 2008.
- EA 2007. Tiki Car Wash, Summary of Monitoring Well Installation. Letter report dated April 19, 2007.
- EA 2006. Tiki Car Wash, Summary of Results for Geoprobe Investigation. Letter report dated August 4, 2006.
- EA 2006b. Interim Action Report, Tiki Car Wash, Report dated September 2006.
- Hart Crowser 2013. Focused Phase II Environmental Soil and Groundwater Sampling Results, Bartell Drugs Property, Bellevue Washington. Letter report dated January 4, 2013.
- Hart Crowser 1994. Limited Excavation Observation Soil Sampling, Tiki Car Wash Plume Area. Letter report dated October 12, 1994.
- Leidos 2022. Work Plan/Sampling and Analysis/Quality Assurance Project Plan, Tiki Car Wash, Bellevue, Washington. Work Plan dated March 2022.

Tables

TABLE 1
Soil Analytical Data
TIKI CAR WASH
11909 NE 8th Street
Bellevue, Washington

Concentrations reported in µg/kg and mg/kg

Sample Name	Sample Depth	Date	TPH-DRO mg/kg	TPH-HRO mg/kg	TPH-GRO mg/kg	Benzene µg/kg	Toluene µg/kg	Ethylbenzene µg/kg	Total Xylenes µg/kg	EDB µg/kg	EDC µg/kg
SB-1-6.0	6 ft	05/03/22	<4.47	<11.2	0.674	<0.413	<0.495	7.93	4.39	<0.330	<0.495
SB-1-7.0	7 ft	05/03/22	<4.26	<10.7	14.9	0.827	5.09	76.6	315	<0.306	<0.459
SB-1-9.0	9 ft	05/03/22	<4.33	<10.8	23.7	8.86	60.6	71.8	434	<0.363	<0.544
SB-2-5.0	5 ft	05/03/22	<4.72	<11.8	1.51	<0.436	<0.523	<0.349	1.37	<0.349	<0.523
SB-2-8.5	8.5 ft	05/03/22	15.3	<11.4	536	<45.9	<55.1	101	<129	<36.7	<55.1
SB-3-5.5	5.5 ft	05/03/22	<6.08	<15.2	13.8	3.04	3.08	45.2	335	<0.602	<0.902
SB-3-6.5	6.5 ft	05/03/22	<4.56	<11.4	7.35	<24.7	<29.6	<19.8	<69.2	<19.8	<29.6
SB-3-9.5	9.5 ft	05/03/22	<4.74	<11.9	0.587	<0.617	<0.740	<0.494	<1.73	<0.494	<0.740
SB-5-7	7 ft	05/04/22	42.0	<11.6	757	1,360	4,960	10,100	59,000	<60.6	<90.9
SB-5-13	13 ft	05/04/22	17.4	<11.6	1,310	2,810	32,700	35,100	210,000	<51.4	<77.2
SB-5-15	15 ft	05/04/22	<4.42	<11.1	1.49	2.22	11.9	16.4	93.6	<0.299	<0.448
MW-30-15	15 ft	02/22/07	ND	--	67.2	366	540	644	3,230	--	--
MW-31-15	15 ft	02/23/07	ND	--	13.3	757	460	172	890	--	--
MW-32-15	15 ft	02/23/07	ND	--	246.0	1,200	3,400	2,500	14,000	--	--
MW-33-15	15 ft	02/23/07	ND	--	10.7	1,530	250	390	1,340	--	--
MW-34-15	15 ft	02/22/07	ND	--	ND	ND	ND	ND	140	--	--
MW-35-15	15 ft	02/22/07	ND	--	16.7	1,460	410	263	1000	--	--
MW-36-15	15 ft	02/22/07	ND	--	ND	ND	ND	ND	ND	--	--
MW-37-8	8 ft	05/03/22	<4.44	<11.1	0.461	0.524	<0.436	<0.290	<1.02	<0.290	<0.436
MW-37-11	11 ft	05/03/22	<4.39	<11.0	1.14	<0.373	<0.448	<0.299	<1.05	<0.299	<0.448
MW-38-6.5	6.5 ft	05/04/22	63.0	153	1,520	<61.5	143	608	5,910	<49.2	<73.9
MW-38-14	14 ft	05/04/22	<4.31	<10.8	18.3	101	17.6	116	86.3	<0.382	<0.573
MW-39-5	5 ft	11/01/22	<4.48	<11.2	7.23	<0.442	<0.530	<0.530	<1.24	<0.353	<0.530
MW-39-10	10 ft	11/01/22	<4.32	<10.78	<0.203	<0.474	<0.569	<0.379	<1.33	<0.379	<0.569
MW-39-13	15 ft	11/01/22	<4.36	<10.9	9.66	<0.437	<0.524	<0.349	<1.22	<0.349	<0.524
MW-40-5	5 ft	11/02/22	<4.16	<10.4	<0.228	<0.382	<0.458	<0.306	<1.07	<0.306	<0.458
MW-40-10	10 ft	11/02/22	<4.54	<11.3	0.450	<0.399	<0.478	<0.319	<1.12	<0.319	<0.478
MW-40-13	13 ft	11/02/22	<4.41	<11.0	12.0	<0.392	<0.470	<0.313	<1.10	<0.313	<0.470
MW-41-5	5 ft	11/01/22	<4.46	<11.1	0.520	<0.464	<0.557	<0.371	<1.30	<0.371	<0.557
MW-41-10	10 ft	11/01/22	<4.39	<11.0	<0.276	<0.446	<0.535	<0.357	<1.25	<0.357	<0.535
MW-41-14.5	14.5 ft	11/01/22	<4.36	<10.9	3.32	<0.471	<0.565	<0.377	<1.32	<0.377	<0.565
MTCA Method A Cleanup Levels:			2000 mg/kg	2000 mg/kg	30 mg/kg	30 µg/kg	7000 µg/kg	6000 µg/kg	9000 µg/kg	5 mg/kg	5 mg/kg

EXPLANATIONS:

Analytical results in bold font indicate concentrations exceed MTCA Method A cleanup levels.

EDB = Ethylene Dibromide

EDC = Ethylene Dichloride

ft = feet

mg/kg = milligrams per kilogram

MTCA = Model Toxics Control Act

NA= no cleanup level established

TPH-GRO = TPH as gasoline-range organics

USEPA = United States Environmental Protection Agency

<= Analyte not detected at or above Laboratory Detection Limit; value represents limit.

Analytical Methods:

TPH-GRO analyzed by NWTPH-Gx

TPH-DRO analyzed by NWTPH-Dx

BTEX analyzed by USEPA 8260D

TABLE 2
MONITORING WELL CONSTRUCTION DATA
TIKI CAR WASH
11909 NE 8th Street
Bellevue, Washington

Well ID	Well Diameter (inches)	Total Depth (feet btoc)	Screen Length (feet)	Screened Interval (feet btoc)
MW-2	2.00	7.85	3.00	6.50-9.50
MW-6	2.00	7.01	3.00	4.01-7.01
MW-20	2.00	12.32	4.00	7.50-11.50
MW-23	2.00	10.23	10.00	3.00-13.00
MW-29	2.00	13.62	10.00	3.50-13.50
MW-30	2.00	13.30	10.00	2.97-12.97
MW-31	4.00	13.56	10.00	3.17-13.17
MW-32	4.00	13.28	10.00	2.95-12.95
MW-33	4.00	13.19	10.00	2.86-12.86
MW-34	2.00	13.73	10.00	3.40-13.40
MW-35	4.00	13.00	10.00	2.67-12.67
MW-36	2.00	13.78	10.00	3.45-13.45
MW-37	2.00	15.00	10.00	5.00-15.00
MW-38	2.00	14.00	10.00	4.00-14.00
MW-39	2.00	12.00	9.00	3.00-12.00
MW-40	2.00	12.00	9.00	3.00-12.00
MW-41	2.00	14.00	10.00	4.00-14.00

TABLE 3
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS
TIKI CAR WASH
11909 NE 8th Street
Bellevue, Washington
Concentrations reported in µg/L

Well ID	Date	TOC (ft.)	DTW (ft.)	GWE (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Total Lead
MW-2	06/06/06	144.61	-	-	268	<485	1,410	2.16	<0.5	13.4	6.32	-	<0.001
	09/06/06		-	-	508	<495	6,550	21.4	18.3	188	394	-	<0.001
	05/05/22		4.09	140.50	-	-	<19.0	<0.300	<0.200	<0.400	<0.400	-	-
MW-6	06/06/06	143.52	-	-	2,060	<500	116,000	3,120	16,600	2,980	17,800	-	11.9
	09/06/06		-	-	2,650	<495	102,000	3,600	15,000	2,960	18,500	-	14.4
	02/16/22		2.68	140.84	-	-	1,000	<1.0	<1.0	13	83	<1.0	-
	05/05/22		2.43	141.09	-	-	167	<0.300	<0.200	<0.400	0.677	-	-
MW-20	05/31/05	144.55	-	-	<250	<500	<0.50	<0.500	<0.500	<0.500	<1.00	<1.00	<0.001
	02/13/06		-	-	<240	<481	<0.50	<0.500	<0.500	<0.500	<1.00	-	<0.001
	06/06/06		-	-	<236	<472	<0.50	<0.500	<0.500	<0.500	<1.00	-	1.06
	09/06/06		-	-		<472	<100.0	<0.500	<2.000	<1.000	<1.50	-	<0.001
	02/17/22		8.10	136.45		-	<250	<1.0	<1.0	<1.0	<1.0	<1.0	-
	05/05/22		7.75	136.80		-	<19.0	<0.300	<0.200	<0.400	<0.400		
MW-23	05/31/05	142.60	-	-		<500	<0.50	<0.500	0.806	<0.500	1.44	<1.00	<0.001
	02/13/06		-	-		<476	<0.50	<0.500	<0.500	<0.500	<1.50	-	<0.001
	06/06/06		-	-	<240	<481	<0.50	<0.500	<0.500	<0.500	<1.00	-	2.3
	09/06/06		-	-	<243	<485	<100.0	<0.500	<2.000	<1.000	<1.00	-	<0.001
	02/17/22		3.93	140.67	-	-	<250	<1.0	<1.0	<1.0	<1.0	<1.0	-
	05/05/22		2.61	139.99	-	-	<19.0	<0.300	<0.200	<0.400	<0.400	-	-
MW-29	05/31/05	148.47	-	-	2,380	<250	131,000	14,800	22,800	3,430	20,600	<1.00	32.4
	02/13/06		-	-	2,630	1,660	145,000	8,750	17,900	3,450	20,400	-	22.7
	06/06/06		-	-	7,370	10,900	143,000	11,300	20,600	3,690	22,300	-	39.6
	09/06/06		-	-	2,680	<4,850	121,000	9,030	15,200	2,650	17,100	-	49.4
	03/18/08		-	-	4,930	3,620	130,000	9,780	16,400	3,520	22,100	-	-
	04/09/08		-	-	5,190	759	99,700	4,450	9,090	3,000	19,500	-	-
	04/29/08		-	-	5,220	ND	111,000	5,810	10,600	3,230	20,100	-	-
	10/08/08		-	-	3,740	ND	117,000	12,800	14,600	3,530	21,000	-	-
	02/16/22		4.38	144.09	-	-	100,000	6,800	9,900	3,000	15,000	<20	-
MW-30	05/05/22	146.52	4.15	144.32	-	-	93,500	6,210	9,050	3,240	17,100	-	-
	03/15/07		-	-	3,160	716	90,600	14,000	11,700	2,500	12,100	-	-
	03/18/08		-	-	2,160	603	73,700	11,000	4,820	2,460	8,060	-	-
	04/29/08		-	-	2,600	ND	65,100	8,240	4,210	2,370	7,930	-	-
	10/08/08		-	-	2,980	1,850	89,400	18,700	9,300	2,770	12,400	-	-
	02/16/22		4.39	142.13	-	-	6,800	1,200	280	580	770	<2.0	-
MW-31	05/05/22	148.96	4.11	142.41	-	-	4,080	519	22.9	521	132	-	-
	03/18/08		-	-	2,210	<472	134,000	5,030	21,800	2,810	16,100	-	-
	04/29/08		-	-	3,780	ND	150,000	5,080	25,000	3,580	22,600	-	-
	02/16/22		5.70	143.26	-	-	81,000	2,600	2,200	1,800	14,000	<5.0	-
	05/05/22		5.24	143.72	-	-	58,100	2,580	1,260	1,700	10,700	-	-
MW-32	03/18/08	149.30	-	-	5,490	895	198,000	22,100	34,600	3,140	17,200	-	-
	04/09/08		-	-	6,570	900	174,000	21,300	32,200	2,950	17,300	-	-
	04/29/08		-	-	6,500	ND	172,000	19,600	29,700	2,620	16,500	-	-
	02/16/22		5.34	143.96	-	-	38,000	3,200	3,100	340	8,800	<10	-
	05/05/22		4.79	144.51	-	-	52,500	3,870	4,050	512	10,300	-	-
MW-33	03/18/08	149.34	-	-	4,190	542	116,000	11,300	19,000	2,760	15,100	-	-
	04/29/08		-	-	4,320	480	86,400	2,490	9,860	2,780	15,500	-	-
	10/08/08		-	-	3,030	ND	56,100	6,670	4,320	2,070	11,100	-	-
	02/16/22		5.09	144.25	-	-	12,000	520	97	780	580	<2.0	-
	05/05/22		4.79	144.55	-	-	9,950	199	19.0	635	333	-	-
MW-34	03/18/08	148.99	-	-	1,620	654	10,500	271	17.3	616	921	-	-
	04/29/08		-	-	1,420	601	11,900	272	38.9	594	951	-	-
	02/16/22		6.78	142.21	-	-	5,000	14	9.1	120	180	<1.0	-
	05/05/22		6.41	142.58	-	-	3,710	11.4	1.33	36.2	23.1	-	-
MW-35	03/15/07	146.13	-	-	1,910	<485	65,400	2,760	7,030	1,450	12,900	-	-
	03/18/08		-	-	2,730	489	82,300	3,620	10,400	2,910	13,600	-	-
	04/29/08		-	-	2,560	ND	81,800	1,740	7,430	2,890	13,300	-	-
	10/08/08		-	-	1,350	ND	49,500	10,500	1,630	2,500	5,600	-	-
	02/16/22		2.96	143.17	-	-	33,000	120	450	1,900	3,700	<2.0	-
	05/05/22		2.64	143.49	-	-	31,500	86.2	139	1,750	3,510	-	-
MW-36	03/15/07	143.28	-	-	<238	<476	<50	<1	<1	<1	<1	-	-
	02/17/22		8.88	134.40	-	-	<250	<1.0	<1.0	<1.0	<1.0	<1.0	-
	05/05/22		6.75	136.53	-	-	<19.0	<0.300	<0.200	<0.400	<0.400	-	-
MW-37	05/05/22	148.77	5.85	142.92	-	-	2,310	203	172	59.7	303	-	-
	07/07/22				-	-	636	363	4.01	2.84	8.14	-	-
	11/02/22		6.28	142.49			636	277	2.41	<4.00	<4.00	-	-
MW-38	05/05/22	146.87	3.67	140.22	-	-	47,600	5,750	4,540	1,340	7,020	-	-
	07/07/22				-	-	93,800	3,290	16,300	2,600	14,900	-	-
	11/02/22		4.49	142.38			98,800	5,200	16,800	2,760	15,500	-	-
MW-39	11/03/22	148.6	5.59	143.01	-	-	<43.0	<0.300	<0.200	<0.400	<0.400	-	-
	11/3/22(D)		5.59		-	-	<43.0	<0.300	<0.200	<0.400	<0.400	-	-
MW-40	11/03/22	145.50	5.38	140.12	-	-	<43.0	<0.300	<0.200	<0.400	<0.400	-	-
MW-41	11/03/22	144.39	5.22	139.17	-	-	<43.0	0.316	<0.200	<0.400	<0.400	-	-
QA	02/16/22	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	-
	05/05/22	-	-	-	-	-	<19.0	<0.300	<0.200	<0.400	<0.400	-	-
	11/02/22	-	-	-	-	-	-	<0.300	<0.200	<0.400	<0.400	-	-
Standard Laboratory Reporting Limit:					--	--	50	0.5	0.5	0.5	1.5	--	--
MTCA Method A Cleanup Levels:					500	500	800/1,000	5	1,000	700	1,000	20	250
Current Method:					NWTPH-Dx + Extended		NWTPH-Gx	EPA 8260D					EPA 7421

EXPLANATIONS:

Analytical results in bold font indicate concentrations exceed MTCA Method A cleanup levels.

(D) = Duplicate
DTP = Depth to Product
DTW = Depth to Water
EPA = United States Environmental Protection Agency
ft. = Feet
GWE = Groundwater Elevation
HVOCs = Halogenated Volatile Organic Compounds
LFP = Low Flow Purge

TOC = Top of Casing
TPH = Total Petroleum Hydrocarbons
TPH-DRO = TPH as Diesel-Range Organics
TPH-GRO = TPH as Gasoline-Range Organics
TPH-HRO = TPH as Heavy Oil-Range Organics
µg/L = Micrograms per liter
-- = Not Measured/Not Analyzed

TABLE 4
VAPOR SAMPLING DATA AND ANALYTICAL RESULTS
TIKI CAR WASH
11909 NE 8th Street
Bellevue, Washington

Concentrations reported in ppbv and µg/m3

Sample ID	Sample Date	TPH-GRO (ppbv)	TPH-GRO µg/m3	Benzene (ppbv)	Benzene µg/m3	Toluene (ppbv)	Toluene µg/m3	Ethyl-Benzene (ppbv)	Ethyl-Benzene µg/m3	m,p-Xylene (ppbv)	m,p-Xylene µg/m3	o-Xylene (ppbv)	o-Xylene µg/m3
Indoor Ambient	2/24/2023	40	160	0.29	0.93	1.3	5.1	0.19	0.82	0.64	2.8	0.22	0.96
Outdoor Ambient	2/24/2023	16	65	0.28	0.91	0.87	3.3	0.12	0.54	0.48	2.1	0.16	0.71
Subslab 2	2/24/2023	ND	ND	ND	ND	ND	ND	0.13	0.57	ND	ND	ND	ND
Standard Laboratory Reporting Limit:		13	55	0.067	0.21	0.067	0.25	0.027	0.12	0.054	0.23	0.027	0.12
Current Method: EPA TO-15 GC/MS													

EXPLANATIONS:

ND = No Detections Found

µg/m3 = micrograms per cubic meter

ppbv = parts per billion by volume

Figures



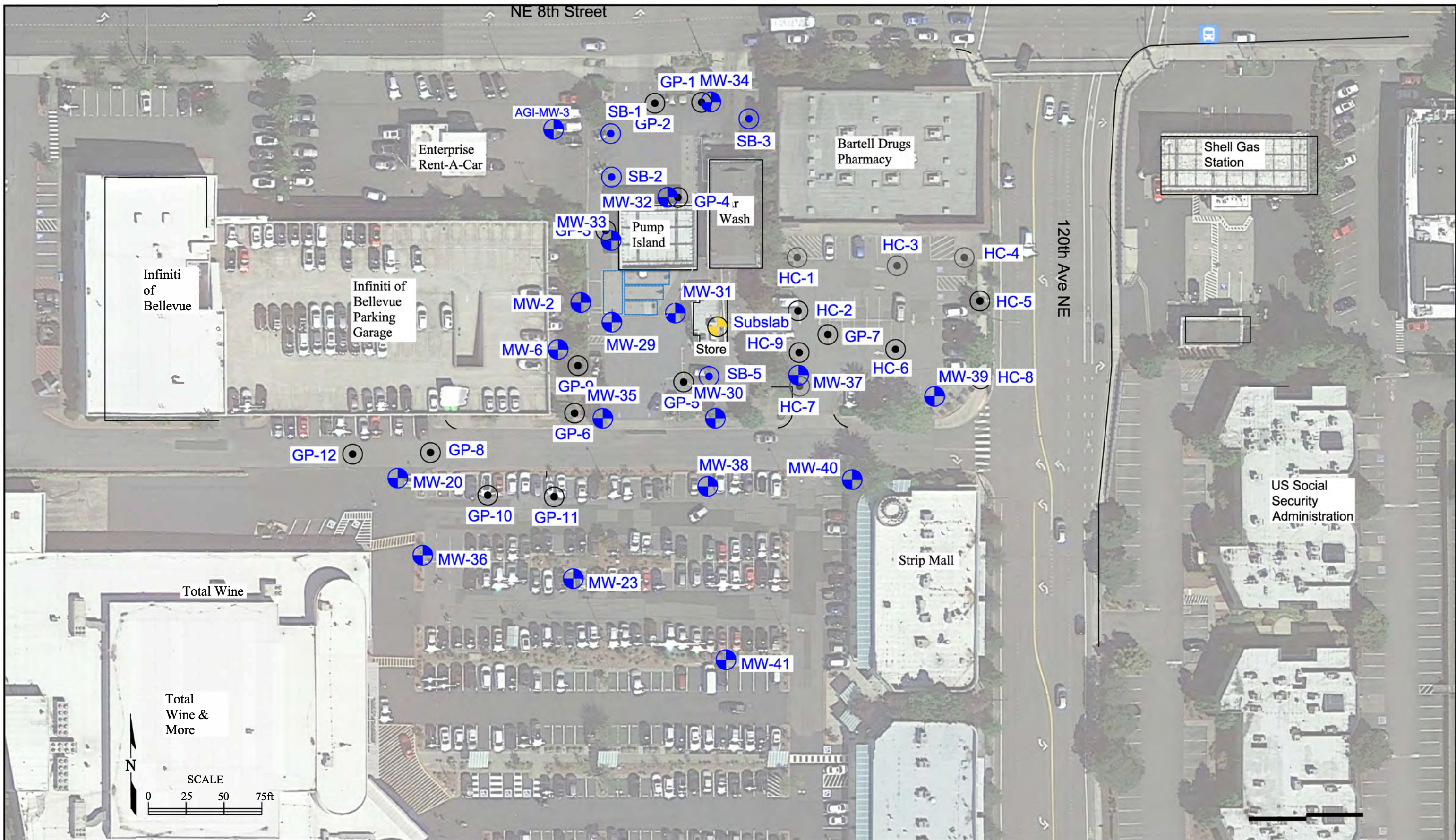
LEGEND



-  Concrete Surface
-  Current Buildings and Structures

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 1
Site Map



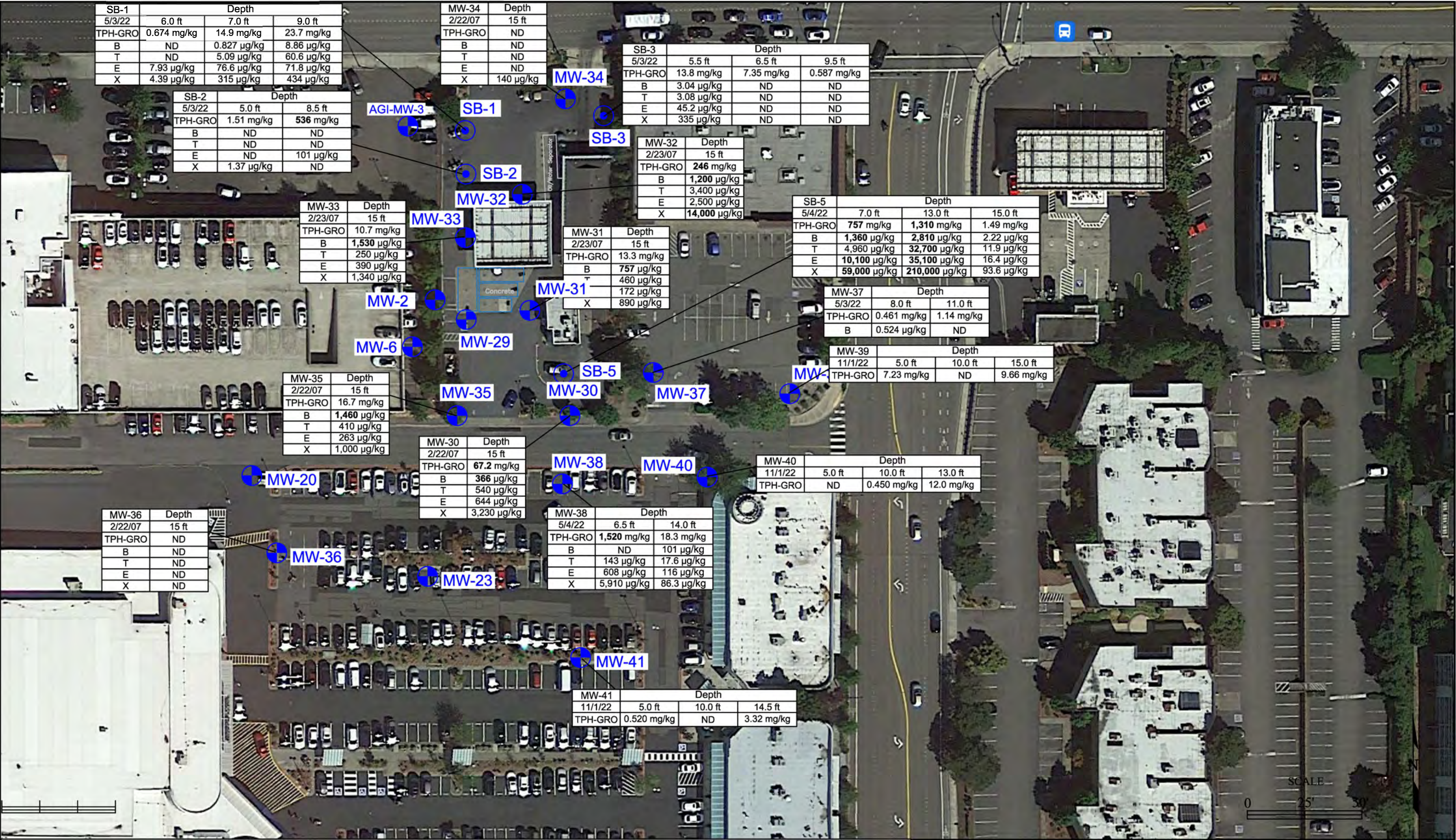
LEGEND

	Concrete Surface		Soil Boring		Subslab		Subslab Vapor Sampling Point
	Current Buildings and Structures		Monitoring Well				
	Parcel Boundary						



Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 2
Well and Boring Locations



LEGEND

MW-25 Monitoring Well

ANALYTES

DATE	DEPTH
TPH-GRO	GASOLINE-RANGE HYDROCARBONS
B	BENZENE
E	ETHYLBENZENE
T	TOLUENE
X	TOTAL XYLENES

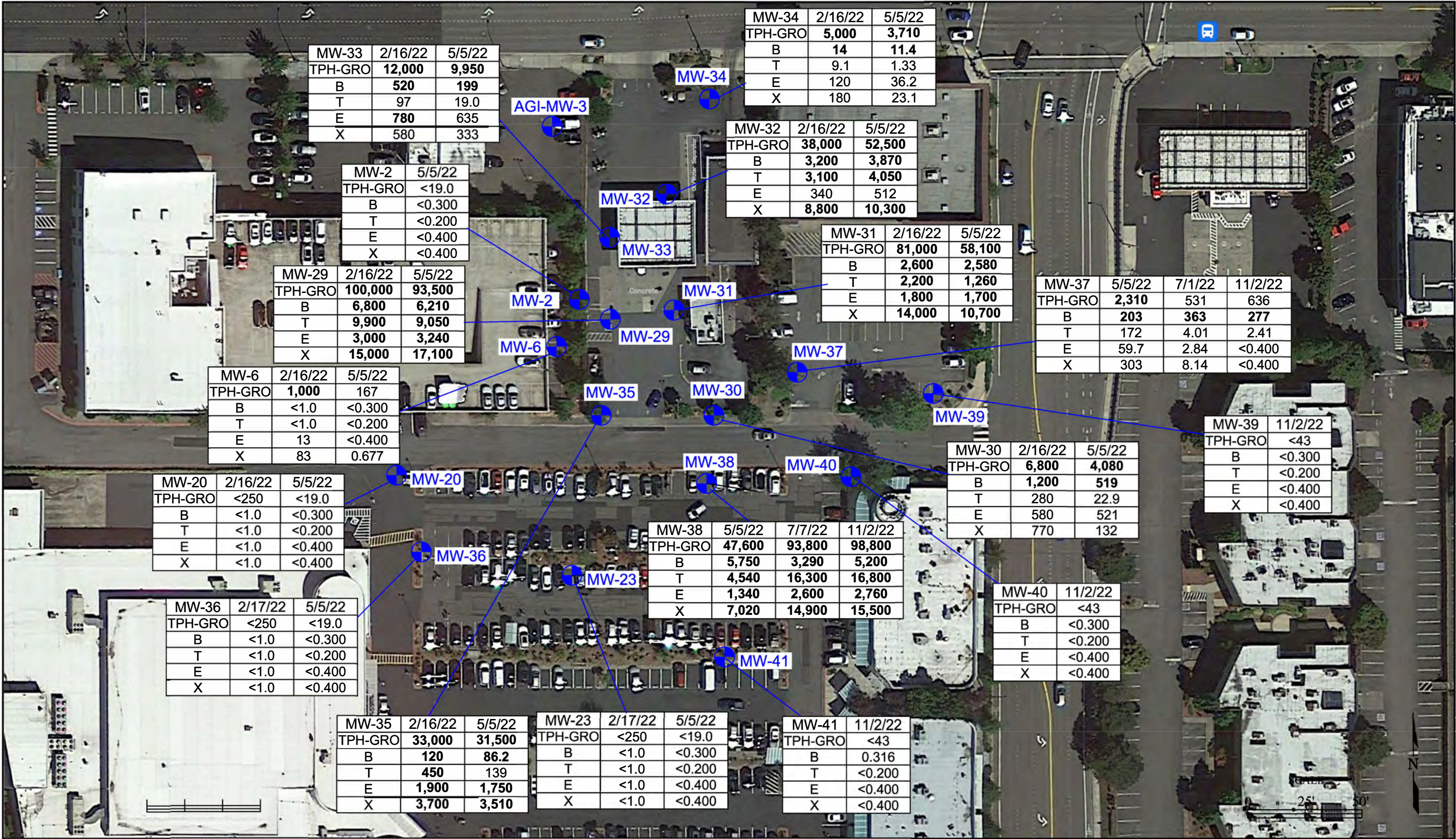
Only Detections are shown. Concentrations Exceeding MTCA Method A Cleanup Level Shown in **BOLD**.

ND Less than Indicated Laboratory Reporting Limits

Units in Milligrams per Kilogram (mg/kg) and Micrograms per Kilogram (µg/kg)

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 3
Soil Concentrations



LEGEND

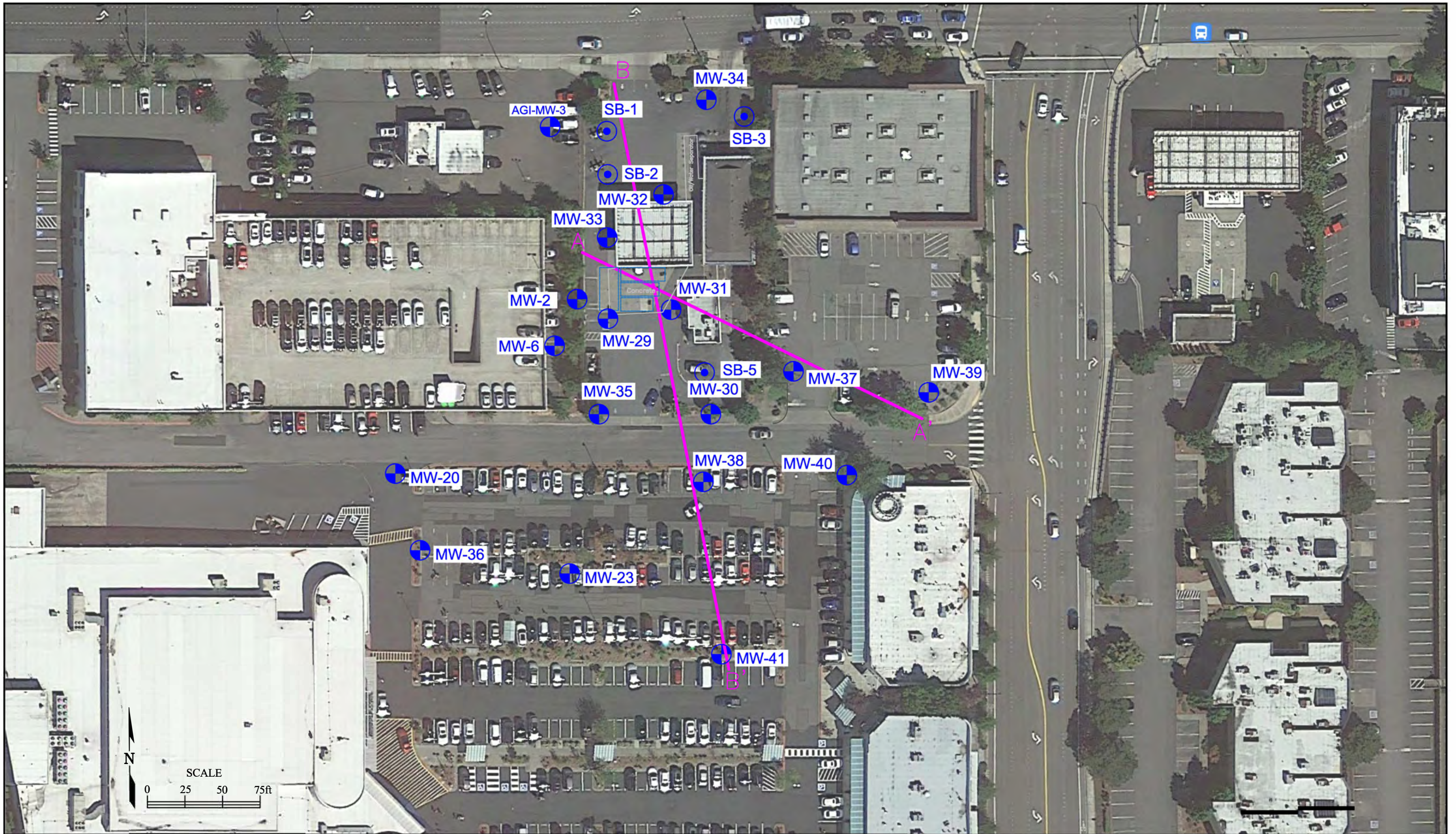
MW-25 Monitoring Well

WELL ID	DATE
TPH-GRO	GASOLINE-RANGE HYDROCARBONS
B	BENZENE
E	ETHYLBENZENE
T	TOLUENE
X	TOTAL XYLENES

<50 Less than Indicated Laboratory Reporting Limits
BOLD Concentration Exceeding MTCA Method A Cleanup Level
Units in Micrograms per Liter (µg/L)

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 4
Groundwater Concentrations



LEGEND



USTs



Concrete Surface



Current Buildings and Structures

SB-5



Soil Boring

MW-37



Monitoring Well



Parcel Boundary

A

A'

Cross-Section
Transect Location



leidos

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

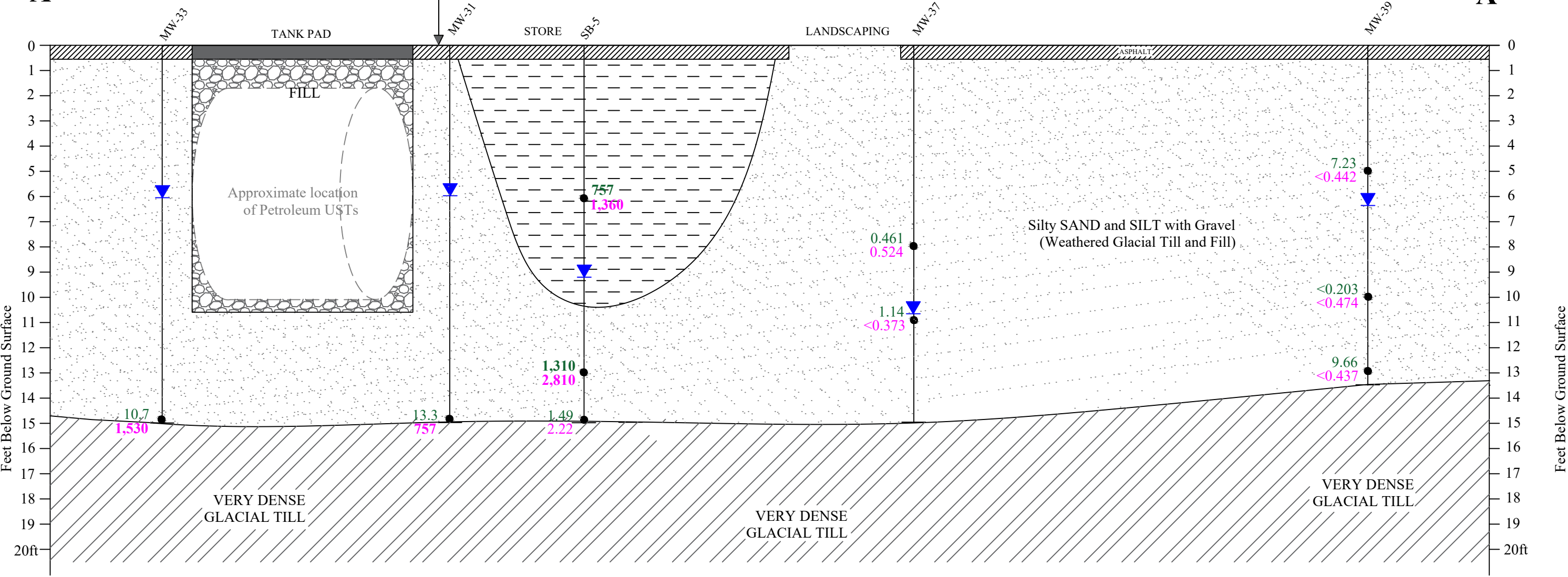
Figure 5
Cross-Section Locations

DATE: 4/27/2023

DRAWING: Bellevue_Tiki.dwg

WEST
A

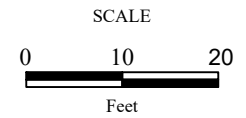
EAST
A'



LEGEND:

10.7 Gasoline-range hydrocarbon concentration in mg/kg
1,530 Benzene concentration in milligrams per kilogram (ug/kg)
Concentrations in Excess of MTCA Method A Cleanup Levels shown in **BOLD**.

- | | |
|---|---|
|  Silty CLAY |  TANK BASIN FILL |
|  Silty SAND (SM) and SILT (ML) with Gravel | |



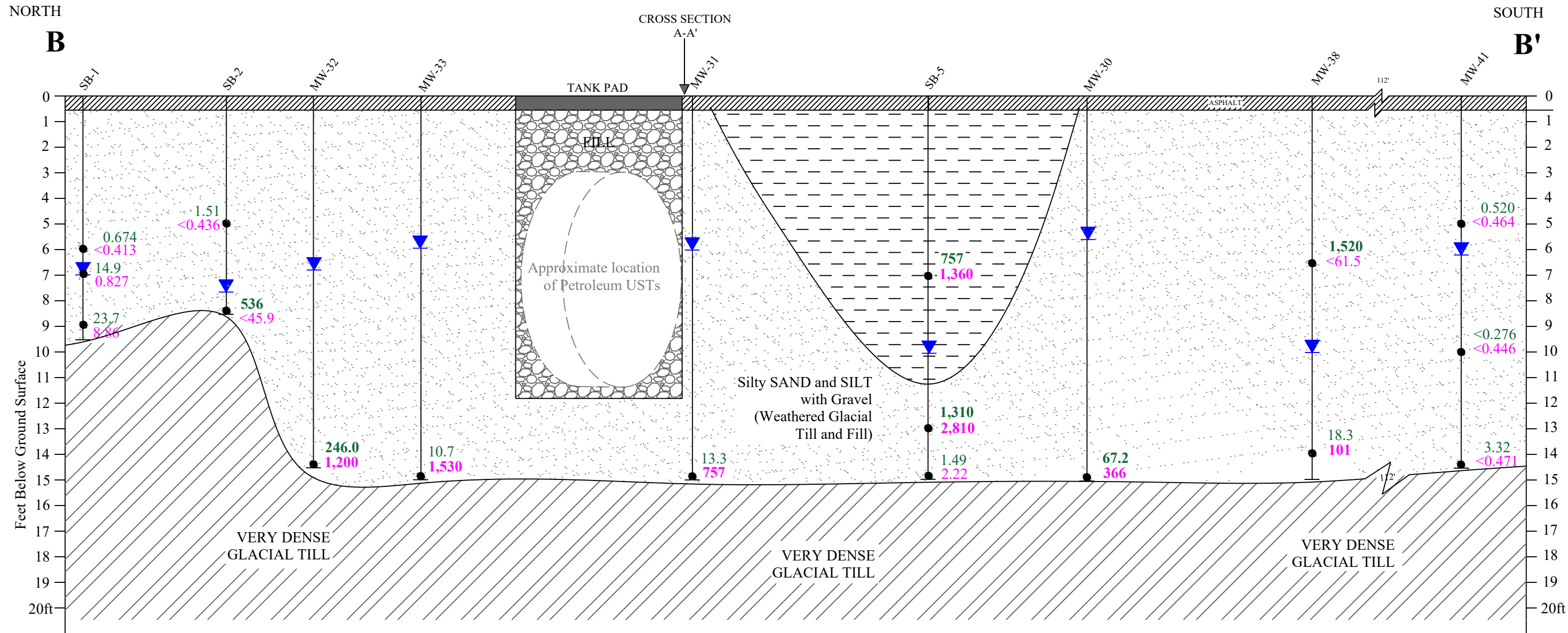
(5X Vertical Exaggeration)

NOTE: Many Borings are projected into cross section to show data.



Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

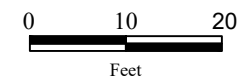
FIGURE 6
Geologic Cross-Section A-A'



LEGEND:

- 10.7 Gasoline-range hydrocarbon concentration in mg/kg
- 1,530 Benzene concentration in milligrams per kilogram (ug/kg)
- Concentrations in Excess of MTCA Method A Cleanup Levels shown in **BOLD**.

- Silty CLAY
- TANK BASIN FILL
- Silty SAND (SM) and SILT (ML) with Gravel



(5X Vertical Exaggeration)

NOTE: Many Borings are projected into cross section to show data.



Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

FIGURE 7
Geologic Cross-Section B-B'



LEGEND

- USTs
- Concrete Surface
- Current Buildings and Structures

- SB-5 Soil Boring
- MW-37 Monitoring Well
- Parcel Boundary

Groundwater Elevation
Contours at 1-Foot Intervals

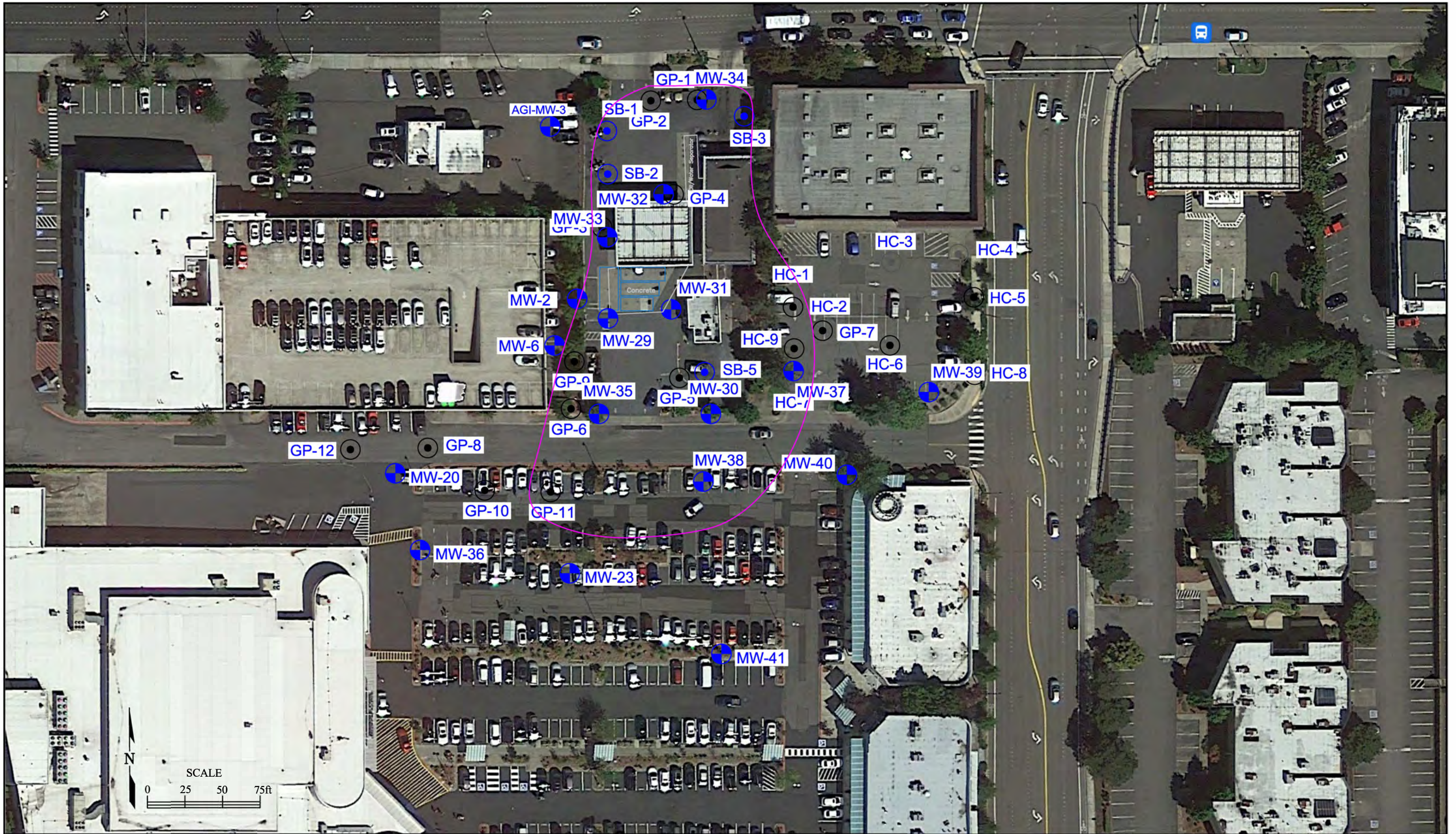
Approximate Groundwater
Flow Direction

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 8
Groundwater
Potentiometric Map

DATE: 4/27/2023

DRAWING: Bellevue_Tiki.dwg



LEGEND

- | | | | |
|---|----------------------------------|---|-----------------|
|  | USTs |  | Soil Boring |
|  | Concrete Surface |  | Monitoring Well |
|  | Current Buildings and Structures |  | Parcel Boundary |

 Extent of Contamination in Soil (dashed where inferred)



Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 9
Extent of Soil
Contamination



LEGEND

- | | | | | | |
|--|----------------------------------|--|-------|--|-----------------|
| | USTs | | SB-5 | | Soil Boring |
| | Concrete Surface | | MW-37 | | Monitoring Well |
| | Current Buildings and Structures | | | | Parcel Boundary |

Extent of Contamination in Groundwater (dashed where inferred)

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Figure 10
Extent of Groundwater
Contamination

Appendix A

Boring Logs

BORING LOG						Well No: SB-1	
						PAGE 1 of 1	
PROJECT: Tiki Carwash		DRILLER: Cascade Drilling, Inc.		WELL DIAMETER: --			
LOCATION: Bellevue, WA		DRILL METHOD: Hand Auger/Geoprobe		WELL DEPTH: --			
CLIENT: Ecology		SAMPLE METHOD: Hand Auger/Geoprobe		WELL CASING: --			
DATE: 5/4/22		HOLE DIAMETER: 6-inch max.		WELL SCREEN: --			
LOGGED BY: Chris Wildt		HOLE DEPTH: 9.5 feet		FILTER PACK: --			
						CASING ELEVATION:--	
Analytical Sample Number	PID (ppm)	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material
SB-1-6	0.0			1	ML	ASPHALT	
				2		brown mottled sandy SILT; no odor, no sheen.	
				3			
				4			
				5			
SB-1-7	13.3			6	ML	gray sandy SILT; damp, no odor, no sheen.	
				7	SM	brown silty SAND; no odor, no sheen.	
SB-1-9	4.4			8	SM	brown, very compact silty SAND; damp. Moderate odor, no sheen.	
				9			
				10			
				11			
						Refusal at 9.5 ft	

NOTES:

BORING LOG						Well No: SB-2	
						PAGE 1 of 1	
PROJECT: Tiki Carwash		DRILLER: Cascade Drilling, Inc.		WELL DIAMETER: --			
LOCATION: Bellevue, WA		DRILL METHOD: Hand Auger/Geoprobe		WELL DEPTH: --			
CLIENT: Ecology		SAMPLE METHOD: Hand Auger/Geoprobe		WELL CASING: --			
DATE: 5/4/22		HOLE DIAMETER: 6-inch max.		WELL SCREEN: --			
LOGGED BY: Chris Wildt		HOLE DEPTH: 8.5 feet		FILTER PACK: --			
						CASING ELEVATION:--	
Analytical Sample Number	PID (ppm)	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material
SB-2-5	0.4			1	ML	ASPHALT	
				2		brown mottled sandy SILT; damp, no odor, no sheen.	
				3			
				4			
SB-2-8.5	1.6	136.0		5		gray sandy SILT; wet, no odor, no sheen.	
				6			
				7	brown, very compact sandy SILT; damp. Moderate odor, no sheen.		
				8	Refusal at 8.5 ft		
				9			
				10			
				11			

NOTES: poor recovery at 8-8.5

MONITORING WELL LOG

Well No: **MW-37**

PAGE 1 of 1

PROJECT: Tiki Carwash
LOCATION: Bellevue, WA
CLIENT: Ecology
DATE: 5/3/22
LOGGED BY: Chris Wildt

DRILLER: Cascade Drilling, Inc.
DRILL METHOD: Air Knife/Geoprobe
SAMPLE METHOD: Hand Auger/Geoprobe
HOLE DIAMETER: 6-inch max.
HOLE DEPTH: 15 feet

WELL DIAMETER: 2'
WELL DEPTH: 15 ft
WELL CASING: PVC
WELL SCREEN: 5-15 ft
FILTER PACK:--Sand

CASING ELEVATION:--

Analytical Sample Number	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material
		Recovery	Interval				
MW-37-8				1	SM	Asphalt	Bentonite
				2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
MW-37-11	▽			16	SM		Bentonite
				17			
				18			
				19			
				20			
				21			
				22			
				23			

NOTES:

BORING LOG						Well No: SB-5	
						PAGE 2 of 2	
PROJECT: Tiki Carwash		DRILLER: Cascade Drilling, Inc.		WELL DIAMETER: --			
LOCATION: Bellevue, WA		DRILL METHOD: Hand Auger/Geoprobe		WELL DEPTH: --			
CLIENT: Ecology		SAMPLE METHOD: Hand Auger/Geoprobe		WELL CASING: --			
DATE: 5/4/22		HOLE DIAMETER: 6-inch max.		WELL SCREEN: --			
LOGGED BY: Chris Wildt		HOLE DEPTH: 15.0 feet		FILTER PACK: --			
						CASING ELEVATION: --	
Analytical Sample Number	PID (ppm)	Water Level	Sample Recovery Interval	DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Backfill Material
SB-5-13	48.6			12	SM	gray silty SAND, wet, moderate odor, no sheen	
	569.4			13	ML	gray sandy SILT, compact; strong odor, slight sheen	
SB-5-15	7.8		14			gray sandy SILT, moist; slight odor, no sheen	
			15		Refusal @ 15 ft		
				16			
				17			
				18			
				19			
				20			
				21			
				22			

NOTES:



EA Engineering,
Science, And
Technology, Inc.

Client

Ecology

Project Number

619904.01

Location In planter

Tiki - S. of Food Mart

Drilling/Sampling
Methods

Hollow Stem Auger

Limited Access Rig

4.25" ID Auger

Water Level

4.9'

4.56'

DRILLING

Start

Finish

Time

0956

1313

Time

0956

Time

1100

Date

2-22-07

2-27-07

Date

2-22-07

Date

2-22-07

Reference

bgs

bgs

LOG OF SOIL BORING: MW-30

Elevation From

Top of Casing (TOC):

INCHES Driven	Recovery	Blows/6"	RIP GPA Reading	WELL DETAIL	DEPTH (Ft)	USCS SYMBOL	Surface Conditions	Well Completion
							Bark Planter Description by: JKM	
					0			
					1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
5"	7"	55	28		10	SM		
					11			
					12			
					13			
					14			
4"	4"	60	8		15	SM		
					16			
					17			
					18			
					19			
					20			

2" PVC
2 1/2" Bentonite
chips

Monterey
2 1/2"
sand

Water level prior to drilling
grey silty sand w/ slight
hydrocarbon odor

Vacuum cleared to 7' on 2/21/07.

grey silty sand/sandy silt
w/ fine gravel, slight hydrocarbon
odor, wet, dense, SM

grey sand silty-sand with fine
moist, dense gravel

End of boring @ 15'
Sample collected @ 15'



EA Engineering,
Science, And
Technology, Inc.

Client

ECOLOGY

Project Number

U19904.01

Location IN FRONT of

TIKI Convient Store

Drilling/Sampling
Methods

Hand Operated Auger: Limited Access Rig
6.5" ID Auger

DRILLING

Water Level

6' bc

Start

Finish

Time

0905

Time

0905

Time

1035

Date

2-23-07

Date

2-23-07

Date

2-23-07

Reference

bgs

Well Completion

4" PVC

INCHES

Driven

Recov.

Blows/6"

PID (ppm)

Reading

WELL
DETAIL

DEPTH
(Ft)

USCS
SYMBOL

Surface Conditions

Pavement / Asphalt

Description by: JKM

LOG OF SOIL BORING: MW-31

Elevation From

Top of Casing (TOC):

INCHES	Driven	Recov.	Blows/6"	PID (ppm)	Reading	WELL DETAIL	DEPTH (Ft)	USCS SYMBOL	Surface Conditions	Well Completion
							0			
						4" PVC	1			
						3/8" bentonite chips	2			
							3			
							4			
							5		slight HC odor	
					65		6		water level prior to drilling	
							7			
							8		vacuum cleared to 8' bgs	
							9			
6"	6"			60	15		10	SM	dense moist medium grey Silty sand with fine to coarse gravel SM	
							11			
							12			
							13			
						2 1/2 Monten Sand	14			
12"	8"			70	10		15	SM	dense wet/moist medium grey Silty sand w/ fine gravel SM collected sample	
							16			
							17		End of boring	
							18			
							19			
							20			



EA Engineering,
Science, And
Technology, Inc.

Client

Ecology

Project Number

619904.01

Location

TIKI - North of
Pump Islands.

Drilling/Sampling
Methods

Limited Access Rig
Hollow Stem Auger - 6.5 ID Auger

DRILLING

Water Level

Start

Finish

Time

Time

6:59

Time

0930

Date

Date

2-23-07

Date

2-23-07

Reference

Well Completion

LOG OF SOIL BORING: MW-32

Elevation From

Top of Casing (TOC):

INCHES Driven	Recov.	Blows/6"	PID (ppm) Reading	WELL DETAIL	DEPTH (Ft)	USCS SYMBOL	Surface Conditions	Well Completion
							Asphalt Description by: JKM	
				4" PVC	0			
				5/8" denton chips	1			
					2			
					3			
					4			
					5			
					6			
					7			
					8			
					9			
3"	2"	100	739		10	SM	vacuum cleared to 7.5 bgs brown and grey silty sand with coarse gravel, dense, dry SM Hc odor	
					11			
				2 1/2 Marley Sand	12			
					13			
					14			
2"	2"	55	16		15		medium grey dense silty sand with coarse and fine gravels, dry SM no odors Sample collected	
					16			
					17			
					18			
					19			
					20			

End of boring @ 14.5' bgs



EA Engineering,
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Technology, Inc.

Client

Ecology

Project Number

619904.01

Location

Tiki - W. of pump
Island

Drilling/Sampling
Methods

Hollow Stem Auger Limited Access Rig
6.5" ID Auger

Water Level

6'

Time

1045

Date

2-23-07

Reference

bgs

DRILLING

Start

Finish

Time

1035

Time

1230

Date

2-23-07

Date

2/23/07

LOG OF SOIL BORING: MW-33

Elevation From

Top of Casing (TOC):

INCHES

Driven

Recov.

Blows/s"

PID (ppm)
Reading

WELL
DETAIL

DEPTH
(Ft)

USCS
SYMBOL

Surface Conditions

Asphalt

Description by: JKM

Well Completion

4" PVC

					0
					1
					2
					3
					4
					5
					6
					7
					8
					9
2"	0	50	0		10
					11
					12
					13
					14
6"	5"	70	124		15
					16
					17
					18
					19
					20

4" bentonite
chips
PVC

2 1/2"
Monteney
Sand

Water @ 6' bgs prior to drilling

vacuum cleared to 7.5' bgs

SM - dense, wet medium brown
silty sand SM

SM - dense dry medium grey silty
sand with fine to coarse
gravel SM

Collected sample @ 15' bgs

end of boring @ 15' bgs



EA Engineering,
Science, And
Technology, Inc.

Client

Ecology

Project Number

619904.01

Location

TIKI Car Wash

Drilling/Sampling
Methods

Hollow Stem Auger Limited Access Rig
4.25" ID Auger

Water Level

6.95'

Time

1520

Date

2-22-07

Reference

6502
65 JKM

DRILLING

Start

Finish

Time
1338

Time
1435

Date

2-22-07

Date

2-22-07

LOG OF SOIL BORING: MW-34

Elevation From
Top of Casing (TOC):

INCHES

Driven

Recov.

Blows/6"

PID (ppm)
Reading

WELL
DETAIL

DEPTH
(Ft)

USCS
SYMBOL

Surface Conditions

Asphalt

Description by: JKM

Well Completion

2" PVC

					0
					1
				2" PVC	2
					3
					4
					5
					6
					7
					8
					9
5"	5"	60	2.9	JKM	10
					11
					12
					13
					14
6"	2"	100	0	2 1/2" Monterey Sand	15
6"	3"	100	0		16
					17
					18
					19
					20

grey silty sand with fine gravel

- Vacuum cleared to 7.5' ft bgs

SW - dense silty sand grey moist
wi fine gravel. No odors
SW

SW - limited recovery - rock stuck in shoe
re-sampling for adequate sample volume

- dense silty sand wi coarse gravel
Wet, no odors
SW

End of boring @ 15.5'
Sample @ 15.5'



EA Engineering,
Science, And
Technology, Inc.

Client

Ecology

Project Number

619904.01

Location In planter

Tiki - S. of dumpst

Drilling/Sampling

Methods

Limited Access Rig
Hollow Stem Auger - 6.5" ID Auger

Water Level

9.29'

DRILLING

Time

1454

Start

Finish

Date

2-22-07

Time

1115

Time

1325

Date

2-22-07

Date

2-22-07

Reference

btoC

LOG OF SOIL BORING:

Elevation From

Top of Casing (TOC):

MW-35

INCHES

Driven

Recov.

Blows/6"

QA/QC
Reading

WELL
DETAIL

DEPTH
(Ft)

USCS
SYMBOL

Surface Conditions

Barik Planter

Description by: JKM

Well Completion

4" PVC

					0		
					1		
				4" PVC	2		
				3/8" Bentonite chip	3		
					4		
					5		
					6		
					7		
					8		
					9		
5"	4"	50	33		10	SM	
			2.5	JKM	11		
					12		
					13		
					14		
2"	2"	50		2/12 Moisture Sand	15	SM	
					16		
					17		
					18		
					19		
					20		

2.5 lbs water level prior to drilling

grey silty sand w/ gravel

vacuum cleared to 6'

SM - dense grey silty sand with ^{fine} gravel, SM dry

SM - dense wet grey silty sand with gravel and (fine to coarse), SM

End of boring @ 15'
sample collected @ 15'



EA Engineering,
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Technology, Inc.

Client

Ecology

Project Number

61944.01

Location

Tiki - G.F. JOE Parkway lot

Drilling/Sampling
Methods

Hollow Stem Auger - Limited Access Rig (Old Rig)
4.25" ID Auger

Water Level

M

DRILLING

Time

Start

Finish

Date

Time
0830

Time
0930

Reference

Date
2/22/07

Date
2/22/07

LOG OF SOIL BORING: MW-36

Elevation From

Top of Casing (TOC):

INCHES		Blows/6"	P.D. Reading	WELL DETAIL	DEPTH (Ft)	USCS SYMBOL	Surface Conditions	Well Completion
Driven	Recov.						Asphalt	
							Description by: MW36	
				2" PVC	0			
				3/8" Bit Chips	1			
					2		Sand w/ gravel + cobbles, medium brown, dry.	
					3			
				Monterey 2 1/2 Sand	4			
					5			
					6		Vacuum cleared to 6' on 2/21/07.	
					7		Dense.	
					8			
					9			
2"	4"	50	0		10	SM	silty sand with gravel, med gray, dry.	
					11		No odors.	
					12			
					13		3 Moist cuttings noted by ~~driller~~ ¹⁰³	
					14			
3"	4"	50	0		15		silty sand, coarse sand, med gray, dry.	
					16		End of Boring, Collect soil sample.	
					17		(2' of water observed in well after submergence)	
					18			
					19			
					20			

MONITORING WELL LOG

Well No: **MW-37**

PAGE 1 of 1

PROJECT: Tiki Carwash
LOCATION: Bellevue, WA
CLIENT: Ecology
DATE: 5/3/22
LOGGED BY: Chris Wildt

DRILLER: Cascade Drilling, Inc.
DRILL METHOD: Air Knife/Geoprobe/HSA
SAMPLE METHOD: Hand Auger/Geoprobe
HOLE DIAMETER: 6-inch max.
HOLE DEPTH: 15 feet

WELL DIAMETER: 2'
WELL DEPTH: 15 ft
WELL CASING: PVC
WELL SCREEN: 5-15 ft
FILTER PACK:--Sand

CASING ELEVATION:--

Analytical Sample Number	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material
		Recovery	Interval				
MW-37-8				1	SM	Asphalt	Bentonite
				2			
				3			
				4			
				5			
				6			
				7			
				8			
MW-37-11	▽			9	SM		Bentonite
				10			
				11		gray fine silty SAND with 10% gravel and roots, damp; No odor, no sheen.	
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			

NOTES:

MONITORING WELL LOG

Well No: **MW-38**

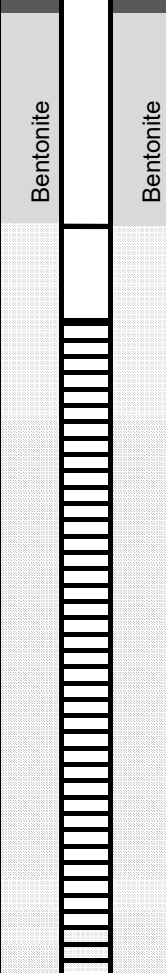
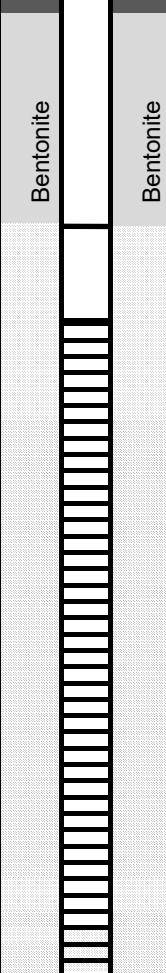
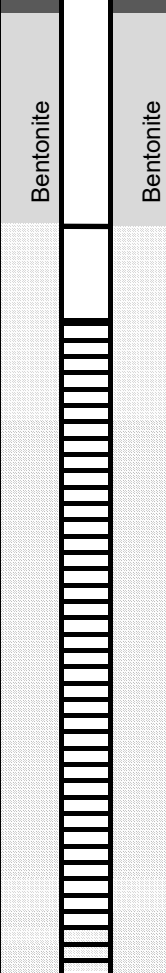
PAGE 1 of 1

PROJECT: Tiki Carwash
LOCATION: Bellevue, WA
CLIENT: Ecology
DATE: 5/4/22
LOGGED BY: Chris Wildt

DRILLER: Cascade Drilling, Inc.
DRILL METHOD: Air Knife/Geoprobe/HSA
SAMPLE METHOD: Hand Auger/Geoprobe
HOLE DIAMETER: 6-inch max.
HOLE DEPTH: 14 feet

WELL DIAMETER: 2'
WELL DEPTH: 14 ft
WELL CASING: PVC
WELL SCREEN: 4-14 ft
FILTER PACK:--Sand

CASING ELEVATION:--

Analytical Sample Number	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material			
		Recovery	Interval							
MW-38-6.5				1	ML	Asphalt				
		2	brown sandy SILT, 20%; moderate odor, moderate sheen.							
		3								
		4								
		5								
		6								
		7								
		8	SM	gray compact silty SAND with 10% gravel and roots, damp; moderate odor, no sheen.						
		9								
		10	ML	gray, loose, sandy SILT, wet; 10% gravel, no odor, no sheen						
		11								
MW-38-14				12	SM	gray, compact silty SAND, wet; 10% gravel, slight odor, no sheen				
				13						
				14						
				15						
				16						
				17						
				18						
				19						
				20						
				21						
				22						

NOTES:

MONITORING WELL LOG

Well No: **MW-39**

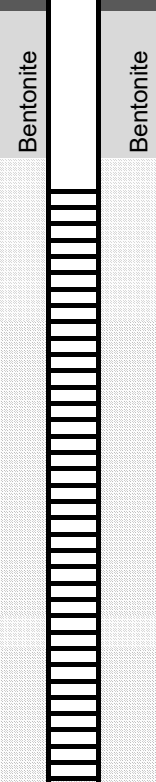
PAGE 1 of 1

PROJECT: Tiki Carwash
LOCATION: Bellevue, WA
CLIENT: Ecology
DATE: 11/1/22
LOGGED BY: Chris Wildt

DRILLER: Cascade Drilling, Inc.
DRILL METHOD: Air Knife/Geoprobe/HSA
SAMPLE METHOD: Hand Auger/Geoprobe
HOLE DIAMETER: 6-inch max.
HOLE DEPTH: 13.5 feet

WELL DIAMETER: 2'
WELL DEPTH: 12 ft
WELL CASING: PVC
WELL SCREEN: 3-12 ft
FILTER PACK:--Sand

CASING ELEVATION:--

Analytical Sample Number	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material
		Recovery	Interval				
MW-39-5				1	SM	ASPHALT	
				2			
				3			
				4			
				5			
MW-39-10				6	SM	brown silty SAND; 10% gravel; No odor, no sheen.	
				7			
				8			
				9			
				10			
MW-39-13				11	ML	gray gravelly SILT, dense; No odor, no sheen.	
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			

NOTES:

MONITORING WELL LOG

Well No: **MW-40**

PAGE 1 of 1

PROJECT: Tiki Carwash
LOCATION: Bellevue, WA
CLIENT: Ecology
DATE: 11/2/22
LOGGED BY: Chris Wildt

DRILLER: Cascade Drilling, Inc.
DRILL METHOD: Air Knife/Geoprobe/HSA
SAMPLE METHOD: Hand Auger/Geoprobe
HOLE DIAMETER: 6-inch max.
HOLE DEPTH: 13.5 feet

WELL DIAMETER: 2'
WELL DEPTH: 12 ft
WELL CASING: PVC
WELL SCREEN: 3-12 ft
FILTER PACK:--Sand

CASING ELEVATION:--

Analytical Sample Number	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material
		Recovery	Interval				
MW-40-5				1	ML	brown sandy SILT; 30% gravel; No odor, no sheen. grayish brown sandy SILT, damp; No odor, no sheen. gray sandy SILT, wet; No odor, no sheen.	
				2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
MW-40-10				10			
				11			
				12			
MW-40-13				13			
				14			
				15			
				16			
				17			
				18			
				19			
				22			
				21			
				22			

NOTES:

MONITORING WELL LOG

Well No: **MW-41**

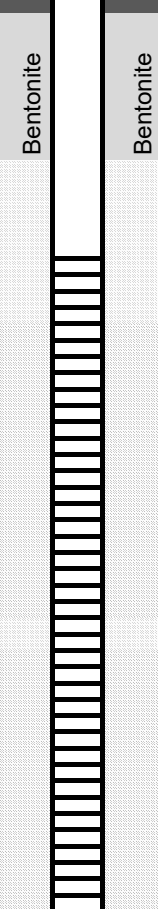
PAGE 1 of 1

PROJECT: Tiki Carwash
LOCATION: Bellevue, WA
CLIENT: Ecology
DATE: 11/1/22
LOGGED BY: Chris Wildt

DRILLER: Cascade Drilling, Inc.
DRILL METHOD: Air Knife/Geoprobe/HSA
SAMPLE METHOD: Hand Auger/Geoprobe
HOLE DIAMETER: 6-inch max.
HOLE DEPTH: 14.75 feet

WELL DIAMETER: 2'
WELL DEPTH: 14 ft
WELL CASING: PVC
WELL SCREEN: 4-14 ft
FILTER PACK:--Sand

CASING ELEVATION:--

Analytical Sample Number	Water Level	Sample		DEPTH (ft.)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion/ Backfill Material	
		Recovery	Interval				Bentonite	Bentonite
MW-41-5				1	ML	brown SILT; No odor, no sheen.		
				2				
				3				
				4				
				5	ML	mottled brown and gray sandy SILT, wet; No odor, no sheen.		
MW-41-10				6				
				7				
				8				
				9	ML	gray SILT with 20% gravel, wet; No odor, no sheen.		
				10				
				11				
				12				
				13	ML			
MW-41-14.5				14				
				15				
				16				
			17					
			18					
			19					
			22					
			21					
			22					

NOTES:

Appendix B

Analytical

Data

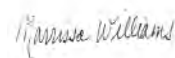
ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-90244-1
Client Project/Site: Tiki Car Wash

For:
Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell, Washington 98011

Attn: Don Wyll



Authorized for release by:
7/15/2022 4:38:58 PM

Marrissa Williams, Project Manager
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Marrissa.Williams@et.eurofinsus.com

LINKS

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

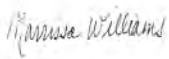
- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Marrison Williams
Project Manager
7/15/2022 4:38:58 PM

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Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Job ID: 410-90244-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-90244-1

Receipt

The samples were received on 7/7/2022 10:11 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 7.5°C

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

The following samples were received at the laboratory outside the required temperature criteria: MW-37 (410-90244-1), MW-38 (410-90244-2) and TB-LB (410-90244-3). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): TB-LB (410-90244-3). The sample container was received with headspace.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Client Sample ID: MW-37

Lab Sample ID: 410-90244-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2.84		1.00	0.400	ug/L	1		8260D	Total/NA
Toluene	4.01		1.00	0.200	ug/L	1		8260D	Total/NA
Xylene (total)	8.14		1.00	0.400	ug/L	1		8260D	Total/NA
Benzene - DL	363		10.0	3.00	ug/L	10		8260D	Total/NA
C7-C12 (1C)	531		250	43.0	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-38

Lab Sample ID: 410-90244-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene - DL	3290		50.0	15.0	ug/L	50		8260D	Total/NA
Ethylbenzene - DL	2600		50.0	20.0	ug/L	50		8260D	Total/NA
Xylene (total) - DL	14900		50.0	20.0	ug/L	50		8260D	Total/NA
Toluene - DL2	16300		500	100	ug/L	500		8260D	Total/NA
C7-C12 (1C)	93800		5000	860	ug/L	20		NWTPH-Gx	Total/NA

Client Sample ID: TB-LB

Lab Sample ID: 410-90244-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Client Sample ID: MW-37

Lab Sample ID: 410-90244-1

Date Collected: 07/01/22 09:00

Matrix: Water

Date Received: 07/07/22 10:11

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			07/14/22 01:15	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			07/14/22 01:15	1
Ethylbenzene	2.84		1.00	0.400	ug/L			07/14/22 01:15	1
Toluene	4.01		1.00	0.200	ug/L			07/14/22 01:15	1
Xylene (total)	8.14		1.00	0.400	ug/L			07/14/22 01:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		80 - 120		07/14/22 01:15	1
4-Bromofluorobenzene (Surr)	99		80 - 120		07/14/22 01:15	1
Dibromofluoromethane (Surr)	104		80 - 120		07/14/22 01:15	1
Toluene-d8 (Surr)	101		80 - 120		07/14/22 01:15	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	363		10.0	3.00	ug/L			07/15/22 04:45	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 120					07/15/22 04:45	10
4-Bromofluorobenzene (Surr)	90		80 - 120					07/15/22 04:45	10
Dibromofluoromethane (Surr)	108		80 - 120					07/15/22 04:45	10
Toluene-d8 (Surr)	97		80 - 120					07/15/22 04:45	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	531		250	43.0	ug/L			07/11/22 17:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	98		50 - 150					07/11/22 17:54	1

Client Sample ID: MW-38

Lab Sample ID: 410-90244-2

Date Collected: 07/01/22 09:30

Matrix: Water

Date Received: 07/07/22 10:11

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<1.00		5.00	1.00	ug/L			07/14/22 02:21	5
Ethylene dichloride	<1.50		5.00	1.50	ug/L			07/14/22 02:21	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		80 - 120					07/14/22 02:21	5
4-Bromofluorobenzene (Surr)	97		80 - 120					07/14/22 02:21	5
Dibromofluoromethane (Surr)	98		80 - 120					07/14/22 02:21	5
Toluene-d8 (Surr)	104		80 - 120					07/14/22 02:21	5

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3290		50.0	15.0	ug/L			07/14/22 02:43	50
Ethylbenzene	2600		50.0	20.0	ug/L			07/14/22 02:43	50
Xylene (total)	14900		50.0	20.0	ug/L			07/14/22 02:43	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 120					07/14/22 02:43	50

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Client Sample ID: MW-38

Lab Sample ID: 410-90244-2

Date Collected: 07/01/22 09:30

Matrix: Water

Date Received: 07/07/22 10:11

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		07/14/22 02:43	50
Dibromofluoromethane (Surr)	102		80 - 120		07/14/22 02:43	50
Toluene-d8 (Surr)	102		80 - 120		07/14/22 02:43	50

Method: 8260D - Volatile Organic Compounds by GC/MS - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	16300		500	100	ug/L			07/15/22 05:07	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 120		07/15/22 05:07	500
4-Bromofluorobenzene (Surr)	93		80 - 120		07/15/22 05:07	500
Dibromofluoromethane (Surr)	110		80 - 120		07/15/22 05:07	500
Toluene-d8 (Surr)	95		80 - 120		07/15/22 05:07	500

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	93800		5000	860	ug/L			07/12/22 00:19	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	98		50 - 150		07/12/22 00:19	20

Client Sample ID: TB-LB

Lab Sample ID: 410-90244-3

Date Collected: 07/01/22 00:00

Matrix: Water

Date Received: 07/07/22 10:11

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200	cn	1.00	0.200	ug/L			07/13/22 19:22	1
Ethylene dichloride	<0.300	cn	1.00	0.300	ug/L			07/13/22 19:22	1
Benzene	<0.300	cn	1.00	0.300	ug/L			07/13/22 19:22	1
Ethylbenzene	<0.400	cn	1.00	0.400	ug/L			07/13/22 19:22	1
Toluene	<0.200	cn	1.00	0.200	ug/L			07/13/22 19:22	1
Xylene (total)	<0.400	cn	1.00	0.400	ug/L			07/13/22 19:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112	cn	80 - 120		07/13/22 19:22	1
4-Bromofluorobenzene (Surr)	87	cn	80 - 120		07/13/22 19:22	1
Dibromofluoromethane (Surr)	116	cn	80 - 120		07/13/22 19:22	1
Toluene-d8 (Surr)	97	cn	80 - 120		07/13/22 19:22	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<43.0		250	43.0	ug/L			07/11/22 14:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	102		50 - 150		07/11/22 14:02	1

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (80-120)	BFB (80-120)	DBFM (80-120)	TOL (80-120)
410-90244-1	MW-37	104	99	104	101
410-90244-1 - DL	MW-37	105	90	108	97
410-90244-2	MW-38	99	97	98	104
410-90244-2 - DL	MW-38	102	101	102	102
410-90244-2 - DL2	MW-38	107	93	110	95
410-90244-3	TB-LB	112 cn	87 cn	116 cn	97 cn
LCS 410-274793/5	Lab Control Sample	106	99	105	102
LCS 410-275729/5	Lab Control Sample	101	99	103	102
MB 410-274793/8	Method Blank	111	87	115	97
MB 410-275729/8	Method Blank	108	90	111	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TFT-F1 (50-150)			
410-90244-1	MW-37	98			
410-90244-2	MW-38	98			
410-90244-3	TB-LB	102			
LCS 410-274131/5	Lab Control Sample	94			
LCSD 410-274131/6	Lab Control Sample Dup	93			
MB 410-274131/4	Method Blank	101			

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-274793/8

Matrix: Water

Analysis Batch: 274793

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			07/13/22 19:00	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			07/13/22 19:00	1
Benzene	<0.300		1.00	0.300	ug/L			07/13/22 19:00	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			07/13/22 19:00	1
Toluene	<0.200		1.00	0.200	ug/L			07/13/22 19:00	1
Xylene (total)	<0.400		1.00	0.400	ug/L			07/13/22 19:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		80 - 120		07/13/22 19:00	1
4-Bromofluorobenzene (Surr)	87		80 - 120		07/13/22 19:00	1
Dibromofluoromethane (Surr)	115		80 - 120		07/13/22 19:00	1
Toluene-d8 (Surr)	97		80 - 120		07/13/22 19:00	1

Lab Sample ID: LCS 410-274793/5

Matrix: Water

Analysis Batch: 274793

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	20.0	19.65		ug/L		98	77 - 120
Ethylene dichloride	20.0	19.40		ug/L		97	73 - 124
Benzene	20.0	19.31		ug/L		97	80 - 120
Ethylbenzene	20.0	18.63		ug/L		93	80 - 120
Toluene	20.0	18.92		ug/L		95	80 - 120
Xylene (total)	60.0	56.55		ug/L		94	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: MB 410-275729/8

Matrix: Water

Analysis Batch: 275729

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			07/14/22 23:10	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			07/14/22 23:10	1
Benzene	<0.300		1.00	0.300	ug/L			07/14/22 23:10	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			07/14/22 23:10	1
Toluene	<0.200		1.00	0.200	ug/L			07/14/22 23:10	1
Xylene (total)	<0.400		1.00	0.400	ug/L			07/14/22 23:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		07/14/22 23:10	1
4-Bromofluorobenzene (Surr)	90		80 - 120		07/14/22 23:10	1
Dibromofluoromethane (Surr)	111		80 - 120		07/14/22 23:10	1

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-275729/8

Matrix: Water

Analysis Batch: 275729

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		07/14/22 23:10	1

Lab Sample ID: LCS 410-275729/5

Matrix: Water

Analysis Batch: 275729

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	20.0	18.80		ug/L		94	77 - 120
Ethylene dichloride	20.0	18.43		ug/L		92	73 - 124
Benzene	20.0	18.01		ug/L		90	80 - 120
Ethylbenzene	20.0	17.74		ug/L		89	80 - 120
Toluene	20.0	18.16		ug/L		91	80 - 120
Xylene (total)	60.0	53.45		ug/L		89	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-274131/4

Matrix: Water

Analysis Batch: 274131

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<43.0		250	43.0	ug/L			07/11/22 12:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	101		50 - 150		07/11/22 12:45	1

Lab Sample ID: LCS 410-274131/5

Matrix: Water

Analysis Batch: 274131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C7-C12 (1C)	1100	1022		ug/L		93	64 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	94		50 - 150

Lab Sample ID: LCSD 410-274131/6

Matrix: Water

Analysis Batch: 274131

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	1100	1035		ug/L		94	64 - 131	1	30

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

<i>Surrogate</i>	<i>LCSD LCSD</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
<i>a,a,a-Trifluorotoluene (fid) (1C)</i>	93		50 - 150

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

GC/MS VOA

Analysis Batch: 274793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-90244-1	MW-37	Total/NA	Water	8260D	
410-90244-2	MW-38	Total/NA	Water	8260D	
410-90244-2 - DL	MW-38	Total/NA	Water	8260D	
410-90244-3	TB-LB	Total/NA	Water	8260D	
MB 410-274793/8	Method Blank	Total/NA	Water	8260D	
LCS 410-274793/5	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 275729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-90244-1 - DL	MW-37	Total/NA	Water	8260D	
410-90244-2 - DL2	MW-38	Total/NA	Water	8260D	
MB 410-275729/8	Method Blank	Total/NA	Water	8260D	
LCS 410-275729/5	Lab Control Sample	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 274131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-90244-1	MW-37	Total/NA	Water	NWTPH-Gx	
410-90244-2	MW-38	Total/NA	Water	NWTPH-Gx	
410-90244-3	TB-LB	Total/NA	Water	NWTPH-Gx	
MB 410-274131/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-274131/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-274131/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Client Sample ID: MW-37

Lab Sample ID: 410-90244-1

Date Collected: 07/01/22 09:00

Matrix: Water

Date Received: 07/07/22 10:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	274793	07/14/22 01:15	Y6ZN	ELLE
Total/NA	Analysis	8260D	DL	10	275729	07/15/22 04:45	Y6ZN	ELLE
Total/NA	Analysis	NWTPH-Gx		1	274131	07/11/22 17:54	NND8	ELLE

Client Sample ID: MW-38

Lab Sample ID: 410-90244-2

Date Collected: 07/01/22 09:30

Matrix: Water

Date Received: 07/07/22 10:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		5	274793	07/14/22 02:21	Y6ZN	ELLE
Total/NA	Analysis	8260D	DL	50	274793	07/14/22 02:43	Y6ZN	ELLE
Total/NA	Analysis	8260D	DL2	500	275729	07/15/22 05:07	Y6ZN	ELLE
Total/NA	Analysis	NWTPH-Gx		20	274131	07/12/22 00:19	NND8	ELLE

Client Sample ID: TB-LB

Lab Sample ID: 410-90244-3

Date Collected: 07/01/22 00:00

Matrix: Water

Date Received: 07/07/22 10:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	274793	07/13/22 19:22	Y6ZN	ELLE
Total/NA	Analysis	NWTPH-Gx		1	274131	07/11/22 14:02	NND8	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-23

Method Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-90244-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-90244-1	MW-37	Water	07/01/22 09:00	07/07/22 10:11
410-90244-2	MW-38	Water	07/01/22 09:30	07/07/22 10:11
410-90244-3	TB-LB	Water	07/01/22 00:00	07/07/22 10:11

**Lancaster Laboratories
Environmental**

Acct. #

For Eurofins Lancaster Laboratories Environmental use only

Group #

Sample #

Instructions on reverse side correspond with circled numbers

410-90244 Chain of Custody

[illegible]

Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-90244-1

Login Number: 90244

List Number: 1

Creator: McBeth, Jessica

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
Sample custody seals are intact.	True	
VOA sample vials do not have headspace $> 6\text{mm}$ in diameter (none, if from WV)?	True	

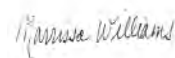
ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-82886-1
Client Project/Site: Tiki Car Wash

For:
Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell, Washington 98011

Attn: Don Wyll



Authorized for release by:
5/20/2022 9:39:43 AM

Marrissa Williams, Project Manager
(717)556-7246
Marrissa.Williams@et.eurofinsus.com

LINKS

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results through



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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

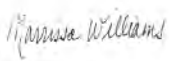
- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Marrison Williams
Project Manager
5/20/2022 9:39:43 AM

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Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Job ID: 410-82886-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-82886-1

Receipt

The samples were received on 5/5/2022 10:39 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.6°C and 5.7°C

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

GC/MS VOA

Method 8260D: The following samples were diluted due to the abundance of non-target analytes: SB-3-6.5 (410-82886-4) and SB-2-8.5 (410-82886-10). Elevated reporting limits (RLs) are provided.

Method 8260D: The continuing calibration verification (CCV) associated with batch 410-253404 recovered above the upper control limit for Ethylene dichloride. Non-detections of the affected analytes are reported. Any detections are considered estimated.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

Method NWTPH_Gx: Surrogate recovery for the following sample was outside the upper control limit: SB-2-5.0 (410-82886-9). No sample volume was available for re-analysis.

Method NWTPH_Gx: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: SB-1-9.0 (410-82886-8). Elevated reporting limits (RLs) are provided.

Method NWTPH_Gx: The method blank for 410-253950 contained C7-C12 above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method NWTPH_Gx: The method blank for preparation batch 410-252851 and analytical batch 410-253950 contained C7-C12 above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL). The client was contacted and the data reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: MW-37-11

Lab Sample ID: 410-82886-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	1.14	J	4.68	0.215	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: MW-37-8

Lab Sample ID: 410-82886-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.524	J	3.63	0.363	ug/Kg	1	✱	8260D	Total/NA
C7-C12 (1C)	0.461	J	4.16	0.192	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-3-5.5

Lab Sample ID: 410-82886-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3.04	J	7.52	0.752	ug/Kg	1	✱	8260D	Total/NA
Ethylbenzene	45.2		7.52	0.602	ug/Kg	1	✱	8260D	Total/NA
Toluene	3.08	J	7.52	0.902	ug/Kg	1	✱	8260D	Total/NA
Xylene (total)	335		15.0	2.11	ug/Kg	1	✱	8260D	Total/NA
C7-C12 (1C)	13.8		9.72	0.447	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-3-6.5

Lab Sample ID: 410-82886-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	7.35		5.14	0.237	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-3-9.5

Lab Sample ID: 410-82886-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	0.587	J	6.88	0.316	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-1-6.0

Lab Sample ID: 410-82886-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	7.93		4.13	0.330	ug/Kg	1	✱	8260D	Total/NA
Xylene (total)	4.39	J	8.25	1.16	ug/Kg	1	✱	8260D	Total/NA
C7-C12 (1C)	0.674	J	4.63	0.213	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-1-7.0

Lab Sample ID: 410-82886-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.827	J	3.83	0.383	ug/Kg	1	✱	8260D	Total/NA
Ethylbenzene	76.6		3.83	0.306	ug/Kg	1	✱	8260D	Total/NA
Toluene	5.09		3.83	0.459	ug/Kg	1	✱	8260D	Total/NA
Xylene (total)	315		7.65	1.07	ug/Kg	1	✱	8260D	Total/NA
C7-C12 (1C)	14.9		3.51	0.162	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-1-9.0

Lab Sample ID: 410-82886-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	8.86		4.54	0.454	ug/Kg	1	✱	8260D	Total/NA
Ethylbenzene - DL	71.8	J	294	23.5	ug/Kg	50	✱	8260D	Total/NA
Toluene - DL	60.6	J	294	35.3	ug/Kg	50	✱	8260D	Total/NA
Xylene (total) - DL	434	J	588	82.4	ug/Kg	50	✱	8260D	Total/NA
C7-C12 (1C)	23.7	J cn	55.6	2.56	mg/Kg	250	✱	NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-2-5.0

Lab Sample ID: 410-82886-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylene (total)	1.37	J	8.72	1.22	ug/Kg	1	✱	8260D	Total/NA
C7-C12 (1C)	1.51	J cn	3.42	0.157	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-2-8.5

Lab Sample ID: 410-82886-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	101	J cn	459	36.7	ug/Kg	100	✱	8260D	Total/NA
C7-C12 (1C)	536	cn	192	8.85	mg/Kg	1000	✱	NWTPH-Gx	Total/NA
C12-C24	15.3		11.4	4.54	mg/Kg	1	✱	NWTPH-Dx	Total/NA

Client Sample ID: MW-38-6.5

Lab Sample ID: 410-82886-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	608	J	615	49.2	ug/Kg	100	✱	8260D	Total/NA
Toluene	143	J	615	73.9	ug/Kg	100	✱	8260D	Total/NA
Xylene (total)	5910		1230	172	ug/Kg	100	✱	8260D	Total/NA
C7-C12 (1C)	1520	cn	925	42.5	mg/Kg	5000	✱	NWTPH-Gx	Total/NA
C12-C24	63.0		11.1	4.42	mg/Kg	1	✱	NWTPH-Dx	Total/NA
C24-C40	153		33.2	11.1	mg/Kg	1	✱	NWTPH-Dx	Total/NA

Client Sample ID: MW-38-14

Lab Sample ID: 410-82886-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	116		4.77	0.382	ug/Kg	1	✱	8260D	Total/NA
Toluene	17.6		4.77	0.573	ug/Kg	1	✱	8260D	Total/NA
Xylene (total)	86.3		9.55	1.34	ug/Kg	1	✱	8260D	Total/NA
Benzene - DL	101	J	293	29.3	ug/Kg	50	✱	8260D	Total/NA
C7-C12 (1C)	18.3		4.53	0.208	mg/Kg	25	✱	NWTPH-Gx	Total/NA

Client Sample ID: SB-5-7

Lab Sample ID: 410-82886-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1360		758	75.8	ug/Kg	100	✱	8260D	Total/NA
Ethylbenzene	10100		758	60.6	ug/Kg	100	✱	8260D	Total/NA
Toluene	4960		758	90.9	ug/Kg	100	✱	8260D	Total/NA
Xylene (total)	59000		1520	212	ug/Kg	100	✱	8260D	Total/NA
C7-C12 (1C)	757	cn	450	20.7	mg/Kg	2000	✱	NWTPH-Gx	Total/NA
C12-C24	42.0		11.6	4.65	mg/Kg	1	✱	NWTPH-Dx	Total/NA

Client Sample ID: SB-5-13

Lab Sample ID: 410-82886-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2810		643	64.3	ug/Kg	100	✱	8260D	Total/NA
Ethylbenzene	35100		643	51.4	ug/Kg	100	✱	8260D	Total/NA
Toluene	32700		643	77.2	ug/Kg	100	✱	8260D	Total/NA
Xylene (total) - DL	210000		12900	1800	ug/Kg	1000	✱	8260D	Total/NA
C7-C12 (1C)	1310	cn	962	44.3	mg/Kg	5000	✱	NWTPH-Gx	Total/NA
C12-C24	17.4		11.6	4.63	mg/Kg	1	✱	NWTPH-Dx	Total/NA

Client Sample ID: SB-5-15

Lab Sample ID: 410-82886-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.22	J	3.73	0.373	ug/Kg	1	✱	8260D	Total/NA
Ethylbenzene	16.4		3.73	0.299	ug/Kg	1	✱	8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-5-15 (Continued)

Lab Sample ID: 410-82886-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	11.9		3.73	0.448	ug/Kg	1	✱	8260D	Total/NA
Xylene (total)	93.6		7.47	1.05	ug/Kg	1	✱	8260D	Total/NA
C7-C12 (1C)	1.49	J	4.43	0.204	mg/Kg	25	✱	NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: MW-37-11

Lab Sample ID: 410-82886-1

Date Collected: 05/03/22 10:45

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.299		3.73	0.299	ug/Kg	✱	05/08/22 16:15	05/10/22 19:32	1
Ethylene dichloride	<0.448	cn	3.73	0.448	ug/Kg	✱	05/08/22 16:15	05/10/22 19:32	1
Benzene	<0.373		3.73	0.373	ug/Kg	✱	05/08/22 16:15	05/10/22 19:32	1
Ethylbenzene	<0.299		3.73	0.299	ug/Kg	✱	05/08/22 16:15	05/10/22 19:32	1
Toluene	<0.448		3.73	0.448	ug/Kg	✱	05/08/22 16:15	05/10/22 19:32	1
Xylene (total)	<1.05		7.47	1.05	ug/Kg	✱	05/08/22 16:15	05/10/22 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		54 - 135	05/08/22 16:15	05/10/22 19:32	1
4-Bromofluorobenzene (Surr)	101		50 - 131	05/08/22 16:15	05/10/22 19:32	1
Dibromofluoromethane (Surr)	109		50 - 141	05/08/22 16:15	05/10/22 19:32	1
Toluene-d8 (Surr)	97		52 - 141	05/08/22 16:15	05/10/22 19:32	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	1.14	J	4.68	0.215	mg/Kg	☼	05/08/22 18:10	05/10/22 14:48	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	124		50 - 150				05/08/22 18:10	05/10/22 14:48	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.39		11.0	4.39	mg/Kg	☼	05/14/22 09:54	05/16/22 19:24	1
C24-C40	<11.0		32.9	11.0	mg/Kg	☼	05/14/22 09:54	05/16/22 19:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	98		50 - 150				05/14/22 09:54	05/16/22 19:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.1		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: MW-37-8

Lab Sample ID: 410-82886-2

Date Collected: 05/03/22 10:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.290		3.63	0.290	ug/Kg	✱	05/08/22 16:15	05/10/22 16:08	1
Ethylene dichloride	<0.436	cn	3.63	0.436	ug/Kg	✱	05/08/22 16:15	05/10/22 16:08	1
Benzene	0.524	J	3.63	0.363	ug/Kg	✱	05/08/22 16:15	05/10/22 16:08	1
Ethylbenzene	<0.290		3.63	0.290	ug/Kg	✱	05/08/22 16:15	05/10/22 16:08	1
Toluene	<0.436		3.63	0.436	ug/Kg	✱	05/08/22 16:15	05/10/22 16:08	1
Xylene (total)	<1.02		7.26	1.02	ug/Kg	✱	05/08/22 16:15	05/10/22 16:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		54 - 135	05/08/22 16:15	05/10/22 16:08	1
4-Bromofluorobenzene (Surr)	101		50 - 131	05/08/22 16:15	05/10/22 16:08	1
Dibromofluoromethane (Surr)	111		50 - 141	05/08/22 16:15	05/10/22 16:08	1
Toluene-d8 (Surr)	97		52 - 141	05/08/22 16:15	05/10/22 16:08	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: MW-37-8

Lab Sample ID: 410-82886-2

Date Collected: 05/03/22 10:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.2

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.461	J	4.16	0.192	mg/Kg	☆	05/08/22 18:10	05/10/22 15:27	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	143		50 - 150				05/08/22 18:10	05/10/22 15:27	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.44		11.1	4.44	mg/Kg	☆	05/14/22 09:54	05/16/22 19:44	1
C24-C40	<11.1		33.3	11.1	mg/Kg	☆	05/14/22 09:54	05/16/22 19:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	97		50 - 150				05/14/22 09:54	05/16/22 19:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.8		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-3-5.5

Lab Sample ID: 410-82886-3

Date Collected: 05/03/22 14:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 65.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.602		7.52	0.602	ug/Kg	☆	05/08/22 16:15	05/11/22 18:28	1
Ethylene dichloride	<0.902		7.52	0.902	ug/Kg	☆	05/08/22 16:15	05/11/22 18:28	1
Benzene	3.04	J	7.52	0.752	ug/Kg	☆	05/08/22 16:15	05/11/22 18:28	1
Ethylbenzene	45.2		7.52	0.602	ug/Kg	☆	05/08/22 16:15	05/11/22 18:28	1
Toluene	3.08	J	7.52	0.902	ug/Kg	☆	05/08/22 16:15	05/11/22 18:28	1
Xylene (total)	335		15.0	2.11	ug/Kg	☆	05/08/22 16:15	05/11/22 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		54 - 135				05/08/22 16:15	05/11/22 18:28	1
4-Bromofluorobenzene (Surr)	86		50 - 131				05/08/22 16:15	05/11/22 18:28	1
Dibromofluoromethane (Surr)	87		50 - 141				05/08/22 16:15	05/11/22 18:28	1
Toluene-d8 (Surr)	111		52 - 141				05/08/22 16:15	05/11/22 18:28	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	13.8		9.72	0.447	mg/Kg	☆	05/08/22 18:10	05/10/22 16:05	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	136		50 - 150				05/08/22 18:10	05/10/22 16:05	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<6.08		15.2	6.08	mg/Kg	☆	05/14/22 09:54	05/16/22 20:04	1
C24-C40	<15.2		45.6	15.2	mg/Kg	☆	05/14/22 09:54	05/16/22 20:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	81		50 - 150				05/14/22 09:54	05/16/22 20:04	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-3-5.5

Lab Sample ID: 410-82886-3

Date Collected: 05/03/22 14:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 65.5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	34.5		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-3-6.5

Lab Sample ID: 410-82886-4

Date Collected: 05/03/22 15:00

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 86.5

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<19.8	cn	247	19.8	ug/Kg	✱	05/08/22 18:03	05/11/22 03:44	50
Ethylene dichloride	<29.6	cn	247	29.6	ug/Kg	✱	05/08/22 18:03	05/11/22 03:44	50
Benzene	<24.7	cn	247	24.7	ug/Kg	✱	05/08/22 18:03	05/11/22 03:44	50
Ethylbenzene	<19.8	cn	247	19.8	ug/Kg	✱	05/08/22 18:03	05/11/22 03:44	50
Toluene	<29.6	cn	247	29.6	ug/Kg	✱	05/08/22 18:03	05/11/22 03:44	50
Xylene (total)	<69.2	cn	494	69.2	ug/Kg	✱	05/08/22 18:03	05/11/22 03:44	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98	cn	54 - 135	05/08/22 18:03	05/11/22 03:44	50
4-Bromofluorobenzene (Surr)	84	cn	50 - 131	05/08/22 18:03	05/11/22 03:44	50
Dibromofluoromethane (Surr)	95	cn	50 - 141	05/08/22 18:03	05/11/22 03:44	50
Toluene-d8 (Surr)	85	cn	52 - 141	05/08/22 18:03	05/11/22 03:44	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	7.35		5.14	0.237	mg/Kg	✱	05/08/22 18:10	05/10/22 16:43	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	117		50 - 150	05/08/22 18:10	05/10/22 16:43	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.56		11.4	4.56	mg/Kg	✱	05/14/22 09:54	05/17/22 00:22	1
C24-C40	<11.4		34.2	11.4	mg/Kg	✱	05/14/22 09:54	05/17/22 00:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	95		50 - 150	05/14/22 09:54	05/17/22 00:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.5		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-3-9.5

Lab Sample ID: 410-82886-5

Date Collected: 05/03/22 15:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 84.2

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.494		6.17	0.494	ug/Kg	✱	05/08/22 16:15	05/11/22 12:05	1
Ethylene dichloride	<0.740		6.17	0.740	ug/Kg	✱	05/08/22 16:15	05/11/22 12:05	1
Benzene	<0.617		6.17	0.617	ug/Kg	✱	05/08/22 16:15	05/11/22 12:05	1
Ethylbenzene	<0.494		6.17	0.494	ug/Kg	✱	05/08/22 16:15	05/11/22 12:05	1
Toluene	<0.740		6.17	0.740	ug/Kg	✱	05/08/22 16:15	05/11/22 12:05	1
Xylene (total)	<1.73		12.3	1.73	ug/Kg	✱	05/08/22 16:15	05/11/22 12:05	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-3-9.5

Lab Sample ID: 410-82886-5

Date Collected: 05/03/22 15:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 84.2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		54 - 135	05/08/22 16:15	05/11/22 12:05	1
4-Bromofluorobenzene (Surr)	97		50 - 131	05/08/22 16:15	05/11/22 12:05	1
Dibromofluoromethane (Surr)	88		50 - 141	05/08/22 16:15	05/11/22 12:05	1
Toluene-d8 (Surr)	104		52 - 141	05/08/22 16:15	05/11/22 12:05	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.587	J	6.88	0.316	mg/Kg	☼	05/09/22 16:32	05/13/22 20:46	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	109		50 - 150				05/09/22 16:32	05/13/22 20:46	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.74		11.9	4.74	mg/Kg	☼	05/14/22 09:54	05/16/22 20:24	1
C24-C40	<11.9		35.6	11.9	mg/Kg	☼	05/14/22 09:54	05/16/22 20:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	86		50 - 150				05/14/22 09:54	05/16/22 20:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.8		1.0	1.0	%	—		05/06/22 16:28	1

Client Sample ID: SB-1-6.0

Lab Sample ID: 410-82886-6

Date Collected: 05/03/22 15:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.330		4.13	0.330	ug/Kg	☼	05/08/22 16:15	05/10/22 16:30	1
Ethylene dichloride	<0.495	cn	4.13	0.495	ug/Kg	☼	05/08/22 16:15	05/10/22 16:30	1
Benzene	<0.413		4.13	0.413	ug/Kg	☼	05/08/22 16:15	05/10/22 16:30	1
Ethylbenzene	7.93		4.13	0.330	ug/Kg	☼	05/08/22 16:15	05/10/22 16:30	1
Toluene	<0.495		4.13	0.495	ug/Kg	☼	05/08/22 16:15	05/10/22 16:30	1
Xylene (total)	4.39	J	8.25	1.16	ug/Kg	☼	05/08/22 16:15	05/10/22 16:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		54 - 135				05/08/22 16:15	05/10/22 16:30	1
4-Bromofluorobenzene (Surr)	101		50 - 131				05/08/22 16:15	05/10/22 16:30	1
Dibromofluoromethane (Surr)	108		50 - 141				05/08/22 16:15	05/10/22 16:30	1
Toluene-d8 (Surr)	97		52 - 141				05/08/22 16:15	05/10/22 16:30	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.674	J	4.63	0.213	mg/Kg	☼	05/08/22 18:10	05/10/22 17:22	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	119		50 - 150				05/08/22 18:10	05/10/22 17:22	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.47		11.2	4.47	mg/Kg	☆	05/14/22 09:54	05/16/22 20:44	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-1-6.0

Lab Sample ID: 410-82886-6

Date Collected: 05/03/22 15:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C24-C40	<11.2		33.5	11.2	mg/Kg	☆	05/14/22 09:54	05/16/22 20:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	99		50 - 150				05/14/22 09:54	05/16/22 20:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.9		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-1-7.0

Lab Sample ID: 410-82886-7

Date Collected: 05/03/22 16:05

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 93.1

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.306		3.83	0.306	ug/Kg	☆	05/08/22 16:15	05/10/22 16:53	1
Ethylene dichloride	<0.459	cn	3.83	0.459	ug/Kg	☆	05/08/22 16:15	05/10/22 16:53	1
Benzene	0.827	J	3.83	0.383	ug/Kg	☆	05/08/22 16:15	05/10/22 16:53	1
Ethylbenzene	76.6		3.83	0.306	ug/Kg	☆	05/08/22 16:15	05/10/22 16:53	1
Toluene	5.09		3.83	0.459	ug/Kg	☆	05/08/22 16:15	05/10/22 16:53	1
Xylene (total)	315		7.65	1.07	ug/Kg	☆	05/08/22 16:15	05/10/22 16:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		54 - 135				05/08/22 16:15	05/10/22 16:53	1
4-Bromofluorobenzene (Surr)	100		50 - 131				05/08/22 16:15	05/10/22 16:53	1
Dibromofluoromethane (Surr)	106		50 - 141				05/08/22 16:15	05/10/22 16:53	1
Toluene-d8 (Surr)	98		52 - 141				05/08/22 16:15	05/10/22 16:53	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	14.9		3.51	0.162	mg/Kg	☆	05/08/22 18:10	05/10/22 18:00	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>a,a,a</i> -Trifluorotoluene (fid) (1C)	111		50 - 150				05/08/22 18:10	05/10/22 18:00	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.26		10.7	4.26	mg/Kg	☆	05/14/22 09:54	05/16/22 21:03	1
C24-C40	<10.7		32.0	10.7	mg/Kg	☆	05/14/22 09:54	05/16/22 21:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	99		50 - 150				05/14/22 09:54	05/16/22 21:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.9		1.0	1.0	%			05/06/22 16:28	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-1-9.0

Lab Sample ID: 410-82886-8

Date Collected: 05/03/22 16:10

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 91.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.363		4.54	0.363	ug/Kg	✱	05/08/22 16:15	05/11/22 18:50	1
Ethylene dichloride	<0.544		4.54	0.544	ug/Kg	✱	05/08/22 16:15	05/11/22 18:50	1
Benzene	8.86		4.54	0.454	ug/Kg	✱	05/08/22 16:15	05/11/22 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		54 - 135				05/08/22 16:15	05/11/22 18:50	1
4-Bromofluorobenzene (Surr)	101		50 - 131				05/08/22 16:15	05/11/22 18:50	1
Dibromofluoromethane (Surr)	88		50 - 141				05/08/22 16:15	05/11/22 18:50	1
Toluene-d8 (Surr)	102		52 - 141				05/08/22 16:15	05/11/22 18:50	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	71.8	J	294	23.5	ug/Kg	✱	05/09/22 16:32	05/11/22 04:06	50
Toluene	60.6	J	294	35.3	ug/Kg	✱	05/09/22 16:32	05/11/22 04:06	50
Xylene (total)	434	J	588	82.4	ug/Kg	✱	05/09/22 16:32	05/11/22 04:06	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		54 - 135				05/09/22 16:32	05/11/22 04:06	50
4-Bromofluorobenzene (Surr)	96		50 - 131				05/09/22 16:32	05/11/22 04:06	50
Dibromofluoromethane (Surr)	105		50 - 141				05/09/22 16:32	05/11/22 04:06	50
Toluene-d8 (Surr)	94		52 - 141				05/09/22 16:32	05/11/22 04:06	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	23.7	J cn	55.6	2.56	mg/Kg	✱	05/08/22 18:10	05/12/22 19:56	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	144	cn	50 - 150				05/08/22 18:10	05/12/22 19:56	250

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.33		10.8	4.33	mg/Kg	✱	05/14/22 09:54	05/16/22 21:43	1
C24-C40	<10.8		32.5	10.8	mg/Kg	✱	05/14/22 09:54	05/16/22 21:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	93		50 - 150				05/14/22 09:54	05/16/22 21:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.1		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-2-5.0

Lab Sample ID: 410-82886-9

Date Collected: 05/03/22 16:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 83.4

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.349		4.36	0.349	ug/Kg	✱	05/08/22 16:15	05/11/22 18:05	1
Ethylene dichloride	<0.523		4.36	0.523	ug/Kg	✱	05/08/22 16:15	05/11/22 18:05	1
Benzene	<0.436		4.36	0.436	ug/Kg	✱	05/08/22 16:15	05/11/22 18:05	1
Ethylbenzene	<0.349		4.36	0.349	ug/Kg	✱	05/08/22 16:15	05/11/22 18:05	1
Toluene	<0.523		4.36	0.523	ug/Kg	✱	05/08/22 16:15	05/11/22 18:05	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-2-5.0

Lab Sample ID: 410-82886-9

Date Collected: 05/03/22 16:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 83.4

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylene (total)	1.37	J	8.72	1.22	ug/Kg	☼	05/08/22 16:15	05/11/22 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		54 - 135				05/08/22 16:15	05/11/22 18:05	1
4-Bromofluorobenzene (Surr)	100		50 - 131				05/08/22 16:15	05/11/22 18:05	1
Dibromofluoromethane (Surr)	88		50 - 141				05/08/22 16:15	05/11/22 18:05	1
Toluene-d8 (Surr)	100		52 - 141				05/08/22 16:15	05/11/22 18:05	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	1.51	J cn	3.42	0.157	mg/Kg	☼	05/08/22 18:10	05/10/22 19:54	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	165	S1+ cn	50 - 150				05/08/22 18:10	05/10/22 19:54	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.72		11.8	4.72	mg/Kg	☼	05/14/22 09:54	05/16/22 22:03	1
C24-C40	<11.8		35.4	11.8	mg/Kg	☼	05/14/22 09:54	05/16/22 22:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	99		50 - 150				05/14/22 09:54	05/16/22 22:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16.6		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-2-8.5

Lab Sample ID: 410-82886-10

Date Collected: 05/03/22 16:40

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 87.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<36.7	cn	459	36.7	ug/Kg	☼	05/08/22 18:03	05/11/22 04:49	100
Ethylene dichloride	<55.1	cn	459	55.1	ug/Kg	☼	05/08/22 18:03	05/11/22 04:49	100
Benzene	<45.9	cn	459	45.9	ug/Kg	☼	05/08/22 18:03	05/11/22 04:49	100
Ethylbenzene	101	J cn	459	36.7	ug/Kg	☼	05/08/22 18:03	05/11/22 04:49	100
Toluene	<55.1	cn	459	55.1	ug/Kg	☼	05/08/22 18:03	05/11/22 04:49	100
Xylene (total)	<129	cn	918	129	ug/Kg	☼	05/08/22 18:03	05/11/22 04:49	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92	cn	54 - 135				05/08/22 18:03	05/11/22 04:49	100
4-Bromofluorobenzene (Surr)	85	cn	50 - 131				05/08/22 18:03	05/11/22 04:49	100
Dibromofluoromethane (Surr)	87	cn	50 - 141				05/08/22 18:03	05/11/22 04:49	100
Toluene-d8 (Surr)	85	cn	52 - 141				05/08/22 18:03	05/11/22 04:49	100

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	536	cn	192	8.85	mg/Kg	☼	05/08/22 18:10	05/12/22 20:34	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	240	S1+ cn	50 - 150				05/08/22 18:10	05/12/22 20:34	1000

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Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-2-8.5

Lab Sample ID: 410-82886-10

Date Collected: 05/03/22 16:40

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 87.8

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	15.3		11.4	4.54	mg/Kg	☆	05/14/22 09:54	05/16/22 22:23	1
C24-C40	<11.4		34.1	11.4	mg/Kg	☆	05/14/22 09:54	05/16/22 22:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	98		50 - 150				05/14/22 09:54	05/16/22 22:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	12.2		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: MW-38-6.5

Lab Sample ID: 410-82886-11

Date Collected: 05/04/22 08:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.6

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<49.2		615	49.2	ug/Kg	☆	05/09/22 16:32	05/11/22 05:11	100
Ethylene dichloride	<73.9		615	73.9	ug/Kg	☆	05/09/22 16:32	05/11/22 05:11	100
Benzene	<61.5		615	61.5	ug/Kg	☆	05/09/22 16:32	05/11/22 05:11	100
Ethylbenzene	608	J	615	49.2	ug/Kg	☆	05/09/22 16:32	05/11/22 05:11	100
Toluene	143	J	615	73.9	ug/Kg	☆	05/09/22 16:32	05/11/22 05:11	100
Xylene (total)	5910		1230	172	ug/Kg	☆	05/09/22 16:32	05/11/22 05:11	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		54 - 135				05/09/22 16:32	05/11/22 05:11	100
4-Bromofluorobenzene (Surr)	98		50 - 131				05/09/22 16:32	05/11/22 05:11	100
Dibromofluoromethane (Surr)	106		50 - 141				05/09/22 16:32	05/11/22 05:11	100
Toluene-d8 (Surr)	97		52 - 141				05/09/22 16:32	05/11/22 05:11	100

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	1520	cn	925	42.5	mg/Kg	☆	05/08/22 18:10	05/12/22 21:13	5000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>a,a,a</i> -Trifluorotoluene (fid) (1C)	376	S1+ cn	50 - 150				05/08/22 18:10	05/12/22 21:13	5000

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	63.0		11.1	4.42	mg/Kg	☆	05/14/22 09:54	05/17/22 01:21	1
C24-C40	153		33.2	11.1	mg/Kg	☆	05/14/22 09:54	05/17/22 01:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	107		50 - 150				05/14/22 09:54	05/17/22 01:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.4		1.0	1.0	%			05/06/22 16:28	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: MW-38-14

Lab Sample ID: 410-82886-12

Date Collected: 05/04/22 08:45

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 91.7

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.382		4.77	0.382	ug/Kg	✱	05/08/22 16:15	05/11/22 19:13	1
Ethylene dichloride	<0.573		4.77	0.573	ug/Kg	✱	05/08/22 16:15	05/11/22 19:13	1
Ethylbenzene	116		4.77	0.382	ug/Kg	✱	05/08/22 16:15	05/11/22 19:13	1
Toluene	17.6		4.77	0.573	ug/Kg	✱	05/08/22 16:15	05/11/22 19:13	1
Xylene (total)	86.3		9.55	1.34	ug/Kg	✱	05/08/22 16:15	05/11/22 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		54 - 135	05/08/22 16:15	05/11/22 19:13	1
4-Bromofluorobenzene (Surr)	91		50 - 131	05/08/22 16:15	05/11/22 19:13	1
Dibromofluoromethane (Surr)	87		50 - 141	05/08/22 16:15	05/11/22 19:13	1
Toluene-d8 (Surr)	104		52 - 141	05/08/22 16:15	05/11/22 19:13	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	101	J	293	29.3	ug/Kg	☼	05/09/22 16:32	05/11/22 04:28	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		54 - 135				05/09/22 16:32	05/11/22 04:28	50
4-Bromofluorobenzene (Surr)	96		50 - 131				05/09/22 16:32	05/11/22 04:28	50
Dibromofluoromethane (Surr)	107		50 - 141				05/09/22 16:32	05/11/22 04:28	50
Toluene-d8 (Surr)	96		52 - 141				05/09/22 16:32	05/11/22 04:28	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	18.3		4.53	0.208	mg/Kg	☼	05/08/22 18:10	05/10/22 20:32	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a.a.a-Trifluorotoluene (fid) (1C)	92		50 - 150				05/08/22 18:10	05/10/22 20:32	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.31		10.8	4.31	mg/Kg	✱	05/14/22 09:54	05/16/22 22:43	1
C24-C40	<10.8		32.3	10.8	mg/Kg	✱	05/14/22 09:54	05/16/22 22:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	92		50 - 150				05/14/22 09:54	05/16/22 22:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.3		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-5-7

Lab Sample ID: 410-82886-13

Date Collected: 05/04/22 11:20

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 85.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<60.6		758	60.6	ug/Kg	✱	05/08/22 18:03	05/11/22 05:33	100
Ethylene dichloride	<90.9		758	90.9	ug/Kg	✱	05/08/22 18:03	05/11/22 05:33	100
Benzene	1360		758	75.8	ug/Kg	✱	05/08/22 18:03	05/11/22 05:33	100
Ethylbenzene	10100		758	60.6	ug/Kg	✱	05/08/22 18:03	05/11/22 05:33	100
Toluene	4960		758	90.9	ug/Kg	✱	05/08/22 18:03	05/11/22 05:33	100

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-5-7

Lab Sample ID: 410-82886-13

Date Collected: 05/04/22 11:20

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 85.8

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylene (total)	59000		1520	212	ug/Kg	☼	05/08/22 18:03	05/11/22 05:33	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		54 - 135				05/08/22 18:03	05/11/22 05:33	100
4-Bromofluorobenzene (Surr)	76		50 - 131				05/08/22 18:03	05/11/22 05:33	100
Dibromofluoromethane (Surr)	77		50 - 141				05/08/22 18:03	05/11/22 05:33	100
Toluene-d8 (Surr)	77		52 - 141				05/08/22 18:03	05/11/22 05:33	100

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	757	cn	450	20.7	mg/Kg	☼	05/08/22 18:10	05/12/22 21:50	2000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	175	S1+ cn	50 - 150				05/08/22 18:10	05/12/22 21:50	2000

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	42.0		11.6	4.65	mg/Kg	☼	05/14/22 09:54	05/16/22 23:22	1
C24-C40	<11.6		34.9	11.6	mg/Kg	☼	05/14/22 09:54	05/16/22 23:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	98		50 - 150				05/14/22 09:54	05/16/22 23:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.2		1.0	1.0	%			05/10/22 12:39	1

Client Sample ID: SB-5-13

Lab Sample ID: 410-82886-14

Date Collected: 05/04/22 11:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 86.3

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<51.4		643	51.4	ug/Kg	☼	05/08/22 18:03	05/11/22 05:55	100
Ethylene dichloride	<77.2		643	77.2	ug/Kg	☼	05/08/22 18:03	05/11/22 05:55	100
Benzene	2810		643	64.3	ug/Kg	☼	05/08/22 18:03	05/11/22 05:55	100
Ethylbenzene	35100		643	51.4	ug/Kg	☼	05/08/22 18:03	05/11/22 05:55	100
Toluene	32700		643	77.2	ug/Kg	☼	05/08/22 18:03	05/11/22 05:55	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		54 - 135				05/08/22 18:03	05/11/22 05:55	100
4-Bromofluorobenzene (Surr)	87		50 - 131				05/08/22 18:03	05/11/22 05:55	100
Dibromofluoromethane (Surr)	88		50 - 141				05/08/22 18:03	05/11/22 05:55	100
Toluene-d8 (Surr)	84		52 - 141				05/08/22 18:03	05/11/22 05:55	100

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylene (total)	210000		12900	1800	ug/Kg	☼	05/08/22 18:03	05/11/22 20:18	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	71		54 - 135				05/08/22 18:03	05/11/22 20:18	1000
4-Bromofluorobenzene (Surr)	85		50 - 131				05/08/22 18:03	05/11/22 20:18	1000

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-5-13

Lab Sample ID: 410-82886-14

Date Collected: 05/04/22 11:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 86.3

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	67		50 - 141	05/08/22 18:03	05/11/22 20:18	1000
Toluene-d8 (Surr)	74		52 - 141	05/08/22 18:03	05/11/22 20:18	1000

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	1310	cn	962	44.3	mg/Kg	☆	05/08/22 18:10	05/12/22 22:29	5000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	337	S1+ cn	50 - 150	05/08/22 18:10	05/12/22 22:29	5000

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	17.4		11.6	4.63	mg/Kg	☆	05/14/22 09:54	05/16/22 23:42	1
C24-C40	<11.6		34.7	11.6	mg/Kg	☆	05/14/22 09:54	05/16/22 23:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	101		50 - 150	05/14/22 09:54	05/16/22 23:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13.7		1.0	1.0	%			05/06/22 16:28	1

Client Sample ID: SB-5-15

Lab Sample ID: 410-82886-15

Date Collected: 05/04/22 11:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.9

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.299		3.73	0.299	ug/Kg	☆	05/08/22 16:15	05/11/22 12:27	1
Ethylene dichloride	<0.448		3.73	0.448	ug/Kg	☆	05/08/22 16:15	05/11/22 12:27	1
Benzene	2.22	J	3.73	0.373	ug/Kg	☆	05/08/22 16:15	05/11/22 12:27	1
Ethylbenzene	16.4		3.73	0.299	ug/Kg	☆	05/08/22 16:15	05/11/22 12:27	1
Toluene	11.9		3.73	0.448	ug/Kg	☆	05/08/22 16:15	05/11/22 12:27	1
Xylene (total)	93.6		7.47	1.05	ug/Kg	☆	05/08/22 16:15	05/11/22 12:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		54 - 135	05/08/22 16:15	05/11/22 12:27	1
4-Bromofluorobenzene (Surr)	100		50 - 131	05/08/22 16:15	05/11/22 12:27	1
Dibromofluoromethane (Surr)	87		50 - 141	05/08/22 16:15	05/11/22 12:27	1
Toluene-d8 (Surr)	105		52 - 141	05/08/22 16:15	05/11/22 12:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	1.49	J	4.43	0.204	mg/Kg	☆	05/08/22 18:10	05/10/22 21:10	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	125		50 - 150	05/08/22 18:10	05/10/22 21:10	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.42		11.1	4.42	mg/Kg	☆	05/14/22 09:54	05/17/22 00:02	1
C24-C40	<11.1		33.2	11.1	mg/Kg	☆	05/14/22 09:54	05/17/22 00:02	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-5-15

Lab Sample ID: 410-82886-15

Date Collected: 05/04/22 11:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.9

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o- terphenyl (Surr)</i>	96		50 - 150					05/14/22 09:54	05/17/22 00:02	1
General Chemistry										
<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Percent Moisture	10.1		1.0	1.0	%				05/06/22 16:28	1

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (54-135)	BFB (50-131)	DBFM (50-141)	TOL (52-141)
410-82886-1	MW-37-11	109	101	109	97
410-82886-2	MW-37-8	110	101	111	97
410-82886-3	SB-3-5.5	89	86	87	111
410-82886-4	SB-3-6.5	98 cn	84 cn	95 cn	85 cn
410-82886-5	SB-3-9.5	95	97	88	104
410-82886-6	SB-1-6.0	105	101	108	97
410-82886-7	SB-1-7.0	110	100	106	98
410-82886-8 - DL	SB-1-9.0	110	96	105	94
410-82886-8	SB-1-9.0	92	101	88	102
410-82886-9	SB-2-5.0	93	100	88	100
410-82886-10	SB-2-8.5	92 cn	85 cn	87 cn	85 cn
410-82886-11	MW-38-6.5	111	98	106	97
410-82886-12 - DL	MW-38-14	109	96	107	96
410-82886-12	MW-38-14	94	91	87	104
410-82886-13	SB-5-7	82	76	77	77
410-82886-14	SB-5-13	90	87	88	84
410-82886-14 - DL	SB-5-13	71	85	67	74
410-82886-15	SB-5-15	91	100	87	105
LCS 410-253404/4	Lab Control Sample	101	105	112	98
LCS 410-253675/5	Lab Control Sample	102	91	104	92
LCS 410-253893/5	Lab Control Sample	89	92	91	90
LCS 410-253897/4	Lab Control Sample	89	102	88	103
LCSD 410-253404/5	Lab Control Sample Dup	102	102	109	98
LCSD 410-253675/6	Lab Control Sample Dup	105	89	103	89
LCSD 410-253893/6	Lab Control Sample Dup	86	88	86	84
LCSD 410-253897/5	Lab Control Sample Dup	86	102	86	103
MB 410-253404/7	Method Blank	99	101	107	98
MB 410-253675/10	Method Blank	104	86	100	89
MB 410-253893/8	Method Blank	90	91	89	90
MB 410-253897/7	Method Blank	89	99	89	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TFT-F1 (50-150)			
410-82886-1	MW-37-11	124			
410-82886-2	MW-37-8	143			
410-82886-3	SB-3-5.5	136			
410-82886-4	SB-3-6.5	117			
410-82886-5	SB-3-9.5	109			
410-82886-6	SB-1-6.0	119			
410-82886-7	SB-1-7.0	111			

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Surrogate Summary

Client: Leidos Engineering, LLC

Job ID: 410-82886-1

Project/Site: Tiki Car Wash

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TFT-F1 (50-150)					
410-82886-8	SB-1-9.0	144 cn					
410-82886-9	SB-2-5.0	165 S1+ cn					
410-82886-10	SB-2-8.5	240 S1+ cn					
410-82886-11	MW-38-6.5	376 S1+ cn					
410-82886-12	MW-38-14	92					
410-82886-13	SB-5-7	175 S1+ cn					
410-82886-14	SB-5-13	337 S1+ cn					
410-82886-15	SB-5-15	125					
LCS 410-253473/6	Lab Control Sample	113					
LCS 410-253950/6	Lab Control Sample	112					
LCS 410-254939/7	Lab Control Sample	112					
LCSD 410-253473/7	Lab Control Sample Dup	113					
LCSD 410-253950/7	Lab Control Sample Dup	112					
LCSD 410-254939/8	Lab Control Sample Dup	111					
MB 410-253473/5	Method Blank	113					
MB 410-253950/5	Method Blank	119					
MB 410-254939/6	Method Blank	119					
Surrogate Legend							
TFT-F = a,a,a-Trifluorotoluene (fid)							

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	OTP (50-150)					
410-82886-1	MW-37-11	98					
410-82886-2	MW-37-8	97					
410-82886-3	SB-3-5.5	81					
410-82886-4	SB-3-6.5	95					
410-82886-4 DU	SB-3-6.5	97					
410-82886-4 MS	SB-3-6.5	103					
410-82886-5	SB-3-9.5	86					
410-82886-6	SB-1-6.0	99					
410-82886-7	SB-1-7.0	99					
410-82886-7 DU	SB-1-7.0	101					
410-82886-8	SB-1-9.0	93					
410-82886-9	SB-2-5.0	99					
410-82886-10	SB-2-8.5	98					
410-82886-11	MW-38-6.5	107					
410-82886-12	MW-38-14	92					
410-82886-13	SB-5-7	98					
410-82886-14	SB-5-13	101					
410-82886-15	SB-5-15	96					
LCS 410-255247/2-A	Lab Control Sample	101					
MB 410-255247/1-A	Method Blank	100					

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-253404/7

Matrix: Solid

Analysis Batch: 253404

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.400		5.00	0.400	ug/Kg			05/10/22 11:38	1
Ethylene dichloride	<0.600		5.00	0.600	ug/Kg			05/10/22 11:38	1
Benzene	<0.500		5.00	0.500	ug/Kg			05/10/22 11:38	1
Ethylbenzene	<0.400		5.00	0.400	ug/Kg			05/10/22 11:38	1
Toluene	<0.600		5.00	0.600	ug/Kg			05/10/22 11:38	1
Xylene (total)	<1.40		10.0	1.40	ug/Kg			05/10/22 11:38	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		54 - 135		05/10/22 11:38	1
4-Bromofluorobenzene (Surr)	101		50 - 131		05/10/22 11:38	1
Dibromofluoromethane (Surr)	107		50 - 141		05/10/22 11:38	1
Toluene-d8 (Surr)	98		52 - 141		05/10/22 11:38	1

Lab Sample ID: LCS 410-253404/4

Matrix: Solid

Analysis Batch: 253404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	20.0	17.80		ug/Kg		89	76 - 120
Ethylene dichloride	20.0	21.20		ug/Kg		106	71 - 128
Benzene	20.0	16.85		ug/Kg		84	80 - 120
Ethylbenzene	20.0	17.88		ug/Kg		89	78 - 120
Toluene	20.0	17.11		ug/Kg		86	80 - 120
Xylene (total)	60.0	52.96		ug/Kg		88	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		54 - 135
4-Bromofluorobenzene (Surr)	105		50 - 131
Dibromofluoromethane (Surr)	112		50 - 141
Toluene-d8 (Surr)	98		52 - 141

Lab Sample ID: LCSD 410-253404/5

Matrix: Solid

Analysis Batch: 253404

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylene Dibromide	20.0	17.97		ug/Kg		90	76 - 120	1	30
Ethylene dichloride	20.0	21.18		ug/Kg		106	71 - 128	0	30
Benzene	20.0	17.46		ug/Kg		87	80 - 120	4	30
Ethylbenzene	20.0	18.63		ug/Kg		93	78 - 120	4	30
Toluene	20.0	17.71		ug/Kg		89	80 - 120	3	30
Xylene (total)	60.0	54.74		ug/Kg		91	75 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		54 - 135
4-Bromofluorobenzene (Surr)	102		50 - 131
Dibromofluoromethane (Surr)	109		50 - 141

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-253404/5

Matrix: Solid

Analysis Batch: 253404

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	98		52 - 141

Lab Sample ID: MB 410-253675/10

Matrix: Solid

Analysis Batch: 253675

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<20.0	Qualifier	250	20.0	ug/Kg			05/10/22 23:21	50
Ethylene dichloride	<30.0		250	30.0	ug/Kg			05/10/22 23:21	50
Benzene	<25.0		250	25.0	ug/Kg			05/10/22 23:21	50
Ethylbenzene	<20.0		250	20.0	ug/Kg			05/10/22 23:21	50
Toluene	<30.0		250	30.0	ug/Kg			05/10/22 23:21	50
Xylene (total)	<70.0		500	70.0	ug/Kg			05/10/22 23:21	50

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104	Qualifier	54 - 135		05/10/22 23:21	50
4-Bromofluorobenzene (Surr)	86		50 - 131		05/10/22 23:21	50
Dibromofluoromethane (Surr)	100		50 - 141		05/10/22 23:21	50
Toluene-d8 (Surr)	89		52 - 141		05/10/22 23:21	50

Lab Sample ID: LCS 410-253675/5

Matrix: Solid

Analysis Batch: 253675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier			Limits	
Ethylene Dibromide	1000	963.5		ug/Kg		96	76 - 120
Ethylene dichloride	1000	1020		ug/Kg		102	71 - 128
Benzene	1000	996.2		ug/Kg		100	80 - 120
Ethylbenzene	1000	916.5		ug/Kg		92	78 - 120
Toluene	1000	944.7		ug/Kg		94	80 - 120
Xylene (total)	3000	2796		ug/Kg		93	75 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		54 - 135
4-Bromofluorobenzene (Surr)	91		50 - 131
Dibromofluoromethane (Surr)	104		50 - 141
Toluene-d8 (Surr)	92		52 - 141

Lab Sample ID: LCSD 410-253675/6

Matrix: Solid

Analysis Batch: 253675

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Unit	D	%Rec	%Rec	RPD	RPD
	Added	Result	Qualifier			Limits		Limit	
Ethylene Dibromide	1000	948.6		ug/Kg		95	76 - 120	2	30
Ethylene dichloride	1000	1014		ug/Kg		101	71 - 128	1	30
Benzene	1000	986.9		ug/Kg		99	80 - 120	1	30
Ethylbenzene	1000	897.3		ug/Kg		90	78 - 120	2	30
Toluene	1000	921.3		ug/Kg		92	80 - 120	3	30

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QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-253675/6

Matrix: Solid

Analysis Batch: 253675

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Xylene (total)	3000	2713		ug/Kg		90	75 - 120	3	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		54 - 135
4-Bromofluorobenzene (Surr)	89		50 - 131
Dibromofluoromethane (Surr)	103		50 - 141
Toluene-d8 (Surr)	89		52 - 141

Lab Sample ID: MB 410-253893/8

Matrix: Solid

Analysis Batch: 253893

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<20.0		250	20.0	ug/Kg			05/11/22 14:25	50
Ethylene dichloride	<30.0		250	30.0	ug/Kg			05/11/22 14:25	50
Benzene	<25.0		250	25.0	ug/Kg			05/11/22 14:25	50
Ethylbenzene	<20.0		250	20.0	ug/Kg			05/11/22 14:25	50
Toluene	<30.0		250	30.0	ug/Kg			05/11/22 14:25	50
Xylene (total)	<70.0		500	70.0	ug/Kg			05/11/22 14:25	50

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		54 - 135		05/11/22 14:25	50
4-Bromofluorobenzene (Surr)	91		50 - 131		05/11/22 14:25	50
Dibromofluoromethane (Surr)	89		50 - 141		05/11/22 14:25	50
Toluene-d8 (Surr)	90		52 - 141		05/11/22 14:25	50

Lab Sample ID: LCS 410-253893/5

Matrix: Solid

Analysis Batch: 253893

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	1000	959.8		ug/Kg		96	76 - 120
Ethylene dichloride	1000	911.9		ug/Kg		91	71 - 128
Benzene	1000	911.2		ug/Kg		91	80 - 120
Ethylbenzene	1000	979.0		ug/Kg		98	78 - 120
Toluene	1000	952.7		ug/Kg		95	80 - 120
Xylene (total)	3000	2972		ug/Kg		99	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		54 - 135
4-Bromofluorobenzene (Surr)	92		50 - 131
Dibromofluoromethane (Surr)	91		50 - 141
Toluene-d8 (Surr)	90		52 - 141

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-253893/6

Matrix: Solid

Analysis Batch: 253893

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylene Dibromide	1000	913.8		ug/Kg		91	76 - 120	5	30
Ethylene dichloride	1000	864.7		ug/Kg		86	71 - 128	5	30
Benzene	1000	852.3		ug/Kg		85	80 - 120	7	30
Ethylbenzene	1000	918.6		ug/Kg		92	78 - 120	6	30
Toluene	1000	894.3		ug/Kg		89	80 - 120	6	30
Xylene (total)	3000	2784		ug/Kg		93	75 - 120	7	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		54 - 135
4-Bromofluorobenzene (Surr)	88		50 - 131
Dibromofluoromethane (Surr)	86		50 - 141
Toluene-d8 (Surr)	84		52 - 141

Lab Sample ID: MB 410-253897/7

Matrix: Solid

Analysis Batch: 253897

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.400		5.00	0.400	ug/Kg			05/11/22 11:20	1
Ethylene dichloride	<0.600		5.00	0.600	ug/Kg			05/11/22 11:20	1
Benzene	<0.500		5.00	0.500	ug/Kg			05/11/22 11:20	1
Ethylbenzene	<0.400		5.00	0.400	ug/Kg			05/11/22 11:20	1
Toluene	<0.600		5.00	0.600	ug/Kg			05/11/22 11:20	1
Xylene (total)	<1.40		10.0	1.40	ug/Kg			05/11/22 11:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		54 - 135		05/11/22 11:20	1
4-Bromofluorobenzene (Surr)	99		50 - 131		05/11/22 11:20	1
Dibromofluoromethane (Surr)	89		50 - 141		05/11/22 11:20	1
Toluene-d8 (Surr)	101		52 - 141		05/11/22 11:20	1

Lab Sample ID: LCS 410-253897/4

Matrix: Solid

Analysis Batch: 253897

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	20.0	20.32		ug/Kg		102	76 - 120
Ethylene dichloride	20.0	20.19		ug/Kg		101	71 - 128
Benzene	20.0	22.81		ug/Kg		114	80 - 120
Ethylbenzene	20.0	23.23		ug/Kg		116	78 - 120
Toluene	20.0	22.43		ug/Kg		112	80 - 120
Xylene (total)	60.0	67.14		ug/Kg		112	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		54 - 135
4-Bromofluorobenzene (Surr)	102		50 - 131
Dibromofluoromethane (Surr)	88		50 - 141

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-253897/4

Matrix: Solid

Analysis Batch: 253897

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	103		52 - 141

Lab Sample ID: LCSD 410-253897/5

Matrix: Solid

Analysis Batch: 253897

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylene Dibromide	20.0	19.89		ug/Kg		99	76 - 120	2	30
Ethylene dichloride	20.0	18.65		ug/Kg		93	71 - 128	8	30
Benzene	20.0	22.65		ug/Kg		113	80 - 120	1	30
Ethylbenzene	20.0	22.89		ug/Kg		114	78 - 120	1	30
Toluene	20.0	22.42		ug/Kg		112	80 - 120	0	30
Xylene (total)	60.0	66.80		ug/Kg		111	75 - 120	1	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		54 - 135
4-Bromofluorobenzene (Surr)	102		50 - 131
Dibromofluoromethane (Surr)	86		50 - 141
Toluene-d8 (Surr)	103		52 - 141

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-253473/5

Matrix: Solid

Analysis Batch: 253473

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.230		5.00	0.230	mg/Kg			05/10/22 12:15	25

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	113		50 - 150		05/10/22 12:15	25

Lab Sample ID: LCS 410-253473/6

Matrix: Solid

Analysis Batch: 253473

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C7-C12 (1C)	11.0	11.29		mg/Kg		103	55 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	113		50 - 150

Lab Sample ID: LCSD 410-253473/7

Matrix: Solid

Analysis Batch: 253473

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	11.0	11.36		mg/Kg		103	55 - 145	1	30

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QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	113		50 - 150

Lab Sample ID: MB 410-253950/5

Matrix: Solid

Analysis Batch: 253950

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.3424	J	5.00	0.230	mg/Kg			05/12/22 14:11	25

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	119		50 - 150		05/12/22 14:11	25

Lab Sample ID: LCS 410-253950/6

Matrix: Solid

Analysis Batch: 253950

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C7-C12 (1C)	11.0	9.788		mg/Kg		89	55 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	112		50 - 150

Lab Sample ID: LCSD 410-253950/7

Matrix: Solid

Analysis Batch: 253950

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	11.0	9.839		mg/Kg		89	55 - 145	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	112		50 - 150

Lab Sample ID: MB 410-254939/6

Matrix: Solid

Analysis Batch: 254939

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.230		5.00	0.230	mg/Kg			05/13/22 15:39	25

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	119		50 - 150		05/13/22 15:39	25

Lab Sample ID: LCS 410-254939/7

Matrix: Solid

Analysis Batch: 254939

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C7-C12 (1C)	11.0	11.57		mg/Kg		105	55 - 145

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 410-254939/7

Matrix: Solid

Analysis Batch: 254939

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	112		50 - 150

Lab Sample ID: LCSD 410-254939/8

Matrix: Solid

Analysis Batch: 254939

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	11.0	11.63		mg/Kg		106	55 - 145	1	30
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
a,a,a-Trifluorotoluene (fid) (1C)	111		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-255247/1-A

Matrix: Solid

Analysis Batch: 255784

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 255247

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.00		10.0	4.00	mg/Kg		05/14/22 09:54	05/16/22 18:45	1
C24-C40	<10.0		30.0	10.0	mg/Kg		05/14/22 09:54	05/16/22 18:45	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	100		50 - 150				05/14/22 09:54	05/16/22 18:45	1

Lab Sample ID: LCS 410-255247/2-A

Matrix: Solid

Analysis Batch: 255784

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 255247

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C12-C24	133	105.7		mg/Kg		79	74 - 115		
	LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits						
o- terphenyl (Surr)	101		50 - 150						

Lab Sample ID: 410-82886-4 MS

Matrix: Solid

Analysis Batch: 255784

Client Sample ID: SB-3-6.5

Prep Type: Total/NA

Prep Batch: 255247

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
C12-C24	<4.56		152	112.9		mg/Kg	✱	74	74 - 115		
	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
o- terphenyl (Surr)	103		50 - 150								

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 410-82886-4 DU

Matrix: Solid

Analysis Batch: 255784

Client Sample ID: SB-3-6.5

Prep Type: Total/NA

Prep Batch: 255247

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
C12-C24	<4.56		<4.58		mg/Kg	✖	NC	20
C24-C40	<11.4		<11.4		mg/Kg	✖	NC	20
Surrogate	%Recovery	DU Qualifier	DU	Limits				
<i>o</i> -terphenyl (Surr)	97			50 - 150				

Lab Sample ID: 410-82886-7 DU

Matrix: Solid

Analysis Batch: 255784

Client Sample ID: SB-1-7.0

Prep Type: Total/NA

Prep Batch: 255247

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
C12-C24	<4.26		<4.24		mg/Kg	✖	NC	20
C24-C40	<10.7		<10.6		mg/Kg	✖	NC	20
Surrogate	%Recovery	DU Qualifier	DU	Limits				
<i>o</i> -terphenyl (Surr)	101			50 - 150				

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

GC/MS VOA

Prep Batch: 252843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	5035	
410-82886-2	MW-37-8	Total/NA	Solid	5035	
410-82886-3	SB-3-5.5	Total/NA	Solid	5035	
410-82886-5	SB-3-9.5	Total/NA	Solid	5035	
410-82886-6	SB-1-6.0	Total/NA	Solid	5035	
410-82886-7	SB-1-7.0	Total/NA	Solid	5035	
410-82886-8	SB-1-9.0	Total/NA	Solid	5035	
410-82886-9	SB-2-5.0	Total/NA	Solid	5035	
410-82886-12	MW-38-14	Total/NA	Solid	5035	
410-82886-15	SB-5-15	Total/NA	Solid	5035	

Prep Batch: 252850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-4	SB-3-6.5	Total/NA	Solid	5035	
410-82886-10	SB-2-8.5	Total/NA	Solid	5035	
410-82886-13	SB-5-7	Total/NA	Solid	5035	
410-82886-14	SB-5-13	Total/NA	Solid	5035	
410-82886-14 - DL	SB-5-13	Total/NA	Solid	5035	

Prep Batch: 253202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-8 - DL	SB-1-9.0	Total/NA	Solid	5035	
410-82886-11	MW-38-6.5	Total/NA	Solid	5035	
410-82886-12 - DL	MW-38-14	Total/NA	Solid	5035	

Analysis Batch: 253404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	8260D	252843
410-82886-2	MW-37-8	Total/NA	Solid	8260D	252843
410-82886-6	SB-1-6.0	Total/NA	Solid	8260D	252843
410-82886-7	SB-1-7.0	Total/NA	Solid	8260D	252843
MB 410-253404/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-253404/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-253404/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

Analysis Batch: 253675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-4	SB-3-6.5	Total/NA	Solid	8260D	252850
410-82886-8 - DL	SB-1-9.0	Total/NA	Solid	8260D	253202
410-82886-10	SB-2-8.5	Total/NA	Solid	8260D	252850
410-82886-11	MW-38-6.5	Total/NA	Solid	8260D	253202
410-82886-12 - DL	MW-38-14	Total/NA	Solid	8260D	253202
410-82886-13	SB-5-7	Total/NA	Solid	8260D	252850
410-82886-14	SB-5-13	Total/NA	Solid	8260D	252850
MB 410-253675/10	Method Blank	Total/NA	Solid	8260D	
LCS 410-253675/5	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-253675/6	Lab Control Sample Dup	Total/NA	Solid	8260D	

Analysis Batch: 253893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-14 - DL	SB-5-13	Total/NA	Solid	8260D	252850

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QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

GC/MS VOA (Continued)

Analysis Batch: 253893 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-253893/8	Method Blank	Total/NA	Solid	8260D	
LCS 410-253893/5	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-253893/6	Lab Control Sample Dup	Total/NA	Solid	8260D	

Analysis Batch: 253897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-3	SB-3-5.5	Total/NA	Solid	8260D	252843
410-82886-5	SB-3-9.5	Total/NA	Solid	8260D	252843
410-82886-8	SB-1-9.0	Total/NA	Solid	8260D	252843
410-82886-9	SB-2-5.0	Total/NA	Solid	8260D	252843
410-82886-12	MW-38-14	Total/NA	Solid	8260D	252843
410-82886-15	SB-5-15	Total/NA	Solid	8260D	252843
MB 410-253897/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-253897/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-253897/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

GC VOA

Prep Batch: 252851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	5035	
410-82886-2	MW-37-8	Total/NA	Solid	5035	
410-82886-3	SB-3-5.5	Total/NA	Solid	5035	
410-82886-4	SB-3-6.5	Total/NA	Solid	5035	
410-82886-6	SB-1-6.0	Total/NA	Solid	5035	
410-82886-7	SB-1-7.0	Total/NA	Solid	5035	
410-82886-8	SB-1-9.0	Total/NA	Solid	5035	
410-82886-9	SB-2-5.0	Total/NA	Solid	5035	
410-82886-10	SB-2-8.5	Total/NA	Solid	5035	
410-82886-11	MW-38-6.5	Total/NA	Solid	5035	
410-82886-12	MW-38-14	Total/NA	Solid	5035	
410-82886-13	SB-5-7	Total/NA	Solid	5035	
410-82886-14	SB-5-13	Total/NA	Solid	5035	
410-82886-15	SB-5-15	Total/NA	Solid	5035	

Prep Batch: 253202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-5	SB-3-9.5	Total/NA	Solid	5030C	

Analysis Batch: 253473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	NWTPH-Gx	252851
410-82886-2	MW-37-8	Total/NA	Solid	NWTPH-Gx	252851
410-82886-3	SB-3-5.5	Total/NA	Solid	NWTPH-Gx	252851
410-82886-4	SB-3-6.5	Total/NA	Solid	NWTPH-Gx	252851
410-82886-6	SB-1-6.0	Total/NA	Solid	NWTPH-Gx	252851
410-82886-7	SB-1-7.0	Total/NA	Solid	NWTPH-Gx	252851
410-82886-9	SB-2-5.0	Total/NA	Solid	NWTPH-Gx	252851
410-82886-12	MW-38-14	Total/NA	Solid	NWTPH-Gx	252851
410-82886-15	SB-5-15	Total/NA	Solid	NWTPH-Gx	252851
MB 410-253473/5	Method Blank	Total/NA	Solid	NWTPH-Gx	

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

GC VOA (Continued)

Analysis Batch: 253473 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-253473/6	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-253473/7	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

Analysis Batch: 253950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-8	SB-1-9.0	Total/NA	Solid	NWTPH-Gx	252851
410-82886-10	SB-2-8.5	Total/NA	Solid	NWTPH-Gx	252851
410-82886-11	MW-38-6.5	Total/NA	Solid	NWTPH-Gx	252851
410-82886-13	SB-5-7	Total/NA	Solid	NWTPH-Gx	252851
410-82886-14	SB-5-13	Total/NA	Solid	NWTPH-Gx	252851
MB 410-253950/5	Method Blank	Total/NA	Solid	NWTPH-Gx	
LCS 410-253950/6	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-253950/7	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

Analysis Batch: 254939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-5	SB-3-9.5	Total/NA	Solid	NWTPH-Gx	253202
MB 410-254939/6	Method Blank	Total/NA	Solid	NWTPH-Gx	
LCS 410-254939/7	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-254939/8	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

GC Semi VOA

Prep Batch: 255247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	3550C	
410-82886-2	MW-37-8	Total/NA	Solid	3550C	
410-82886-3	SB-3-5.5	Total/NA	Solid	3550C	
410-82886-4	SB-3-6.5	Total/NA	Solid	3550C	
410-82886-5	SB-3-9.5	Total/NA	Solid	3550C	
410-82886-6	SB-1-6.0	Total/NA	Solid	3550C	
410-82886-7	SB-1-7.0	Total/NA	Solid	3550C	
410-82886-8	SB-1-9.0	Total/NA	Solid	3550C	
410-82886-9	SB-2-5.0	Total/NA	Solid	3550C	
410-82886-10	SB-2-8.5	Total/NA	Solid	3550C	
410-82886-11	MW-38-6.5	Total/NA	Solid	3550C	
410-82886-12	MW-38-14	Total/NA	Solid	3550C	
410-82886-13	SB-5-7	Total/NA	Solid	3550C	
410-82886-14	SB-5-13	Total/NA	Solid	3550C	
410-82886-15	SB-5-15	Total/NA	Solid	3550C	
MB 410-255247/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 410-255247/2-A	Lab Control Sample	Total/NA	Solid	3550C	
410-82886-4 MS	SB-3-6.5	Total/NA	Solid	3550C	
410-82886-4 DU	SB-3-6.5	Total/NA	Solid	3550C	
410-82886-7 DU	SB-1-7.0	Total/NA	Solid	3550C	

Analysis Batch: 255784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	NWTPH-Dx	255247
410-82886-2	MW-37-8	Total/NA	Solid	NWTPH-Dx	255247
410-82886-3	SB-3-5.5	Total/NA	Solid	NWTPH-Dx	255247

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

GC Semi VOA (Continued)

Analysis Batch: 255784 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-4	SB-3-6.5	Total/NA	Solid	NWTPH-Dx	255247
410-82886-5	SB-3-9.5	Total/NA	Solid	NWTPH-Dx	255247
410-82886-6	SB-1-6.0	Total/NA	Solid	NWTPH-Dx	255247
410-82886-7	SB-1-7.0	Total/NA	Solid	NWTPH-Dx	255247
410-82886-8	SB-1-9.0	Total/NA	Solid	NWTPH-Dx	255247
410-82886-9	SB-2-5.0	Total/NA	Solid	NWTPH-Dx	255247
410-82886-10	SB-2-8.5	Total/NA	Solid	NWTPH-Dx	255247
410-82886-11	MW-38-6.5	Total/NA	Solid	NWTPH-Dx	255247
410-82886-12	MW-38-14	Total/NA	Solid	NWTPH-Dx	255247
410-82886-13	SB-5-7	Total/NA	Solid	NWTPH-Dx	255247
410-82886-14	SB-5-13	Total/NA	Solid	NWTPH-Dx	255247
410-82886-15	SB-5-15	Total/NA	Solid	NWTPH-Dx	255247
MB 410-255247/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	255247
LCS 410-255247/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	255247
410-82886-4 MS	SB-3-6.5	Total/NA	Solid	NWTPH-Dx	255247
410-82886-4 DU	SB-3-6.5	Total/NA	Solid	NWTPH-Dx	255247
410-82886-7 DU	SB-1-7.0	Total/NA	Solid	NWTPH-Dx	255247

General Chemistry

Analysis Batch: 252619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-1	MW-37-11	Total/NA	Solid	Moisture	
410-82886-2	MW-37-8	Total/NA	Solid	Moisture	
410-82886-3	SB-3-5.5	Total/NA	Solid	Moisture	
410-82886-4	SB-3-6.5	Total/NA	Solid	Moisture	
410-82886-5	SB-3-9.5	Total/NA	Solid	Moisture	
410-82886-6	SB-1-6.0	Total/NA	Solid	Moisture	
410-82886-7	SB-1-7.0	Total/NA	Solid	Moisture	
410-82886-8	SB-1-9.0	Total/NA	Solid	Moisture	
410-82886-9	SB-2-5.0	Total/NA	Solid	Moisture	
410-82886-10	SB-2-8.5	Total/NA	Solid	Moisture	
410-82886-11	MW-38-6.5	Total/NA	Solid	Moisture	
410-82886-12	MW-38-14	Total/NA	Solid	Moisture	
410-82886-14	SB-5-13	Total/NA	Solid	Moisture	
410-82886-15	SB-5-15	Total/NA	Solid	Moisture	

Analysis Batch: 253549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-82886-13	SB-5-7	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: MW-37-11

Lab Sample ID: 410-82886-1

Date Collected: 05/03/22 10:45

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: MW-37-11

Lab Sample ID: 410-82886-1

Date Collected: 05/03/22 10:45

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253404	05/10/22 19:32	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 14:48	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 19:24	IUSB	ELLE

Client Sample ID: MW-37-8

Lab Sample ID: 410-82886-2

Date Collected: 05/03/22 10:50

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: MW-37-8

Lab Sample ID: 410-82886-2

Date Collected: 05/03/22 10:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253404	05/10/22 16:08	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 15:27	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 19:44	IUSB	ELLE

Client Sample ID: SB-3-5.5

Lab Sample ID: 410-82886-3

Date Collected: 05/03/22 14:50

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-3-5.5

Lab Sample ID: 410-82886-3

Date Collected: 05/03/22 14:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 65.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253897	05/11/22 18:28	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 16:05	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 20:04	IUSB	ELLE

Client Sample ID: SB-3-6.5

Lab Sample ID: 410-82886-4

Date Collected: 05/03/22 15:00

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-3-6.5

Lab Sample ID: 410-82886-4

Date Collected: 05/03/22 15:00

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252850	05/08/22 18:03	D8NM	ELLE
Total/NA	Analysis	8260D		50	253675	05/11/22 03:44	SWV2	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 16:43	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/17/22 00:22	IUSB	ELLE

Client Sample ID: SB-3-9.5

Lab Sample ID: 410-82886-5

Date Collected: 05/03/22 15:30

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-3-9.5

Lab Sample ID: 410-82886-5

Date Collected: 05/03/22 15:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 84.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253897	05/11/22 12:05	UCB5	ELLE
Total/NA	Prep	5030C			253202	05/09/22 16:32	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	254939	05/13/22 20:46	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 20:24	IUSB	ELLE

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-1-6.0

Lab Sample ID: 410-82886-6

Date Collected: 05/03/22 15:50

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-1-6.0

Lab Sample ID: 410-82886-6

Date Collected: 05/03/22 15:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253404	05/10/22 16:30	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 17:22	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 20:44	IUSB	ELLE

Client Sample ID: SB-1-7.0

Lab Sample ID: 410-82886-7

Date Collected: 05/03/22 16:05

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-1-7.0

Lab Sample ID: 410-82886-7

Date Collected: 05/03/22 16:05

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253404	05/10/22 16:53	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 18:00	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 21:03	IUSB	ELLE

Client Sample ID: SB-1-9.0

Lab Sample ID: 410-82886-8

Date Collected: 05/03/22 16:10

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-1-9.0

Lab Sample ID: 410-82886-8

Date Collected: 05/03/22 16:10

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		253202	05/09/22 16:32	D8NM	ELLE
Total/NA	Analysis	8260D	DL	50	253675	05/11/22 04:06	SWV2	ELLE
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253897	05/11/22 18:50	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		250	253950	05/12/22 19:56	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 21:43	IUSB	ELLE

Client Sample ID: SB-2-5.0

Lab Sample ID: 410-82886-9

Date Collected: 05/03/22 16:30

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-2-5.0

Lab Sample ID: 410-82886-9

Date Collected: 05/03/22 16:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 83.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253897	05/11/22 18:05	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 19:54	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 22:03	IUSB	ELLE

Client Sample ID: SB-2-8.5

Lab Sample ID: 410-82886-10

Date Collected: 05/03/22 16:40

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-2-8.5

Lab Sample ID: 410-82886-10

Date Collected: 05/03/22 16:40

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 87.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252850	05/08/22 18:03	D8NM	ELLE
Total/NA	Analysis	8260D		100	253675	05/11/22 04:49	SWV2	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		1000	253950	05/12/22 20:34	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 22:23	IUSB	ELLE

Eurofins Lancaster Laboratories Environment Testing, LLC

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: MW-38-6.5

Lab Sample ID: 410-82886-11

Date Collected: 05/04/22 08:30

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: MW-38-6.5

Lab Sample ID: 410-82886-11

Date Collected: 05/04/22 08:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			253202	05/09/22 16:32	D8NM	ELLE
Total/NA	Analysis	8260D		100	253675	05/11/22 05:11	SWV2	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		5000	253950	05/12/22 21:13	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/17/22 01:21	IUSB	ELLE

Client Sample ID: MW-38-14

Lab Sample ID: 410-82886-12

Date Collected: 05/04/22 08:45

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: MW-38-14

Lab Sample ID: 410-82886-12

Date Collected: 05/04/22 08:45

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 91.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035	DL		253202	05/09/22 16:32	D8NM	ELLE
Total/NA	Analysis	8260D	DL	50	253675	05/11/22 04:28	SWV2	ELLE
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253897	05/11/22 19:13	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 20:32	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 22:43	IUSB	ELLE

Client Sample ID: SB-5-7

Lab Sample ID: 410-82886-13

Date Collected: 05/04/22 11:20

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	253549	05/10/22 12:39	UVJN	ELLE

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Client Sample ID: SB-5-7

Lab Sample ID: 410-82886-13

Date Collected: 05/04/22 11:20

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 85.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252850	05/08/22 18:03	D8NM	ELLE
Total/NA	Analysis	8260D		100	253675	05/11/22 05:33	SWV2	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		2000	253950	05/12/22 21:50	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 23:22	IUSB	ELLE

Client Sample ID: SB-5-13

Lab Sample ID: 410-82886-14

Date Collected: 05/04/22 11:30

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-5-13

Lab Sample ID: 410-82886-14

Date Collected: 05/04/22 11:30

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 86.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252850	05/08/22 18:03	D8NM	ELLE
Total/NA	Analysis	8260D		100	253675	05/11/22 05:55	SWV2	ELLE
Total/NA	Prep	5035	DL		252850	05/08/22 18:03	D8NM	ELLE
Total/NA	Analysis	8260D	DL	1000	253893	05/11/22 20:18	Y6ZN	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		5000	253950	05/12/22 22:29	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/16/22 23:42	IUSB	ELLE

Client Sample ID: SB-5-15

Lab Sample ID: 410-82886-15

Date Collected: 05/04/22 11:50

Matrix: Solid

Date Received: 05/05/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	252619	05/06/22 16:28	OEL4	ELLE

Client Sample ID: SB-5-15

Lab Sample ID: 410-82886-15

Date Collected: 05/04/22 11:50

Matrix: Solid

Date Received: 05/05/22 10:39

Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			252843	05/08/22 16:15	D8NM	ELLE
Total/NA	Analysis	8260D		1	253897	05/11/22 12:27	UCB5	ELLE
Total/NA	Prep	5035			252851	05/08/22 18:10	D8NM	ELLE
Total/NA	Analysis	NWTPH-Gx		25	253473	05/10/22 21:10	JJT8	ELLE
Total/NA	Prep	3550C			255247	05/14/22 09:54	A2VL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	255784	05/17/22 00:02	IUSB	ELLE

Eurofins Lancaster Laboratories Environment Testing, LLC

Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

Method Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
Moisture	Percent Moisture	EPA	ELLE
3550C	Ultrasonic Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-82886-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-82886-1	MW-37-11	Solid	05/03/22 10:45	05/05/22 10:39
410-82886-2	MW-37-8	Solid	05/03/22 10:50	05/05/22 10:39
410-82886-3	SB-3-5.5	Solid	05/03/22 14:50	05/05/22 10:39
410-82886-4	SB-3-6.5	Solid	05/03/22 15:00	05/05/22 10:39
410-82886-5	SB-3-9.5	Solid	05/03/22 15:30	05/05/22 10:39
410-82886-6	SB-1-6.0	Solid	05/03/22 15:50	05/05/22 10:39
410-82886-7	SB-1-7.0	Solid	05/03/22 16:05	05/05/22 10:39
410-82886-8	SB-1-9.0	Solid	05/03/22 16:10	05/05/22 10:39
410-82886-9	SB-2-5.0	Solid	05/03/22 16:30	05/05/22 10:39
410-82886-10	SB-2-8.5	Solid	05/03/22 16:40	05/05/22 10:39
410-82886-11	MW-38-6.5	Solid	05/04/22 08:30	05/05/22 10:39
410-82886-12	MW-38-14	Solid	05/04/22 08:45	05/05/22 10:39
410-82886-13	SB-5-7	Solid	05/04/22 11:20	05/05/22 10:39
410-82886-14	SB-5-13	Solid	05/04/22 11:30	05/05/22 10:39
410-82886-15	SB-5-15	Solid	05/04/22 11:50	05/05/22 10:39

Eurofins Lancaster Laboratories Environme

2425 New Holland Pike

Lancaster, PA 17601

Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record



eurofins

Environment Testing
America

410-82886 Chain of Custody

C No

J-55576-15721 1

Client Information		Sampler		Lab PM: Williams, Marrison C		410-82886 Chain of Custody		C No J-55576-15721 1	
Client Contact: Don Wyll		Phone:		E-Mail: Marrison.Williams@et.eurofinsus.com		State or Origin:		Page Page 1 of 3	
Company: Leidos Engineering, LLC		PWSID:		Analysis Requested				Job #:	
Address: 11824 North Creek Parkway N Suite 101		Due Date Requested:						Preservation Codes:	
City: Bothell		TAT Requested (days):						A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
State, Zip: WA, 98011		Compliance Project: ☐ Yes ☐ No						Other:	
Phone: 425-482-3315(Tel)		PO #: Purchase Order not required							
Email: don.e.wyll@leidos.com		WO #:							
Project Name: Tiki Car Wash		Project #: 41010568							
Site:		SSOW#:							
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other to fill, BT=Tissue, A=Air)	
								Solid Filtered Sample Size NWTPH_Dx - NWTPH_Dx 8280D, NWTPH_Gx	
MW-37-11		5-3-22		1045		G		Solid	
MW-37-8		5-3-22		1050		G		Solid	
SB-3-5.5		5-3-22		1450		G		Solid	
SB-3-6.5		5-3-22		1500		G		Solid	
SB-3-9.5		5-3-22		1500		G		Solid	
SB-1-6.0		5-3-22		1530		G		Solid	
SB-1-7.0		5-3-22		1605		G		Solid	
SB-1-9.0		5-3-22		1610		G		Solid	
SB-2-5.0		5-3-22		1630		G		Solid	
SB-2-8.5		5-3-22		1640		G		Solid	
								Solid	
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological					☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <u>Eden Hernandez</u>		Date/Time: <u>4/28/22 1308</u>		Company:		Received by:		Date/Time:	
Relinquished by: <u>Don Wyll</u>		Date/Time: <u>5-4-22 1500</u>		Company: <u>CEIDOS</u>		Received by:		Date/Time:	
Relinquished by: _____		Date/Time: _____		Company:		Received by: <u>MVP</u>		Date/Time: <u>5/5/22 1039</u>	
Custody Seals Intact: ☒ Yes ☐ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: <u>3.6-5.7°C</u>			

Ver. 06/08/2021

 eurofins Environment Testing
America

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-82886-1

Login Number: 82886

List Number: 1

Creator: Renner, Melissa

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
Sample custody seals are intact.	N/A	Not present.

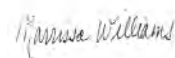
ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-83593-1
Client Project/Site: Tiki Car Wash

For:
Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell, Washington 98011

Attn: Don Wyll



Authorized for release by:
5/20/2022 9:35:36 AM

Marrissa Williams, Project Manager
(717)556-7246
Marrissa.Williams@et.eurofinsus.com

LINKS

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results through



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www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

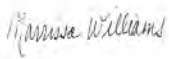
- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Marrison Williams
Project Manager
5/20/2022 9:35:36 AM

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Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Job ID: 410-83593-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-83593-1

Receipt

The samples were received on 5/11/2022 10:32 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-23

Lab Sample ID: 410-83593-1

No Detections.

Client Sample ID: MW-36

Lab Sample ID: 410-83593-2

No Detections.

Client Sample ID: MW-20

Lab Sample ID: 410-83593-3

No Detections.

Client Sample ID: MW-6

Lab Sample ID: 410-83593-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylene (total)	0.677	J	1.00	0.400	ug/L	1		8260D	Total/NA
C7-C12 (1C)	167	J	250	19.0	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 410-83593-5

No Detections.

Client Sample ID: MW-35

Lab Sample ID: 410-83593-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	86.2		1.00	0.300	ug/L	1		8260D	Total/NA
Toluene	139		1.00	0.200	ug/L	1		8260D	Total/NA
Ethylbenzene - DL	1750		10.0	4.00	ug/L	10		8260D	Total/NA
Xylene (total) - DL	3510		10.0	4.00	ug/L	10		8260D	Total/NA
C7-C12 (1C)	31500		2500	190	ug/L	10		NWTPH-Gx	Total/NA

Client Sample ID: MW-30

Lab Sample ID: 410-83593-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	22.9		1.00	0.200	ug/L	1		8260D	Total/NA
Xylene (total)	132		1.00	0.400	ug/L	1		8260D	Total/NA
Benzene - DL	519		10.0	3.00	ug/L	10		8260D	Total/NA
Ethylbenzene - DL	521		10.0	4.00	ug/L	10		8260D	Total/NA
C7-C12 (1C)	4080		1250	95.0	ug/L	5		NWTPH-Gx	Total/NA

Client Sample ID: MW-33

Lab Sample ID: 410-83593-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	199		1.00	0.300	ug/L	1		8260D	Total/NA
Toluene	19.0		1.00	0.200	ug/L	1		8260D	Total/NA
Xylene (total)	333		1.00	0.400	ug/L	1		8260D	Total/NA
Ethylbenzene - DL	635		10.0	4.00	ug/L	10		8260D	Total/NA
C7-C12 (1C)	9950		1250	95.0	ug/L	5		NWTPH-Gx	Total/NA

Client Sample ID: MW-32

Lab Sample ID: 410-83593-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	512		5.00	2.00	ug/L	5		8260D	Total/NA
Benzene - DL	3870		50.0	15.0	ug/L	50		8260D	Total/NA
Toluene - DL	4050		50.0	10.0	ug/L	50		8260D	Total/NA
Xylene (total) - DL	10300		50.0	20.0	ug/L	50		8260D	Total/NA
C7-C12 (1C)	52500		5000	380	ug/L	20		NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-34

Lab Sample ID: 410-83593-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	11.4		1.00	0.300	ug/L	1		8260D	Total/NA
Ethylbenzene	36.2		1.00	0.400	ug/L	1		8260D	Total/NA
Toluene	1.33		1.00	0.200	ug/L	1		8260D	Total/NA
Xylene (total)	23.1		1.00	0.400	ug/L	1		8260D	Total/NA
C7-C12 (1C)	3710		250	19.0	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-31

Lab Sample ID: 410-83593-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene - DL	2580		20.0	6.00	ug/L	20		8260D	Total/NA
Ethylbenzene - DL	1700		20.0	8.00	ug/L	20		8260D	Total/NA
Toluene - DL	1260		20.0	4.00	ug/L	20		8260D	Total/NA
Xylene (total) - DL	10700		20.0	8.00	ug/L	20		8260D	Total/NA
C7-C12 (1C)	58100		6250	475	ug/L	25		NWTPH-Gx	Total/NA

Client Sample ID: Ecology Drum

Lab Sample ID: 410-83593-12

No Detections.

Client Sample ID: Purge Water

Lab Sample ID: 410-83593-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	596		2.00	0.800	ug/L	2		8260D	Total/NA
Benzene - DL	1210		20.0	6.00	ug/L	20		8260D	Total/NA
Toluene - DL	2230		20.0	4.00	ug/L	20		8260D	Total/NA
Xylene (total) - DL	3460		20.0	8.00	ug/L	20		8260D	Total/NA
C7-C12 (1C)	27700		5000	380	ug/L	20		NWTPH-Gx	Total/NA

Client Sample ID: MW-37

Lab Sample ID: 410-83593-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	203		1.00	0.300	ug/L	1		8260D	Total/NA
Ethylbenzene	59.7		1.00	0.400	ug/L	1		8260D	Total/NA
Toluene	172		1.00	0.200	ug/L	1		8260D	Total/NA
Xylene (total)	303		1.00	0.400	ug/L	1		8260D	Total/NA
C7-C12 (1C)	2310		250	19.0	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-38

Lab Sample ID: 410-83593-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1340		5.00	2.00	ug/L	5		8260D	Total/NA
Benzene - DL	5750		50.0	15.0	ug/L	50		8260D	Total/NA
Toluene - DL	4540		50.0	10.0	ug/L	50		8260D	Total/NA
Xylene (total) - DL	7020		50.0	20.0	ug/L	50		8260D	Total/NA
C7-C12 (1C)	47600		5000	380	ug/L	20		NWTPH-Gx	Total/NA

Client Sample ID: MW-29

Lab Sample ID: 410-83593-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene - DL	6210		50.0	15.0	ug/L	50		8260D	Total/NA
Ethylbenzene - DL	3240		50.0	20.0	ug/L	50		8260D	Total/NA
Toluene - DL	9050		50.0	10.0	ug/L	50		8260D	Total/NA
Xylene (total) - DL	17100		50.0	20.0	ug/L	50		8260D	Total/NA
C7-C12 (1C)	93500		5000	380	ug/L	20		NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-23

Lab Sample ID: 410-83593-1

Date Collected: 05/05/22 07:00

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 11:14	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 11:14	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 11:14	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 11:14	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 11:14	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 11:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		05/18/22 11:14	1
4-Bromofluorobenzene (Surr)	92		80 - 120		05/18/22 11:14	1
Dibromofluoromethane (Surr)	97		80 - 120		05/18/22 11:14	1
Toluene-d8 (Surr)	97		80 - 120		05/18/22 11:14	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 13:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	104		50 - 150					05/16/22 13:46	1

Client Sample ID: MW-36

Lab Sample ID: 410-83593-2

Date Collected: 05/05/22 07:40

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 11:34	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 11:34	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 11:34	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 11:34	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 11:34	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 11:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 11:34	1
4-Bromofluorobenzene (Surr)	96		80 - 120		05/18/22 11:34	1
Dibromofluoromethane (Surr)	95		80 - 120		05/18/22 11:34	1
Toluene-d8 (Surr)	95		80 - 120		05/18/22 11:34	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	104		50 - 150					05/16/22 14:12	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-20

Lab Sample ID: 410-83593-3

Date Collected: 05/05/22 08:00

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 11:54	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 11:54	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 11:54	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 11:54	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 11:54	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 11:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 11:54	1
4-Bromofluorobenzene (Surr)	93		80 - 120		05/18/22 11:54	1
Dibromofluoromethane (Surr)	93		80 - 120		05/18/22 11:54	1
Toluene-d8 (Surr)	101		80 - 120		05/18/22 11:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 14:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	103		50 - 150					05/16/22 14:37	1

Client Sample ID: MW-6

Lab Sample ID: 410-83593-4

Date Collected: 05/05/22 08:30

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 10:55	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 10:55	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 10:55	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 10:55	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 10:55	1
Xylene (total)	0.677	J	1.00	0.400	ug/L			05/18/22 10:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 10:55	1
4-Bromofluorobenzene (Surr)	95		80 - 120		05/18/22 10:55	1
Dibromofluoromethane (Surr)	91		80 - 120		05/18/22 10:55	1
Toluene-d8 (Surr)	100		80 - 120		05/18/22 10:55	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	167	J	250	19.0	ug/L			05/16/22 15:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	96		50 - 150					05/16/22 15:03	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-2

Lab Sample ID: 410-83593-5

Date Collected: 05/05/22 08:50

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 12:13	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 12:13	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 12:13	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 12:13	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 12:13	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 12:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 12:13	1
4-Bromofluorobenzene (Surr)	96		80 - 120		05/18/22 12:13	1
Dibromofluoromethane (Surr)	94		80 - 120		05/18/22 12:13	1
Toluene-d8 (Surr)	102		80 - 120		05/18/22 12:13	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 15:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	103		50 - 150					05/16/22 15:28	1

Client Sample ID: MW-35

Lab Sample ID: 410-83593-6

Date Collected: 05/05/22 09:40

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 13:13	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 13:13	1
Benzene	86.2		1.00	0.300	ug/L			05/18/22 13:13	1
Toluene	139		1.00	0.200	ug/L			05/18/22 13:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		05/18/22 13:13	1
4-Bromofluorobenzene (Surr)	96		80 - 120		05/18/22 13:13	1
Dibromofluoromethane (Surr)	94		80 - 120		05/18/22 13:13	1
Toluene-d8 (Surr)	101		80 - 120		05/18/22 13:13	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	1750		10.0	4.00	ug/L			05/18/22 13:33	10
Xylene (total)	3510		10.0	4.00	ug/L			05/18/22 13:33	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		05/18/22 13:33	10
4-Bromofluorobenzene (Surr)	96		80 - 120		05/18/22 13:33	10
Dibromofluoromethane (Surr)	94		80 - 120		05/18/22 13:33	10
Toluene-d8 (Surr)	98		80 - 120		05/18/22 13:33	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	31500		2500	190	ug/L			05/16/22 18:52	10

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-35

Lab Sample ID: 410-83593-6

Date Collected: 05/05/22 09:40

Matrix: Water

Date Received: 05/11/22 10:32

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	100		50 - 150		05/16/22 18:52	10

Client Sample ID: MW-30

Lab Sample ID: 410-83593-7

Date Collected: 05/05/22 10:10

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 13:53	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 13:53	1
Toluene	22.9		1.00	0.200	ug/L			05/18/22 13:53	1
Xylene (total)	132		1.00	0.400	ug/L			05/18/22 13:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		05/18/22 13:53	1
4-Bromofluorobenzene (Surr)	94		80 - 120		05/18/22 13:53	1
Dibromofluoromethane (Surr)	95		80 - 120		05/18/22 13:53	1
Toluene-d8 (Surr)	99		80 - 120		05/18/22 13:53	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	519		10.0	3.00	ug/L			05/18/22 14:13	10
Ethylbenzene	521		10.0	4.00	ug/L			05/18/22 14:13	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		05/18/22 14:13	10
4-Bromofluorobenzene (Surr)	95		80 - 120		05/18/22 14:13	10
Dibromofluoromethane (Surr)	92		80 - 120		05/18/22 14:13	10
Toluene-d8 (Surr)	99		80 - 120		05/18/22 14:13	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	4080		1250	95.0	ug/L			05/16/22 19:17	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150		05/16/22 19:17	5

Client Sample ID: MW-33

Lab Sample ID: 410-83593-8

Date Collected: 05/05/22 10:50

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 14:33	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 14:33	1
Benzene	199		1.00	0.300	ug/L			05/18/22 14:33	1
Toluene	19.0		1.00	0.200	ug/L			05/18/22 14:33	1
Xylene (total)	333		1.00	0.400	ug/L			05/18/22 14:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 14:33	1
4-Bromofluorobenzene (Surr)	92		80 - 120		05/18/22 14:33	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-33

Lab Sample ID: 410-83593-8

Date Collected: 05/05/22 10:50

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	95		80 - 120		05/18/22 14:33	1
Toluene-d8 (Surr)	98		80 - 120		05/18/22 14:33	1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	635		10.0	4.00	ug/L			05/18/22 14:53	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		05/18/22 14:53	10
4-Bromofluorobenzene (Surr)	95		80 - 120		05/18/22 14:53	10
Dibromofluoromethane (Surr)	96		80 - 120		05/18/22 14:53	10
Toluene-d8 (Surr)	103		80 - 120		05/18/22 14:53	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	9950		1250	95.0	ug/L			05/16/22 19:43	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	98		50 - 150		05/16/22 19:43	5

Client Sample ID: MW-32

Lab Sample ID: 410-83593-9

Date Collected: 05/05/22 11:10

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<1.00		5.00	1.00	ug/L			05/18/22 15:13	5
Ethylene dichloride	<1.50		5.00	1.50	ug/L			05/18/22 15:13	5
Ethylbenzene	512		5.00	2.00	ug/L			05/18/22 15:13	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 120		05/18/22 15:13	5
4-Bromofluorobenzene (Surr)	97		80 - 120		05/18/22 15:13	5
Dibromofluoromethane (Surr)	93		80 - 120		05/18/22 15:13	5
Toluene-d8 (Surr)	99		80 - 120		05/18/22 15:13	5

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3870		50.0	15.0	ug/L			05/18/22 15:32	50
Toluene	4050		50.0	10.0	ug/L			05/18/22 15:32	50
Xylene (total)	10300		50.0	20.0	ug/L			05/18/22 15:32	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		05/18/22 15:32	50
4-Bromofluorobenzene (Surr)	95		80 - 120		05/18/22 15:32	50
Dibromofluoromethane (Surr)	97		80 - 120		05/18/22 15:32	50
Toluene-d8 (Surr)	96		80 - 120		05/18/22 15:32	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	52500		5000	380	ug/L			05/16/22 20:08	20

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-32

Lab Sample ID: 410-83593-9

Date Collected: 05/05/22 11:10

Matrix: Water

Date Received: 05/11/22 10:32

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	100		50 - 150		05/16/22 20:08	20

Client Sample ID: MW-34

Lab Sample ID: 410-83593-10

Date Collected: 05/05/22 12:00

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 18:30	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 18:30	1
Benzene	11.4		1.00	0.300	ug/L			05/18/22 18:30	1
Ethylbenzene	36.2		1.00	0.400	ug/L			05/18/22 18:30	1
Toluene	1.33		1.00	0.200	ug/L			05/18/22 18:30	1
Xylene (total)	23.1		1.00	0.400	ug/L			05/18/22 18:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		05/18/22 18:30	1
4-Bromofluorobenzene (Surr)	97		80 - 120		05/18/22 18:30	1
Dibromofluoromethane (Surr)	94		80 - 120		05/18/22 18:30	1
Toluene-d8 (Surr)	98		80 - 120		05/18/22 18:30	1

Method: NWTPh-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	3710		250	19.0	ug/L			05/16/22 18:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	112		50 - 150		05/16/22 18:26	1

Client Sample ID: MW-31

Lab Sample ID: 410-83593-11

Date Collected: 05/05/22 12:30

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.400		2.00	0.400	ug/L			05/18/22 15:52	2
Ethylene dichloride	<0.600		2.00	0.600	ug/L			05/18/22 15:52	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 15:52	2
4-Bromofluorobenzene (Surr)	97		80 - 120		05/18/22 15:52	2
Dibromofluoromethane (Surr)	93		80 - 120		05/18/22 15:52	2
Toluene-d8 (Surr)	99		80 - 120		05/18/22 15:52	2

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2580		20.0	6.00	ug/L			05/18/22 16:12	20
Ethylbenzene	1700		20.0	8.00	ug/L			05/18/22 16:12	20
Toluene	1260		20.0	4.00	ug/L			05/18/22 16:12	20
Xylene (total)	10700		20.0	8.00	ug/L			05/18/22 16:12	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		80 - 120		05/18/22 16:12	20

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-31

Date Collected: 05/05/22 12:30

Date Received: 05/11/22 10:32

Lab Sample ID: 410-83593-11

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		80 - 120		05/18/22 16:12	20
Dibromofluoromethane (Surr)	93		80 - 120		05/18/22 16:12	20
Toluene-d8 (Surr)	101		80 - 120		05/18/22 16:12	20

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	58100		6250	475	ug/L			05/17/22 18:25	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	100		50 - 150					05/17/22 18:25	25

Client Sample ID: Ecology Drum

Date Collected: 05/05/22 13:00

Date Received: 05/11/22 10:32

Lab Sample ID: 410-83593-12

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 12:53	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 12:53	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 12:53	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 12:53	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 12:53	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 12:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120					05/18/22 12:53	1
4-Bromofluorobenzene (Surr)	94		80 - 120					05/18/22 12:53	1
Dibromofluoromethane (Surr)	95		80 - 120					05/18/22 12:53	1
Toluene-d8 (Surr)	98		80 - 120					05/18/22 12:53	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 15:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	102		50 - 150					05/16/22 15:53	1

Client Sample ID: Purge Water

Date Collected: 05/05/22 13:10

Date Received: 05/11/22 10:32

Lab Sample ID: 410-83593-13

Matrix: Water

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.400		2.00	0.400	ug/L			05/18/22 16:32	2
Ethylene dichloride	<0.600		2.00	0.600	ug/L			05/18/22 16:32	2
Ethylbenzene	596		2.00	0.800	ug/L			05/18/22 16:32	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		80 - 120					05/18/22 16:32	2
4-Bromofluorobenzene (Surr)	98		80 - 120					05/18/22 16:32	2
Dibromofluoromethane (Surr)	94		80 - 120					05/18/22 16:32	2

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: Purge Water

Lab Sample ID: 410-83593-13

Date Collected: 05/05/22 13:10

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		05/18/22 16:32	2

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1210		20.0	6.00	ug/L			05/18/22 16:52	20
Toluene	2230		20.0	4.00	ug/L			05/18/22 16:52	20
Xylene (total)	3460		20.0	8.00	ug/L			05/18/22 16:52	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 16:52	20
4-Bromofluorobenzene (Surr)	97		80 - 120		05/18/22 16:52	20
Dibromofluoromethane (Surr)	95		80 - 120		05/18/22 16:52	20
Toluene-d8 (Surr)	93		80 - 120		05/18/22 16:52	20

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	27700		5000	380	ug/L			05/17/22 18:51	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	100		50 - 150		05/17/22 18:51	20

Client Sample ID: MW-37

Lab Sample ID: 410-83593-15

Date Collected: 05/05/22 14:15

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 18:50	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 18:50	1
Benzene	203		1.00	0.300	ug/L			05/18/22 18:50	1
Ethylbenzene	59.7		1.00	0.400	ug/L			05/18/22 18:50	1
Toluene	172		1.00	0.200	ug/L			05/18/22 18:50	1
Xylene (total)	303		1.00	0.400	ug/L			05/18/22 18:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 120		05/18/22 18:50	1
4-Bromofluorobenzene (Surr)	98		80 - 120		05/18/22 18:50	1
Dibromofluoromethane (Surr)	92		80 - 120		05/18/22 18:50	1
Toluene-d8 (Surr)	102		80 - 120		05/18/22 18:50	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	2310		250	19.0	ug/L			05/16/22 16:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	100		50 - 150		05/16/22 16:18	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-38

Lab Sample ID: 410-83593-16

Date Collected: 05/05/22 15:00

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<1.00		5.00	1.00	ug/L			05/18/22 17:11	5
Ethylene dichloride	<1.50		5.00	1.50	ug/L			05/18/22 17:11	5
Ethylbenzene	1340		5.00	2.00	ug/L			05/18/22 17:11	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		80 - 120					05/18/22 17:11	5
4-Bromofluorobenzene (Surr)	97		80 - 120					05/18/22 17:11	5
Dibromofluoromethane (Surr)	94		80 - 120					05/18/22 17:11	5
Toluene-d8 (Surr)	99		80 - 120					05/18/22 17:11	5

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5750		50.0	15.0	ug/L			05/18/22 17:31	50
Toluene	4540		50.0	10.0	ug/L			05/18/22 17:31	50
Xylene (total)	7020		50.0	20.0	ug/L			05/18/22 17:31	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120					05/18/22 17:31	50
4-Bromofluorobenzene (Surr)	96		80 - 120					05/18/22 17:31	50
Dibromofluoromethane (Surr)	95		80 - 120					05/18/22 17:31	50
Toluene-d8 (Surr)	101		80 - 120					05/18/22 17:31	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	47600		5000	380	ug/L			05/17/22 19:43	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	98		50 - 150					05/17/22 19:43	20

Client Sample ID: MW-29

Lab Sample ID: 410-83593-17

Date Collected: 05/05/22 15:15

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<1.00		5.00	1.00	ug/L			05/18/22 17:51	5
Ethylene dichloride	<1.50		5.00	1.50	ug/L			05/18/22 17:51	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		80 - 120					05/18/22 17:51	5
4-Bromofluorobenzene (Surr)	96		80 - 120					05/18/22 17:51	5
Dibromofluoromethane (Surr)	92		80 - 120					05/18/22 17:51	5
Toluene-d8 (Surr)	102		80 - 120					05/18/22 17:51	5

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6210		50.0	15.0	ug/L			05/18/22 18:11	50
Ethylbenzene	3240		50.0	20.0	ug/L			05/18/22 18:11	50
Toluene	9050		50.0	10.0	ug/L			05/18/22 18:11	50
Xylene (total)	17100		50.0	20.0	ug/L			05/18/22 18:11	50

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-29

Lab Sample ID: 410-83593-17

Date Collected: 05/05/22 15:15

Matrix: Water

Date Received: 05/11/22 10:32

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		05/18/22 18:11	50
4-Bromofluorobenzene (Surr)	95		80 - 120		05/18/22 18:11	50
Dibromofluoromethane (Surr)	94		80 - 120		05/18/22 18:11	50
Toluene-d8 (Surr)	100		80 - 120		05/18/22 18:11	50

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	93500		5000	380	ug/L			05/16/22 21:52	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150		05/16/22 21:52	20

Client Sample ID: TB-LB

Lab Sample ID: 410-83593-18

Date Collected: 05/05/22 00:00

Matrix: Water

Date Received: 05/11/22 10:32

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 10:35	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 10:35	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 10:35	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 10:35	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 10:35	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 10:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 120		05/18/22 10:35	1
4-Bromofluorobenzene (Surr)	92		80 - 120		05/18/22 10:35	1
Dibromofluoromethane (Surr)	94		80 - 120		05/18/22 10:35	1
Toluene-d8 (Surr)	99		80 - 120		05/18/22 10:35	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 13:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	103		50 - 150		05/16/22 13:21	1

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (80-120)	BFB (80-120)	DBFM (80-120)	TOL (80-120)
410-83593-1	MW-23	94	92	97	97
410-83593-2	MW-36	95	96	95	95
410-83593-3	MW-20	95	93	93	101
410-83593-4	MW-6	95	95	91	100
410-83593-5	MW-2	95	96	94	102
410-83593-6	MW-35	94	96	94	101
410-83593-6 - DL	MW-35	94	96	94	98
410-83593-7	MW-30	96	94	95	99
410-83593-7 - DL	MW-30	96	95	92	99
410-83593-8	MW-33	95	92	95	98
410-83593-8 - DL	MW-33	96	95	96	103
410-83593-9	MW-32	92	97	93	99
410-83593-9 - DL	MW-32	96	95	97	96
410-83593-10	MW-34	96	97	94	98
410-83593-11	MW-31	95	97	93	99
410-83593-11 - DL	MW-31	93	96	93	101
410-83593-12	Ecology Drum	95	94	95	98
410-83593-13	Purge Water	93	98	94	101
410-83593-13 - DL	Purge Water	95	97	95	93
410-83593-15	MW-37	94	98	92	102
410-83593-16	MW-38	97	97	94	99
410-83593-16 - DL	MW-38	95	96	95	101
410-83593-17	MW-29	90	96	92	102
410-83593-17 - DL	MW-29	95	95	94	100
410-83593-18	TB-LB	98	92	94	99
LCS 410-256436/4	Lab Control Sample	92	97	94	96
LCSD 410-256436/5	Lab Control Sample Dup	98	97	97	102
MB 410-256436/7	Method Blank	90	94	95	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TFT-F1 (50-150)			
410-83593-1	MW-23	104			
410-83593-2	MW-36	104			
410-83593-3	MW-20	103			
410-83593-4	MW-6	96			
410-83593-5	MW-2	103			
410-83593-6	MW-35	100			
410-83593-7	MW-30	99			
410-83593-8	MW-33	98			
410-83593-9	MW-32	100			

Eurofins Lancaster Laboratories Environment Testing, LLC

Surrogate Summary

Client: Leidos Engineering, LLC

Job ID: 410-83593-1

Project/Site: Tiki Car Wash

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TFT-F1 (50-150)					
410-83593-10	MW-34	112					
410-83593-11	MW-31	100					
410-83593-12	Ecology Drum	102					
410-83593-13	Purge Water	100					
410-83593-15	MW-37	100					
410-83593-16	MW-38	98					
410-83593-17	MW-29	99					
410-83593-18	TB-LB	103					
LCS 410-255566/5	Lab Control Sample	94					
LCS 410-256085/5	Lab Control Sample	93					
LCSD 410-255566/6	Lab Control Sample Dup	94					
LCSD 410-256085/6	Lab Control Sample Dup	95					
MB 410-255566/4	Method Blank	103					
MB 410-256085/4	Method Blank	102					

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-256436/7

Matrix: Water

Analysis Batch: 256436

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			05/18/22 10:16	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			05/18/22 10:16	1
Benzene	<0.300		1.00	0.300	ug/L			05/18/22 10:16	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			05/18/22 10:16	1
Toluene	<0.200		1.00	0.200	ug/L			05/18/22 10:16	1
Xylene (total)	<0.400		1.00	0.400	ug/L			05/18/22 10:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		80 - 120		05/18/22 10:16	1
4-Bromofluorobenzene (Surr)	94		80 - 120		05/18/22 10:16	1
Dibromofluoromethane (Surr)	95		80 - 120		05/18/22 10:16	1
Toluene-d8 (Surr)	99		80 - 120		05/18/22 10:16	1

Lab Sample ID: LCS 410-256436/4

Matrix: Water

Analysis Batch: 256436

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	20.0	18.61		ug/L		93	77 - 120
Ethylene dichloride	20.0	18.75		ug/L		94	73 - 124
Benzene	20.0	18.40		ug/L		92	80 - 120
Ethylbenzene	20.0	18.98		ug/L		95	80 - 120
Toluene	20.0	17.62		ug/L		88	80 - 120
Xylene (total)	60.0	56.17		ug/L		94	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	94		80 - 120
Toluene-d8 (Surr)	96		80 - 120

Lab Sample ID: LCSD 410-256436/5

Matrix: Water

Analysis Batch: 256436

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylene Dibromide	20.0	18.33		ug/L		92	77 - 120	2	30
Ethylene dichloride	20.0	18.10		ug/L		90	73 - 124	4	30
Benzene	20.0	18.72		ug/L		94	80 - 120	2	30
Ethylbenzene	20.0	19.26		ug/L		96	80 - 120	1	30
Toluene	20.0	18.36		ug/L		92	80 - 120	4	30
Xylene (total)	60.0	56.82		ug/L		95	80 - 120	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-256436/5

Matrix: Water

Analysis Batch: 256436

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-255566/4

Matrix: Water

Analysis Batch: 255566

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB								
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/16/22 12:04	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
a,a,a-Trifluorotoluene (fid) (1C)	103		50 - 150					05/16/22 12:04	1	

Lab Sample ID: LCS 410-255566/5

Matrix: Water

Analysis Batch: 255566

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte			Spike	LCS	LCS				%Rec		
			Added	Result	Qualifier	Unit	D	%Rec	Limits		
C7-C12 (1C)			1100	1063		ug/L		97	64 - 131		
Surrogate	%Recovery	Qualifier	Limits								
a,a,a-Trifluorotoluene (fid) (1C)	94		50 - 150								

Lab Sample ID: LCSD 410-255566/6

Matrix: Water

Analysis Batch: 255566

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike	LCSD	LCSD				%Rec		RPD
			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
C7-C12 (1C)			1100	1090		ug/L		99	64 - 131	3	30
Surrogate	%Recovery	Qualifier	Limits								
a,a,a-Trifluorotoluene (fid) (1C)	94		50 - 150								

Lab Sample ID: MB 410-256085/4

Matrix: Water

Analysis Batch: 256085

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB								
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
C7-C12 (1C)	<19.0		250	19.0	ug/L			05/17/22 13:18	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
a,a,a-Trifluorotoluene (fid) (1C)	102		50 - 150					05/17/22 13:18	1	

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 410-256085/5

Matrix: Water

Analysis Batch: 256085

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C7-C12 (1C)	1100	1017		ug/L		92	64 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	93		50 - 150

Lab Sample ID: LCSD 410-256085/6

Matrix: Water

Analysis Batch: 256085

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	1100	1011		ug/L		92	64 - 131	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	95		50 - 150

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

GC/MS VOA

Analysis Batch: 256436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-83593-1	MW-23	Total/NA	Water	8260D	
410-83593-2	MW-36	Total/NA	Water	8260D	
410-83593-3	MW-20	Total/NA	Water	8260D	
410-83593-4	MW-6	Total/NA	Water	8260D	
410-83593-5	MW-2	Total/NA	Water	8260D	
410-83593-6	MW-35	Total/NA	Water	8260D	
410-83593-6 - DL	MW-35	Total/NA	Water	8260D	
410-83593-7	MW-30	Total/NA	Water	8260D	
410-83593-7 - DL	MW-30	Total/NA	Water	8260D	
410-83593-8	MW-33	Total/NA	Water	8260D	
410-83593-8 - DL	MW-33	Total/NA	Water	8260D	
410-83593-9	MW-32	Total/NA	Water	8260D	
410-83593-9 - DL	MW-32	Total/NA	Water	8260D	
410-83593-10	MW-34	Total/NA	Water	8260D	
410-83593-11	MW-31	Total/NA	Water	8260D	
410-83593-11 - DL	MW-31	Total/NA	Water	8260D	
410-83593-12	Ecology Drum	Total/NA	Water	8260D	
410-83593-13	Purge Water	Total/NA	Water	8260D	
410-83593-13 - DL	Purge Water	Total/NA	Water	8260D	
410-83593-15	MW-37	Total/NA	Water	8260D	
410-83593-16	MW-38	Total/NA	Water	8260D	
410-83593-16 - DL	MW-38	Total/NA	Water	8260D	
410-83593-17	MW-29	Total/NA	Water	8260D	
410-83593-17 - DL	MW-29	Total/NA	Water	8260D	
410-83593-18	TB-LB	Total/NA	Water	8260D	
MB 410-256436/7	Method Blank	Total/NA	Water	8260D	
LCS 410-256436/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 410-256436/5	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 255566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-83593-1	MW-23	Total/NA	Water	NWTPH-Gx	
410-83593-2	MW-36	Total/NA	Water	NWTPH-Gx	
410-83593-3	MW-20	Total/NA	Water	NWTPH-Gx	
410-83593-4	MW-6	Total/NA	Water	NWTPH-Gx	
410-83593-5	MW-2	Total/NA	Water	NWTPH-Gx	
410-83593-6	MW-35	Total/NA	Water	NWTPH-Gx	
410-83593-7	MW-30	Total/NA	Water	NWTPH-Gx	
410-83593-8	MW-33	Total/NA	Water	NWTPH-Gx	
410-83593-9	MW-32	Total/NA	Water	NWTPH-Gx	
410-83593-10	MW-34	Total/NA	Water	NWTPH-Gx	
410-83593-12	Ecology Drum	Total/NA	Water	NWTPH-Gx	
410-83593-15	MW-37	Total/NA	Water	NWTPH-Gx	
410-83593-17	MW-29	Total/NA	Water	NWTPH-Gx	
410-83593-18	TB-LB	Total/NA	Water	NWTPH-Gx	
MB 410-255566/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-255566/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-255566/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

GC VOA

Analysis Batch: 256085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-83593-11	MW-31	Total/NA	Water	NWTPH-Gx	
410-83593-13	Purge Water	Total/NA	Water	NWTPH-Gx	
410-83593-16	MW-38	Total/NA	Water	NWTPH-Gx	
MB 410-256085/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-256085/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-256085/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-23

Lab Sample ID: 410-83593-1

Date Collected: 05/05/22 07:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 11:14	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 13:46	JJT8	ELLE

Client Sample ID: MW-36

Lab Sample ID: 410-83593-2

Date Collected: 05/05/22 07:40

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 11:34	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 14:12	JJT8	ELLE

Client Sample ID: MW-20

Lab Sample ID: 410-83593-3

Date Collected: 05/05/22 08:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 11:54	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 14:37	JJT8	ELLE

Client Sample ID: MW-6

Lab Sample ID: 410-83593-4

Date Collected: 05/05/22 08:30

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 10:55	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 15:03	JJT8	ELLE

Client Sample ID: MW-2

Lab Sample ID: 410-83593-5

Date Collected: 05/05/22 08:50

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 12:13	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 15:28	JJT8	ELLE

Client Sample ID: MW-35

Lab Sample ID: 410-83593-6

Date Collected: 05/05/22 09:40

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 13:13	ULCP	ELLE
Total/NA	Analysis	8260D	DL	10	256436	05/18/22 13:33	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		10	255566	05/16/22 18:52	JJT8	ELLE

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: MW-30

Lab Sample ID: 410-83593-7

Date Collected: 05/05/22 10:10

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 13:53	ULCP	ELLE
Total/NA	Analysis	8260D	DL	10	256436	05/18/22 14:13	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		5	255566	05/16/22 19:17	JJT8	ELLE

Client Sample ID: MW-33

Lab Sample ID: 410-83593-8

Date Collected: 05/05/22 10:50

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 14:33	ULCP	ELLE
Total/NA	Analysis	8260D	DL	10	256436	05/18/22 14:53	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		5	255566	05/16/22 19:43	JJT8	ELLE

Client Sample ID: MW-32

Lab Sample ID: 410-83593-9

Date Collected: 05/05/22 11:10

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		5	256436	05/18/22 15:13	ULCP	ELLE
Total/NA	Analysis	8260D	DL	50	256436	05/18/22 15:32	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		20	255566	05/16/22 20:08	JJT8	ELLE

Client Sample ID: MW-34

Lab Sample ID: 410-83593-10

Date Collected: 05/05/22 12:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 18:30	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 18:26	JJT8	ELLE

Client Sample ID: MW-31

Lab Sample ID: 410-83593-11

Date Collected: 05/05/22 12:30

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		2	256436	05/18/22 15:52	ULCP	ELLE
Total/NA	Analysis	8260D	DL	20	256436	05/18/22 16:12	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		25	256085	05/17/22 18:25	JJT8	ELLE

Client Sample ID: Ecology Drum

Lab Sample ID: 410-83593-12

Date Collected: 05/05/22 13:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 12:53	ULCP	ELLE

Eurofins Lancaster Laboratories Environment Testing, LLC

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Client Sample ID: Ecology Drum

Lab Sample ID: 410-83593-12

Date Collected: 05/05/22 13:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 15:53	JJT8	ELLE

Client Sample ID: Purge Water

Lab Sample ID: 410-83593-13

Date Collected: 05/05/22 13:10

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		2	256436	05/18/22 16:32	ULCP	ELLE
Total/NA	Analysis	8260D	DL	20	256436	05/18/22 16:52	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		20	256085	05/17/22 18:51	JJT8	ELLE

Client Sample ID: MW-37

Lab Sample ID: 410-83593-15

Date Collected: 05/05/22 14:15

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 18:50	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 16:18	JJT8	ELLE

Client Sample ID: MW-38

Lab Sample ID: 410-83593-16

Date Collected: 05/05/22 15:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		5	256436	05/18/22 17:11	ULCP	ELLE
Total/NA	Analysis	8260D	DL	50	256436	05/18/22 17:31	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		20	256085	05/17/22 19:43	JJT8	ELLE

Client Sample ID: MW-29

Lab Sample ID: 410-83593-17

Date Collected: 05/05/22 15:15

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		5	256436	05/18/22 17:51	ULCP	ELLE
Total/NA	Analysis	8260D	DL	50	256436	05/18/22 18:11	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		20	255566	05/16/22 21:52	JJT8	ELLE

Client Sample ID: TB-LB

Lab Sample ID: 410-83593-18

Date Collected: 05/05/22 00:00

Matrix: Water

Date Received: 05/11/22 10:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	256436	05/18/22 10:35	ULCP	ELLE
Total/NA	Analysis	NWTPH-Gx		1	255566	05/16/22 13:21	JJT8	ELLE

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-23

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Method Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-83593-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-83593-1	MW-23	Water	05/05/22 07:00	05/11/22 10:32
410-83593-2	MW-36	Water	05/05/22 07:40	05/11/22 10:32
410-83593-3	MW-20	Water	05/05/22 08:00	05/11/22 10:32
410-83593-4	MW-6	Water	05/05/22 08:30	05/11/22 10:32
410-83593-5	MW-2	Water	05/05/22 08:50	05/11/22 10:32
410-83593-6	MW-35	Water	05/05/22 09:40	05/11/22 10:32
410-83593-7	MW-30	Water	05/05/22 10:10	05/11/22 10:32
410-83593-8	MW-33	Water	05/05/22 10:50	05/11/22 10:32
410-83593-9	MW-32	Water	05/05/22 11:10	05/11/22 10:32
410-83593-10	MW-34	Water	05/05/22 12:00	05/11/22 10:32
410-83593-11	MW-31	Water	05/05/22 12:30	05/11/22 10:32
410-83593-12	Ecology Drum	Water	05/05/22 13:00	05/11/22 10:32
410-83593-13	Purge Water	Water	05/05/22 13:10	05/11/22 10:32
410-83593-15	MW-37	Water	05/05/22 14:15	05/11/22 10:32
410-83593-16	MW-38	Water	05/05/22 15:00	05/11/22 10:32
410-83593-17	MW-29	Water	05/05/22 15:15	05/11/22 10:32
410-83593-18	TB-LB	Water	05/05/22 00:00	05/11/22 10:32

Eurofins Lancaster Laboratories Environme

2425 New Holland Pike

Lancaster, PA 17601

Phone: 717-656-2300 Fax: 717-656-2681

Chain of Custody Record



410-83593 Chain of Custody

eurofins

Environment Testing
America

Client Information		Sampler:		Lab PM:		JC No:			
Client Contact: Don Wyll		Phone:		Williams, Marrisca C		10-55575-15720 2			
Company: Leidos Engineering, LLC		PWSID:		E-Mail: Marrisca.Williams@et.eurofinsus.com		Page: Page 2 of 2			
Address: 11824 North Creek Parkway N Suite 101		Due Date Requested:		Analysis Requested		Job #:			
City: Bothell		TAT Requested (days):		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) NWTPH_Gx - NWTPH-Dx 8260D - BTEX, EDB, EDC NWTPH_Gx - NWTPH - Gasoline Range Organics		Preservation Codes:			
State, Zip: WA, 98011		Compliance Project: ☐ Yes ☐ No				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Phone: 425-482-3315(Tel)		PO #:				Other:			
Email: don.e.wyll@leidos.com		Purchase Order not required							
Project Name: Tiki Car Wash		Project #: 41010568							
Site:		SSOW#:							
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Special Instructions/Note:			
				Preservation Code:					
MW-23		5.5.22	0700	G	Water				
MW-36		5.5.22	0740	G	Water				
MW-20		5.5.22	0800	G	Water				
MW-6		5.5.22	0830	G	Water				
MW-2		5.5.22	0850	G	Water				
MW-35		5.5.22	0940	G	Water				
MW-30		5.5.22	1010	G	Water				
MW-33		5.5.22	1050	G	Water				
MW-32		5.5.22	1110	G	Water				
MW-34		5.5.22	1200	G	Water				
MW-31		5.5.22	1230	G	Water				
Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological				☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by:		Date/Time:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Received by:		Date/Time:			
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					
☐ Yes ☐ No		not present		2.2°C					

Ver: 06/08/2021

**Environment Testing
America**

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-83593-1

Login Number: 83593

List Number: 1

Creator: Renner, Melissa

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
Sample custody seals are intact.	True	



ANALYTICAL REPORT

PREPARED FOR

Attn: Don Wyll
Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell Washington 98011

Generated 11/22/2022 9:40:37 AM

JOB DESCRIPTION

Tiki Car Wash

JOB NUMBER

410-104315-1

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Appendix 32



Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
H	Sample was prepped or analyzed beyond the specified holding time

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Job ID: 410-104315-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-104315-1

Receipt

The samples were received on 11/3/2022 10:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C

GC/MS VOA

Method 8260D: Client Label Added MW-39-5 (410-104315-1), MW-39-10 (410-104315-2), MW-39-15 (410-104315-3) and MW-41-10 (410-104315-5)

Method 8260D: Internal standard (ISTD) response for t-Butyl alcohol-d10 for the following sample in analytical batch 410-318817 was outside acceptance criteria: MW-41-10 (410-104315-5). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; therefore, the data have been reported.

Method 8260D: The following sample(s) was analyzed outside of analytical holding time. The sample was released for analysis after the holding time had already expired due to lab error: MW-41-10 (410-104315-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

Method NWTPH_Gx: Client Label Added MW-39-5 (410-104315-1), MW-39-10 (410-104315-2) and MW-39-15 (410-104315-3)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-39-5

Lab Sample ID: 410-104315-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	7.23		4.96	0.228	mg/Kg	25	✧	NWTPH-Gx	Total/NA

Client Sample ID: MW-39-10

Lab Sample ID: 410-104315-2

No Detections.

Client Sample ID: MW-39-15

Lab Sample ID: 410-104315-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	9.66		4.48	0.206	mg/Kg	25	✧	NWTPH-Gx	Total/NA

Client Sample ID: MW-41-5

Lab Sample ID: 410-104315-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	0.520	J	5.28	0.243	mg/Kg	25	✧	NWTPH-Gx	Total/NA

Client Sample ID: MW-41-10

Lab Sample ID: 410-104315-5

No Detections.

Client Sample ID: MW-41-14.5

Lab Sample ID: 410-104315-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	3.32	J	5.08	0.234	mg/Kg	25	✧	NWTPH-Gx	Total/NA

Client Sample ID: MW-40-5

Lab Sample ID: 410-104315-7

No Detections.

Client Sample ID: MW-40-10

Lab Sample ID: 410-104315-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	0.450	J	5.35	0.246	mg/Kg	25	✧	NWTPH-Gx	Total/NA

Client Sample ID: MW-40-13

Lab Sample ID: 410-104315-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	12.0		6.08	0.280	mg/Kg	25	✧	NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-39-5

Lab Sample ID: 410-104315-1

Date Collected: 11/01/22 08:15

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 88.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.442		4.42	0.442	ug/Kg	☆	11/06/22 21:31	11/08/22 06:10	1
Ethylbenzene	<0.353		4.42	0.353	ug/Kg	☆	11/06/22 21:31	11/08/22 06:10	1
Ethylene Dibromide	<0.353		4.42	0.353	ug/Kg	☆	11/06/22 21:31	11/08/22 06:10	1
Ethylene dichloride	<0.530		4.42	0.530	ug/Kg	☆	11/06/22 21:31	11/08/22 06:10	1
Toluene	<0.530		4.42	0.530	ug/Kg	☆	11/06/22 21:31	11/08/22 06:10	1
Xylene (total)	<1.24		8.83	1.24	ug/Kg	☆	11/06/22 21:31	11/08/22 06:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		54 - 135	11/06/22 21:31	11/08/22 06:10	1
4-Bromofluorobenzene (Surr)	99		50 - 131	11/06/22 21:31	11/08/22 06:10	1
Dibromofluoromethane (Surr)	100		50 - 141	11/06/22 21:31	11/08/22 06:10	1
Toluene-d8 (Surr)	102		52 - 141	11/06/22 21:31	11/08/22 06:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	7.23		4.96	0.228	mg/Kg	☆	11/06/22 22:15	11/08/22 15:53	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	127		50 - 150	11/06/22 22:15	11/08/22 15:53	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.48		11.2	4.48	mg/Kg	☆	11/09/22 08:17	11/09/22 20:25	1
C24-C40	<11.2		33.6	11.2	mg/Kg	☆	11/09/22 08:17	11/09/22 20:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	99		50 - 150	11/09/22 08:17	11/09/22 20:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	11.6		1.0	1.0	%			11/05/22 19:11	1

Client Sample ID: MW-39-10

Lab Sample ID: 410-104315-2

Date Collected: 11/01/22 08:30

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 91.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.474		4.74	0.474	ug/Kg	☆	11/06/22 21:31	11/08/22 04:16	1
Ethylbenzene	<0.379		4.74	0.379	ug/Kg	☆	11/06/22 21:31	11/08/22 04:16	1
Ethylene Dibromide	<0.379		4.74	0.379	ug/Kg	☆	11/06/22 21:31	11/08/22 04:16	1
Ethylene dichloride	<0.569		4.74	0.569	ug/Kg	☆	11/06/22 21:31	11/08/22 04:16	1
Toluene	<0.569		4.74	0.569	ug/Kg	☆	11/06/22 21:31	11/08/22 04:16	1
Xylene (total)	<1.33		9.48	1.33	ug/Kg	☆	11/06/22 21:31	11/08/22 04:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		54 - 135	11/06/22 21:31	11/08/22 04:16	1
4-Bromofluorobenzene (Surr)	101		50 - 131	11/06/22 21:31	11/08/22 04:16	1
Dibromofluoromethane (Surr)	102		50 - 141	11/06/22 21:31	11/08/22 04:16	1
Toluene-d8 (Surr)	102		52 - 141	11/06/22 21:31	11/08/22 04:16	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-39-10

Lab Sample ID: 410-104315-2

Date Collected: 11/01/22 08:30

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 91.1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.203		4.42	0.203	mg/Kg	☆	11/06/22 22:15	11/08/22 16:29	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	115		50 - 150				11/06/22 22:15	11/08/22 16:29	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.32		10.8	4.32	mg/Kg	☆	11/09/22 08:17	11/09/22 17:27	1
C24-C40	<10.8		32.4	10.8	mg/Kg	☆	11/09/22 08:17	11/09/22 17:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	96		50 - 150				11/09/22 08:17	11/09/22 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	8.9		1.0	1.0	%			11/04/22 11:35	1

Client Sample ID: MW-39-15

Lab Sample ID: 410-104315-3

Date Collected: 11/01/22 08:40

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.9

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.437		4.37	0.437	ug/Kg	☆	11/06/22 21:31	11/08/22 06:33	1
Ethylbenzene	<0.349		4.37	0.349	ug/Kg	☆	11/06/22 21:31	11/08/22 06:33	1
Ethylene Dibromide	<0.349		4.37	0.349	ug/Kg	☆	11/06/22 21:31	11/08/22 06:33	1
Ethylene dichloride	<0.524		4.37	0.524	ug/Kg	☆	11/06/22 21:31	11/08/22 06:33	1
Toluene	<0.524		4.37	0.524	ug/Kg	☆	11/06/22 21:31	11/08/22 06:33	1
Xylene (total)	<1.22		8.73	1.22	ug/Kg	☆	11/06/22 21:31	11/08/22 06:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		54 - 135				11/06/22 21:31	11/08/22 06:33	1
4-Bromofluorobenzene (Surr)	99		50 - 131				11/06/22 21:31	11/08/22 06:33	1
Dibromofluoromethane (Surr)	99		50 - 141				11/06/22 21:31	11/08/22 06:33	1
Toluene-d8 (Surr)	103		52 - 141				11/06/22 21:31	11/08/22 06:33	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	9.66		4.48	0.206	mg/Kg	☆	11/06/22 22:15	11/08/22 17:06	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	124		50 - 150				11/06/22 22:15	11/08/22 17:06	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.36		10.9	4.36	mg/Kg	☆	11/09/22 08:17	11/09/22 17:47	1
C24-C40	<10.9		32.7	10.9	mg/Kg	☆	11/09/22 08:17	11/09/22 17:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	102		50 - 150				11/09/22 08:17	11/09/22 17:47	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-39-15

Date Collected: 11/01/22 08:40

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-3

Matrix: Solid

Percent Solids: 90.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	9.1		1.0	1.0	%			11/05/22 19:11	1

Client Sample ID: MW-41-5

Date Collected: 11/01/22 11:30

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-4

Matrix: Solid

Percent Solids: 89.2

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.464		4.64	0.464	ug/Kg	✱	11/06/22 21:31	11/08/22 04:39	1
Ethylbenzene	<0.371		4.64	0.371	ug/Kg	✱	11/06/22 21:31	11/08/22 04:39	1
Ethylene Dibromide	<0.371		4.64	0.371	ug/Kg	✱	11/06/22 21:31	11/08/22 04:39	1
Ethylene dichloride	<0.557		4.64	0.557	ug/Kg	✱	11/06/22 21:31	11/08/22 04:39	1
Toluene	<0.557		4.64	0.557	ug/Kg	✱	11/06/22 21:31	11/08/22 04:39	1
Xylene (total)	<1.30		9.29	1.30	ug/Kg	✱	11/06/22 21:31	11/08/22 04:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		54 - 135	11/06/22 21:31	11/08/22 04:39	1
4-Bromofluorobenzene (Surr)	101		50 - 131	11/06/22 21:31	11/08/22 04:39	1
Dibromofluoromethane (Surr)	100		50 - 141	11/06/22 21:31	11/08/22 04:39	1
Toluene-d8 (Surr)	103		52 - 141	11/06/22 21:31	11/08/22 04:39	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.520	J	5.28	0.243	mg/Kg	✱	11/06/22 22:15	11/08/22 17:42	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	122		50 - 150	11/06/22 22:15	11/08/22 17:42	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.46		11.1	4.46	mg/Kg	✱	11/09/22 08:17	11/09/22 18:06	1
C24-C40	<11.1		33.4	11.1	mg/Kg	✱	11/09/22 08:17	11/09/22 18:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	100		50 - 150	11/09/22 08:17	11/09/22 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	10.8		1.0	1.0	%			11/05/22 19:11	1

Client Sample ID: MW-41-10

Date Collected: 11/01/22 11:40

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-5

Matrix: Solid

Percent Solids: 90.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.446	H cn	4.46	0.446	ug/Kg	✱	11/06/22 21:31	11/18/22 00:11	1
Ethylbenzene	<0.357	H cn	4.46	0.357	ug/Kg	✱	11/06/22 21:31	11/18/22 00:11	1
Ethylene Dibromide	<0.357	H cn	4.46	0.357	ug/Kg	✱	11/06/22 21:31	11/18/22 00:11	1
Ethylene dichloride	<0.535	H cn	4.46	0.535	ug/Kg	✱	11/06/22 21:31	11/18/22 00:11	1
Toluene	<0.535	H cn	4.46	0.535	ug/Kg	✱	11/06/22 21:31	11/18/22 00:11	1
Xylene (total)	<1.25	H cn	8.92	1.25	ug/Kg	✱	11/06/22 21:31	11/18/22 00:11	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-41-10

Lab Sample ID: 410-104315-5

Date Collected: 11/01/22 11:40

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109	cn	54 - 135	11/06/22 21:31	11/18/22 00:11	1
4-Bromofluorobenzene (Surr)	96	cn	50 - 131	11/06/22 21:31	11/18/22 00:11	1
Dibromofluoromethane (Surr)	104	cn	50 - 141	11/06/22 21:31	11/18/22 00:11	1
Toluene-d8 (Surr)	97	cn	52 - 141	11/06/22 21:31	11/18/22 00:11	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.276		6.00	0.276	mg/Kg	☼	11/07/22 18:39	11/09/22 21:00	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a.a.a-Trifluorotoluene (fid) (1C)	99		50 - 150				11/07/22 18:39	11/09/22 21:00	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.39		11.0	4.39	mg/Kg	☼	11/09/22 08:17	11/09/22 18:26	1
C24-C40	<11.0		32.9	11.0	mg/Kg	☼	11/09/22 08:17	11/09/22 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	97		50 - 150				11/09/22 08:17	11/09/22 18:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	9.4		1.0	1.0	%			11/05/22 19:11	1

Client Sample ID: MW-41-14.5

Lab Sample ID: 410-104315-6

Date Collected: 11/01/22 11:50

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 91.0

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.471		4.71	0.471	ug/Kg	☼	11/06/22 21:31	11/09/22 13:27	1
Ethylbenzene	<0.377		4.71	0.377	ug/Kg	☼	11/06/22 21:31	11/09/22 13:27	1
Ethylene Dibromide	<0.377		4.71	0.377	ug/Kg	☼	11/06/22 21:31	11/09/22 13:27	1
Ethylene dichloride	<0.565		4.71	0.565	ug/Kg	☼	11/06/22 21:31	11/09/22 13:27	1
Toluene	<0.565		4.71	0.565	ug/Kg	☼	11/06/22 21:31	11/09/22 13:27	1
Xylene (total)	<1.32		9.42	1.32	ug/Kg	☼	11/06/22 21:31	11/09/22 13:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		54 - 135				11/06/22 21:31	11/09/22 13:27	1
4-Bromofluorobenzene (Surr)	100		50 - 131				11/06/22 21:31	11/09/22 13:27	1
Dibromofluoromethane (Surr)	102		50 - 141				11/06/22 21:31	11/09/22 13:27	1
Toluene-d8 (Surr)	102		52 - 141				11/06/22 21:31	11/09/22 13:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	3.32	J	5.08	0.234	mg/Kg	☼	11/06/22 22:15	11/08/22 18:25	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	122		50 - 150				11/06/22 22:15	11/08/22 18:25	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.36		10.9	4.36	mg/Kg	☆	11/09/22 08:17	11/09/22 18:46	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-41-14.5

Lab Sample ID: 410-104315-6

Date Collected: 11/01/22 11:50

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 91.0

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C24-C40	<10.9		32.7	10.9	mg/Kg	☆	11/09/22 08:17	11/09/22 18:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	96		50 - 150				11/09/22 08:17	11/09/22 18:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	9.0		1.0	1.0	%			11/05/22 19:11	1

Client Sample ID: MW-40-5

Lab Sample ID: 410-104315-7

Date Collected: 11/02/22 08:40

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 95.4

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.382		3.82	0.382	ug/Kg	☆	11/06/22 21:31	11/08/22 05:25	1
Ethylbenzene	<0.306		3.82	0.306	ug/Kg	☆	11/06/22 21:31	11/08/22 05:25	1
Ethylene Dibromide	<0.306		3.82	0.306	ug/Kg	☆	11/06/22 21:31	11/08/22 05:25	1
Ethylene dichloride	<0.458		3.82	0.458	ug/Kg	☆	11/06/22 21:31	11/08/22 05:25	1
Toluene	<0.458		3.82	0.458	ug/Kg	☆	11/06/22 21:31	11/08/22 05:25	1
Xylene (total)	<1.07		7.64	1.07	ug/Kg	☆	11/06/22 21:31	11/08/22 05:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		54 - 135				11/06/22 21:31	11/08/22 05:25	1
4-Bromofluorobenzene (Surr)	99		50 - 131				11/06/22 21:31	11/08/22 05:25	1
Dibromofluoromethane (Surr)	100		50 - 141				11/06/22 21:31	11/08/22 05:25	1
Toluene-d8 (Surr)	103		52 - 141				11/06/22 21:31	11/08/22 05:25	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.228		4.95	0.228	mg/Kg	☆	11/06/22 22:15	11/08/22 19:01	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>a,a,a</i> -Trifluorotoluene (fid) (1C)	106		50 - 150				11/06/22 22:15	11/08/22 19:01	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.16		10.4	4.16	mg/Kg	☆	11/09/22 08:17	11/09/22 19:06	1
C24-C40	<10.4		31.2	10.4	mg/Kg	☆	11/09/22 08:17	11/09/22 19:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	96		50 - 150				11/09/22 08:17	11/09/22 19:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	4.6		1.0	1.0	%			11/04/22 11:35	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-40-10

Lab Sample ID: 410-104315-8

Date Collected: 11/02/22 09:00

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 87.7

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.399		3.99	0.399	ug/Kg	☆	11/06/22 21:31	11/08/22 05:47	1
Ethylbenzene	<0.319		3.99	0.319	ug/Kg	☆	11/06/22 21:31	11/08/22 05:47	1
Ethylene Dibromide	<0.319		3.99	0.319	ug/Kg	☆	11/06/22 21:31	11/08/22 05:47	1
Ethylene dichloride	<0.478		3.99	0.478	ug/Kg	☆	11/06/22 21:31	11/08/22 05:47	1
Toluene	<0.478		3.99	0.478	ug/Kg	☆	11/06/22 21:31	11/08/22 05:47	1
Xylene (total)	<1.12		7.97	1.12	ug/Kg	☆	11/06/22 21:31	11/08/22 05:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		54 - 135	11/06/22 21:31	11/08/22 05:47	1
4-Bromofluorobenzene (Surr)	98		50 - 131	11/06/22 21:31	11/08/22 05:47	1
Dibromofluoromethane (Surr)	100		50 - 141	11/06/22 21:31	11/08/22 05:47	1
Toluene-d8 (Surr)	102		52 - 141	11/06/22 21:31	11/08/22 05:47	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.450	J	5.35	0.246	mg/Kg	☆	11/06/22 22:15	11/08/22 19:38	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	103		50 - 150	11/06/22 22:15	11/08/22 19:38	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.54		11.3	4.54	mg/Kg	☆	11/09/22 08:17	11/09/22 19:45	1
C24-C40	<11.3		34.0	11.3	mg/Kg	☆	11/09/22 08:17	11/09/22 19:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	96		50 - 150	11/09/22 08:17	11/09/22 19:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	12.3		1.0	1.0	%			11/04/22 11:35	1

Client Sample ID: MW-40-13

Lab Sample ID: 410-104315-9

Date Collected: 11/02/22 09:20

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.392		3.92	0.392	ug/Kg	☆	11/06/22 21:32	11/09/22 13:49	1
Ethylbenzene	<0.313		3.92	0.313	ug/Kg	☆	11/06/22 21:32	11/09/22 13:49	1
Ethylene Dibromide	<0.313		3.92	0.313	ug/Kg	☆	11/06/22 21:32	11/09/22 13:49	1
Ethylene dichloride	<0.470		3.92	0.470	ug/Kg	☆	11/06/22 21:32	11/09/22 13:49	1
Toluene	<0.470		3.92	0.470	ug/Kg	☆	11/06/22 21:32	11/09/22 13:49	1
Xylene (total)	<1.10		7.84	1.10	ug/Kg	☆	11/06/22 21:32	11/09/22 13:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		54 - 135	11/06/22 21:32	11/09/22 13:49	1
4-Bromofluorobenzene (Surr)	100		50 - 131	11/06/22 21:32	11/09/22 13:49	1
Dibromofluoromethane (Surr)	100		50 - 141	11/06/22 21:32	11/09/22 13:49	1
Toluene-d8 (Surr)	103		52 - 141	11/06/22 21:32	11/09/22 13:49	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-40-13

Lab Sample ID: 410-104315-9

Date Collected: 11/02/22 09:20

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	12.0		6.08	0.280	mg/Kg	☆	11/06/22 22:15	11/08/22 20:14	25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150	11/06/22 22:15	11/08/22 20:14	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.41		11.0	4.41	mg/Kg	☆	11/09/22 08:17	11/09/22 20:05	1
C24-C40	<11.0		33.0	11.0	mg/Kg	☆	11/09/22 08:17	11/09/22 20:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	88		50 - 150	11/09/22 08:17	11/09/22 20:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	9.9		1.0	1.0	%	—		11/04/22 11:35	1

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (54-135)	BFB (50-131)	DBFM (50-141)	TOL (52-141)
410-104315-1	MW-39-5	107	99	100	102
410-104315-2	MW-39-10	108	101	102	102
410-104315-3	MW-39-15	107	99	99	103
410-104315-4	MW-41-5	103	101	100	103
410-104315-5	MW-41-10	109 cn	96 cn	104 cn	97 cn
410-104315-6	MW-41-14.5	108	100	102	102
410-104315-7	MW-40-5	107	99	100	103
410-104315-8	MW-40-10	104	98	100	102
410-104315-9	MW-40-13	106	100	100	103
LCS 410-314959/4	Lab Control Sample	103	104	99	104
LCS 410-315593/4	Lab Control Sample	99	103	100	105
LCS 410-318817/4	Lab Control Sample	101	98	104	101
LCSD 410-314959/5	Lab Control Sample Dup	104 cn	103 cn	100 cn	102 cn
LCSD 410-315593/5	Lab Control Sample Dup	101	103	99	105
LCSD 410-318817/5	Lab Control Sample Dup	104	98	104	101
MB 410-314959/7	Method Blank	98	100	97	103
MB 410-315593/7	Method Blank	103	102	101	104
MB 410-318817/7	Method Blank	104	94	104	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TFT-F1 (50-150)	
410-104315-1	MW-39-5	127	
410-104315-2	MW-39-10	115	
410-104315-3	MW-39-15	124	
410-104315-4	MW-41-5	122	
410-104315-5	MW-41-10	99	
410-104315-6	MW-41-14.5	122	
410-104315-7	MW-40-5	106	
410-104315-8	MW-40-10	103	
410-104315-9	MW-40-13	99	
LCS 410-315227/6	Lab Control Sample	94	
LCS 410-315620/8	Lab Control Sample	84	
LCSD 410-315227/7	Lab Control Sample Dup	94	
LCSD 410-315620/9	Lab Control Sample Dup	84	
MB 410-315227/5	Method Blank	94	
MB 410-315620/5	Method Blank	93	

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTP (50-150)
410-104315-1	MW-39-5	99
410-104315-2	MW-39-10	96
410-104315-3	MW-39-15	102
410-104315-4	MW-41-5	100
410-104315-5	MW-41-10	97
410-104315-6	MW-41-14.5	96
410-104315-7	MW-40-5	96
410-104315-8	MW-40-10	96
410-104315-9	MW-40-13	88
LCS 410-315509/2-A	Lab Control Sample	106
MB 410-315509/1-A	Method Blank	103

Surrogate Legend

OTP = o- terphenyl (Surr)

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-314959/7

Matrix: Solid

Analysis Batch: 314959

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		5.00	0.500	ug/Kg			11/08/22 00:06	1
Ethylbenzene	<0.400		5.00	0.400	ug/Kg			11/08/22 00:06	1
Ethylene Dibromide	<0.400		5.00	0.400	ug/Kg			11/08/22 00:06	1
Ethylene dichloride	<0.600		5.00	0.600	ug/Kg			11/08/22 00:06	1
Toluene	<0.600		5.00	0.600	ug/Kg			11/08/22 00:06	1
Xylene (total)	<1.40		10.0	1.40	ug/Kg			11/08/22 00:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		54 - 135		11/08/22 00:06	1
4-Bromofluorobenzene (Surr)	100		50 - 131		11/08/22 00:06	1
Dibromofluoromethane (Surr)	97		50 - 141		11/08/22 00:06	1
Toluene-d8 (Surr)	103		52 - 141		11/08/22 00:06	1

Lab Sample ID: LCS 410-314959/4

Matrix: Solid

Analysis Batch: 314959

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	18.57		ug/Kg		93	80 - 120
Ethylbenzene	20.0	19.47		ug/Kg		97	78 - 120
Ethylene Dibromide	20.0	20.52		ug/Kg		103	76 - 120
Ethylene dichloride	20.0	20.30		ug/Kg		102	71 - 128
Toluene	20.0	17.94		ug/Kg		90	80 - 120
Xylene (total)	60.0	55.06		ug/Kg		92	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		54 - 135
4-Bromofluorobenzene (Surr)	104		50 - 131
Dibromofluoromethane (Surr)	99		50 - 141
Toluene-d8 (Surr)	104		52 - 141

Lab Sample ID: LCSD 410-314959/5

Matrix: Solid

Analysis Batch: 314959

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	20.0	18.13	cn	ug/Kg		91	80 - 120	2	30
Ethylbenzene	20.0	18.71	cn	ug/Kg		94	78 - 120	4	30
Ethylene Dibromide	20.0	20.61	cn	ug/Kg		103	76 - 120	0	30
Ethylene dichloride	20.0	20.40	cn	ug/Kg		102	71 - 128	0	30
Toluene	20.0	17.83	cn	ug/Kg		89	80 - 120	1	30
Xylene (total)	60.0	53.83	cn	ug/Kg		90	75 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104	cn	54 - 135
4-Bromofluorobenzene (Surr)	103	cn	50 - 131
Dibromofluoromethane (Surr)	100	cn	50 - 141

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-314959/5

Matrix: Solid

Analysis Batch: 314959

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	102	cn	52 - 141

Lab Sample ID: MB 410-315593/7

Matrix: Solid

Analysis Batch: 315593

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		5.00	0.500	ug/Kg			11/09/22 11:58	1
Ethylbenzene	<0.400		5.00	0.400	ug/Kg			11/09/22 11:58	1
Ethylene Dibromide	<0.400		5.00	0.400	ug/Kg			11/09/22 11:58	1
Ethylene dichloride	<0.600		5.00	0.600	ug/Kg			11/09/22 11:58	1
Toluene	<0.600		5.00	0.600	ug/Kg			11/09/22 11:58	1
Xylene (total)	<1.40		10.0	1.40	ug/Kg			11/09/22 11:58	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		54 - 135		11/09/22 11:58	1
4-Bromofluorobenzene (Surr)	102		50 - 131		11/09/22 11:58	1
Dibromofluoromethane (Surr)	101		50 - 141		11/09/22 11:58	1
Toluene-d8 (Surr)	104		52 - 141		11/09/22 11:58	1

Lab Sample ID: LCS 410-315593/4

Matrix: Solid

Analysis Batch: 315593

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	19.42		ug/Kg		97	80 - 120
Ethylbenzene	20.0	19.26		ug/Kg		96	78 - 120
Ethylene Dibromide	20.0	20.00		ug/Kg		100	76 - 120
Ethylene dichloride	20.0	20.30		ug/Kg		101	71 - 128
Toluene	20.0	18.40		ug/Kg		92	80 - 120
Xylene (total)	60.0	56.08		ug/Kg		93	75 - 120

Surrogate	LCS	LCS	Limits
1,2-Dichloroethane-d4 (Surr)	99		54 - 135
4-Bromofluorobenzene (Surr)	103		50 - 131
Dibromofluoromethane (Surr)	100		50 - 141
Toluene-d8 (Surr)	105		52 - 141

Lab Sample ID: LCSD 410-315593/5

Matrix: Solid

Analysis Batch: 315593

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	20.0	18.00		ug/Kg		90	80 - 120	8	30
Ethylbenzene	20.0	18.37		ug/Kg		92	78 - 120	5	30
Ethylene Dibromide	20.0	19.01		ug/Kg		95	76 - 120	5	30
Ethylene dichloride	20.0	19.18		ug/Kg		96	71 - 128	6	30
Toluene	20.0	17.39		ug/Kg		87	80 - 120	6	30

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-315593/5

Matrix: Solid

Analysis Batch: 315593

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Xylene (total)	60.0	53.34		ug/Kg		89	75 - 120	5	30
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	101		54 - 135						
4-Bromofluorobenzene (Surr)	103		50 - 131						
Dibromofluoromethane (Surr)	99		50 - 141						
Toluene-d8 (Surr)	105		52 - 141						

Lab Sample ID: MB 410-318817/7

Matrix: Solid

Analysis Batch: 318817

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		5.00	0.500	ug/Kg			11/17/22 23:23	1
Ethylbenzene	<0.400		5.00	0.400	ug/Kg			11/17/22 23:23	1
Ethylene Dibromide	<0.400		5.00	0.400	ug/Kg			11/17/22 23:23	1
Ethylene dichloride	<0.600		5.00	0.600	ug/Kg			11/17/22 23:23	1
Toluene	<0.600		5.00	0.600	ug/Kg			11/17/22 23:23	1
Xylene (total)	<1.40		10.0	1.40	ug/Kg			11/17/22 23:23	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		54 - 135					11/17/22 23:23	1
4-Bromofluorobenzene (Surr)	94		50 - 131					11/17/22 23:23	1
Dibromofluoromethane (Surr)	104		50 - 141					11/17/22 23:23	1
Toluene-d8 (Surr)	99		52 - 141					11/17/22 23:23	1

Lab Sample ID: LCS 410-318817/4

Matrix: Solid

Analysis Batch: 318817

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	20.0	17.80		ug/Kg		89	80 - 120		
Ethylbenzene	20.0	18.08		ug/Kg		90	78 - 120		
Ethylene Dibromide	20.0	19.28		ug/Kg		96	76 - 120		
Ethylene dichloride	20.0	19.39		ug/Kg		97	71 - 128		
Toluene	20.0	17.36		ug/Kg		87	80 - 120		
Xylene (total)	60.0	54.12		ug/Kg		90	75 - 120		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	101		54 - 135						
4-Bromofluorobenzene (Surr)	98		50 - 131						
Dibromofluoromethane (Surr)	104		50 - 141						
Toluene-d8 (Surr)	101		52 - 141						

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-318817/5

Matrix: Solid

Analysis Batch: 318817

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	20.0	17.27		ug/Kg		86	80 - 120	3	30
Ethylbenzene	20.0	17.60		ug/Kg		88	78 - 120	3	30
Ethylene Dibromide	20.0	19.46		ug/Kg		97	76 - 120	1	30
Ethylene dichloride	20.0	19.37		ug/Kg		97	71 - 128	0	30
Toluene	20.0	16.88		ug/Kg		84	80 - 120	3	30
Xylene (total)	60.0	52.91		ug/Kg		88	75 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		54 - 135
4-Bromofluorobenzene (Surr)	98		50 - 131
Dibromofluoromethane (Surr)	104		50 - 141
Toluene-d8 (Surr)	101		52 - 141

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-315227/5

Matrix: Solid

Analysis Batch: 315227

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.230		5.00	0.230	mg/Kg	-		11/08/22 13:58	25
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
a.a.a-Trifluorotoluene (fid) (1C)	94		50 - 150					11/08/22 13:58	25

Lab Sample ID: LCS 410-315227/6

Matrix: Solid

Analysis Batch: 315227

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
C7-C12 (1C)			11.0	10.36		mg/Kg		94	55 - 145		
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
a.a.a-Trifluorotoluene (fid) (1C)	94		50 - 150								

Lab Sample ID: LCSD 410-315227/7

Matrix: Solid

Analysis Batch: 315227

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)			11.0	10.66		mg/Kg		97	55 - 145	3	30
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits								
a.a.a-Trifluorotoluene (fid) (1C)	94		50 - 150								

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 410-315620/5

Matrix: Solid

Analysis Batch: 315620

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<0.230		5.00	0.230	mg/Kg			11/09/22 13:29	25
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	93		50 - 150					11/09/22 13:29	25

Lab Sample ID: LCS 410-315620/8

Matrix: Solid

Analysis Batch: 315620

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C7-C12 (1C)	0.440	0.4000		mg/Kg		91	55 - 145		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
a,a,a-Trifluorotoluene (fid) (1C)	84		50 - 150						

Lab Sample ID: LCSD 410-315620/9

Matrix: Solid

Analysis Batch: 315620

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	0.440	0.4027		mg/Kg		92	55 - 145	1	30
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
a,a,a-Trifluorotoluene (fid) (1C)	84		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-315509/1-A

Matrix: Solid

Analysis Batch: 315764

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 315509

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	<4.00		10.0	4.00	mg/Kg		11/09/22 08:17	11/09/22 16:27	1
C24-C40	<10.0		30.0	10.0	mg/Kg		11/09/22 08:17	11/09/22 16:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	103		50 - 150				11/09/22 08:17	11/09/22 16:27	1

Lab Sample ID: LCS 410-315509/2-A

Matrix: Solid

Analysis Batch: 315764

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 315509

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C12-C24	133	103.4		mg/Kg		78	74 - 115		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o- terphenyl (Surr)	106		50 - 150						

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

GC/MS VOA

Prep Batch: 314436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	5035	
410-104315-2	MW-39-10	Total/NA	Solid	5035	
410-104315-3	MW-39-15	Total/NA	Solid	5035	
410-104315-4	MW-41-5	Total/NA	Solid	5035	
410-104315-5	MW-41-10	Total/NA	Solid	5035	
410-104315-6	MW-41-14.5	Total/NA	Solid	5035	
410-104315-7	MW-40-5	Total/NA	Solid	5035	
410-104315-8	MW-40-10	Total/NA	Solid	5035	
410-104315-9	MW-40-13	Total/NA	Solid	5035	

Analysis Batch: 314959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	8260D	314436
410-104315-2	MW-39-10	Total/NA	Solid	8260D	314436
410-104315-3	MW-39-15	Total/NA	Solid	8260D	314436
410-104315-4	MW-41-5	Total/NA	Solid	8260D	314436
410-104315-7	MW-40-5	Total/NA	Solid	8260D	314436
410-104315-8	MW-40-10	Total/NA	Solid	8260D	314436
MB 410-314959/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-314959/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-314959/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

Analysis Batch: 315593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-6	MW-41-14.5	Total/NA	Solid	8260D	314436
410-104315-9	MW-40-13	Total/NA	Solid	8260D	314436
MB 410-315593/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-315593/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-315593/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

Analysis Batch: 318817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-5	MW-41-10	Total/NA	Solid	8260D	314436
MB 410-318817/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-318817/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-318817/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

GC VOA

Prep Batch: 314444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	5035	
410-104315-2	MW-39-10	Total/NA	Solid	5035	
410-104315-3	MW-39-15	Total/NA	Solid	5035	
410-104315-4	MW-41-5	Total/NA	Solid	5035	
410-104315-6	MW-41-14.5	Total/NA	Solid	5035	
410-104315-7	MW-40-5	Total/NA	Solid	5035	
410-104315-8	MW-40-10	Total/NA	Solid	5035	
410-104315-9	MW-40-13	Total/NA	Solid	5035	

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

GC VOA

Prep Batch: 314920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-5	MW-41-10	Total/NA	Solid	5030C	

Analysis Batch: 315227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	NWTPH-Gx	314444
410-104315-2	MW-39-10	Total/NA	Solid	NWTPH-Gx	314444
410-104315-3	MW-39-15	Total/NA	Solid	NWTPH-Gx	314444
410-104315-4	MW-41-5	Total/NA	Solid	NWTPH-Gx	314444
410-104315-6	MW-41-14.5	Total/NA	Solid	NWTPH-Gx	314444
410-104315-7	MW-40-5	Total/NA	Solid	NWTPH-Gx	314444
410-104315-8	MW-40-10	Total/NA	Solid	NWTPH-Gx	314444
410-104315-9	MW-40-13	Total/NA	Solid	NWTPH-Gx	314444
MB 410-315227/5	Method Blank	Total/NA	Solid	NWTPH-Gx	
LCS 410-315227/6	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-315227/7	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

Analysis Batch: 315620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-5	MW-41-10	Total/NA	Solid	NWTPH-Gx	314920
MB 410-315620/5	Method Blank	Total/NA	Solid	NWTPH-Gx	
LCS 410-315620/8	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-315620/9	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

GC Semi VOA

Prep Batch: 315509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	3550C	
410-104315-2	MW-39-10	Total/NA	Solid	3550C	
410-104315-3	MW-39-15	Total/NA	Solid	3550C	
410-104315-4	MW-41-5	Total/NA	Solid	3550C	
410-104315-5	MW-41-10	Total/NA	Solid	3550C	
410-104315-6	MW-41-14.5	Total/NA	Solid	3550C	
410-104315-7	MW-40-5	Total/NA	Solid	3550C	
410-104315-8	MW-40-10	Total/NA	Solid	3550C	
410-104315-9	MW-40-13	Total/NA	Solid	3550C	
MB 410-315509/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 410-315509/2-A	Lab Control Sample	Total/NA	Solid	3550C	

Analysis Batch: 315764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	NWTPH-Dx	315509
410-104315-2	MW-39-10	Total/NA	Solid	NWTPH-Dx	315509
410-104315-3	MW-39-15	Total/NA	Solid	NWTPH-Dx	315509
410-104315-4	MW-41-5	Total/NA	Solid	NWTPH-Dx	315509
410-104315-5	MW-41-10	Total/NA	Solid	NWTPH-Dx	315509
410-104315-6	MW-41-14.5	Total/NA	Solid	NWTPH-Dx	315509
410-104315-7	MW-40-5	Total/NA	Solid	NWTPH-Dx	315509
410-104315-8	MW-40-10	Total/NA	Solid	NWTPH-Dx	315509
410-104315-9	MW-40-13	Total/NA	Solid	NWTPH-Dx	315509
MB 410-315509/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	315509

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

GC Semi VOA (Continued)

Analysis Batch: 315764 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-315509/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	315509

General Chemistry

Analysis Batch: 314015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-2	MW-39-10	Total/NA	Solid	Moisture	
410-104315-7	MW-40-5	Total/NA	Solid	Moisture	
410-104315-8	MW-40-10	Total/NA	Solid	Moisture	
410-104315-9	MW-40-13	Total/NA	Solid	Moisture	

Analysis Batch: 314316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104315-1	MW-39-5	Total/NA	Solid	Moisture	
410-104315-3	MW-39-15	Total/NA	Solid	Moisture	
410-104315-4	MW-41-5	Total/NA	Solid	Moisture	
410-104315-5	MW-41-10	Total/NA	Solid	Moisture	
410-104315-6	MW-41-14.5	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-39-5

Date Collected: 11/01/22 08:15

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314316	USWF	ELLE	11/05/22 19:11

Client Sample ID: MW-39-5

Date Collected: 11/01/22 08:15

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-1

Matrix: Solid

Percent Solids: 88.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	314959	ULCP	ELLE	11/08/22 06:10
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 15:53
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 20:25

Client Sample ID: MW-39-10

Date Collected: 11/01/22 08:30

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314015	UWC1	ELLE	11/04/22 11:35

Client Sample ID: MW-39-10

Date Collected: 11/01/22 08:30

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-2

Matrix: Solid

Percent Solids: 91.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	314959	ULCP	ELLE	11/08/22 04:16
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 16:29
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 17:27

Client Sample ID: MW-39-15

Date Collected: 11/01/22 08:40

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314316	USWF	ELLE	11/05/22 19:11

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-39-15

Lab Sample ID: 410-104315-3

Date Collected: 11/01/22 08:40

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	314959	ULCP	ELLE	11/08/22 06:33
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 17:06
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 17:47

Client Sample ID: MW-41-5

Lab Sample ID: 410-104315-4

Date Collected: 11/01/22 11:30

Matrix: Solid

Date Received: 11/03/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314316	USWF	ELLE	11/05/22 19:11

Client Sample ID: MW-41-5

Lab Sample ID: 410-104315-4

Date Collected: 11/01/22 11:30

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	314959	ULCP	ELLE	11/08/22 04:39
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 17:42
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 18:06

Client Sample ID: MW-41-10

Lab Sample ID: 410-104315-5

Date Collected: 11/01/22 11:40

Matrix: Solid

Date Received: 11/03/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314316	USWF	ELLE	11/05/22 19:11

Client Sample ID: MW-41-10

Lab Sample ID: 410-104315-5

Date Collected: 11/01/22 11:40

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	318817	L8QZ	ELLE	11/18/22 00:11
Total/NA	Prep	5030C			314920	D8NM	ELLE	11/07/22 18:39
Total/NA	Analysis	NWTPH-Gx		25	315620	MXX6	ELLE	11/09/22 21:00
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 18:26

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-41-14.5

Date Collected: 11/01/22 11:50

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-6

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314316	USWF	ELLE	11/05/22 19:11

Client Sample ID: MW-41-14.5

Date Collected: 11/01/22 11:50

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-6

Matrix: Solid

Percent Solids: 91.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	315593	L8QZ	ELLE	11/09/22 13:27
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 18:25
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 18:46

Client Sample ID: MW-40-5

Date Collected: 11/02/22 08:40

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-7

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314015	UWC1	ELLE	11/04/22 11:35

Client Sample ID: MW-40-5

Date Collected: 11/02/22 08:40

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-7

Matrix: Solid

Percent Solids: 95.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	314959	ULCP	ELLE	11/08/22 05:25
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 19:01
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 19:06

Client Sample ID: MW-40-10

Date Collected: 11/02/22 09:00

Date Received: 11/03/22 10:15

Lab Sample ID: 410-104315-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314015	UWC1	ELLE	11/04/22 11:35

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Client Sample ID: MW-40-10

Lab Sample ID: 410-104315-8

Date Collected: 11/02/22 09:00

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 87.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:31
Total/NA	Analysis	8260D		1	314959	ULCP	ELLE	11/08/22 05:47
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 19:38
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 19:45

Client Sample ID: MW-40-13

Lab Sample ID: 410-104315-9

Date Collected: 11/02/22 09:20

Matrix: Solid

Date Received: 11/03/22 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	314015	UWC1	ELLE	11/04/22 11:35

Client Sample ID: MW-40-13

Lab Sample ID: 410-104315-9

Date Collected: 11/02/22 09:20

Matrix: Solid

Date Received: 11/03/22 10:15

Percent Solids: 90.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			314436	D8NM	ELLE	11/06/22 21:32
Total/NA	Analysis	8260D		1	315593	L8QZ	ELLE	11/09/22 13:49
Total/NA	Prep	5035			314444	D8NM	ELLE	11/06/22 22:15
Total/NA	Analysis	NWTPH-Gx		25	315227	NND8	ELLE	11/08/22 20:14
Total/NA	Prep	3550C			315509	A2VL	ELLE	11/09/22 08:17
Total/NA	Analysis	NWTPH-Dx		1	315764	IUSB	ELLE	11/09/22 20:05

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

Method Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
Moisture	Percent Moisture	EPA	ELLE
3550C	Ultrasonic Extraction	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104315-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-104315-1	MW-39-5	Solid	11/01/22 08:15	11/03/22 10:15
410-104315-2	MW-39-10	Solid	11/01/22 08:30	11/03/22 10:15
410-104315-3	MW-39-15	Solid	11/01/22 08:40	11/03/22 10:15
410-104315-4	MW-41-5	Solid	11/01/22 11:30	11/03/22 10:15
410-104315-5	MW-41-10	Solid	11/01/22 11:40	11/03/22 10:15
410-104315-6	MW-41-14.5	Solid	11/01/22 11:50	11/03/22 10:15
410-104315-7	MW-40-5	Solid	11/02/22 08:40	11/03/22 10:15
410-104315-8	MW-40-10	Solid	11/02/22 09:00	11/03/22 10:15
410-104315-9	MW-40-13	Solid	11/02/22 09:20	11/03/22 10:15



Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-104315-1

Login Number: 104315

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Kanagy, Nicholas

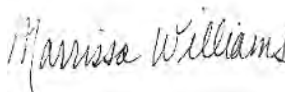
Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $> 6\text{mm}$ in diameter (none, if from WV)?	N/A	

Eurofins Lancaster Laboratories Environment Testing, LLC

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
11/22/2022 9:40:37 AM

Authorized for release by
Marrissa Williams, Project Manager
Marrissa.Williams@et.eurofinsus.com
(717)556-7246

Eurofins Lancaster Laboratories Environment Testing, LLC

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.

- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

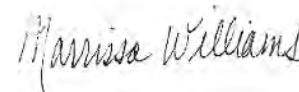
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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ANALYTICAL REPORT

PREPARED FOR

Attn: Don Wyll
Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell Washington 98011

Generated 11/17/2022 3:00:13 PM

JOB DESCRIPTION

Tiki Car Wash

JOB NUMBER

410-104482-1

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Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Job ID: 410-104482-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-104482-1

Receipt

The samples were received on 11/4/2022 1:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3°C

GC/MS VOA

Method 8260D: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-37 (410-104482-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

Method NWTPH_Gx: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-37 (410-104482-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: MW-38

Lab Sample ID: 410-104482-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5200		50.0	15.0	ug/L	50		8260D	Total/NA
Ethylbenzene	2760		50.0	20.0	ug/L	50		8260D	Total/NA
Xylene (total)	15500		50.0	20.0	ug/L	50		8260D	Total/NA
Toluene - DL	16800		500	100	ug/L	500		8260D	Total/NA
C7-C12 (1C)	98800		12500	2150	ug/L	50		NWTPH-Gx	Total/NA
C12-C24	1000		106	47.6	ug/L	1		NWTPH-Dx	Total/NA
C24-C40	127	J	265	106	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-37

Lab Sample ID: 410-104482-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	277	cn	10.0	3.00	ug/L	10		8260D	Total/NA
Toluene	2.41	J cn	10.0	2.00	ug/L	10		8260D	Total/NA
C7-C12 (1C)	636	J cn	2500	430	ug/L	10		NWTPH-Gx	Total/NA
C12-C24	233		101	45.5	ug/L	1		NWTPH-Dx	Total/NA
C24-C40	200	J	253	101	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-41

Lab Sample ID: 410-104482-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.316	J	1.00	0.300	ug/L	1		8260D	Total/NA
C12-C24	214		101	45.5	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-40

Lab Sample ID: 410-104482-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C12-C24	55.6	J	103	46.5	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-39

Lab Sample ID: 410-104482-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C12-C24	52.8	J	109	49.2	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: DUP-1

Lab Sample ID: 410-104482-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C12-C24	57.7	J	108	48.6	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: TB-LB

Lab Sample ID: 410-104482-7

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: MW-38

Lab Sample ID: 410-104482-1

Date Collected: 11/02/22 08:00

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<10.0		50.0	10.0	ug/L			11/15/22 17:33	50
Ethylene dichloride	<15.0		50.0	15.0	ug/L			11/15/22 17:33	50
Benzene	5200		50.0	15.0	ug/L			11/15/22 17:33	50
Ethylbenzene	2760		50.0	20.0	ug/L			11/15/22 17:33	50
Xylene (total)	15500		50.0	20.0	ug/L			11/15/22 17:33	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		80 - 120		11/15/22 17:33	50
4-Bromofluorobenzene (Surr)	95		80 - 120		11/15/22 17:33	50
Dibromofluoromethane (Surr)	110		80 - 120		11/15/22 17:33	50
Toluene-d8 (Surr)	94		80 - 120		11/15/22 17:33	50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	16800		500	100	ug/L			11/15/22 17:55	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 120		11/15/22 17:55	500
4-Bromofluorobenzene (Surr)	97		80 - 120		11/15/22 17:55	500
Dibromofluoromethane (Surr)	114		80 - 120		11/15/22 17:55	500
Toluene-d8 (Surr)	94		80 - 120		11/15/22 17:55	500

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	98800		12500	2150	ug/L			11/11/22 23:30	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150		11/11/22 23:30	50

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	1000		106	47.6	ug/L		11/16/22 08:06	11/16/22 19:05	1
C24-C40	127	J	265	106	ug/L		11/16/22 08:06	11/16/22 19:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	112		50 - 150	11/16/22 08:06	11/16/22 19:05	1

Client Sample ID: MW-37

Lab Sample ID: 410-104482-2

Date Collected: 11/02/22 08:20

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<2.00	cn	10.0	2.00	ug/L			11/15/22 18:17	10
Ethylene dichloride	<3.00	cn	10.0	3.00	ug/L			11/15/22 18:17	10
Benzene	277	cn	10.0	3.00	ug/L			11/15/22 18:17	10
Ethylbenzene	<4.00	cn	10.0	4.00	ug/L			11/15/22 18:17	10
Toluene	2.41	J cn	10.0	2.00	ug/L			11/15/22 18:17	10
Xylene (total)	<4.00	cn	10.0	4.00	ug/L			11/15/22 18:17	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110	cn	80 - 120		11/15/22 18:17	10

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: MW-37

Lab Sample ID: 410-104482-2

Date Collected: 11/02/22 08:20

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96	cn	80 - 120		11/15/22 18:17	10
Dibromofluoromethane (Surr)	113	cn	80 - 120		11/15/22 18:17	10
Toluene-d8 (Surr)	94	cn	80 - 120		11/15/22 18:17	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	636	J cn	2500	430	ug/L			11/11/22 23:05	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	102	cn	50 - 150		11/11/22 23:05	10

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	233		101	45.5	ug/L		11/16/22 08:06	11/16/22 20:13	1
C24-C40	200	J	253	101	ug/L		11/16/22 08:06	11/16/22 20:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	74		50 - 150	11/16/22 08:06	11/16/22 20:13	1

Client Sample ID: MW-41

Lab Sample ID: 410-104482-3

Date Collected: 11/03/22 07:30

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			11/15/22 14:34	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			11/15/22 14:34	1
Benzene	0.316	J	1.00	0.300	ug/L			11/15/22 14:34	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			11/15/22 14:34	1
Toluene	<0.200		1.00	0.200	ug/L			11/15/22 14:34	1
Xylene (total)	<0.400		1.00	0.400	ug/L			11/15/22 14:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		80 - 120		11/15/22 14:34	1
4-Bromofluorobenzene (Surr)	95		80 - 120		11/15/22 14:34	1
Dibromofluoromethane (Surr)	118		80 - 120		11/15/22 14:34	1
Toluene-d8 (Surr)	94		80 - 120		11/15/22 14:34	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<43.0		250	43.0	ug/L			11/09/22 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	98		50 - 150		11/09/22 17:51	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	214		101	45.5	ug/L		11/16/22 08:06	11/16/22 20:58	1
C24-C40	<101		253	101	ug/L		11/16/22 08:06	11/16/22 20:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	79		50 - 150	11/16/22 08:06	11/16/22 20:58	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: MW-40

Lab Sample ID: 410-104482-4

Date Collected: 11/03/22 08:00

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			11/15/22 14:57	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			11/15/22 14:57	1
Benzene	<0.300		1.00	0.300	ug/L			11/15/22 14:57	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			11/15/22 14:57	1
Toluene	<0.200		1.00	0.200	ug/L			11/15/22 14:57	1
Xylene (total)	<0.400		1.00	0.400	ug/L			11/15/22 14:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		80 - 120		11/15/22 14:57	1
4-Bromofluorobenzene (Surr)	96		80 - 120		11/15/22 14:57	1
Dibromofluoromethane (Surr)	116		80 - 120		11/15/22 14:57	1
Toluene-d8 (Surr)	95		80 - 120		11/15/22 14:57	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<43.0		250	43.0	ug/L			11/09/22 18:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150		11/09/22 18:17	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	55.6	J	103	46.5	ug/L		11/16/22 08:06	11/16/22 19:28	1
C24-C40	<103		259	103	ug/L		11/16/22 08:06	11/16/22 19:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	84		50 - 150	11/16/22 08:06	11/16/22 19:28	1

Client Sample ID: MW-39

Lab Sample ID: 410-104482-5

Date Collected: 11/03/22 08:30

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			11/15/22 15:19	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			11/15/22 15:19	1
Benzene	<0.300		1.00	0.300	ug/L			11/15/22 15:19	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			11/15/22 15:19	1
Toluene	<0.200		1.00	0.200	ug/L			11/15/22 15:19	1
Xylene (total)	<0.400		1.00	0.400	ug/L			11/15/22 15:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		80 - 120		11/15/22 15:19	1
4-Bromofluorobenzene (Surr)	96		80 - 120		11/15/22 15:19	1
Dibromofluoromethane (Surr)	114		80 - 120		11/15/22 15:19	1
Toluene-d8 (Surr)	94		80 - 120		11/15/22 15:19	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<43.0		250	43.0	ug/L			11/09/22 18:42	1

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: MW-39

Lab Sample ID: 410-104482-5

Date Collected: 11/03/22 08:30

Matrix: Water

Date Received: 11/04/22 13:20

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150					11/09/22 18:42	1
Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	52.8	J	109	49.2	ug/L		11/16/22 08:06	11/16/22 21:44	1
C24-C40	<109		273	109	ug/L		11/16/22 08:06	11/16/22 21:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	86		50 - 150				11/16/22 08:06	11/16/22 21:44	1

Client Sample ID: DUP-1

Lab Sample ID: 410-104482-6

Date Collected: 11/03/22 08:40

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			11/15/22 15:41	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			11/15/22 15:41	1
Benzene	<0.300		1.00	0.300	ug/L			11/15/22 15:41	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			11/15/22 15:41	1
Toluene	<0.200		1.00	0.200	ug/L			11/15/22 15:41	1
Xylene (total)	<0.400		1.00	0.400	ug/L			11/15/22 15:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		80 - 120					11/15/22 15:41	1
4-Bromofluorobenzene (Surr)	95		80 - 120					11/15/22 15:41	1
Dibromofluoromethane (Surr)	115		80 - 120					11/15/22 15:41	1
Toluene-d8 (Surr)	95		80 - 120					11/15/22 15:41	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	<43.0		250	43.0	ug/L			11/09/22 19:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150					11/09/22 19:07	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	57.7	J	108	48.6	ug/L		11/16/22 08:06	11/16/22 22:06	1
C24-C40	<108		270	108	ug/L		11/16/22 08:06	11/16/22 22:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	90		50 - 150				11/16/22 08:06	11/16/22 22:06	1

Client Sample ID: TB-LB

Lab Sample ID: 410-104482-7

Date Collected: 11/02/22 00:00

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			11/15/22 13:26	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			11/15/22 13:26	1
Benzene	<0.300		1.00	0.300	ug/L			11/15/22 13:26	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: TB-LB

Lab Sample ID: 410-104482-7

Date Collected: 11/02/22 00:00

Matrix: Water

Date Received: 11/04/22 13:20

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.400		1.00	0.400	ug/L			11/15/22 13:26	1
Toluene	<0.200		1.00	0.200	ug/L			11/15/22 13:26	1
Xylene (total)	<0.400		1.00	0.400	ug/L			11/15/22 13:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		80 - 120					11/15/22 13:26	1
4-Bromofluorobenzene (Surr)	96		80 - 120					11/15/22 13:26	1
Dibromofluoromethane (Surr)	113		80 - 120					11/15/22 13:26	1
Toluene-d8 (Surr)	95		80 - 120					11/15/22 13:26	1

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (80-120)	BFB (80-120)	DBFM (80-120)	TOL (80-120)
410-104482-1	MW-38	109	95	110	94
410-104482-1 - DL	MW-38	108	97	114	94
410-104482-2	MW-37	110 cn	96 cn	113 cn	94 cn
410-104482-3	MW-41	114	95	118	94
410-104482-4	MW-40	112	96	116	95
410-104482-5	MW-39	112	96	114	94
410-104482-6	DUP-1	109	95	115	95
410-104482-7	TB-LB	109	96	113	95
LCS 410-317535/5	Lab Control Sample	109	101	109	97
LCSD 410-317535/6	Lab Control Sample Dup	107	99	109	98
MB 410-317535/11	Method Blank	110	99	114	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TFT-F1 (50-150)			
410-104482-1	MW-38	99			
410-104482-2	MW-37	102 cn			
410-104482-3	MW-41	98			
410-104482-4	MW-40	99			
410-104482-5	MW-39	99			
410-104482-6	DUP-1	99			
LCS 410-315712/5	Lab Control Sample	91			
LCS 410-316643/5	Lab Control Sample	92			
LCSD 410-315712/6	Lab Control Sample Dup	89			
LCSD 410-316643/6	Lab Control Sample Dup	91			
MB 410-315712/4	Method Blank	99			
MB 410-316643/4	Method Blank	101			

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		OTP (50-150)			
410-104482-1	MW-38	112			
410-104482-2	MW-37	74			
410-104482-2 DU	MW-37	78			
410-104482-3	MW-41	79			
410-104482-3 DU	MW-41	85			

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Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	OTP (50-150)					
410-104482-4	MW-40	84					
410-104482-5	MW-39	86					
410-104482-6	DUP-1	90					
LCS 410-318051/2-A	Lab Control Sample	77					
LCSD 410-318051/3-A	Lab Control Sample Dup	81					
MB 410-318051/1-A	Method Blank	83					

Surrogate Legend

OTP = o- terphenyl (Surr)

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-317535/11

Matrix: Water

Analysis Batch: 317535

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	<0.200		1.00	0.200	ug/L			11/15/22 12:41	1
Ethylene dichloride	<0.300		1.00	0.300	ug/L			11/15/22 12:41	1
Benzene	<0.300		1.00	0.300	ug/L			11/15/22 12:41	1
Ethylbenzene	<0.400		1.00	0.400	ug/L			11/15/22 12:41	1
Toluene	<0.200		1.00	0.200	ug/L			11/15/22 12:41	1
Xylene (total)	<0.400		1.00	0.400	ug/L			11/15/22 12:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		80 - 120		11/15/22 12:41	1
4-Bromofluorobenzene (Surr)	99		80 - 120		11/15/22 12:41	1
Dibromofluoromethane (Surr)	114		80 - 120		11/15/22 12:41	1
Toluene-d8 (Surr)	96		80 - 120		11/15/22 12:41	1

Lab Sample ID: LCS 410-317535/5

Matrix: Water

Analysis Batch: 317535

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylene Dibromide	20.0	20.22		ug/L		101	77 - 120
Ethylene dichloride	20.0	20.45		ug/L		102	73 - 124
Benzene	20.0	21.22		ug/L		106	80 - 120
Ethylbenzene	20.0	20.07		ug/L		100	80 - 120
Toluene	20.0	19.84		ug/L		99	80 - 120
Xylene (total)	60.0	60.38		ug/L		101	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: LCSD 410-317535/6

Matrix: Water

Analysis Batch: 317535

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ethylene Dibromide	20.0	20.19		ug/L		101	77 - 120	0	30
Ethylene dichloride	20.0	20.89		ug/L		104	73 - 124	2	30
Benzene	20.0	21.32		ug/L		107	80 - 120	0	30
Ethylbenzene	20.0	20.40		ug/L		102	80 - 120	2	30
Toluene	20.0	20.31		ug/L		102	80 - 120	2	30
Xylene (total)	60.0	61.59		ug/L		103	80 - 120	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	109		80 - 120

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 410-317535/6

Matrix: Water

Analysis Batch: 317535

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	98		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-315712/4

Matrix: Water

Analysis Batch: 315712

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB								
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
C7-C12 (1C)	<43.0		250	43.0	ug/L			11/09/22 14:10	1	

Surrogate	MB	MB								
	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150		11/09/22 14:10	1				

Lab Sample ID: LCS 410-315712/5

Matrix: Water

Analysis Batch: 315712

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte			Spike	LCS	LCS				%Rec	
			Added	Result	Qualifier	Unit	D	%Rec	Limits	
C7-C12 (1C)			1100	981.9		ug/L		89	64 - 131	

Surrogate	LCS	LCS	
	%Recovery	Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	91		50 - 150

Lab Sample ID: LCSD 410-315712/6

Matrix: Water

Analysis Batch: 315712

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte			Spike	LCSD	LCSD				%Rec		RPD	
			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
C7-C12 (1C)			1100	976.6		ug/L		89	64 - 131	1	30	

Surrogate	LCSD	LCSD	
	%Recovery	Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	89		50 - 150

Lab Sample ID: MB 410-316643/4

Matrix: Water

Analysis Batch: 316643

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB									
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
C7-C12 (1C)	<43.0		250	43.0	ug/L			11/11/22 12:27	1		

Surrogate	MB	MB									
	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac					
a,a,a-Trifluorotoluene (fid) (1C)	101		50 - 150		11/11/22 12:27	1					

QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 410-316643/5

Matrix: Water

Analysis Batch: 316643

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
C7-C12 (1C)			1100	1003		ug/L		91	64 - 131		
			LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits								
a,a,a-Trifluorotoluene (fid) (1C)	92		50 - 150								

Lab Sample ID: LCSD 410-316643/6

Matrix: Water

Analysis Batch: 316643

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
C7-C12 (1C)			1100	1009		ug/L	-	92	64 - 131	1	30

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-318051/1-A

Matrix: Water

Analysis Batch: 318274

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 318051

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C12-C24	<45.0		100	45.0	ug/L		11/16/22 08:06	11/16/22 16:50	1
C24-C40	<100		250	100	ug/L		11/16/22 08:06	11/16/22 16:50	1
Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac			
	%Recovery	Qualifier							
o- terphenyl (Surr)	83		50 - 150	11/16/22 08:06	11/16/22 16:50	1			

Lab Sample ID: LCS 410-318051/2-A

Matrix: Water

Analysis Batch: 318274

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 318051

				Spike	LCS	LCS				
Analyte			Added	Result	Qualifier	Unit	D	%Rec	%Rec Limits	
C12-C24			600	219.6		ug/L		37	14 - 115	
		LCS	LCS							
Surrogate	%Recovery	Qualifier	Limits							
o- terphenyl (Surr)	77		50 - 150							

Lab Sample ID: LCSD 410-318051/3-A

Matrix: Water

Analysis Batch: 318274

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 318051

Top Level Summary											
Analyte	Spike Added			LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C12-C24	600			248.0		ug/L		41	14 - 115	12	20
Surrogate	LCSD %Recovery		LCSD Qualifier	Limits							
o- terphenyl (Surr)	81			50 - 150							

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QC Sample Results

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 410-104482-2 DU

Matrix: Water

Analysis Batch: 318274

Client Sample ID: MW-37

Prep Type: Total/NA

Prep Batch: 318051

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
C12-C24	233		350.3	F3	ug/L		40	20
C24-C40	200	J	258.5	J F5	ug/L		26	20
	DU	DU						
Surrogate	%Recovery	Qualifier	Limits					
o- terphenyl (Surr)	78		50 - 150					

Lab Sample ID: 410-104482-3 DU

Matrix: Water

Analysis Batch: 318274

Client Sample ID: MW-41

Prep Type: Total/NA

Prep Batch: 318051

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
C12-C24	214		235.6		ug/L		10	20
C24-C40	<101		<101		ug/L		NC	20
	DU	DU						
Surrogate	%Recovery	Qualifier	Limits					
o- terphenyl (Surr)	85		50 - 150					

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

GC/MS VOA

Analysis Batch: 317535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104482-1	MW-38	Total/NA	Water	8260D	
410-104482-1 - DL	MW-38	Total/NA	Water	8260D	
410-104482-2	MW-37	Total/NA	Water	8260D	
410-104482-3	MW-41	Total/NA	Water	8260D	
410-104482-4	MW-40	Total/NA	Water	8260D	
410-104482-5	MW-39	Total/NA	Water	8260D	
410-104482-6	DUP-1	Total/NA	Water	8260D	
410-104482-7	TB-LB	Total/NA	Water	8260D	
MB 410-317535/11	Method Blank	Total/NA	Water	8260D	
LCS 410-317535/5	Lab Control Sample	Total/NA	Water	8260D	
LCSD 410-317535/6	Lab Control Sample Dup	Total/NA	Water	8260D	

GC VOA

Analysis Batch: 315712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104482-3	MW-41	Total/NA	Water	NWTPH-Gx	
410-104482-4	MW-40	Total/NA	Water	NWTPH-Gx	
410-104482-5	MW-39	Total/NA	Water	NWTPH-Gx	
410-104482-6	DUP-1	Total/NA	Water	NWTPH-Gx	
MB 410-315712/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-315712/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-315712/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

Analysis Batch: 316643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104482-1	MW-38	Total/NA	Water	NWTPH-Gx	
410-104482-2	MW-37	Total/NA	Water	NWTPH-Gx	
MB 410-316643/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-316643/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-316643/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 318051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104482-1	MW-38	Total/NA	Water	3510C	
410-104482-2	MW-37	Total/NA	Water	3510C	
410-104482-3	MW-41	Total/NA	Water	3510C	
410-104482-4	MW-40	Total/NA	Water	3510C	
410-104482-5	MW-39	Total/NA	Water	3510C	
410-104482-6	DUP-1	Total/NA	Water	3510C	
MB 410-318051/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-318051/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-318051/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
410-104482-2 DU	MW-37	Total/NA	Water	3510C	
410-104482-3 DU	MW-41	Total/NA	Water	3510C	

Analysis Batch: 318274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104482-1	MW-38	Total/NA	Water	NWTPH-Dx	318051
410-104482-2	MW-37	Total/NA	Water	NWTPH-Dx	318051

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

GC Semi VOA (Continued)

Analysis Batch: 318274 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-104482-3	MW-41	Total/NA	Water	NWTPH-Dx	318051
410-104482-4	MW-40	Total/NA	Water	NWTPH-Dx	318051
410-104482-5	MW-39	Total/NA	Water	NWTPH-Dx	318051
410-104482-6	DUP-1	Total/NA	Water	NWTPH-Dx	318051
MB 410-318051/1-A	Method Blank	Total/NA	Water	NWTPH-Dx	318051
LCS 410-318051/2-A	Lab Control Sample	Total/NA	Water	NWTPH-Dx	318051
LCSD 410-318051/3-A	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	318051
410-104482-2 DU	MW-37	Total/NA	Water	NWTPH-Dx	318051
410-104482-3 DU	MW-41	Total/NA	Water	NWTPH-Dx	318051

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: MW-38

Lab Sample ID: 410-104482-1

Date Collected: 11/02/22 08:00

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	DL	50	317535	USEJ	ELLE	11/15/22 17:33
Total/NA	Analysis	8260D		500	317535	USEJ	ELLE	11/15/22 17:55
Total/NA	Analysis	NWTPH-Gx		50	316643	NND8	ELLE	11/11/22 23:30
Total/NA	Prep	3510C			318051	YDF5	ELLE	11/16/22 08:06
Total/NA	Analysis	NWTPH-Dx		1	318274	IUSB	ELLE	11/16/22 19:05

Client Sample ID: MW-37

Lab Sample ID: 410-104482-2

Date Collected: 11/02/22 08:20

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	317535	USEJ	ELLE	11/15/22 18:17
Total/NA	Analysis	NWTPH-Gx		10	316643	NND8	ELLE	11/11/22 23:05
Total/NA	Prep	3510C			318051	YDF5	ELLE	11/16/22 08:06
Total/NA	Analysis	NWTPH-Dx		1	318274	IUSB	ELLE	11/16/22 20:13

Client Sample ID: MW-41

Lab Sample ID: 410-104482-3

Date Collected: 11/03/22 07:30

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	317535	USEJ	ELLE	11/15/22 14:34
Total/NA	Analysis	NWTPH-Gx		1	315712	NND8	ELLE	11/09/22 17:51
Total/NA	Prep	3510C			318051	YDF5	ELLE	11/16/22 08:06
Total/NA	Analysis	NWTPH-Dx		1	318274	IUSB	ELLE	11/16/22 20:58

Client Sample ID: MW-40

Lab Sample ID: 410-104482-4

Date Collected: 11/03/22 08:00

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	317535	USEJ	ELLE	11/15/22 14:57
Total/NA	Analysis	NWTPH-Gx		1	315712	NND8	ELLE	11/09/22 18:17
Total/NA	Prep	3510C			318051	YDF5	ELLE	11/16/22 08:06
Total/NA	Analysis	NWTPH-Dx		1	318274	IUSB	ELLE	11/16/22 19:28

Client Sample ID: MW-39

Lab Sample ID: 410-104482-5

Date Collected: 11/03/22 08:30

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	317535	USEJ	ELLE	11/15/22 15:19
Total/NA	Analysis	NWTPH-Gx		1	315712	NND8	ELLE	11/09/22 18:42
Total/NA	Prep	3510C			318051	YDF5	ELLE	11/16/22 08:06
Total/NA	Analysis	NWTPH-Dx		1	318274	IUSB	ELLE	11/16/22 21:44

Eurofins Lancaster Laboratories Environment Testing, LLC

Lab Chronicle

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Client Sample ID: DUP-1

Lab Sample ID: 410-104482-6

Date Collected: 11/03/22 08:40

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	317535	USEJ	ELLE	11/15/22 15:41
Total/NA	Analysis	NWTPH-Gx		1	315712	NND8	ELLE	11/09/22 19:07
Total/NA	Prep	3510C			318051	YDF5	ELLE	11/16/22 08:06
Total/NA	Analysis	NWTPH-Dx		1	318274	IUSB	ELLE	11/16/22 22:06

Client Sample ID: TB-LB

Lab Sample ID: 410-104482-7

Date Collected: 11/02/22 00:00

Matrix: Water

Date Received: 11/04/22 13:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	317535	USEJ	ELLE	11/15/22 13:26

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-23

Method Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Leidos Engineering, LLC
Project/Site: Tiki Car Wash

Job ID: 410-104482-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-104482-1	MW-38	Water	11/02/22 08:00	11/04/22 13:20
410-104482-2	MW-37	Water	11/02/22 08:20	11/04/22 13:20
410-104482-3	MW-41	Water	11/03/22 07:30	11/04/22 13:20
410-104482-4	MW-40	Water	11/03/22 08:00	11/04/22 13:20
410-104482-5	MW-39	Water	11/03/22 08:30	11/04/22 13:20
410-104482-6	DUP-1	Water	11/03/22 08:40	11/04/22 13:20
410-104482-7	TB-LB	Water	11/02/22 00:00	11/04/22 13:20

Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-104482-1

Login Number: 104482

List Number: 1

Creator: McBeth, Jessica

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

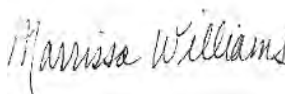
Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	
VOA sample vials do not have headspace $> 6\text{mm}$ in diameter (none, if from WV)?	True	

Eurofins Lancaster Laboratories Environment Testing, LLC

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
11/17/2022 3:00:13 PM

Authorized for release by
Marrissa Williams, Project Manager
Marrissa.Williams@et.eurofinsus.com
(717)556-7246

Eurofins Lancaster Laboratories Environment Testing, LLC

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.

- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

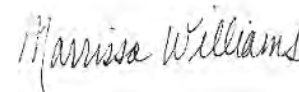
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Analytical Report

3/15/2023

Mr. Don Wyll

Leidos

11824 N Creek Parkway North

Ste 101

Bothell WA 98011

Project Name: Tiki Carwash

Project #: 339701

Workorder #: 2303160A

Dear Mr. Don Wyll

The following report includes the data for the above referenced project for sample(s) received on 3/2/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran

Project Manager

WORK ORDER #: 2303160A

Work Order Summary

CLIENT:	Mr. Don Wyll Leidos 11824 N Creek Parkway North Ste 101 Bothell, WA 98011	BILL TO:	Mr. Don Wyll Leidos 11824 N Creek Parkway North Ste 101 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	PR-36008
FAX:		PROJECT #	339701 Tiki Carwash
DATE RECEIVED:	03/02/2023	CONTACT:	Monica Tran
DATE COMPLETED:	03/15/2023		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	Indoor Ambient	Modified TO-15	4.5 "Hg	2 psi
01B	Indoor Ambient	Modified TO-15	4.5 "Hg	2 psi
02A	Outdoor Ambient	Modified TO-15	3.5 "Hg	2 psi
02B	Outdoor Ambient	Modified TO-15	3.5 "Hg	2 psi
03A	Subslab 2	Modified TO-15	3.0 "Hg	2 psi
03B	Subslab 2	Modified TO-15	3.0 "Hg	2 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:



Technical Director

DATE: 03/15/23

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-017

Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Leidos
Workorder# 2303160A

Two 6 Liter Summa Canister (100% SIM Ambient) and one 6 Liter Summa Canister (SIM Certified) samples were received on March 02, 2023. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	For Full Scan: 30% RSD with 4 compounds allowed out to $< 40\%$ RSD For SIM: Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to $< 40\%$ RSD
Daily Calibration	$\pm 30\%$ Difference	For Full Scan: $\leq 30\%$ Difference with four allowed out up to $\leq 40\%$.; flag and narrate outliers For SIM: Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The samples arrived at the laboratory without a Chain of Custody (COC). The client subsequently provided the COC by e-mail on 3/1/23.

The Chain of Custody was missing method assignment in the 'Requested Analyses' checkboxes for the associated samples. EATL proceeded with the analysis as per the original contract or verbal agreement.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

The hydrocarbon profile present in sample Indoor Ambient did not resemble that of commercial gasoline. Results were calculated using the response factor derived from the gasoline calibration.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: Indoor Ambient

Lab ID#: 2303160A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	13	40	55	160

Client Sample ID: Indoor Ambient

Lab ID#: 2303160A-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.067	0.29	0.21	0.93
Toluene	0.067	1.3	0.25	5.1
Ethyl Benzene	0.027	0.19	0.12	0.82
m,p-Xylene	0.054	0.64	0.23	2.8
o-Xylene	0.027	0.22	0.12	0.96

Client Sample ID: Outdoor Ambient

Lab ID#: 2303160A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	13	16	53	65

Client Sample ID: Outdoor Ambient

Lab ID#: 2303160A-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.064	0.28	0.21	0.91
Toluene	0.064	0.87	0.24	3.3
Ethyl Benzene	0.026	0.12	0.11	0.54
m,p-Xylene	0.052	0.48	0.22	2.1
o-Xylene	0.026	0.16	0.11	0.71

Client Sample ID: Subslab 2

Lab ID#: 2303160A-03A

No Detections Were Found.

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: Subslab 2

Lab ID#: 2303160A-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethyl Benzene	0.025	0.13	0.11	0.57



Air Toxics

Client Sample ID: Indoor Ambient

Lab ID#: 2303160A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031309	Date of Collection:	2/24/23 2:32:00 PM
Dil. Factor:	1.34	Date of Analysis:	3/13/23 01:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	13	40	55	160

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: Indoor Ambient

Lab ID#: 2303160A-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031309sim	Date of Collection:	2/24/23 2:32:00 PM
Dil. Factor:	1.34	Date of Analysis:	3/13/23 01:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.067	0.29	0.21	0.93
Toluene	0.067	1.3	0.25	5.1
Ethyl Benzene	0.027	0.19	0.12	0.82
m,p-Xylene	0.054	0.64	0.23	2.8
o-Xylene	0.027	0.22	0.12	0.96
Naphthalene	0.067	Not Detected	0.35	Not Detected

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: Outdoor Ambient

Lab ID#: 2303160A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031310	Date of Collection:	2/24/23 2:19:00 PM
Dil. Factor:	1.29	Date of Analysis:	3/13/23 02:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	13	16	53	65

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	86	70-130



Air Toxics

Client Sample ID: Outdoor Ambient

Lab ID#: 2303160A-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031310sim	Date of Collection: 2/24/23 2:19:00 PM
Dil. Factor:	1.29	Date of Analysis: 3/13/23 02:52 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.064	0.28	0.21	0.91
Toluene	0.064	0.87	0.24	3.3
Ethyl Benzene	0.026	0.12	0.11	0.54
m,p-Xylene	0.052	0.48	0.22	2.1
o-Xylene	0.026	0.16	0.11	0.71
Naphthalene	0.064	Not Detected	0.34	Not Detected

Container Type: 6 Liter Summa Canister (100% SIM Ambient)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	90	70-130



Air Toxics

Client Sample ID: Subslab 2

Lab ID#: 2303160A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031311	Date of Collection:	2/24/23 8:45:00 AM
Dil. Factor:	1.26	Date of Analysis:	3/13/23 03:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	13	Not Detected	52	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	89	70-130

Client Sample ID: Subslab 2

Lab ID#: 2303160A-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031311sim	Date of Collection: 2/24/23 8:45:00 AM
Dil. Factor:	1.26	Date of Analysis: 3/13/23 03:30 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.063	Not Detected	0.20	Not Detected
Toluene	0.063	Not Detected	0.24	Not Detected
Ethyl Benzene	0.025	0.13	0.11	0.57
m,p-Xylene	0.050	Not Detected	0.22	Not Detected
o-Xylene	0.025	Not Detected	0.11	Not Detected
Naphthalene	0.063	Not Detected	0.33	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2303160A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031307	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/13/23 12:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	84	70-130

Client Sample ID: Lab Blank

Lab ID#: 2303160A-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031307sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/13/23 12:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.050	Not Detected	0.19	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
Naphthalene	0.050	Not Detected	0.26	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	87	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 2303160A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031302	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/13/23 08:41 AM

Compound	%Recovery
----------	-----------

TPH ref. to Gasoline (MW=100)	100
-------------------------------	-----

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	89	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 2303160A-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: 20031302sim

Date of Collection: NA

Dil. Factor: 1.00

Date of Analysis: 3/13/23 08:41 AM

Compound	%Recovery
----------	-----------

Benzene	108
---------	-----

Toluene	106
---------	-----

Ethyl Benzene	112
---------------	-----

m,p-Xylene	109
------------	-----

o-Xylene	105
----------	-----

Naphthalene	108
-------------	-----

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
------------	-----------	---------------

1,2-Dichloroethane-d4	98	70-130
-----------------------	----	--------

Toluene-d8	102	70-130
------------	-----	--------

4-Bromofluorobenzene	89	70-130
----------------------	----	--------



Air Toxics

Client Sample ID: LCS

Lab ID#: 2303160A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031303	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/13/23 09:21 AM

Compound	%Recovery	Method Limits
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	93	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2303160A-06AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031304	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/13/23 09:59 AM

Compound	%Recovery	Method Limits
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	96	70-130

Client Sample ID: LCS

Lab ID#: 2303160A-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	20031303sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 3/13/23 09:21 AM

Compound	%Recovery	Method Limits
Benzene	101	70-130
Toluene	98	70-130
Ethyl Benzene	107	70-130
m,p-Xylene	104	70-130
o-Xylene	100	70-130
Naphthalene	111	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2303160A-06BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: 20031304sim
Dil. Factor: 1.00

Date of Collection: NA
Date of Analysis: 3/13/23 09:59 AM

Compound	%Recovery	Method Limits
Benzene	97	70-130
Toluene	94	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	99	70-130
o-Xylene	95	70-130
Naphthalene	104	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	96	70-130

Remedial Investigation Amendment

Tiki Car Wash

Facility Site ID: 2352

Cleanup Site ID: 5096

Prepared for:

Washington State Department of Ecology

Toxics Cleanup Program
Northwest Regional Office
Shoreline, Washington

January 26, 2024

Project No. M0592.06.001

Prepared by:

Maul Foster & Alongi, Inc.
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Remedial Investigation Amendment

Tiki Car Wash

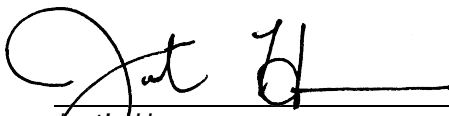
Facility Site ID: 2352

Cleanup Site ID: 5096

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

Maul Foster & Alongi, Inc.

Josh Elliott, PE 01-26-2024
Principal Engineer



Justin Hansen
Project Environmental Scientist

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Appendixes

Appendix A

Data from Existing Reports

Appendix B

Water Field Sampling Data Sheets

Appendix C

Historical Groundwater Contour Maps

Abbreviations

BTEX	benzene, toluene, ethylbenzene, and total xylenes
COC	contaminant of concern
CSM	conceptual site model
DRO	diesel-range organics
DRO+ORO	summation of diesel- and heavy-oil-range organics
EA	EA Engineering, Science, and Technology, Inc.
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management System
ft bgs	feet below ground surface
GRO	gasoline-range organics
GW-VI	groundwater-vapor intrusion
Leidos	Leidos, Inc.
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
ND	non-detect
PCUL	preliminary cleanup level
the Property	11909 NE 8th Street in Bellevue, Washington
RI	remedial investigation
the Site	Tiki Car Wash site (Facility Site ID: 2352, Cleanup Site ID: 5096)
ug/L	micrograms per liter
VI	vapor intrusion
WAC	Washington Administrative Code

1 Introduction

On behalf of the Washington State Department of Ecology (Ecology), Maul Foster & Alongi, Inc. (MFA), prepared this remedial investigation (RI) amendment for the Tiki Car Wash site (Facility Site ID: 2352, Cleanup Site ID: 5096, the Site), located at 11909 NE 8th Street in Bellevue, Washington (the Property) (see Figure 1-1).

1.1 Purpose

In April 2023, Leidos, Inc. (Leidos), prepared an RI to document the nature and extent of petroleum contamination at the Site (Leidos 2023). Ecology identified several data gaps associated with the Site following completion of the RI. This RI amendment was prepared to address data gaps identified by Ecology in the existing RI report including the following:

- Summarize all water quality data collected for the Site (see Section 2.1).
- Include current and historical analytical and field data for all groundwater monitoring wells with data collected after 2006 (see Section 2.2).
- Provide field collected groundwater parameters and results including pH, temperature, turbidity, and oxygen-reduction potential (see Section 2.3).
- Include the evaluation of diesel-range organics (DRO) impacts to groundwater to comply with Washington Administrative Code (WAC) 173-340-350(7)(b) (see Section 3).
- Update tables and figures to clearly indicate the extent of soil contamination above Model Toxics Control Act (MTCA) regulatory cleanup levels on neighboring properties, including but not limited to, the Wilburton Crossing property (see Section 5.2.2).
- Investigate and characterize the source zone of the contaminants to comply with WAC 173-340(7)(c)(iii)(G) and WAC 173-340-200 (see Section 5).
- Address and evaluate DRO as a contaminant of concern (COC) and cleanup levels pursuant to WAC 173-340(7)(a) and (b) (see Section 3).
- Evaluate existing buildings within 30 feet of identified volatile subsurface petroleum contaminants for potential soil vapor exposure pathways and vapor intrusion (VI) (see Section 4).
- Include DRO in the preliminary cleanup levels (PCULs) and resolve historical concentration of sample results within the Site Conceptual Model (see Section 3).
- Included in the final RI amendment will be a publicly accessible link to Ecology's Facility/Site web page and the Site's Environmental Information Management System (EIM) database (see Section 6). The RI amendment will also include an appendix for historical data that are not included in the existing RI. It is comprised of scanned copies of the existing data from existing reports (see Appendix A).

1.2 Site Background

A summary of background information for the Site, including operational and investigative history, geology, and hydrogeology, is provided in the RI report (Leidos 2023). Historical sample locations are provided in Figure 1-2.

2 Summary of Water Quality and Groundwater Data

2.1 Water Quality Data

Table 2-1 summarizes available historical water quality data collected in 2007 and 2008 from select monitoring wells at the Site (EA 2007, 2008). These data are supplemented by groundwater parameters collected by MFA in 2023 (described below in Section 2.3).

2.2 Groundwater Monitoring Data

Tables 2-2 and 2-3 present tabulated groundwater and soil analytical data collected since 2006. MFA obtained the groundwater and soil data from Ecology's EIM database on November 11, 2023. Historical sample locations are shown in Figure 1-2.

2.3 Groundwater Parameters

On October 24, 2023, MFA measured groundwater parameters at five monitoring wells¹ at the Site. Water quality parameters are included in Table 2-1 and water field sampling data sheets from this event are provided in Appendix B.

3 Evaluation of Diesel Impacts at the Site

An evaluation of DRO concentrations in groundwater at the Site was conducted in accordance with WAC 173-340-350(7)(b). WAC 173-340-350(7)(b) lists scoping activities for an RI including assembling and evaluating existing data, developing a preliminary conceptual site model (CSM), identifying likely cleanup levels, identifying likely cleanup action components, considering data

¹ Monitoring wells MW-23, MW-29, MW-30, MW-34, and MW-40 were selected to measure parameters across a range of environmental conditions (e.g., wells with significant contamination versus wells with lower COC concentrations).

necessary to support selection of a cleanup action, and identifying likely applicable state and federal laws. Consistent with Section 7.3 of Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2016), DRO and heavy-oil-range organics (ORO) concentrations were summed (represented as DRO+ORO) for evaluation and screening purposes (see Section 3.3).

Consistent with WAC 173-340-350(7)(b) and to supplement the RI, this section evaluates historical detections of DRO in groundwater at the Site.

3.1 Historical Data Collection

DRO was historically analyzed in soil and groundwater at the Site. Soil samples were collected on the Site between 2006 and 2022 and analyzed for DRO (see Table 2-3). DRO is often non-detect (ND) or detected at relatively low concentrations in Site soils. Groundwater samples were collected on the Site between 2006 and 2022 and analyzed for DRO (see Table 2-2). MFA created a groundwater contour map (see Figure 3-1) with groundwater flow direction using groundwater elevation data provided by Leidos in Figure 8 of the RI report (Leidos 2023).² Historical groundwater elevation contour maps excerpted from previous reports are also provided in Appendix C. According to the RI, groundwater beneath the Site is perched on a dense till layer at approximately 5 feet below ground surface (ft bgs) (Leidos 2023). Groundwater at the Site consistently flows toward the south-southwest.

Historically, DRO was detected in groundwater at every on-Property sample location with DRO+ORO concentrations ranging from 1,400 to 18,000 micrograms per liter (ug/L) (see Table 2-2). The highest DRO+ORO concentrations in groundwater are present in monitoring wells MW-29 and MW-32, located south and north of the pump island, respectively.

3.2 Conceptual Site Model

A CSM was prepared in the RI report (Leidos 2023). Excerpts of the CSM relative to an evaluation of DRO in groundwater at the Site are provided in the sections below.

3.2.1 Current and Potential Land Use

Current and future land use considerations at the Site are consistent with Section 5.2 of the RI report (Leidos 2023).

3.2.2 Exposure Pathways and Potential Receptors

Potential soil and groundwater exposure pathways developed in the RI report apply to DRO concentrations (Leidos 2023).

Given the nature of DRO exceedances, often collocated with gasoline-range organics (GRO) or other COC exceedances, the groundwater exposure pathways and terrestrial ecological evaluation determination are consistent with the evaluation in Section 5.3 of the RI report.

² The date of water level measurement was not provided by Leidos in the RI report.

3.2.3 Cleanup Standards and Points of Compliance

Based on the CSM for the Site, the PCULs proposed for DRO+ORO in soil and groundwater are MTCA Method A cleanup levels.

The point of compliance for soil at the Site is based on the potential for direct contact by both humans and ecological receptors (surface to 15 feet bgs).

As described in the RI report, the local perched aquifer is not currently used for drinking water and is not expected to be used for future domestic water supply. However, the point of compliance for groundwater cleanup levels is based on the protection of groundwater as drinking water.

3.3 DRO+ORO Data Screening

The lowest on-Property DRO+ORO detection in groundwater (1,400 ug/L) exceeds the PCUL (500 ug/L) by a factor of two, though the magnitude of DRO+ORO exceedances are less than GRO exceedances. DRO+ORO exceedances are shown in Figure 3-2.

DRO was similarly detected in groundwater at off-Property sample locations, though generally at lower concentrations than on-Property sample locations (see Table 2-2). DRO+ORO is below detection limits or detected at concentrations below the PCUL (500 ug/L) in groundwater from all the monitoring wells except for three:

- **MW-2** (located on the Infinity of Bellevue property to the west of the Property): DRO+ORO was detected above the PCUL at a concentration of 760 ug/L.
- **MW-6** (also located on the Infinity of Bellevue property): DRO+ORO was detected at concentrations up to 2,900 ug/L.
- **MW-38** (located south of the Property in the parking lot of the Willburton Crossing property): DRO+ORO was detected at a concentration of 1,100 ug/L.

The highest DRO+ORO concentration in off-Property groundwater (170,000 ug/L) was measured in a sample collected from a temporary well at location GP9, also on the Infinity of Bellevue property near MW-2 and MW-6. Though detected above the PCUL at MW-38, DRO+ORO was below detection limits in other groundwater samples collected from the Willburton Crossing parking lot (MW-20, MW-23, and MW-36). Finally, aside from temporary well GP-7 (2,200 ug/L), DRO+ORO was below detection limits or detected at concentrations below the PCUL in groundwater samples from the Bartell Drugs property.

3.4 Contaminant of Concern Evaluation

In the RI report (Leidos 2023), COCs proposed for the Site include GRO and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Though not present in soil at concentrations exceeding soil PCULs, DRO+ORO is present in on-Property and off-Property groundwater at concentrations exceeding groundwater PCULs. Additionally, use of DRO is associated with historical operations at the Property, including a diesel underground storage tank installed in 1971. Therefore, DRO and ORO are also included as COCs for the Site with a proposed DRO+ORO PCUL of 500 ug/L (i.e., the MTCA Method A PCUL).

4 Vapor Intrusion Evaluation

Consistent with Ecology's *Guidance for Evaluating Vapor Intrusion in Washington State, Investigation and Remedial Action* (2022), MFA evaluated petroleum and BTEX concentrations from sample locations within 30 feet of enclosed buildings and structures. Given the limited historical soil vapor data available at the Site, MFA first screened groundwater concentrations against MTCA Method B groundwater-vapor intrusion (GW-VI) cancer and noncancer screening levels. A summary of previous sub-slab sampling at the Site by Leidos is also provided below.

Five historical sample locations (MW-31, MW-40, HC-1, HC-4, and SB-3) are within 30 feet of an enclosed building or structure. Of these, two locations, MW-31 (near the on-Property convenience store) and MW-40 (on the Willburton Crossing property) have historical groundwater data. Sample locations are shown in Figure 1-2. Screening results for GRO, DRO,³ ORO, and BTEX from MW-31 and MW-40 are presented in Table 4-1.

At MW-31, near the on-Property convenience store, BTEX concentrations in 2008 groundwater samples exceed the MTCA Method B GW-VI cancer⁴ and noncancer screening levels. In 2022 groundwater samples, benzene exceeds the MTCA Method B GW-VI cancer and noncancer screening levels, xylenes exceed the noncancer screening levels, and ethylbenzene and toluene were detected below the noncancer screening levels. However, as described below, the potential VI risk to convenience store occupants is minimal. At MW-40, BTEX concentrations in groundwater collected in 2022 are below MTCA Method B GW-VI cancer and noncancer screening levels.

Further investigation of VI potential to the on-Property convenience store is described by Leidos in the RI report. Sub-slab vapor sampling conducted in February 2023 showed that COC concentrations were below MTCA Method B soil gas screening levels. During this sampling event, GRO and BTEX concentrations were similar between indoor ambient and outdoor ambient air samples collected at the convenience store, and ambient air concentrations were relatively higher than the concentrations identified below the slab of the building. This suggests that sub-slab contamination is not strongly affecting ambient air quality near the convenience store.

MFA also reviewed petroleum detections in soil near existing buildings to evaluate whether additional soil vapor samples may need to be collected to close data gaps and assess VI potential at buildings on the Site. For example, location SB-3 is within 30 feet of the Bartell Drugs property located east of the Site. While groundwater data are not available from SB-3 to screen against MTCA Method B GW-VI cancer and noncancer screening levels, soil data are available. Petroleum constituents are largely not detected above reporting limits or detected at concentrations below MTCA Method A PCULs at three depth intervals (5.5 to 6 ft bgs, 6.5 to 7 ft bgs, and 9.5 to 10 ft bgs), suggesting qualitatively minimal VI potential at the Bartell Drugs property.

Petroleum detections in soil are similar on the Willburton Crossing property. Near both the Uwajimaya Bellevue and Total Wine and More (southwest of the Site) petroleum constituents were largely below detection limits or detected at concentrations below MTCA Method A PCULs in soils from GP-8 (9 to 10 ft bgs), GP-12 (8 ft bgs), and MW-36 (15 ft bgs). Benzene is present at GP-8, but

³ Though GRO and DRO were detected in groundwater from MW-31 and MW-40, MTCA Method B GW-VI cancer and noncancer screening levels do not exist for GRO and DRO.

⁴ Benzene is the only BTEX constituent that has a MTCA Method B GW-VI cancer screening level.

the depth of contamination (9 to 10 ft bgs), magnitude of exceedance (one order of magnitude above the PCUL), and distance from the nearest enclosed building (approximately 80 feet) suggest the potential VI risk to building occupants is low.

Collectively, quantitative and qualitative assessment of the available data suggests that VI risks to building occupants both on-Property and off-Property is minimal and additional field investigation to close VI data gaps is not required.

5 Source Zone of Contaminants

WAC 173-340-350(7)(c)(iii)(G) outlines hazardous substance sources, requiring a description of the sources and sufficient sampling to define location, quantity, extent, concentration, and sources of chemical releases. Section 4 of the RI report (Leidos 2023) and this RI amendment describe the nature and extent of COC impacts to soil, groundwater, and soil vapor at the Site. The subsections below supplement this information to address the requirements in WAC 173-340-350(7)(c)(iii)(G).

5.1 Contaminants of Concern

Following the evaluation in Sections 3 and 4 above, Site COCs have been updated in the table below.

Table 5-1. Updated Contaminants of Concern

COC	Groundwater	Soil	Soil Vapor
Benzene	X	X	X
Toluene	X	X	X
Ethylbenzene	X	X	X
Total xylenes	X	X	X
GRO	X	X	X
DRO	X	--	--
ORO	X	--	--

Notes

-- = media not impacted by COC.

COC = contaminant of concern.

DRO = diesel-range organics.

GRO = gasoline-range organics.

ORO = heavy-oil-range organics.

X = media impacted by COC.

5.2 Soil

Soil data are provided in Table 2-3 and soil COC exceedances are shown in Figure 5-1.

5.2.1 On-Property Sample Locations

In on-Property locations, GRO and benzene exceed PCULs at the highest frequency. GRO exceeds the PCUL in subsurface soil samples collected around the pump island from borings SB-2, GP-3, and

GP-4, at depths between 7 and 9 ft bgs. GRO also exceeds the PCUL in soil from MW-32 at a depth of 15 ft bgs near the pump island.

GRO, benzene, ethylbenzene, and xylenes exceed applicable PCULs from location GP-1 on the northern portion of the Site near NE 8th Street at a depth of 6 to 7 ft bgs. However, all COCs are below PCULs from other sample locations on the northern portion of the Site including GP-2, SB-1, SB-3, and MW-34.

On the southern portion of the Property, GRO exceeds the PCUL south of the store at locations GP-5 and SB-5 (7 to 7.5 ft bgs) and MW-30 (15 ft bgs). BTEX exceeds applicable PCULs at locations GP-5 (7 ft bgs) and SB-5 (7 to 7.5 ft bgs and 13 to 13.5 ft bgs). Further, benzene exceeds the PCUL at locations MW-30, MW-31, and MW-35 (all 15 ft bgs).

5.2.2 Off-Property Sample Locations

The following COCs exceed PCULs at off-Property locations:

- **Infinity of Bellevue:** GRO and BTEX exceed PCULs in soil samples collected from GP-6 (5 ft bgs) and GP-9 (4 ft bgs).
- **Willburton Crossing:** GRO exceeds the PCUL in soil samples from GP-11 (3 ft bgs) and MW-38 (6.5 to 7 ft bgs), both in the parking lot. Benzene exceeds the PCUL in a soil sample collected from GP-8 (9 to 10 ft bgs), GP-10 (7 ft bgs), GP-11 (3 ft bgs), and MW-38 (14 to 14.5 ft bgs).

In general, off-Property soil contamination is less prevalent than on-Property contamination. No COCs exceed soil PCULs in samples collected from the Bartell Drugs property located east of the Site. Limited exceedances at GP-8 (benzene at 9 to 10 ft bgs) and GP-12 (no COCs at 8 ft bgs) suggest that soil contamination west of the Property is reasonably bound by the contamination observed at GP-6 and GP-9 on the Infinity of Bellevue property. Soil contamination south of the Property is generally bound by MW-41, where all COCs are ND or detected well below PCULs from three depth intervals (5 to 5.5 ft bgs, 10 to 10.5 ft bgs, and 14.5 to 15 ft bgs). Finally, soil contamination southwest of the Property is generally bound, with GRO (GP-11) and benzene (GP-8, GP-10, and GP-11) exceeding their respective PCULs. Though soil data are limited or unavailable at other southwest investigation locations, no COCs exceed groundwater PCULs at MW-20, MW-23, or MW-36, suggesting that the lateral extent of COC impacts beyond GP-8, GP-10, and GP-11 are limited.

Additional assessment of soil conditions off-Property may be evaluated during engineering design phases.

5.3 Groundwater

Groundwater data are provided in Table 2-2 and DRO+ORO groundwater PCUL exceedances are shown in Figure 3-2.

5.3.1 On-Property Sample Locations

In every on-Property sample location, GRO, DRO+ORO, and benzene were detected above their applicable PCULs in groundwater. Ethylbenzene, toluene, and xylenes were also detected above their respective PCULs in groundwater at most on-Property sample locations.

5.3.2 Off-Property Sample Locations

Like soil, groundwater impacts are observed west of the Property on the neighboring Infinity of Bellevue property. GRO, DRO+ORO, and BTEX constituents exceed applicable PCULs in groundwater

from temporary wells GP-6 and GP-9 as well as in groundwater from MW-2 and MW-6. Further west, GRO, DRO+ORO, and benzene exceed PCULs in groundwater at temporary well GP-8. However, all COCs are below detection limits or reporting limits below PCULs in groundwater from temporary well GP-12 and in groundwater from monitoring well MW-20, bounding the lateral extent of impacts to the west.

Southwest of the Property, GRO, DRO+ORO, and benzene exceed PCULs in groundwater from temporary well GP-10. All COCs are ND at method detection or reporting limits below PCULs in groundwater from MW-23 and MW-36, bounding the extent of groundwater impacts to the southwest of the Site. South of the Site, GRO, DRO, and BTEX were detected above PCULs in groundwater from MW-38, though all COCs were below detection limits or detected at concentrations below PCULs in groundwater from MW-41.

East of the Site, COC impacts to groundwater are limited. GRO and benzene were detected above PCULs in groundwater collected from HC-7 and HC-9 (November 2012) and MW-37 (May 2022). However, GRO was detected below its PCUL at MW-37 in the two subsequent monitoring events. DRO+ORO was detected at a concentration above its PCUL in groundwater from temporary well GP-7 (April 2006). All COCs were below detection limits or detected at concentrations below PCULs in groundwater from MW-39.

Additional assessment and sample collection may be evaluated during engineering design phases.

5.4 Soil Vapor

As described in detail in Section 4, quantitative and qualitative lines of evidence suggest that VI risk to building occupants at the Site is minimal.

6 Additional Site Information

Additional documentation regarding previous investigations, formal orders, and technical documents can be accessed at the following locations.

Ecology's Facility/Site webpage for the Site: <https://apps.ecology.wa.gov/cleanupsearch/site/5096>

Ecology's EIM database:

<https://apps.ecology.wa.gov/eim/search/Eim/EIMSearchResults.aspx?ResultType=EIMTabs&StudyEcologyCleanupSiteID=5096>

References

- EA. 2007. Jil Frain, PE, EA Engineering, Science, and Technology, Inc. *Tiki Car Wash, Summary of Monitoring Well Installation and Development*. Letter to Roger Nye, Washington State Department of Ecology, Toxics Cleanup Program. April 19.
- EA. 2008. *Enhanced Fluid Recovery Pilot Test Report, Tiki Car Wash, Washington State Department of Ecology Consent Decree #93-2-077106*. Prepared for the Washington State Department of Ecology. EA Engineering, Science, and Technology, Inc. November.
- Ecology. 2016. *Guidance for Remediation of Petroleum Contaminated Sites*. Toxics Cleanup Program, Publication No. 10-09-057, Revised. June.
- Ecology. 2022. *Guidance for Evaluating Vapor Intrusion in Washington State, Investigation and Remedial Action*. Toxics Cleanup Program, Washington State Department of Ecology: Olympia, Washington. March.
- Leidos. 2023. *Remedial Investigation Report Final, Tiki Car Wash, Bellevue, Washington*. Prepared for the Washington State Department of Ecology, Toxics Cleanup Program, Northwest Regional Office, Shoreline, Washington. Leidos, Inc.: Bothell, WA. April.

Limitations

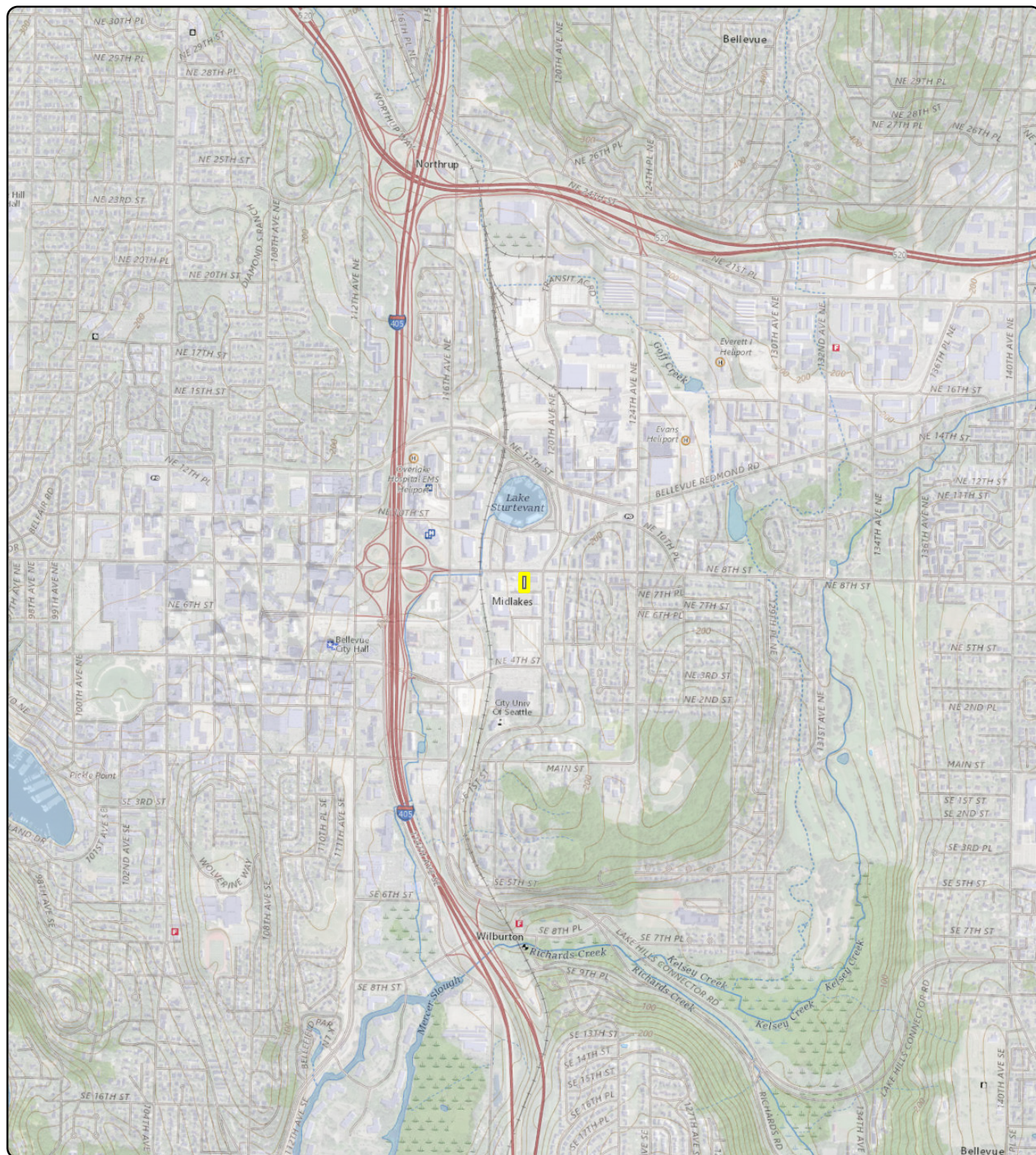
The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for 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.

Figures



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Notes

U.S. Geological Survey 7.5-minute topographic
quadrangle (2020): Mercer Island.
Township 25 north, range 5 east, section 33.

Data Source

Boundary for parcel 3325059180 obtained from King County.



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Legend



Property Boundary

Figure 1-1 Vicinity Map

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA

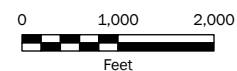


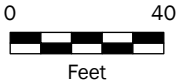


Figure 1-2
Sample Locations

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA

Legend

- Monitoring Well
- Soil Boring
- Subslab Vapor
- Property Boundary
- Parcel



Data Sources
Aerial photograph obtained from Microsoft Bing; parcel data obtained from King County; sample locations from Leidos (2023).

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Path: X:\0_MFA_P\Projects\M0592\06\001\Pro\M0592_06_001_001.aprx [Fig 3-1 Groundwater Contour Map]
Print Date: 12/14/2023
Reviewed By: Hansen
Produced By: Jellstrom
Project: M0592_06_001



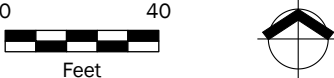
Figure 3-1
Groundwater Contour Map

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA 98005

Legend

- Monitoring Well (Groundwater Elevation)
- Groundwater Elevation Contour (1 foot)
- Groundwater Flow Direction
- Property Boundary
- Parcel

Notes
Groundwater elevations taken from the remedial investigation report (Leidos 2023).
Potentiometric surface generated using ArcGIS Spatial Analyst natural neighbor interpolation method with minor manual correction.
NM = groundwater elevation not measured.



Data Sources
Aerial photograph obtained from Microsoft Bing; parcel data obtained from King County; sample locations from Leidos (2023).

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Figure 3-2
DRO+ORO Exceedances
in Groundwater

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA

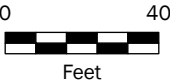
Legend

- Monitoring Well
- Soil Boring/
Temporary Well
- Property Boundary
- Parcel

Exceedance Key

- DRO+ORO
Exceedance

Notes
Locations without DRO or ORO groundwater data are represented as semi-transparent.
Locations with DRO+ORO concentrations in groundwater above the MTCA Method A PCUL are shown with a halo around the sample location.
DRO = diesel-range organics.
DRO+ORO = summation of diesel- and heavy-oil-range organics.
ORO = heavy-oil-range organics.
MTCA = Model Toxics Control Act.
PCUL = preliminary cleanup level.



Data Sources
Aerial photograph obtained from Microsoft Bing; parcel data obtained from King County; sample locations from Leidos (2023).

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Path: X:\0_MFA Projects\MO592\06-001\Pro\MO592_06-001_001.aprx Fig 5-1 Soil Exceedances
Project: MO592_06-001
Produced By: jstrott
Reviewed By: thansen
Print Date: 12/15/2023



Figure 5-1 Soil Exceedances

Tiki Car Wash
11909 NE 8th Street
Bellevue, WA

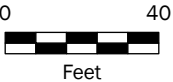
Legend

- Monitoring Well
- Soil Boring/
Temporary Well
- Property Boundary
- Parcel

Exceedance Key

- GRO Exceedance
- BTEX Exceedance

Notes
Locations without soil data are represented as semi-transparent.
Locations with GRO and or BTEX concentrations above the MTCA Method A PCUL are shown with a halo around each location.
At least one BTEX constituent chemical exceeds the PCUL at locations denoted as a BTEX exceedance.
BTEX = benzene, ethylbenzene, toluene, and xylenes.
GRO = gasoline range organics.
MTCA = Model Toxics Control Act.
PCUL = preliminary cleanup level.



Data Sources
Aerial photograph obtained from Microsoft Bing; parcel data obtained from King County; sample locations from Leidos (2023).

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Tables



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Table 2-1
Water Quality Field Parameters
Tiki Car Wash
Bellevue, Washington



Well	Date	pH (SU)	Conductivity ^(a) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
MW-2	06/07/1993	6.5	--	--	--	11.3	--
	05/23/1996	6.80	--	--	--	17.8	--
MW-3	06/07/1993	6.0	--	--	--	13.9	--
	05/23/1996	5.39	--	--	--	17.8	--
MW-5	06/07/1993	6.9	--	--	--	10.9	--
	05/23/1996	7.00	--	--	--	17.8	--
MW-6	06/07/1993	6.0	--	--	--	10.7	--
	05/23/1996	6.08	--	--	--	15.6	--
MW-7	06/07/1993	6.5	--	--	--	10.9	--
	05/23/1996	6.53	--	--	--	17.9	--
MW-20	06/07/1993	6.3	--	--	--	12.6	--
	05/23/1996	6.50	--	--	--	17.8	--
MW-21	06/07/1993	6.5	--	--	--	11.2	--
MW-23	06/07/1993	7.0	--	--	--	13.4	--
	05/23/1996	7.10	--	--	--	17.8	--
	10/24/2023	6.74	0.542	--	2.84	19.7	50
MW-29	06/07/1993	6.5	--	--	--	11.3	--
	05/23/1996	5.54	--	--	--	18.6	--
	03/18/2008	5.30	0.532	7	0.09	11.6	--
	04/09/2008	3.74	0.339	51	0.08	11.8	--
	04/29/2008	5.94	0.456	28	0.07	12.7	--
	10/08/2008	5.67	0.646	16	0.01	19.1	-35
	10/24/2023	6.06	0.335	--	0.52	18.6	24.3

Table 2-1
Water Quality Field Parameters
Tiki Car Wash
Bellevue, Washington



Well	Date	pH (SU)	Conductivity ^(a) (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)
MW-30	03/15/2007	6.16	0.734	1	0.14	11.1	-74
	03/18/2008	5.50	0.644	0	0.13	11.2	--
	04/29/2008	5.71	0.645	0	0.12	12.0	--
	10/08/2008	6.02	0.632	2	0.00	18.7	-67
	10/24/2023	6.33	0.395	--	0.53	18.9	-7.60
MW-31	06/07/1993	6.0	--	--	--	17.3	--
	03/18/2008	5.56	0.581	1	2.70	12.0	--
	04/29/2008	5.97	0.576	28	0.10	12.8	--
MW-32	03/18/2008	5.64	1.090	0	0.44	11.2	--
	04/09/2008	4.17	0.788	36	4.77	11.2	--
	04/29/2008	5.98	0.943	36	7.83	11.7	--
MW-33	06/07/1993	6.0	--	--	--	13.4	--
	03/18/2008	5.50	0.761	67	3.32	11.3	--
	04/29/2008	5.54	0.547	43	6.17	12.1	--
	10/08/2008	6.26	0.731	9	8.72	16.7	-56
MW-34	03/18/2008	5.19	0.736	4	0.08	12.1	--
	04/29/2008	5.21	0.726	2	0.11	12.7	--
	10/24/2023	6.27	0.420	--	0.51	18.7	0.8
MW-35	03/15/2007	6.40	0.677	11	0.11	11.0	58
	03/18/2008	5.49	0.649	1	0.11	11.4	--
	04/29/2008	5.42	0.576	1	0.13	11.8	--
	10/08/2008	5.95	0.555	2	0.00	18.3	-42
MW-36	03/15/2007	6.29	0.550	0	2.60	11.1	151
MW-40	10/24/2023	6.35	0.494	--	1.40	16.9	37.8

Table 2-1
Water Quality Field Parameters
Tiki Car Wash
Bellevue, Washington



Notes

Historical groundwater quality field parameters from 1993 draft interim action report⁽¹⁾, 1993 groundwater report⁽²⁾, 2007 monitoring well development⁽³⁾, and 2008 enhanced fluid recovery pilot test⁽⁴⁾. 2023 groundwater quality field parameters were collected by MFA.

1993 and 1996 conductivity measurements were not converted to mS/cm; results are shown in original units provided by Enviro, Inc.

-- = no historical data available.

°C = degrees Celsius.

MFA = Maul Foster & Alongi, Inc.

mg/L = milligrams per liter.

mS/cm = millisiemens per centimeter.

mV = millivolts.

NTU = nephelometric turbidity units.

ORP = oxidation-reduction potential.

SU = standard units.

uohms = microohms.

uS = microsiemens.

^(a)1993 and 1996 conductivity measurements from Enviro, Inc.⁽¹⁾⁽²⁾ were dimensionally inconsistent. These data were not included since MFA was unable to verify the correct units.

References

⁽¹⁾Enviro. 1993. *Draft Interim Action Report: Groundwater and Subsurface Soil Investigation at the Tiki Car Wash, Bellevue, Washington*. Prepared for Washington State Department of Ecology. Enviro, Inc. July 2.

⁽²⁾Enviro. 1996. *Report of May 1996 Groundwater Sampling and Analysis*. Prepared for Washington State Department of Ecology. Enviro, Inc. June 6.

⁽³⁾EA. 2007. Jil Frain, PE, EA Engineering, Science, and Technology, Inc. *Tiki Car Wash, Summary of Monitoring Well Installation and Development*. Letter to Roger Nye, Washington State Department of Ecology, Toxics Cleanup Program. April 19.

⁽⁴⁾EA. 2008. *Enhanced Fluid Recovery Pilot Test Report, Tiki Car Wash*. Prepared for Washington State Department of Ecology. EA Engineering, Science, and Technology, Inc. November.

Table 2-2
Summary of Historical Groundwater Analytical Results
Tiki Car Wash
Bellevue, Washington



Location	Sample Name	Collection Date	Sample Type	Total Metals (ug/L)	Total Petroleum Hydrocarbons (ug/L)				Volatile Organic Compounds (ug/L)						
Analyte:				Lead	Gasoline-range hydrocarbons	Diesel-range hydrocarbons	Oil-range hydrocarbons	Diesel+Oil ^(a)	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	Benzene	Ethylbenzene	Methyl tert-butyl ether	Toluene	Xylenes (total)
MTCA Method A ⁽¹⁾ :				15	800 ^(b)	500	500	500	0.01	5	5	700	20	1,000	1,000
On-Property															
GP-1	TK-GP1-GW14	04/24/2006	N	--	10,200	1,040	562	1,600	--	--	156	529	--	39.9	1,540
GP-3	TK-GP3-GW10	04/24/2006	N	--	66,700	1,130	472 U	1,400	--	--	2,310	2,440	--	3,260	11,100
GP-4	TK-GP4-GW13	04/24/2006	N	--	141,000	7,510	2,500 U	8,800	--	--	13,200	2,340	--	20,900	12,700
GP-5	TK-GP5-GW12	04/24/2006	N	--	107,000	1,360	618	2,000	--	--	13,500	2,160	--	10,800	11,100
MW-29	TK-MW29	02/13/2006	N	22.7	145,000	2,630	1,660	4,300	--	--	8,750	3,450	--	17,900	20,400
	TK-MW29	06/06/2006	N	39.6	143,000	7,370	10,900	18,000	--	--	11,300	3,690	--	20,600	22,300
	TK-MW29	09/06/2006	N	49.4	121,000	2,680	4,850 U	5,100	--	--	9,030	2,650	--	15,200	17,100
	TK-MW29	03/18/2008	N	--	130,000	4,930	3,620	8,600	--	--	9,780	3,520	--	16,400	22,100
	TK-MW29	04/09/2008	N	--	99,700	5,190	759	5,900	--	--	4,450	3,000	--	9,090	19,500
	TK-MW29	04/29/2008	N	--	111,000	5,220	2,360 U	6,400	--	--	5,810	3,230	--	10,600	20,100
	TK-MW29	10/08/2008	N	--	117,000	3,740	4,720 U	6,100	--	--	12,800	3,530	--	14,600	21,000
	MW-29-021622	02/16/2022	N	--	100,000	--	--	--	--	--	6,800	3,000	20 U	9,900	15,000
MW-29-050522	05/05/2022	N	--	93,500	--	--	--	1 U	1.5 U	6,210	3,240	--	9,050	17,100	
MW-30	TK-MW30	03/15/2007	N	--	90,600	3,160	716	3,900	--	--	14,000	2,500	--	11,700	12,100
	TK-MW30D	03/15/2007	FD	--	104,000	3,360	956	4,300	--	--	13,600	2,430	--	10,500	11,200
	TK-MW30	03/18/2008	N	--	73,700	2,160	603	2,800	--	--	11,000	2,460	--	4,820	8,060
	TK-MW30	04/29/2008	N	--	65,100	2,600	481 U	2,800	--	--	8,240	2,370	--	4,210	7,930
	TK-MW30	10/08/2008	N	--	89,400	2,980	1,850	4,800	--	--	18,700	2,770	--	9,300	12,400
	MW-30-021622	02/16/2022	N	--	6,800	--	--	--	--	--	1,200	580	2 U	280	770
	MW-30-050522	05/05/2022	N	--	4,080	--	--	--	0.2 U	0.3 U	519	521	--	22.9	132
MW-31	TK-MW31	03/18/2008	N	--	134,000	2,210	472 U	2,400	--	--	5,030	2,810	--	21,800	16,100
	TK-MW31	04/29/2008	N	--	150,000	3,780	476 U	4,000	--	--	5,080	3,580	--	25,000	22,600
	MW-31-021622	02/16/2022	N	--	81,000	--	--	--	--	--	2,600	1,800	5 U	2,200	14,000
	MW-31-050522	05/05/2022	N	--	58,100	--	--	--	0.4 U	0.6 U	2,580	1,700	--	1,260	10,700
MW-32	TK-MW32	03/18/2008	N	--	198,000	5,490	895	6,400	--	--	22,100	3,140	--	34,600	17,200
	TK-MW32	04/09/2008	N	--	174,000	6,570	900	7,500	--	--	21,300	2,950	--	32,200	17,300
	TK-MW32	04/29/2008	N	--	167,000	6,500	2,380 U	7,700	--	--	18,400	2,490	--	29,700	15,400
	TK-MW32	04/29/2008	FD	--	172,000	5,970	2,380 U	7,200	--	--	19,600	2,620	--	28,400	16,500
	MW-32-021622	02/16/2022	N	--	38,000	--	--	--	--	--	3,200	340	10 U	3,100	8,800
	MW-32-050522	05/05/2022	N	--	52,500	--	--	--	1 U	1.5 U	3,870	512	--	4,050	10,300

Table 2-2
Summary of Historical Groundwater Analytical Results
Tiki Car Wash
Bellevue, Washington



Location	Sample Name	Collection Date	Sample Type	Total Metals (ug/L)	Total Petroleum Hydrocarbons (ug/L)				Volatile Organic Compounds (ug/L)						
Analyte:				Lead	Gasoline-range hydrocarbons	Diesel-range hydrocarbons	Oil-range hydrocarbons	Diesel+Oil ^(a)	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	Benzene	Ethylbenzene	Methyl tert-butyl ether	Toluene	Xylenes (total)
MTCA Method A ⁽¹⁾ :				15	800 ^(b)	500	500	500	0.01	5	5	700	20	1,000	1,000
MW-33	TK-MW33	03/18/2008	N	--	116,000	3,930	542	4,500	--	--	11,200	2,760	--	18,900	15,100
	TK-MW33	03/18/2008	FD	--	112,000	4,190	518	4,700	--	--	11,300	2,590	--	19,000	14,100
	TK-MW33	04/29/2008	N	--	86,400	4,320	480	4,800	--	--	2,490	2,780	--	9,860	15,500
	TK-MW33	10/08/2008	N	--	56,100	3,030	2,360 U	4,200	--	--	6,670	2,070	--	4,320	11,100
	MW-33-021622	02/16/2022	N	--	12,000	--	--	--	--	--	520	780	2 U	97	580
	MW-33-050522	05/05/2022	N	--	9,950	--	--	--	0.2 U	0.3 U	199	635	--	19	333
MW-34	TK-MW34	03/18/2008	N	--	10,500	1,620	654	2,300	--	--	271	616	--	17.3	921
	TK-MW34	04/29/2008	N	--	11,900	1,420	601	2,000	--	--	272	594	--	38.9	951
	MW-34-021622	02/16/2022	N	--	5,000	--	--	--	--	--	14	120	1 U	9.1	180
	MW-34-050522	05/05/2022	N	--	3,710	--	--	--	0.2 U	0.3 U	11.4	36.2	--	1.33	23.1
MW-35	TK-MW35	03/15/2007	N	--	65,400	1,910	485 U	2,200	--	--	2,760	1,450	--	7,030	12,900
	TK-MW35	03/18/2008	N	--	82,300	2,730	489	3,200	--	--	3,620	2,910	--	10,400	13,600
	TK-MW35	04/29/2008	N	--	81,800	2,560	472 U	2,800	--	--	1,740	2,890	--	7,430	13,300
	TK-MW35	10/08/2008	N	--	49,500	1,350	2,360 U	2,500	--	--	10,500	2,500	--	1,630	5,600
	TK-MW35D	10/08/2008	FD	--	48,300	1,370	2,360 U	2,600	--	--	10,300	2,480	--	1,600	5,480
	MW-35-021622	02/16/2022	N	--	33,000	--	--	--	--	--	120	1,900	2 U	450	3,700
	MW-35-050522	05/05/2022	N	--	31,500	--	--	--	0.2 U	0.3 U	86.2	1,750	--	139	3,510
Off-Property															
GP-6	TK-GP6-GW7	04/24/2006	N	--	50,600	1,080	495 U	1,300	--	--	739	1,160	--	4,210	5,660
GP-7	TK-GP7-GW15	04/25/2006	N	--	50 U	1,050	1,140	2,200	--	--	0.5 U	0.5 U	--	0.5 U	1 U
	TK-GP7-GW15D	04/25/2006	FD	--	50 U	909	1,120	2,000	--	--	0.5 U	0.5 U	--	0.5 U	1 U
GP-8	TK-GP8-GW14	04/25/2006	N	--	18,700	1,230	485 U	1,500	--	--	2,880	486	--	111	734
GP-9	TK-GP9-GW8	04/25/2006	N	--	227,000	149,000	47,200 U	170,000	--	--	25,700	3,440	--	36,400	19,700
GP-10	TK-GP10-GW10	04/25/2006	N	--	5,710	303	472 U	540	--	--	1,110	186	--	27.1	276
GP-12	TK-GP12-GW12	04/25/2006	N	--	50 U	1,560 U	3,120 U	3,120 U	--	--	0.5 U	0.5 U	--	0.525	1 U
HC-1	HC-1	11/30/2012	N	--	150	200 U	500 U	500 U	0.01 U	1 U	1 U	1 U	5 U	3.1	13
HC-2	HC-2	11/30/2012	N	--	100	200 U	500 U	500 U	0.01 U	1 U	1 U	1 U	5 U	4.2	6.0
HC-3	HC-3	11/30/2012	N	--	100 U	200 U	500 U	500 U	0.01 U	1 U	1 U	1 U	5 U	1 U	1 U
HC-4	HC-4	11/30/2012	N	--	100 U	200 U	500 U	500 U	0.01 U	1 U	1 U	1 U	5 U	1 U	1 U
HC-7	HC-7	11/30/2012	N	--	1,800	200 U	500 U	500 U	0.01 U	1 U	650	27	5 U	5.1	80
HC-9	HC-9	11/30/2012	N	--	3,400	200 U	500 U	500 U	0.01 U	1 U	900	61	5 U	7.1	450
MW-2	TK-MW2	06/06/2006	N	1 U	1,410	268	485 U	510	--	--	2.16	13.4	--	0.5 U	6.32
	TK-MW2	09/06/2006	N	1 U	6,550	508	495 U	760	--	--	21.4	188	--	18.3	394
	MW-2-050522	05/05/2022	N	--	19 U	--	--	--	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.4 U

Table 2-2
Summary of Historical Groundwater Analytical Results
Tiki Car Wash
Bellevue, Washington



Location	Sample Name	Collection Date	Sample Type	Total Metals (ug/L)	Total Petroleum Hydrocarbons (ug/L)				Volatile Organic Compounds (ug/L)						
Analyte:				Lead	Gasoline-range hydrocarbons	Diesel-range hydrocarbons	Oil-range hydrocarbons	Diesel+Oil ^(a)	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	Benzene	Ethylbenzene	Methyl tert-butyl ether	Toluene	Xylenes (total)
MTCA Method A ⁽¹⁾ :				15	800 ^(b)	500	500	500	0.01	5	5	700	20	1,000	1,000
MW-6	TK-MW6	06/06/2006	N	11.9	116,000	2,060	500 U	2,300	--	--	3,120	2,980	--	16,600	17,800
	TK-MW6D	06/06/2006	FD	10	103,000	1,790	472 U	2,000	--	--	3,040	2,770	--	16,100	16,700
	TK-MW6	09/06/2006	N	14.4	102,000	2,650	495 U	2,900	--	--	3,600	2,960	--	15,000	18,500
	TK-MW6D	09/06/2006	FD	14.4	91,800	2,570	495 U	2,800	--	--	3,800	2,820	--	15,200	16,900
	MW-6-021622	02/16/2022	N	--	1,000	--	--	--	--	--	1 U	13	1 U	1 U	83
	MW-6-050522	05/05/2022	N	--	167 J	--	--	--	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.677 J
MW-20	TK-MW20	02/13/2006	N	1 U	50 U	240 U	481 U	481 U	--	--	0.5 U	0.5 U	--	0.5 U	1 U
	TK-MW20	06/06/2006	N	1.06	50 U	236 U	472 U	472 U	--	--	0.5 U	0.5 U	--	0.5 U	1 U
	TK-MW20	09/06/2006	N	1 U	100 U	236 U	472 U	472 U	--	--	0.5 U	1 U	--	2 U	1.5 U
	MW-20-021622	02/16/2022	N	--	250 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U
	MW-20-050522	05/05/2022	N	--	19 U	--	--	--	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.4 U
MW-23	TK-MW23	02/13/2006	N	1 U	50 U	238 U	476 U	476 U	--	--	0.5 U	0.5 U	--	0.5 U	1 U
	TK-MW23D	02/13/2006	FD	1 U	50 U	238 U	476 U	476 U	--	--	0.5 U	0.5 U	--	0.5 U	1 U
	TK-MW23	06/06/2006	N	2.2	50 U	240 U	481 U	481 U	--	--	0.5 U	0.5 U	--	0.5 U	1 U
	TK-MW23	09/06/2006	N	1 U	100 U	243 U	485 U	485 U	--	--	0.5 U	1 U	--	2 U	1.5 U
	--	02/17/2022	N	--	250 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U
	MW-23-050522	05/05/2022	N	--	19 U	--	--	--	0.2 U	0.3 U	0.3 U	0.2 U	--	0.2 U	0.4 U
MW-36	TK-MW36	03/15/2007	N	--	50 U	238 U	476 U	476 U	--	--	0.5 U	0.5 U	--	0.54	1 U
	MW-36-021622	02/16/2022	N	--	250 U	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U
	MW-36-050522	05/05/2022	N	--	19 U	--	--	--	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.4 U
MW-37	MW-37-050522	05/05/2022	N	--	2,310	--	--	--	0.2 U	0.3 U	203	59.7	--	172	303
	MW-37-070122	07/01/2022	N	--	531	--	--	--	0.2 U	0.3 U	363	2.84	--	4.01	8.14
	MW-37-110222	11/02/2022	N	--	636 J	233	200 J	430 J	2 U	3 U	277	4 U	--	2.41 J	4 U
MW-38	MW-38-050522	05/05/2022	N	--	47,600	--	--	--	1 U	1.5 U	5,750	1,340	--	4,540	7,020
	MW-38-070122	07/01/2022	N	--	93,800	--	--	--	1 U	1.5 U	3,290	2,600	--	16,300	14,900
	MW-38-110222	11/02/2022	N	--	98,800	1,000	127 J	1,100 J	10 U	15 U	5,200	2,760	--	16,800	15,500
MW-39	MW-39-110322	11/03/2022	N	--	43 U	52.8 J	109 U	110 J	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.4 U
	DUP-1	11/03/2022	N	--	43 U	--	--	--	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.4 U
MW-40	MW-40-110322	11/03/2022	N	--	43 U	55.6 J	103 U	110 J	0.2 U	0.3 U	0.3 U	0.4 U	--	0.2 U	0.4 U
MW-41	MW-41-110322	11/03/2022	N	--	43 U	214	101 U	260	0.2 U	0.3 U	0.316 J	0.4 U	--	0.2 U	0.4 U

Table 2-2
Summary of Historical Groundwater Analytical Results
Tiki Car Wash
Bellevue, Washington



Notes Historical data downloaded from Washington State Department of Ecology's Environmental Information Management System database on November 11, 2023. 2012 data only is from Bartell Drugs Focused Phase II by Hart Crowser.⁽²⁾ Shading indicates values that exceed MTCA screening criteria; non-detects (U) were not compared with screening criteria. -- = no historical information available. FD = field duplicate sample. J = result is estimated. MTCA = Model Toxics Control Act. N = normal environmental sample. U = result is non-detect at the method detection limit or method reporting limit. ug/L = micrograms per liter. ^(a)Diesel+Oil is the sum of diesel- and oil-range hydrocarbons. When results are non-detect, half the detection/reporting limit is used. When both results are non-detect, the highest detection/reporting limit is shown. ^(b)Screening level for gasoline-range hydrocarbons with benzene present. References ⁽¹⁾Ecology. 2023. <i>Cleanup Levels and Risk Calculation (CLARC) table</i>. Washington State Department of Ecology, Toxics Cleanup Program. August. ⁽²⁾Hart Crowser. 2013. Roy Jensen, LG, and Julie K.W. Wukelic, Hart Crowser, Inc. Focused Phase II Environmental Soil and Groundwater: Bartell Drugs Property, Bellevue, Washington. Tables 1 and 2. Letter to James Melby, Kemper Development Company. January 4.

Table 2-3
Summary of Historical Soil Analytical Results
Tiki Car Wash
Bellevue, Washington



Location	Sample Name	Collection Date	Sample Type	Sample Depth (ft bgs)	Total Petroleum Hydrocarbons (mg/kg)				Volatile Organic Compounds (mg/kg)					
Analyte:					Gasoline-range hydrocarbons	Diesel-range hydrocarbons	Oil-range hydrocarbons	Diesel+Oil ^(a)	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	Benzene	Ethylbenzene	Toluene	Xylenes (total)
MTCA Method A, Unrestricted Land Use ⁽¹⁾ :					30 ^(b)	2,000	2,000	2,000	0.005	11 ^(c)	0.03	6	7	9
On-Property														
GP-1	TK-GP1-SS7	04/24/2006	N	6-7	2,400	28.8	33.3 U	45	--	--	1	19.6	3.19	98.4
GP-2	TK-GP2-SS8	04/24/2006	N	8	4.17 U	67	626	690	--	--	0.025 U	0.0417 U	0.0417 U	0.0835 U
GP-3	TK-GP3-SS7	04/24/2006	N	7	4,440	69	28.5 U	83	--	--	6.64	58.2	0.849 U	231
GP-4	TK-GP4-SS7	04/24/2006	N	7	2,360	151	28.7 U	170	--	--	25.5	30	112	168
GP-5	TK-GP5-SS4	04/24/2006	N	7	4,730	36.1	30.1 U	51	--	--	50.3	55.7	167	327
MW-30	TK-MW30-SS15	02/22/2007	N	15	67.2	11.3 U	28.2 U	28.2 U	--	--	0.366	0.644	0.543	3.23
MW-31	TK-MW31-SS15	02/23/2007	N	15	13.3	11.1 U	27.7 U	27.7 U	--	--	0.757	0.172	0.464	0.888
	TK-MW31-SS15D	02/23/2007	FD	15	9.78	11.1 U	27.8 U	27.8 U	--	--	0.768	0.19	0.511	0.971
MW-32	TK-MW32-SS15	02/23/2007	N	15	246	11.1 U	27.8 U	27.8 U	--	--	1.2	2.5	3.4	14
MW-33	TK-MW33-SS15	02/23/2007	N	15	10.7	11.5 U	28.7 U	28.7 U	--	--	1.53	0.39	0.245	1.34
MW-34	TK-MW34-SS15	02/22/2007	N	15	5.3 U	11.6 U	29 U	29 U	--	--	0.0318 U	0.053 U	0.053 U	0.138
MW-35	TK-MW35-SS15	02/22/2007	N	15	16.7	11.4 U	28.4 U	28.4 U	--	--	1.46	0.263	0.41	1
SB-1	SB-1-6.0	05/03/2022	N	6-6.5	0.674 J	4.47 U	11.2 U	11.2 U	0.00033 U	0.000495 U	0.000413 U	0.00793	0.000495 U	0.00439 J
	SB-1-7.0	05/03/2022	N	7-7.5	14.9	4.26 U	10.7 U	10.7 U	0.000363 U	0.000523 U	0.000827 J	0.0718	0.0606	0.315
	SB-1-9.0	05/03/2022	N	9-9.5	23.7 J	4.33 U	10.8 U	10.8 U	0.000363 U	0.000544 U	0.00886	0.0718 J	0.0606 J	0.434 J
SB-2	SB-2-5.0	05/03/2022	N	5-5.5	1.51 J	4.72 U	11.8 U	11.8 U	0.000349 U	0.000523 U	0.000436 U	0.000349 U	0.000523 U	0.00137 J
	SB-2-8.5	05/03/2022	N	8.5-9	536	15.3	11.4 U	21	0.0367 U	0.0551 U	0.0459 U	0.101 J	0.0551 U	0.129 U
SB-3	SB-3-5.5	05/03/2022	N	5.5-6	13.8	6.08 U	15.2 U	15.2 U	0.000602 U	0.000902 U	0.00304 J	0.0452	0.00308 J	0.335
	SB-3-6.5	05/03/2022	N	6.5-7	7.35	4.56 U	11.4 U	11.4 U	0.0198 U	0.0296 U	0.0247 U	0.0198 U	0.0296 U	0.0692 U
	SB-3-9.5	05/03/2022	N	9.5-10	0.587 J	4.74 U	11.9 U	11.9 U	0.000494 U	0.00074 U	0.000617 U	0.000494 U	0.00074 U	0.00173 U
SB-5	SB-5-7	05/04/2022	N	7-7.5	757	42	11.6 U	48	0.0606 U	0.0909 U	1.36	10.1	4.96	59
	SB-5-13	05/04/2022	N	13-13.5	1,310	17.4	11.6 U	23	0.0514 U	0.0772 U	2.81	35.1	32.7	210
	SB-5-15	05/04/2022	N	15-15.5	1.49 J	4.42 U	11.1 U	11.1 U	0.000299 U	0.000448 U	0.00222 J	0.0164	0.0119	0.0936
Off-Property														
GP6	TK-GP6-SS5	04/24/2006	N	5	1,850	97.9	27.6 U	110	--	--	3.68	19.6	33.4	104
GP7	TK-GP7-SS7	04/25/2006	N	7	5.98 U	14 U	35.1 U	35.1 U	--	--	0.0359 U	0.0598 U	0.0598 U	0.12 U
	TK-GP7-SS7D	04/25/2006	FD	7	5.65 U	14.5 U	36.3 U	36.3 U	--	--	0.0339 U	0.0565 U	0.0565 U	0.113 U
GP8	TK-GP8-SS10	04/25/2006	N	9-10	6.07	11.2 U	28.1 U	28.1 U	--	--	0.504	0.306	0.039 U	0.428
GP9	TK-GP9-SS4	04/25/2006	N	4	1,940	617	142 U	690	--	--	17.4	27.2	68.4	155
GP9	TK-GP9-SS8	04/25/2006	N	8	12	11 U	27.4 U	27.4 U	--	--	1.04	0.202	0.664	1.23
GP10	TK-GP10-SS7	04/25/2006	N	7	3.82 U	11.2 U	27.9 U	27.9 U	--	--	0.238	0.0783	0.0382 U	0.1
GP11	TK-GP11-SS3	04/25/2006	N	3	585	11.2 U	28 U	28 U	--	--	1.02	2.49	1.05	4.65

Table 2-3
Summary of Historical Soil Analytical Results
Tiki Car Wash
Bellevue, Washington



Location	Sample Name	Collection Date	Sample Type	Sample Depth (ft bgs)	Total Petroleum Hydrocarbons (mg/kg)				Volatile Organic Compounds (mg/kg)					
Analyte:					Gasoline-range hydrocarbons	Diesel-range hydrocarbons	Oil-range hydrocarbons	Diesel+Oil ^(a)	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	Benzene	Ethylbenzene	Toluene	Xylenes (total)
MTCA Method A, Unrestricted Land Use ⁽¹⁾ :					30 ^(b)	2,000	2,000	2,000	0.005	11 ^(c)	0.03	6	7	9
GP12	TK-GP12-SS8	04/25/2006	N	8	3.78 U	11.1 U	52.7	58	--	--	0.0227 U	0.0378 U	0.0378 U	0.0755 U
	TK-GP12-SS8D	04/25/2006	FD	8	3.78 U	11.1 U	83.3	89	--	--	0.0227 U	0.0378 U	0.0378 U	0.0756 U
HC-1	HC-1-S2	11/30/2012	N	4-6	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
	HC-1-S3	11/30/2012	N	8-12	5 U	20 U	50 U	50 U	0.005 U	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U
HC-2	HC-2-S1	11/30/2012	N	0-1	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
	HC-2-S2	11/30/2012	N	4-7	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
	HC-2-S3	11/30/2012	N	8-10.5	5 U	20 U	50 U	50 U	0.005 U	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U
HC-3	HC-3-S2	11/30/2012	N	4-8	5 U	20 U	50 U	50 U	0.005 U	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U
	HC-3-S3	11/30/2012	N	8-12	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
HC-4	HC-4-S2	11/30/2012	N	4-6	5 U	20 U	50 U	50 U	0.005 U	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U
HC-5	HC-5-S3	11/30/2012	N	8-12	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
HC-6	HC-6-S2	11/30/2012	N	4-8	5.1	20 U	50 U	50 U	--	--	0.02 U	0.068	0.05 U	0.22
HC-7	HC-7-S2	11/30/2012	N	4-7.5	5 U	20 U	50 U	50 U	0.005 U	0.02 U	0.02 U	0.05 U	0.05 U	0.05 U
	HC-7-S3	11/30/2012	N	8-12	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
	HC-7-S4	11/30/2012	N	12-14	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
HC-8	HC-8-S2	11/30/2012	N	4-8	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
HC-9	HC-9-S2	11/30/2012	N	4-5	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
	HC-9-S3	11/30/2012	N	8-10	5 U	20 U	50 U	50 U	0.005 U	0.02 U	0.02 U	0.05 U	0.059	0.077
	HC-9-S4	11/30/2012	N	13-15	5 U	20 U	50 U	50 U	--	--	0.02 U	0.05 U	0.05 U	0.05 U
MW-36	TK-MW36-SS15	02/22/2007	N	15	3.92 U	11.1 U	27.7 U	27.7 U	--	--	0.0235 U	0.0392 U	0.0392 U	0.0783 U
MW-37	MW-37-8	05/03/2022	N	8-8.5	0.461 J	4.44 U	11.1 U	11.1 U	0.00029 U	0.000436 U	0.000524 J	0.00029 U	0.000436 U	0.00102 U
	MW-37-11	05/03/2022	N	11-11.5	1.14 J	4.39 U	11 U	11 U	0.000299 U	0.000448 U	0.000373 U	0.000299 U	0.000448 U	0.00105 U
MW-38	MW-38-6.5	05/04/2022	N	6.5-7	1,520	63	153	220	0.0492 U	0.0739 U	0.0615 U	0.608 J	0.143 J	5.91
	MW-38-14	05/04/2022	N	14-14.5	18.3	4.31 U	10.8 U	10.8 U	0.000382 U	0.000573 U	0.101 J	0.116	0.0176	0.0863
MW-39	MW-39-5	11/01/2022	N	5-5.5	7.23	4.48 U	11.2 U	11.2 U	0.000353 U	0.00053 U	0.000442 U	0.00053 U	0.00053 U	0.00124 U
	MW-39-10	11/01/2022	N	10-10.5	0.203 U	4.32 U	10.78 U	10.78 U	0.000379 U	0.000569 U	0.000474 U	0.000379 U	0.000569 U	0.00133 U
	MW-39-15	11/01/2022	N	14.5-15	9.66	4.36 U	10.9 U	10.9 U	0.000349 U	0.000524 U	0.000437 U	0.000349 U	0.000524 U	0.00122 U
MW-40	MW-40-5	11/02/2022	N	5-5.5	0.228 U	4.16 U	10.4 U	10.4 U	0.000306 U	0.000458 U	0.000382 U	0.000306 U	0.000458 U	0.00107 U
	MW-40-10	11/02/2022	N	10-10.5	0.45 J	4.54 U	11.3 U	11.3 U	0.000319 U	0.000478 U	0.000399 U	0.000319 U	0.000478 U	0.00112 U
	MW-40-13	11/02/2022	N	13-13.5	12	4.41 U	11.1 U	11.1 U	0.000313 U	0.00047 U	0.000392 U	0.000313 U	0.00047 U	0.0011 U
MW-41	MW-41-5	11/01/2022	N	5-5.5	0.52 J	4.46 U	11.1 U	11.1 U	0.000371 U	0.000557 U	0.000464 U	0.000371 U	0.000557 U	0.0013 U
	MW-41-10	11/01/2022	N	10-10.5	0.276 U	4.39 U	11 U	11 U	0.000357 U	0.000535 U	0.000446 U	0.000357 U	0.000535 U	0.00125 U
	MW-41-14.5	11/01/2022	N	14.5-15	3.32 J	4.36 U	10.9 U	10.9 U	0.000377 U	0.000565 U	0.000471 U	0.000377 U	0.000565 U	0.00132 U

Table 2-3
Summary of Historical Soil Analytical Results
Tiki Car Wash
Bellevue, Washington



Notes Historical data downloaded from Washington State Department of Ecology's Environmental Information Management System database on November 11, 2023. 2012 data only is from Bartell Drugs Focused Phase II by Hart Crowser.⁽²⁾ Shading indicates values that exceed MTCA screening criteria; non-detects (U) were not compared with screening criteria. -- = no historical information available. FD = field duplicate sample. ft bgs = feet below ground surface. J = result is estimated. mg/kg = milligrams per kilogram. MTCA = Model Toxics Control Act. N = normal environmental sample. U = result is non-detect at the method detection limit or method reporting limit. ^(a)Diesel+Oil is the sum of diesel- and oil-range hydrocarbons. When results are non-detect, half the detection/reporting limit is used. When both results are non-detect, the highest detection/reporting limit is shown. ^(b)Screening level for gasoline-range hydrocarbons with benzene present. ^(c)No MTCA Method A value is available. MTCA Method B cancer value is shown. References ⁽¹⁾Ecology. 2023. <i>Cleanup Levels and Risk Calculation (CLARC) table</i>. Washington State Department of Ecology, Toxics Cleanup Program. August. ⁽²⁾Hart Crowser. 2013. Roy Jensen, LG, and Julie K.W. Wukelic, Hart Crowser, Inc. Focused Phase II Environmental Soil and Groundwater: Bartell Drugs Property, Bellevue, Washington. Tables 1 and 2. Letter to James Melby, Kemper Development Company. January 4.

Table 4-1
Historical Groundwater Analytical Results: Vapor Intrusion Screening
Tiki Car Wash
Bellevue, Washington

Location	Sample Name	Collection Date	Sample Type	Total Petroleum Hydrocarbons (ug/L)			Volatile Organic Compounds (ug/L)			
Analyte:				Gasoline-range hydrocarbons	Diesel-range hydrocarbons	Oil-range hydrocarbons	Benzene	Ethylbenzene	Toluene	Xylenes (total)
MTCA Method B, Vapor Intrusion, GW, Noncancer: ⁽¹⁾				NV	NV	NV	100	2,800	15,000	320
MTCA Method B, Vapor Intrusion, GW, Cancer: ⁽¹⁾				NV	NV	NV	2.4	NV	NV	NV
On-Property										
MW-31	TK-MW31	03/18/2008	N	134,000	2,210	472 U	5,030	2,810	21,800	16,100
	TK-MW31	04/29/2008	N	150,000	3,780	476 U	5,080	3,580	25,000	22,600
	MW-31-021622	02/16/2022	N	81,000	--	--	2,600	1,800	2,200	14,000
	MW-31-050522	05/05/2022	N	58,100	--	--	2,580	1,700	1,260	10,700
Off-Property										
MW-40	MW-40-110322	11/03/2022	N	43 U	55.6 J	103 U	0.3 U	0.4 U	0.2 U	0.4 U
Notes Only groundwater locations within 30 feet of an enclosed building are shown on this table. Historical data downloaded from Washington State Department of Ecology's Environmental Information Management System database on November 11, 2023. Shading (color key below) indicates values that exceed screening criteria; non-detects (U) were not compared with screening criteria. When multiple criteria are exceeded, results are shaded based on the highest value. MTCA Method B, Vapor Intrusion, GW, Noncancer MTCA Method B, Vapor Intrusion, GW, Cancer -- = no historical information available. GW = groundwater. MTCA = Model Toxics Control Act. N = normal environmental sample. NV = no value. U = result is non-detect at the method detection limit or method reporting limit. ug/L = micrograms per liter. Reference ⁽¹⁾Ecology. 2023. <i>Cleanup Levels and Risk Calculation (CLARC) table</i>. Washington State Department of Ecology, Toxics Cleanup Program. August.										

Appendix A

Data from Existing Reports



MAUL
FOSTER
ALONGI

Table 3.
Temperature, pH, and Specific Conductance
Measured Prior to Sampling

Monitoring Well	Temperature (°F)	pH	Specific Conductance (μohms x 100)
MW-2	52.3	6.5	4.60
MW-3	57.0	6.0	3.42
MW-5	51.6	6.9	2.18
MW-6	51.3	6.0	3.23
MW-7	51.6	6.5	4.01
MW-20	54.7	6.3	5.23
MW-21	52.1	6.5	4.10
MW-23	56.2	7.0	5.20
MW-29	52.3	6.5	7.72
MW-31	63.2	6.0	9.30
MW-33	56.1	6.0	7.93

Unfiltered samples were collected from each well with disposable polyethylene bailers. Samples were stored in 40-mil glass jars with Teflon septas preserved with hydrochloric acid.

Petroleum product odors were noted in monitoring well MW-6, MW-29, and MW-2. A sheen was noted in the purge water from MW-29. Floating product was not observed in any of the sampled monitoring wells. During field activities it was observed that monitoring wells MW-6 and MW-7 had settled within the flush mount protective casing.

Six (MW-5, MW-6, MW-7, MW-21, MW-23, and MW-31) of the ten monitoring wells were bailed dry or were drawn down to 6 inches of water in the well. Recharge appeared slow (30 minutes to several hours) in all wells except MW-29.

A summary of analytical results from groundwater sampling conducted in 1989, 1990, and this Interim Action are presented in Figures 14 through 19. Groundwater samples with concentrations above MTCA Method A cleanup levels are presented in bold. Samples collected by Hart Crowser and AGI were analyzed for TPH using EPA Method 8015, BTEX using EPA Method 8020 or 8240, and volatile organic compounds (VOCs) using EPA Method 8010. All groundwater samples collected by Enviros in May 1993 were analyzed for TPH using EPA Method WTPH-G, and BTEX using EPA Method 5030/8020. In addition, three monitoring wells were sampled and analyzed for halogenated VOCs using EPA Method 601.

Groundwater sampling conducted by Hart Crowser in 1989 and 1990 indicated gasoline concentrations exceeding MTCA Method A cleanup levels in monitoring wells MW-2, MW-5, MW-6, and MW-29 (Figure 14). Groundwater sampling in 1993 indicated lower gasoline concentrations in MW-2, MW-5, and MW-6, with MW-5 gasoline concentrations below MTCA Method A cleanup levels. The only 1993 groundwater sample that showed an increase in gasoline concentration was MW-29 with 140 ppm gasoline.

In 1989 and 1990, four monitoring wells, MW-2, MW-5, MW-6, and MW-29 had benzene concentrations which exceeded MTCA Method A cleanup levels (Figure 15). In 1993, all of these wells, except MW-29, showed a decrease in benzene concentrations. In addition, MW-7 increased from 1.0 ppb in 1990 to 7.3 ppb in 1993.

3. GROUNDWATER SAMPLING

3.1 Procedures and Observations

A total of eight monitoring wells installed by Hart Crowser and AGI in 1989, were sampled on May 23, 1996. As mentioned above, wells MW-31 and MW-33 were decommissioned and conjunction with construction and well MW-21 was covered with cement. All samples were analyzed for gasoline, benzene, toluene, ethylbenzene and total xylenes (BTEX) by Method WTPH-GABTEX.

Groundwater samples were collected after each well was purged a minimum of three times the volume of standing water in the well, or until purged dry. The bailed water was monitored for temperature, pH and conductivity during bailing, as recommended in Guidance for Site Checks and Site Assessments for Underground Storage Tanks (Ecology, 1992). Bailing continued until these parameters stabilized. Groundwater parameters measured prior to sampling are summarized in Table 2.

Table 2.
Parameters Measured Prior to Sample Collection.

Monitoring Well	Temperature (°F)	pH	Conductivity (µS)
MW-2	64.0	6.80	1.10
MW-3	64.0	5.39	1.10
MW-5	64.0	7.00	1.10
MW-6	60.0	6.08	1.11
MW-7	64.2	6.53	1.16
MW-20	64.0	6.50	1.11
MW-23	64.0	7.10	1.10
MW-29	65.5	5.54	1.12

Bailed water was placed in a labeled, 55-gallon drum that was properly disposed off-site. Unfiltered samples were collected from each well with disposable bailers. Samples were stored in 40-mil glass jars with Teflon® septa preserved with hydrochloric acid.

Three (MW-2, MW-6 and MW-7) of the eight monitoring wells were bailed dry or were drawn down to 6 inches of water in the well. Bentonite was observed in the bailed water from wells MW-6 and MW-23.

During field activities it was observed that silica sand had migrated in to the flush mount protective casing of MW-2. Bentonite chips were observed to have migrated in to the flush mount protective casings of MW-6, MW-7 and MW-23. The sand and bentonite, which was removed prior to sampling, was believed to be present because of swelling of the material due to moisture absorbance. In addition, Enviro personnel noted that the top of the pipe used to finish well MW-5 was slotted just below the well cap. It was also noted that surface water was removed from the flush mount protective casings before removing the well caps on all wells except MW-5, which had not accumulated water above the well cap.

TABLE 3. MONITORING WELL FIELD MEASUREMENT DATA, TIKI CAR WASH

Well	Water Quality Parameters recorded on 3/15/07					
	pH	Conductivity (mS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Temperature (°C)	Oxidation- Reduction Potential (mV)
MW-30	6.16	0.734	1	0.14	11.1	-74
MW-35	6.40	0.677	11	0.11	11.0	58
MW-36	6.29	0.55	0	2.60	11.1	151

NOTES:

°C = degrees Celsius.

mg/L - milligrams per liter

mS/cm = milliSiemens per centimeter.

mV = milliVolts

NTUs = Nephelometric turbidity units.



Ground Water Purge and Sampling Form

Well Identification	MW 29	Site Location: Ecology - Tiki Car Wash	Date: 3/18/08
Well Diameter (inches)	2	Project Number: 6199401	Personnel: MBB, KB
Well Monument Locked and Good Condition?	no bolts	Purge Method: ☒ Low Flow	☐ Conventional ☐ None
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC	Purge Equipment: ☒ Peristaltic Pump	☐ Bailer ☐ Grundfos submersible
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump	☐ Bailer ☐ Grundfos submersible
Initial Depth to Water (ft btoc)	4.70	Weather Conditions: 50°	
Well Total Depth (ft btoc)	13.62	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	1428	~~1430~~	1433	1436	1439	1442			
Depth to Ground water (ft btoc)		8.10	8.30	8.45	8.64	8.80			
Total Groundwater Purged (gallons)		.1	.25	.5	.75	1			
Purge Rate (gpm <u>ml/min</u> , other)		450	450	450	450	450			
pH		5.63	5.30	5.26	5.28	5.30			
Conductivity (mS/cm)		.633	.599	.546	.528	.552			
Turbidity (NTU)		98	22	14	7	7			
Dissolved Oxygen (mg/L)		.13	.03	.05	.08	.09			
Temperature (°C)		12.1	12	11.7	11.6	11.6			
ORP/eH (mV)		-	-	-	-	-			
Color of Purged Water (gray, brown, red, clear)		Clear							

Sample Identification: TK-MW 29	Analysis	# of Bottles	Comments:
Time Sampled: 1450	☒ NWTPH-Gasoline	3	Tubing 4 ft off bottom sheen observed
	☒ BTEX (8021B)	3	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW30	Site Location: Ecology - Tiki Car Wash	Date: 3/18/08
Well Diameter (inches)	2	Project Number: 6199401	Personnel: MBB, KB
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow	☐ Conventional ☐ None
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump	☐ Bailer ☐ Grundfos submersible
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump	☐ Bailer ☐ Grundfos submersible
Initial Depth to Water (ft btoc)	4.39	Weather Conditions:	
Well Total Depth (ft btoc)	13.30		
Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			

Time	1307	1310	1313	1316	1319	1322	1325	1328	1331	1334
Depth to Ground water (ft btoc)		4.58	4.69	4.74	4.78		4.94	5.07	5.27	5.37
Total Groundwater Purged (gallons)			0.25	.5	.75			1.7	2.25	
Purge Rate (gpm/ml/min/other)		350	350	350	350	350	350	350	350	350
pH		5.05	5.25	5.22	5.29	5.37	5.54	5.55	5.49	5.50
Conductivity (mS/cm)		.659	.655	.653	.651	.649	.648	.648	.647	.644
Turbidity (NTU)		0	1	1	0	0	3	2	0	0
Dissolved Oxygen (mg/L)		.85	0.04	.03	.06	0.06	.40	.01	.12	.13
Temperature (°C)		11.3	11.3	11.3	11.3	11.3	11.3	11.4	11.3	11.2
ORP/eH (mV)		-	-	-	-	-	-	-	-	-
Color of Purged Water (gray, brown, red, clear)		Clear/yellow								→

Sample Identification: TK-MW30	Analysis	# of Bottles	Comments:
Time Sampled: 1340	☒ NWTPH-Gasoline	3	tubing pulled 3 ft off bottom
	☒ BTEX (8021B)	3	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW31	Site Location: Ecology - Tiki Car Wash		Date: 3/18/08	
Well Diameter (inches)	4	Project Number: 6199401		Personnel: MBB, KB	
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow ☐ Conventional ☐ None			
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Initial Depth to Water (ft btoc)	5.68	Weather Conditions: overcast			
Well Total Depth (ft btoc)	13.56	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			

Time	1505	1506	1509	1512	1515	1518	1521	1524		
Depth to Ground water (ft btoc)		5.98	6.09	6.23	6.35	6.59	6.70	6.82		
Total Groundwater Purged (gallons)			.5	.8	1.3	2	2.4	2.8		
Purge Rate (gpm, <u>ml/min</u> , other)		450	450	450	450	450	450	450		
pH		5.61	5.63	5.61	5.57	5.56	5.56	5.56		
Conductivity (mS/cm)		.60	.597	.593	.590	.587	.582	.581		
Turbidity (NTU)		7	6	2	3	6	4	1		
Disssolved Oxygen (mg/L)		4.99	3.34	3.17	3.44	2.99	2.74	2.70		
Temperature (°C)		12.2	12.2	12.1	12.1	12	11.9	12		
ORP/eH (mV)		-	-	-	-	-	-	-		
Color of Purged Water (gray, brown, red, clear)		clear								

Sample Identification: TK-MW 31	Analysis	# of Bottles	Comments:
Time Sampled: 1530	☒ NWTPH-Gasoline	3	Tubing 4 ft off bottom seen noted on water
	☒ BTEX (8021B)	3	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW-32	Site Location: Ecology - Tiki Car Wash		Date: 3/18/08
Well Diameter (inches)	4 in	Project Number: 6199401		Personnel: MBB, KB
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow ☐ Conventional ☐ None		
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible		
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible		
Initial Depth to Water (ft btoc)	5.59	Weather Conditions: ~40°F, overcast,		
Well Total Depth (ft btoc)	13.28	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons		

Time	1013	1016	1019	1022	1025	1028	1031			
Depth to Ground water (ft btoc)	5.85	6.05	6.18	6.29	6.39	6.53				
Total Groundwater Purged (gallons)		.5	1	1.3	1.5	2				
Purge Rate (gpm, ml/min, other)	400	400	400	400	400	400				
pH	4.38	5.39	5.52	5.59	5.63	5.64				
Conductivity (mS/cm)	1.1	1.09	1.09	1.09	1.09	1.09				
Turbidity (NTU)	1	0	0	0	0	0				
Disssolved Oxygen (mg/L)	1.36	0.59	0.33	.34	0.37	0.44				
Temperature (°C)	11.1	11.1	11.2	11.2	11.2	11.2				
ORP/eH (mV) meter erratic	-45	-68	-72							
Color of Purged Water (gray, brown, red, clear)	clear/yellow									

Sample Identification: TK-MW32	Analysis	# of Bottles	Comments:
Time Sampled: 1040	☒ NWTPH-Gasoline	3	13.07 + .28 = Well Total Depth installed tubing 4 ft off bottom Purge water smelled musty, or sulfur.
	☒ BTEX (8021B)		
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW 33	Site Location: Ecology - Tiki Car Wash	Date: 3/18/08
Well Diameter (inches)	4 in	Project Number: 6199401	Personnel: MBB, KB
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow ☐ Conventional ☐ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible	
Initial Depth to Water (ft btoc)	5.35	Weather Conditions: 40° F	
Well Total Depth (ft btoc)	13.19	overcast	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1112	1115	1118	1121	1124	1127	1130	1133	1136	
Depth to Ground water (ft btoc)	5.59	5.73		5.99		6.26	6.46		6.65	
Total Groundwater Purged (gallons)	.25	.5	1	1.25	1.5	2	2.25	2.5	3	3.7
Purge Rate (gpm, ml/min, other)	400	400	400	400	400	400	400	400	400	
pH	5.57	5.03	4.88	5.05	5.24	5.35	5.43	5.47	5.50	
Conductivity (mS/cm)	.775	.766	.769	.768	.766	.763	.762	.762	.761	
Turbidity (NTU) <i>dumping around a lot</i>	16	~~845~~	60	82	72	86	67	69	67	
Dissolved Oxygen (mg/L)	2.07	3.54	3.82	3.82	3.93	3.59	3.62	3.40	3.32	
Temperature (°C)	11.2	11.3	11.3	11.4	11.3	11.4	11.3	11.3	11.3	
ORP/eH (mV)	-	-	-	-	-	-	-	-	-	
Color of Purged Water (gray, brown, red, clear)	Clear/yell									

Sample Identification: TK-MW 33 / TK-MW 33B analysis	# of Bottles	Comments:
Time Sampled: 1145		
Purge water disposed To: Drum Onsite		

1150

✓ NWTPH-Gasoline

✓ BTEX (8021B)

✓ NWTPH-Dx

3

2

- Installed tubing intake 4 ft off bottom

- bubbles



Ground Water Purge and Sampling Form

Well Identification	MW-34	Site Location: Ecology - Tiki Car Wash		Date: 3/18/08	
Well Diameter (inches)	2 in	Project Number: 6199401		Personnel: MBB, KB	
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow		☐ Conventional ☐ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump		☐ Bailer ☐ Grundfos submersible	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump		☐ Bailer ☐ Grundfos submersible	
Initial Depth to Water (ft btoc)	6.28	Weather Conditions: Overcast, ~40°F			
Well Total Depth (ft btoc)	13.73			Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	9:28 AM	9:31	9:34	9:37	9:40	9:43	9:46			
Depth to Ground water (ft btoc)		6.81	6.90	—	—	7.45				
Total Groundwater Purged (gallons)		.25	0.5							
Purge Rate (gpm, ml/min, other)		450	400							
pH		4.43	4.88	4.98	5.1	5.13	5.19			
Conductivity (mS/cm)		.826	.761	.746	.742	.738	.736			
Turbidity (NTU)		18	11	6	4	3	4			
Disssolved Oxygen (mg/L)		.07	.02	.05	0.07	.08	.08			
Temperature (°C)		11.7	11.9	12	12	12	12.1			
ORP/eH (mV)		—	—	—	—	—				
Color of Purged Water (gray, brown, red, clear)		Clear/Yellow	Clear/Yellow	Clear/Yellow						

Sample Identification: TK-MW 34	Analysis	# of Bottles	Comments:
Time Sampled: 9:50 AM	☒ NWTPH-Gasoline	3	Tubing installed intake 4 ft off bottom
	☒ BTEX (8021B)	2	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx		



Ground Water Purge and Sampling Form

Well Identification	Mw 35	Site Location: Ecology - Tiki Car Wash Date: 3/18/08							
Well Diameter (inches)	4	Project Number: 6199401				Personnel: MBB, KB			
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow ☐ Conventional ☐ None							
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible							
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible							
Initial Depth to Water (ft btoc)	3.02	Weather Conditions: scattered clouds 50°							
Well Total Depth (ft btoc)	13.00	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons							

Time	1354	1356	1359	1402	1405	1408			
Depth to Ground water (ft btoc)	3.05	3.37	3.48	3.62	3.71				
Total Groundwater Purged (gallons)	0.1	0.25	0.5	0.75	1				
Purge Rate (gpm, ml/min, other)	400	400	400	400	400				
pH	4.94	5.43	5.47	5.47	5.49				
Conductivity (mS/cm)	.648	.648	.649	.648	.649				
Turbidity (NTU)	0	1	1	1	1				
Disssolved Oxygen (mg/L)	.11	.04	.09	.11	.11				
Temperature (°C)	11.4	11.4	11.4	11.4	11.4				
ORP/eH (mV)	-	-	-	-	-				
Color of Purged Water (gray, brown, red, clear)	clear								

Sample Identification: TK-MW 35	Analysis	# of Bottles	Comments:
Time Sampled: 1415	☒ NWTPH-Gasoline	3	3.01 ft to product (cont) tubing 3ft off Bottom
	☒ BTEX (8021B)	2	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx		



Ground Water Purge and Sampling Form

Well Identification	MW-29	Site Location: Ecology - Tiki Car Wash	Date: 3/18/08 4/9/08
Well Diameter (inches)	2	Project Number: 6199401	Personnel: MBB, KB, AJ
Well Monument Locked and Good Condition?	No BELTS	Purge Method: ☒ Low Flow ☐ Conventional ☐ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible	
Initial Depth to Water (ft) (btoc)	4.36	Weather Conditions: PARTLY CLOUDY 40°F	
Well Total Depth (ft) (btoc)	3.62	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	0958	1008	1011	1014	1017	1020			
Depth to Ground water (ft) (btoc)	4.36	5.11	5.23	5.3	5.41	5.57			
Total Groundwater Purged (gallons) Liters		0.5	1.85	3.20	4.55	5.90			
Purge Rate (gpm) (ml/min) other		450	450	450	450	450			
pH		3.97	3.77	3.64	3.69	3.74			
Conductivity (mS/cm)		.314	.312	.322	.328	.339			
Turbidity (NTU)		59	57	35	42	51			
Disssolved Oxygen (mg/L)		0.04	0.06	0.08	0.09	0.08			
Temperature (°C)		11.8	11.8	11.7	11.7	11.8			
ORP/eH (mV)		-	-	-	-	-			
Color of Purged Water (gray, brown, red, clear)		Yellowish	Yellowish						

Sample Identification: TK-MW 29	Analysis	# of Bottles	Comments:
Time Sampled: 1030	☒ NWTPH-Gasoline	7	Shoen
	☒ BTEX (8021B)		
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW-32	Site Location: Ecology - Tiki Car Wash	Date: ~~3/18/08~~ 4/9/08
Well Diameter (inches)	4	Project Number: 6199401	Personnel: MBB, KB, AS
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow ☐ Conventional ☐ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible	
Initial Depth to Water (ft btoc)	5.48	Weather Conditions: 240°F overcast	
Well Total Depth (ft btoc)	13.28	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	1058	1101	1104	1107	1110	1113	1116	1119		
Depth to Ground water (ft btoc)	5.85	6.08	6.26	6.44	6.62	6.82	6.98	7.16		
Total Groundwater Purged (gallons) <i>Liters</i>	.9	2.25	3.60	4.95	6.30	7.65	9.00	10.35		
Purge Rate (gpm, <u>ml/min</u> other)	450	450	450	450	450	450	450	450		
pH	4.44	3.70	3.77	3.98	4.11	4.15	4.16	4.17		
Conductivity (mS/cm)	.920	.870	.812	.779	.776	.779	.782	.788		
Turbidity (NTU)	81	84	85	86	82	49	47	36		
Dissolved Oxygen (mg/L)	5.15	5.31	4.92	4.98	5.28	4.88	4.80	4.78		
Temperature (°C)	11.6	11.5	11.4	11.2	11.2	11.2	11.2	11.2		
ORP/eH (mV)	—	—	—	—	—	—	—	—		
Color of Purged Water (gray, brown, red, clear)	pale yellow →									

Sample Identification: TK-MW 32	Analysis	# of Bottles	Comments:
Time Sampled: 1125	☒ NWTPH-Gasoline	3	
	☒ BTEX (8021B)	2	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MU-30	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08	
Well Diameter (inches)	2'	Project Number: 6199401		Personnel: MBB	
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None			
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Initial Depth to Water (ft btoc)	4.39	Weather Conditions: Overcast, ~50°F			
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			

Time	0930	0933	0936	0939	0942	0945			
Depth to Ground water (ft btoc)	4.39	4.80	4.85	5.05	5.10	5.16			
Total Groundwater Purged (gallons)						2.2			
Purge Rate (gpm, ml/min, other)	400								
pH	5.57	4.96	5.33	5.60	5.70	5.74			
Conductivity (mS/cm)	.680	.668	.653	.650	.647	.645			
Turbidity (NTU)	0	0	0	0	0	0			
Dissolved Oxygen (mg/L)	0.17	0.04	0.08	0.10	0.12	0.12			
Temperature (°C)	12.4	12.3	12.2	12.1	12.1	12.0			
ORP/eH (mV)	—	—	—	—	—				
Color of Purged Water (gray, brown, red, clear)	clear								

Sample Identification: TK-MW30	Analysis	# of Bottles	Comments:
Time Sampled: 0950	☒ NWTPH-Gasoline	3	Tubing pulled 3' off bottom
	☒ BTEX (8021B)		
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW-35	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08
Well Diameter (inches)	4"	Project Number: 6199401		Personnel: MBB
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None		
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible		
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible		
Initial Depth to Water (ft btoc)	2.50	Weather Conditions: Overcast, 50's		
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons		

Time	1006	1009	1012	1015	1018				
Depth to Ground water (ft btoc)	2.59	—	3.28	3.43	3.54				
Total Groundwater Purged (gallons)					2.5				
Purge Rate (gpm, ml/min, other)	400	—	—	—	—				
pH	4.44	5.68	5.54	5.49	5.42				
Conductivity (mS/cm)	.575	.575	.575	.576	.576				
Turbidity (NTU)	2	1	1	1	1				
Disssolved Oxygen (mg/L)	0.05	0.04	0.09	0.11	0.13				
Temperature (°C)	12.0	12.9	11.9	11.9	11.8				
ORP/eH (mV)	—	—	—	—	—				
Color of Purged Water (gray, brown, red, clear)	clear/yellow	clear	clear	clear	clear				

Sample Identification: TK-MW 35	Analysis	# of Bottles	Comments: Tubing pulled ~ 3' off bottom
Time Sampled: 1020	☒ NWTPH-Gasoline	3	
	☒ BTEX (8021B)	2	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW-34	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08	
Well Diameter (inches)	2"	Project Number: 6199401		Personnel: MBB	
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None			
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Initial Depth to Water (ft btoc)	6.38	Weather Conditions: Overcast ~ 50's			
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			

Time	1042	1045	1048	1051	1054	1057			
Depth to Ground water (ft btoc)	6.85	6.89	7.10	7.16	7.20	7.25			
Total Groundwater Purged (gallons)						2.6			
Purge Rate (gpm, ml/min, other)	400	→							
pH	5.43	5.11	5.08	5.14	5.18	5.21			
Conductivity (mS/cm)	.710	.717	.721	.725	.727	.726			
Turbidity (NTU)	5	4	3	3	1	2			
Dissolved Oxygen (mg/L)	0.03	0.06	0.09	0.11	0.10	0.11			
Temperature (°C)	12.7	12.7	12.7	12.7	12.7	12.7			
ORP/eH (mV)	—	—	—						
Color of Purged Water (gray, brown, red, clear)	clear	→							

Sample Identification: TK-MW 34	Analysis	# of Bottles	Comments: Tubing pulled ~ 'off bottom
Time Sampled: 1100	☒ NWTPH-Gasoline	3	
	☒ BTEX (8021B)	—	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW-33	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08	
Well Diameter (inches)	4"	Project Number: 6199401		Personnel: MBB	
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None			
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Initial Depth to Water (ft btoc)	5.15	Weather Conditions: Overcast - ~55°F			
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			

Time	1150	1153	1156	1159	1202	1206			
Depth to Ground water (ft btoc)	5.43	5.45	~~5.85~~ 7.05	5.85	6.00	6.04			
Total Groundwater Purged (gallons)						2.8			
Purge Rate (gpm, <u>ml/min</u> , other)	400	→							
pH	5.43	5.42	5.42	5.45	5.49	5.54			
Conductivity (mS/cm)	545	549	547	551	549	547			
Turbidity (NTU)	63	62	51	42	32	43			
Dissolved Oxygen (mg/L)	8.02	6.96	6.65	6.18	6.31	6.17			
Temperature (°C)	12.1	12.1	12.1	12.1	12.1	12.1			
ORP/eH (mV)	-	-	-	-	-				
Color of Purged Water (gray, brown, red, <u>clear</u>)	clear	→							

Sample Identification: TK-MW33	Analysis	# of Bottles	Comments: Tubing pulled ~3.5' off bottom. - Air leaking into tubing near peristaltic pump.
Time Sampled: 1210	☒ NWTPH-Gasoline	2	
	☒ BTEX (8021B)	3	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	



Ground Water Purge and Sampling Form

Well Identification	MW-32	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08						
Well Diameter (inches)	4"	Project Number: 6199401		Personnel: MBB						
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None								
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible								
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible								
Initial Depth to Water (ft btoc)	? 5.52	Weather Conditions: Overcast ~ 55°F								
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons								
Time	1237	1240	1243	1246	1249	1252				1545
Depth to Ground water (ft btoc)	5.52	5.59	5.81	5.89	6.03	6.07				5.94
Total Groundwater Purged (gallons)						2.5				
Purge Rate (gpm, <u>ml/min</u> , other)	480									
pH	6.33	5.72	5.72	5.92	6.00	5.98				
Conductivity (mS/cm)	.939	.939	.937	.935	.938	.943				
Turbidity (NTU)	82	69	34	40	34	36				
Dissolved Oxygen (mg/L)	6.99	8.62	7.74	8.03	7.85	7.83				
Temperature (°C)	12.4	12.0	11.9	11.8	11.7	11.7				
ORP/eH (mV)	—	—	—	—	—	—				
Color of Purged Water (gray, brown, red, clear)	yellow									
Sample Identification: TK-MW 32 / TK-MW 32	Analysis	# of Bottles	Comments: Tubing pulled ~ 3' off bottom.							
Time Sampled: 1258 1300	☒ NWTPH-Gasoline	6	- Air bubbles in tubing near p-pump.							
	☒ BTEX (8021B)	6	- purged water smells of sulfur, or							
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	4	Fats, oils, grease (FOG)							

X VOA represented
for Butane.

3



Ground Water Purge and Sampling Form

Well Identification	nw-31	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08
Well Diameter (inches)	4"	Project Number: 6199401		Personnel: MBB
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None		
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing, WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible		
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible		
Initial Depth to Water (ft btoc)	5.40	Weather Conditions: overcast, drizzle ~50°F		
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons		

Time	1353	1356	1359	1402	1405				
Depth to Ground water (ft btoc)	5.48	6.10	6.32	6.48	6.57				
Total Groundwater Purged (gallons)					2.8				
Purge Rate (gpm, ~~ml~~ /min, other)	400								
pH	6.01	6.12	5.92	5.95	5.97				
Conductivity (mS/cm)	1688	1618	1583	1579	1576				
Turbidity (NTU)	20	18	20	26	28				
Disssolved Oxygen (mg/L)	0.84	0.06	0.09	0.10	0.10				
Temperature (°C)	12.9	12.8	12.8	12.8	12.8				
ORP/eH (mV)	—	—	—	—	—				
Color of Purged Water (gray, brown, red, clear)									

Sample Identification: TK-MW 31	Analysis:	# of Bottles	Comments: Tubing pulled 3' off bottom
Time Sampled: 1415	☒ NWTPH-Gasoline	3	
	☒ BTEX (8021B)	2	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	2	

X VOA, for Butane
unpreserved

3



Ground Water Purge and Sampling Form

Well Identification	NW-29	Site Location: Ecology - Tiki Car Wash		Date: 4/29/08	
Well Diameter (inches)	2"	Project Number: 6199401		Personnel: MBB	
Well Monument Locked and Good Condition?	yes	Purge Method: ☒ Low Flow ☐ Conventional ☐ None			
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: ☒ Peristaltic Pump ☐ Bailer ☐ Grundfos submersible			
Initial Depth to Water (ft btoc)	1432 4.49	Weather Conditions: Overcast, ~55°F			
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons			

Time	1436	1439	1442	1445	1448				
Depth to Ground water (ft btoc)	4.70	4.82	5.10	—	—				
Total Groundwater Purged (gallons)					2.9				
Purge Rate (gpm, ml/min, other)	400	→							
pH	5.99	5.82	5.87	5.89	5.94				
Conductivity (mS/cm)	.496	.498	.474	.456	.456				
Turbidity (NTU)	18	12	13	23	28				
Dissolved Oxygen (mg/L)	0.05	0.04	0.08	0.07	0.07				
Temperature (°C)	12.5	12.6	12.6	12.7	12.7				
ORP/eH (mV)	—	—	—	—	—				
Color of Purged Water (gray, brown, red, clear)	clear	→							

Sample Identification: TK-MW 29	Analysis	# of Bottles	Comments: Tubing pulled 35' off bottom.
Time Sampled: 1500	☒ NWTPH-Gasoline	3	— No product measured, but probe smells of strong gas odor.
	☒ BTEX (8021B)	3	
Purge water disposed To: Drum Onsite	☒ NWTPH-Dx	3	

X VOA's for Butane
unpreserved

3



Ground Water Purge and Sampling Form

Well Identification	MW29	Site Location: TK,	Date: 10/8/2008
Well Diameter (inches)	2"	Project Number: 61994.01	Personnel: AJ
Well Monument Locked and Good Condition?	YES	Purge Method: ☒ Low Flow ☐ Conventional ☐ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing, WBC=Water Below Casing)	WAC	Purge Equipment: ☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Bailer	
Depth to Ground water (ft btoc)	6.35	Weather Conditions: PARTLY CLOUDY 50°F	
Well Total Depth (ft btoc)	0918	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	0930	0933	0936	0939	0942				
Depth to Ground water (ft btoc)	6.87	7.02	7.11	7.16	7.22				
Total Groundwater Purged(gallons, liters, other)	1.6	1.9	1.2	1.5	1.8				
Purge Rate (gpm, ft ³ /min, ml/min, other)	300	300	300	300	300				
pH	5.65	5.65	5.67	5.67	5.67				
Conductivity (mS/cm)	.679	.650	.650	.649	.646				
Turbidity (NTU)	35	22	18	16	16				
Dissolved Oxygen (mg/L)	0.27	0.06	0.03	0.02	0.01				
Temperature (°C)	18.8	19.0	19.1	19.2	19.1				
ORP/eH (mV)	-036	-029	-032	-035	-035				
Color of Purged Water (gray, brown, red, clear)	TAN	TAN	CLR	CLR	CLR				

Sample Identification: TK-MW29	Analysis	Comments:
Time Sampled: 0945	☒ NWTPH-G/BTEX by 8021b	No PRODUCT MEASURED
	☒ NWTPH-Dx	
Purge water disposed To: 10W DRUM	Total Lead	

ONSITE



Ground Water Purge and Sampling Form

Well Identification	MW3	Site Location: TTK1	Date: 10/8/2008
Well Diameter (inches)	2"	Project Number: 61994.01	Personnel: AJ
Well Monument Locked and Good Condition?	Y	Purge Method: ☒ Low Flow ☐ Conventional ☐ None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment: ☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Other	
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment: ☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Bailer	
Depth to Ground water (ft btoc)	4.87	Weather Conditions:	
Well Total Depth (ft btoc)	13.38	52°F. CLOUDY	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons

Time	1229	1232	1235	1238	1241				
Depth to Ground water (ft btoc)	5.59	5.73	5.82	6.05	6.21				
Total Groundwater Purged(gallons, liters, other)	1.0	1.5	2.0	2.5	3.0				
Purge Rate (gpm, ft ³ /min, ml/min, other)	500	500	500	500	500				
pH	6.06	6.06	6.05	6.03	6.02				
Conductivity (mS/cm)	620	628	632	633	632				
Turbidity (NTU)	2	2	2	2	2				
Disssolved Oxygen (mg/L)	0.05	0.01	0.00	0.00	0.00				
Temperature (°C)	18.4	18.6	18.7	18.7	18.7				
ORP/eH (mV)	-0.4	-0.59	-0.61	-0.61	-0.7				
Color of Purged Water (gray, brown, red, clear)	CLR	CLR	CLR	CLR	CLR				

Sample Identification: TK-MW3D	Analysis	Comments:
Time Sampled: 1245	☒ NWTPH-G/BTEX by 8021b	
	☒ NWTPH-Dx	
Purge water disposed To: IDW DRAIN	Total Lead	

ON SITE



Ground Water Purge and Sampling Form

Well Identification	MW-33	Site Location:	Date: 10/8/2008
Well Diameter (inches)	4"	Project Number:	61994.01 Personnel: AJ
Well Monument Locked and Good Condition?	Y	Purge Method:	☒ Low Flow ☐ Conventional ☐ None
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	D	Purge Equipment:	☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Other
Well Casing Plug Locked and Good Condition?	Y	Sampling Equipment:	☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Bailer
Depth to Ground water (ft btoc)	1049 6.97	Weather Conditions:	CLOUDY 52 F
Well Total Depth (ft btoc)		Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	1057	1100	1103	1106	1108	1111	1122			
Depth to Ground water (ft btoc)	7.27	7.42	7.50	7.51	7.52	7.54	7.55			
Total Groundwater Purged(gallons, liters, other)	.7	1.05	1.4	1.75	2.10	2.45	2.80			
Purge Rate (gpm, ft ³ /min, ml/min, other)	350	350	350	350	350	350	350			
pH	6.01	6.01	6.17	6.21	6.26	6.26	6.26			
Conductivity (mS/cm)	.510	.744	.740	.738	.734	.734	.731			
Turbidity (NTU)	25	18	18	19	9	9	9			
Dissolved Oxygen (mg/L)	8.36	8.30	7.65	8.33	8.56	8.64	8.72			
Temperature (°C)	16.7	16.8	16.6	16.6	16.6	16.6	16.7			
ORP/eH (mV)	-050	-055	-059	-059	-057	-056	-056			
Color of Purged Water (gray, brown, red, clear)	CLR	CLR	CLR	CLR	CLR	CLR	CLR			

Sample Identification:	Analysis	Comments:
Time Sampled:	☒ NWTPH-G/BTEX by 8021b	NO PROD. MEASURED
	☒ NWTPH-Dx	
Purge water disposed To:	Total Lead	

ON SITE

REPAIRED TUBING
FROM 1100 - 7107



Ground Water Purge and Sampling Form

Well Identification	MW	35	Site Location:	TK1	Date:	10/8/2008				
Well Diameter (inches)		4	Project Number:	61994.01	Personnel:	AJ				
Well Monument Locked and Good Condition?		Y	Purge Method:	☒ Low Flow ☐ Conventional ☐ None						
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing, WBC=Water Below Casing)		D	Purge Equipment:	☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Other						
Well Casing Plug Locked and Good Condition?		Y	Sampling Equipment:	☒ Peristaltic Pump ☐ Redi-flo Pump ☐ Bailer						
Depth to Ground water (ft btoc)		4.71	Weather Conditions:	52°F / RAIN						
Well Total Depth (ft btoc)		1299	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons							

Time	1150	1153	1156	1159	1202				
Depth to Ground water (ft btoc)	5.23	5.25	5.40	5.62	5.76				
Total Groundwater Purged(gallons (liters, other))	.9	1.35	1.80	2.25	2.70				
Purge Rate (gpm, ft ³ /min, ml/min, other)	450	450	450	450	450				
pH	5.96	5.96	5.96	5.96	5.95				
Conductivity (mS/cm)	.556	.556	.555	.555	.555				
Turbidity (NTU)	1	1	0	1	2				
Disssolved Oxygen (mg/L)	0.06	0.04	0.01	0.00	0.00				
Temperature (°C)	18.0	18.1	18.2	18.2	18.3				
ORP/eH (mV)	-030	-33	-37	-40	-42				
Color of Purged Water (gray, brown, red, clear)	CLR	CLR	CLR	CLR	CLR				

Sample Identification: TK-MW35 1205 Analysis

Time Sampled: TK-MW35 120 ☒ NWTPH-G/BTEX by 8021b

☒ NWTPH-Dx

Purge water disposed To: OW DUM Total Lead

Comments:

Tubing 4' off bottom

NO PROTECT

MEASURE

Table 1 - Analytical Results for Soil Samples

Sheet 1 of 8

Sample ID	MTCA	HC-1-S2	HC-1-S3	HC-2-S1	HC-2-S2
Sampling Date	Method A	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	Cleanup Level	4 to 6	8 to 12	0 to 1	4 to 7
Moisture in %		11	11	13	11
NWTPH-Dx in mg/kg					
Kerosene/Jet fuel	2000	20 U	20 U	20 U	20 U
Diesel/Fuel oil	2000	20 U	20 U	20 U	20 U
Heavy oil	2000	50 U	50 U	50 U	50 U
NWTPH-Gx in mg/kg					
Mineral spirits/Stoddard	100/30 *	5 U	5 U	5 U	5 U
Gasoline	100/30 *	5 U	5 U	5 U	5 U
BTEX in µg/kg					
Benzene	30	20 U		20 U	20 U
Toluene	7000	50 U		50 U	50 U
Ethylbenzene	6000	50 U		50 U	50 U
Xylenes	9000	50 U		50 U	50 U
Total Metals in mg/kg					
Lead	250	2.3	1.0 U	1.1	1.5
Chromium	2000	2.0 U	2.0 U	1.0 U	2.0 U
Cadmium	2	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	20	2.0 U	2.0 U	2.0 U	2.0 U
Mercury	2	0.5 U	0.5 U	0.5 U	0.5 U
Copper		15	1.0 U	3.1	16
Nickel		1.9 J	1.0 UJ	1.5 J	3.2 J
Zinc		25	3.1	7.2	33
Volatiles in µg/kg					
MTBE	100		100 U		
Chloromethane			50 U		
Vinyl chloride			50 U		
Bromomethane			50 U		
Chloroethane			50 U		
Trichlorofluoromethane			50 U		
1,1-Dichloroethene			50 U		
Methylene chloride	20		20 U		
trans-1,2-Dichloroethene			50 U		
1,1-Dichloroethane			50 U		
2,2-Dichloropropane			50 U		
cis-1,2-Dichloroethene			50 U		
Chloroform			50 U		
1,1,1-Trichloroethane	2000		50 U		
Carbon tetrachloride			50 U		
1,1-Dichloropropene			50 U		
Benzene	30		20 U		
1,2-Dichloroethane (EDC)			20 U		
Trichloroethene	30		20 U		
1,2-Dichloropropane			50 U		
Dibromomethane			50 U		

Table 1 - Analytical Results for Soil Samples

Sheet 2 of 8

Sample ID	MTCA	HC-1-S2	HC-1-S3	HC-2-S1	HC-2-S2
Sampling Date	Method A	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	Cleanup	4 to 6	8 to 12	0 to 1	4 to 7
	Level				
Bromodichloromethane			50 U		
cis-1,3-Dichloropropene			50 U		
Toluene	7000		50 U		
trans-1,3-Dichloropropene			50 U		
1,1,2-Trichloroethane			50 U		
Tetrachloroethene	50		50 U		
1,3-Dichloropropane			50 U		
Dibromochloromethane			20 U		
1,2-Dibromoethane (EDB)	5		5 U		
Chlorobenzene			50 U		
1,1,1,2-Tetrachloroethane			50 U		
Ethylbenzene	6000		50 U		
Xylenes	9000		50 U		
Styrene			50 U		
Bromoform			50 U		
Isopropylbenzene			50 U		
1,2,3-Trichloropropane			50 U		
Bromobenzene			50 U		
1,1,2,2-Tetrachloroethane			50 U		
n-Propylbenzene			50 U		
2-Chlorotoluene			50 U		
4-Chlorotoluene			50 U		
1,3,5-Trimethylbenzene			50 U		
tert-Butylbenzene			50 U		
1,2,4-Trimethylbenzene			50 U		
sec-Butylbenzene			50 U		
1,3-Dichlorobenzene			50 U		
Isopropyltoluene			50 U		
1,4-Dichlorobenzene			50 U		
1,2-Dichlorobenzene			50 U		
n-Butylbenzene			50 U		
1,2-Dibromo-3-Chloropropane			50 U		
1,2,4-Trichlorobenzene			50 U		
Naphthalene	5000		50 U		
1,2,3-Trichlorobenzene			50 U		

Table 1 - Analytical Results for Soil Samples

Sheet 3 of 8

Sample ID	HC-2-S3	HC-3-S2	HC-3-S3	HC-4-S2	HC-5-S3
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	8 to 10.5	4 to 8	8 to 12	4 to 6	8 to 12
Moisture in %	14	9.2	17	14	10
NWTPH-Dx in mg/kg					
Kerosene/Jet fuel	20 U	20 U	20 U	20 U	20 U
Diesel/Fuel oil	20 U	20 U	20 U	20 U	20 U
Heavy oil	50 U	50 U	50 U	50 U	50 U
NWTPH-Gx in mg/kg					
Mineral spirits/Stoddard	5 U	5 U	5 U	5 U	5 U
Gasoline	5 U	5 U	5 U	5 U	5 U
BTEX in µg/kg					
Benzene			20 U		20 U
Toluene			50 U		50 U
Ethylbenzene			50 U		50 U
Xylenes			50 U		50 U
Total Metals in mg/kg					
Lead	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cadmium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Mercury	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Copper	1.0 U	1.0 U	3.1	1.0 U	2.1
Nickel	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.1 J
Zinc	1.5	3.1	14	2.6	5.8
Volatiles in µg/kg					
MTBE	100 U	100 U		100 U	
Chloromethane	50 U	50 U		50 U	
Vinyl chloride	50 U	50 U		50 U	
Bromomethane	50 U	50 U		50 U	
Chloroethane	50 U	50 U		50 U	
Trichlorofluoromethane	50 U	50 U		50 U	
1,1-Dichloroethene	50 U	50 U		50 U	
Methylene chloride	20 U	20 U		20 U	
trans-1,2-Dichloroethene	50 U	50 U		50 U	
1,1-Dichloroethane	50 U	50 U		50 U	
2,2-Dichloropropane	50 U	50 U		50 U	
cis-1,2-Dichloroethene	50 U	50 U		50 U	
Chloroform	50 U	50 U		50 U	
1,1,1-Trichloroethane	50 U	50 U		50 U	
Carbon tetrachloride	50 U	50 U		50 U	
1,1-Dichloropropene	50 U	50 U		50 U	
Benzene	20 U	20 U		20 U	
1,2-Dichloroethane (EDC)	20 U	20 U		20 U	
Trichloroethene	20 U	20 U		20 U	
1,2-Dichloropropane	50 U	50 U		50 U	
Dibromomethane	50 U	50 U		50 U	

Table 1 - Analytical Results for Soil Samples

Sheet 4 of 8

Sample ID	HC-2-S3	HC-3-S2	HC-3-S3	HC-4-S2	HC-5-S3
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	8 to 10.5	4 to 8	8 to 12	4 to 6	8 to 12
Bromodichloromethane	50 U	50 U		50 U	
cis-1,3-Dichloropropene	50 U	50 U		50 U	
Toluene	50 U	50 U		50 U	
trans-1,3-Dichloropropene	50 U	50 U		50 U	
1,1,2-Trichloroethane	50 U	50 U		50 U	
Tetrachloroethene	50 U	50 U		50 U	
1,3-Dichloropropane	50 U	50 U		50 U	
Dibromochloromethane	20 U	20 U		20 U	
1,2-Dibromoethane (EDB)	5 U	5 U		5 U	
Chlorobenzene	50 U	50 U		50 U	
1,1,1,2-Tetrachloroethane	50 U	50 U		50 U	
Ethylbenzene	50 U	50 U		50 U	
Xylenes	50 U	50 U		50 U	
Styrene	50 U	50 U		50 U	
Bromoform	50 U	50 U		50 U	
Isopropylbenzene	50 U	50 U		50 U	
1,2,3-Trichloropropane	50 U	50 U		50 U	
Bromobenzene	50 U	50 U		50 U	
1,1,2,2-Tetrachloroethane	50 U	50 U		50 U	
n-Propylbenzene	50 U	50 U		50 U	
2-Chlorotoluene	50 U	50 U		50 U	
4-Chlorotoluene	50 U	50 U		50 U	
1,3,5-Trimethylbenzene	50 U	50 U		50 U	
tert-Butylbenzene	50 U	50 U		50 U	
1,2,4-Trimethylbenzene	50 U	50 U		50 U	
sec-Butylbenzene	50 U	50 U		50 U	
1,3-Dichlorobenzene	50 U	50 U		50 U	
Isopropyltoluene	50 U	50 U		50 U	
1,4-Dichlorobenzene	50 U	50 U		50 U	
1,2-Dichlorobenzene	50 U	50 U		50 U	
n-Butylbenzene	50 U	50 U		50 U	
1,2-Dibromo-3-Chloropropane	50 U	50 U		50 U	
1,2,4-Trichlorobenzene	50 U	50 U		50 U	
Naphthalene	50 U	50 U		50 U	
1,2,3-Trichlorobenzene	50 U	50 U		50 U	

Table 1 - Analytical Results for Soil Samples

Sheet 5 of 8

Sample ID	HC-6-S2	HC-7-S2	HC-7-S3	HC-7-S4	HC-8-S2
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 8	4 to 7.5	8 to 12	12 to 14	4 to 8
Moisture in %	12	14	15	15	15
NWTPH-Dx in mg/kg					
Kerosene/Jet fuel	20 U	20 U	20 U	20 U	20 U
Diesel/Fuel oil	20 U	20 U	20 U	20 U	20 U
Heavy oil	50 U	50 U	50 U	50 U	50 U
NWTPH-Gx in mg/kg					
Mineral spirits/Stoddard	5 U	5 U	5 U	5 U	5 U
Gasoline	5.1	5 U	5 U	5 U	5 U
BTEX in µg/kg					
Benzene	20 U		20 U	20 U	20 U
Toluene	50 U		50 U	50 U	50 U
Ethylbenzene	68		50 U	50 U	50 U
Xylenes	220		50 U	50 U	50 U
Total Metals in mg/kg					
Lead	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Cadmium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Mercury	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Copper	4.9	1.0 U	1.0 U	4.4	1.0 U
Nickel	1.1 J	1.0 UJ	1.0 UJ	1.8 J	1.0 UJ
Zinc	10	3.8	4.5	9.4	3.7
Volatiles in µg/kg					
MTBE		100 U			
Chloromethane		50 U			
Vinyl chloride		50 U			
Bromomethane		50 U			
Chloroethane		50 U			
Trichlorofluoromethane		50 U			
1,1-Dichloroethene		50 U			
Methylene chloride		20 U			
trans-1,2-Dichloroethene		50 U			
1,1-Dichloroethane		50 U			
2,2-Dichloropropane		50 U			
cis-1,2-Dichloroethene		50 U			
Chloroform		50 U			
1,1,1-Trichloroethane		50 U			
Carbon tetrachloride		50 U			
1,1-Dichloropropene		50 U			
Benzene		20 U			
1,2-Dichloroethane (EDC)		20 U			
Trichloroethene		20 U			
1,2-Dichloropropane		50 U			
Dibromomethane		50 U			

Table 1 - Analytical Results for Soil Samples

Sheet 6 of 8

Sample ID	HC-6-S2	HC-7-S2	HC-7-S3	HC-7-S4	HC-8-S2
Sampling Date	11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 8	4 to 7.5	8 to 12	12 to 14	4 to 8
Bromodichloromethane		50 U			
cis-1,3-Dichloropropene		50 U			
Toluene		50 U			
trans-1,3-Dichloropropene		50 U			
1,1,2-Trichloroethane		50 U			
Tetrachloroethene		50 U			
1,3-Dichloropropane		50 U			
Dibromochloromethane		20 U			
1,2-Dibromoethane (EDB)		5 U			
Chlorobenzene		50 U			
1,1,1,2-Tetrachloroethane		50 U			
Ethylbenzene		50 U			
Xylenes		50 U			
Styrene		50 U			
Bromoform		50 U			
Isopropylbenzene		50 U			
1,2,3-Trichloropropane		50 U			
Bromobenzene		50 U			
1,1,2,2-Tetrachloroethane		50 U			
n-Propylbenzene		50 U			
2-Chlorotoluene		50 U			
4-Chlorotoluene		50 U			
1,3,5-Trimethylbenzene		50 U			
tert-Butylbenzene		50 U			
1,2,4-Trimethylbenzene		50 U			
sec-Butylbenzene		50 U			
1,3-Dichlorobenzene		50 U			
Isopropyltoluene		50 U			
1,4-Dichlorobenzene		50 U			
1,2-Dichlorobenzene		50 U			
n-Butylbenzene		50 U			
1,2-Dibromo-3-Chloropropane		50 U			
1,2,4-Trichlorobenzene		50 U			
Naphthalene		50 U			
1,2,3-Trichlorobenzene		50 U			

Table 1 - Analytical Results for Soil Samples

Sample ID	HC-9-S2	HC-9-S3	HC-9-S4
Sampling Date	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 5	8 to 10	13 to 15
Moisture in %	12	15	15
NWTPH-Dx in mg/kg			
Kerosene/Jet fuel	20 U	20 U	20 U
Diesel/Fuel oil	20 U	20 U	20 U
Heavy oil	50 U	50 U	50 U
NWTPH-Gx in mg/kg			
Mineral spirits/Stoddard	5 U	5 U	5 U
Gasoline	5 U	5 U	5 U
BTEX in µg/kg			
Benzene	20 U		20 U
Toluene	50 U		50 U
Ethylbenzene	50 U		50 U
Xylenes	50 U		50 U
Total Metals in mg/kg			
Lead	1.0 U	1.0 U	1.0 U
Chromium	2.0	2.0 U	2.0 U
Cadmium	1.0 U	1.0 UJ	1.0 U
Arsenic	2.0 U	2.0 U	2.0 U
Mercury	0.5 U	0.5 UJ	0.5 U
Copper	22	1.0 U	5
Nickel	2.5 J	1.0 UJ	2.7 J
Zinc	40	2.1	11
Volatiles in µg/kg			
MTBE		100 U	
Chloromethane		50 U	
Vinyl chloride		50 U	
Bromomethane		50 U	
Chloroethane		50 U	
Trichlorofluoromethane		50 U	
1,1-Dichloroethene		50 U	
Methylene chloride		20 U	
trans-1,2-Dichloroethene		50 U	
1,1-Dichloroethane		50 U	
2,2-Dichloropropane		50 U	
cis-1,2-Dichloroethene		50 U	
Chloroform		50 U	
1,1,1-Trichloroethane		50 U	
Carbon tetrachloride		50 U	
1,1-Dichloropropene		50 U	
Benzene		20 U	
1,2-Dichloroethane (EDC)		20 U	
Trichloroethene		20 U	
1,2-Dichloropropane		50 U	
Dibromomethane		50 U	

Table 1 - Analytical Results for Soil Samples

Sample ID	HC-9-S2	HC-9-S3	HC-9-S4
Sampling Date	11/30/2012	11/30/2012	11/30/2012
Sample Depth in Feet	4 to 5	8 to 10	13 to 15
Bromodichloromethane		50 U	
cis-1,3-Dichloropropene		50 U	
Toluene		59	
trans-1,3-Dichloropropene		50 U	
1,1,2-Trichloroethane		50 U	
Tetrachloroethene		50 U	
1,3-Dichloropropane		50 U	
Dibromochloromethane		20 U	
1,2-Dibromoethane (EDB)		5 U	
Chlorobenzene		50 U	
1,1,1,2-Tetrachloroethane		50 U	
Ethylbenzene		50 U	
Xylenes		77	
Styrene		50 U	
Bromoform		50 U	
Isopropylbenzene		50 U	
1,2,3-Trichloropropane		50 U	
Bromobenzene		50 U	
1,1,2,2-Tetrachloroethane		50 U	
n-Propylbenzene		50 U	
2-Chlorotoluene		50 U	
4-Chlorotoluene		50 U	
1,3,5-Trimethylbenzene		50 U	
tert-Butylbenzene		50 U	
1,2,4-Trimethylbenzene		50 U	
sec-Butylbenzene		50 U	
1,3-Dichlorobenzene		50 U	
Isopropyltoluene		50 U	
1,4-Dichlorobenzene		50 U	
1,2-Dichlorobenzene		50 U	
n-Butylbenzene		50 U	
1,2-Dibromo-3-Chloropropane		50 U	
1,2,4-Trichlorobenzene		50 U	
Naphthalene		50 U	
1,2,3-Trichlorobenzene		50 U	

U = Not detected at the reporting limit indicated.

J = Estimated value.

* 100 mg/kg for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 30 mg/kg for all other gasoline mixtures

Table 2 - Analytical Results for Groundwater Samples

Sheet 1 of 4

Sample ID Sampling Date	MTCA Method A Cleanup Level	HC-1 11/30/2012	HC-2 11/30/2012	HC-3 11/30/2012	HC-4 11/30/2012
Total Susp. Solids in mg/L		24000	840	7200	1700
NWTPH-Dx in mg/L					
Kerosene/Jet fuel	0.5	0.20 U	0.20 U	0.20 U	0.20 U
Diesel/Fuel oil	0.5	0.20 U	0.20 U	0.20 U	0.20 U
Heavy oil	0.5	0.50 U	0.50 U	0.50 U	0.50 U
NWTPH-Gx in mg/L					
Mineral spirits/Stoddard	1/0.8 *	0.10 U	0.10 U	0.10 U	0.10 U
Gasoline	1/0.8 *	0.15	0.10	0.10 U	0.10 U
Dissolved Metals in mg/L					
Lead	0.015	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	0.05	0.01 U	0.01 U	0.01 U	0.01 U
Cadmium	0.005	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ
Arsenic	0.005	0.005 U	0.005 U	0.005 U	0.005 U
Mercury	0.002	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Copper		0.01 U	0.01 U	0.01 U	0.01 U
Nickel		0.03	0.03	0.02	0.01 U
Zinc		0.07	0.07	0.05	0.01
Volatiles in µg/L					
MTBE	20	5.0 U	5.0 U	5.0 U	5.0 U
Chloromethane		1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane		1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane		1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane		1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	5	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane		1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U
Chloroform		1.1	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride		1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene		1.0 U	1.0 U	1.0 U	1.0 U
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane (EDC)	5	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane		1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane		1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene		1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000	3.1	4.2	1.0 U	1.0 U
trans-1,3-Dichloropropene		1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane		1.0 U	1.0 U	1.0 U	1.0 U

Table 2 - Analytical Results for Groundwater Samples

Sheet 2 of 4

Sample ID Sampling Date	MTCA Method A Cleanup	HC-1 11/30/2012	HC-2 11/30/2012	HC-3 11/30/2012	HC-4 11/30/2012
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane		1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	0.01	0.01 U	0.01 U	0.01 U	0.01 U
Chlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,1,1,2-Tetrachloroethane		1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	700	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes	1000	13	6.0	1.0 U	1.0 U
Styrene		1.0 U	1.0 U	1.0 U	1.0 U
Bromoform		1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene		1.0 U	1.2	1.0 U	1.0 U
1,2,3-Trichloropropane		1.0 U	1.0 U	1.0 U	1.0 U
Bromobenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane		1.0 U	1.0 U	1.0 U	1.0 U
n-Propylbenzene		1.0 U	1.6	1.0 U	1.0 U
2-Chlorotoluene		1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene		1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene		1.5	1.0 U	1.0 U	1.0 U
tert-Butylbenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene		4.0	1.0	1.0 U	1.0 U
sec-Butylbenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
Isopropyltoluene		1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
n-Butylbenzene		1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane		1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	160	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene		1.0 U	1.0 U	1.0 U	1.0 U

Table 2 - Analytical Results for Groundwater Samples

Sample ID	HC-7	HC-9
Sampling Date	11/30/2012	11/30/2012
Total Susp. Solids in mg/L		740
NWTPH-Dx in mg/L		
Kerosene/Jet fuel	0.20 U	0.20 U
Diesel/Fuel oil	0.20 U	0.20 U
Heavy oil	0.50 U	0.50 U
NWTPH-Gx in mg/L		
Mineral spirits/Stoddard	0.10 U	0.10 U
Gasoline	1.8	3.4
Dissolved Metals in mg/L		
Lead	0.002 U	0.002 UJ
Chromium	0.01 U	0.01 U
Cadmium	0.005 UJ	0.005 UJ
Arsenic	0.005 U	0.005 U
Mercury	0.0005 U	0.0005 U
Copper	0.01 U	0.01 U
Nickel	0.10	0.07
Zinc	0.26	0.20
Volatiles in µg/L		
MTBE	5.0 U	5.0 U
Chloromethane	1.0 U	1.0 U
Vinyl chloride	0.2 U	0.2 U
Bromomethane	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U
Trichlorofluoromethane	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U
Methylene chloride	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U
2,2-Dichloropropane	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U
Chloroform	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	1.0 U
Carbon tetrachloride	1.0 U	1.0 U
1,1-Dichloropropene	1.0 U	1.0 U
Benzene	650	900
1,2-Dichloroethane (EDC)	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U
Dibromomethane	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U
Toluene	5.1	7.1
trans-1,3-Dichloropropene	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U

Table 2 - Analytical Results for Groundwater Samples

Sample ID Sampling Date	HC-7 11/30/2012	HC-9 11/30/2012
Tetrachloroethene	1.0 U	1.0 U
1,3-Dichloropropane	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U
1,2-Dibromoethane (EDB)	0.01 U	0.01 U
Chlorobenzene	1.5	1.2
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U
Ethylbenzene	27	61
Xylenes	80	450
Styrene	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U
Isopropylbenzene	12	30
1,2,3-Trichloropropane	1.0 U	1.0 U
Bromobenzene	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U
n-Propylbenzene	17	55
2-Chlorotoluene	1.2	7.2
4-Chlorotoluene	1.0 U	1.0 U
1,3,5-Trimethylbenzene	11	75
tert-Butylbenzene	1.0 U	1.0 U
1,2,4-Trimethylbenzene	14	390
sec-Butylbenzene	1.0 U	3.0
1,3-Dichlorobenzene	1.0 U	1.0 U
Isopropyltoluene	1.0 U	1.6
1,4-Dichlorobenzene	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U
n-Butylbenzene	1.3	3.9
1,2-Dibromo-3-Chloropropane	1.0 U	1.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U
Naphthalene	2.5	11
1,2,3-Trichlorobenzene	1.3	1.7

U = Not detected at the reporting limit indicated.

J = Estimated value.

* 1 mg/L for gasoline mixtures without benzene and the total of ethylbenzene, toluene, and xylenes are less than 1% of the gasoline mixture; 0.8 mg/L for all other gasoline mixtures
Concentrations that exceed MTCA Method A cleanup level are boxed

Appendix B

Water Field Sampling Data Sheets



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Water Field Sampling Data Sheet

Client Name	WA Dept. of Ecology	Sample Location	MW-23
Project #	M0592.06.001	Sampler	J. Elliott
Project Name	Tiki Car Wash	Sampling Date	10/24/2023
Sampling Event	October 2023	Sample Name	
Sub Area		Sample Depth (ft)	
FSDS QA:	J. Fudge 11/09/2023	Easting	
		Northing	
		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
10/24/2023	11:12			4.10			

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

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	Water Level
(2) Peristaltic Pump	11:01:00 AM			6.57	18.6	563	4.03	112.0		
	11:03:00 AM			6.72	19.4	545	3.78	79.5		
	11:06:00 AM			6.74	19.6	547	3.39	59.6		
Final Parameters	11:09:00 AM			6.74	19.7	542	2.84	50.0		

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

Water Quality Observations:

Clean, odorless.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Began purging at 11:01.
Well has two bolt holes, no bolts.
No sample collected.

Signature _____



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Water Field Sampling Data Sheet

Client Name	WA Dept. of Ecology	Sample Location	MW-29
Project #	M0592.06.001	Sampler	J. Elliott
Project Name	Tiki Car Wash	Sampling Date	10/24/2023
Sampling Event	October 2023	Sample Name	
Sub Area		Sample Depth (ft)	
FSDS QA:	J. Fudge 11/09/2023	Easting	
		Northing	
		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
10/24/2023	12:41			6.11			

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

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	Water Level
(2) Peristaltic Pump	12:45:00 PM			6.07	17.9	420.2	1.90	41.0		
	12:47:00 PM			6.11	18.4	374.3	0.77	32.5		
	12:49:00 PM			6.07	18.5	341.7	0.60	28.2		
	12:50:00 PM			6.07	18.5	337.5	0.56	26.3		
Final Parameters	12:52:00 PM			6.06	18.6	335.4	0.52	24.3		

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

Water Quality Observations: Strong petroleum-like odor.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Began purging at 12:45.
 Well monument filled with water to top of well. Pumped out prior to purging.
 Well located in high traffic area (parking spot).
 Historical data indicate high GRO/BTEX data at this well.
 No sample collected.

Signature _____



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Water Field Sampling Data Sheet

Client Name	WA Dept. of Ecology	Sample Location	MW-30
Project #	M0592.06.001	Sampler	J. Elliott
Project Name	Tiki Car Wash	Sampling Date	10/24/2023
Sampling Event	October 2023	Sample Name	
Sub Area		Sample Depth (ft)	
FSDS QA:	J. Fudge 11/09/2023	Easting	
		Northing	
		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
10/24/2023	11:48			4.73			

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

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	Water Level
(2) Peristaltic Pump	11:51:00 AM			6.21	18.3	409.0	1.74	35.9		
	11:55:00 AM			6.32	18.9	396.6	0.63	4.4		
	11:57:00 AM			6.32	18.9	395.5	0.57	-2.5		
Final Parameters	11:59:00 AM			6.33	18.9	395.4	0.53	-7.6		

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

Water Quality Observations:

Black particulates; odorless.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Began purging at 11:51.
Well located in non-high traffic area, slightly under a tree.
No sample collected.

Signature _____



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Water Field Sampling Data Sheet

Client Name	WA Dept. of Ecology	Sample Location	MW-34
Project #	M0592.06.001	Sampler	J. Elliott
Project Name	Tiki Car Wash	Sampling Date	10/24/2023
Sampling Event	October 2023	Sample Name	
Sub Area		Sample Depth (ft)	
FSDS QA:	J. Fudge 11/09/2023	Easting	
		Northing	
		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
10/24/2023	12:07			7.57			

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

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	Water Level
(2) Peristaltic Pump	12:10:00 PM			6.22	18.3	419.1	3.88	11.9		
	12:12:00 PM			6.28	18.6	418.6	1.02	7.5		
	12:14:00 PM			6.29	18.8	416.8	0.62	3.7		
Final Parameters	12:16:00 PM			6.27	18.7	419.5	0.51	0.8		

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

Water Quality Observations:

Petroleum-like odor. Murky.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Began purging at 12:10
Well located in high traffic area.
Two bolt holes, one bolt missing.
No sample collected.

Signature _____



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Water Field Sampling Data Sheet

Client Name	WA Dept. of Ecology	Sample Location	MW-40
Project #	M0592.06.001	Sampler	J. Elliott
Project Name	Tiki Car Wash	Sampling Date	10/24/2023
Sampling Event	October 2023	Sample Name	
Sub Area		Sample Depth (ft)	
FSDS QA:	J. Fudge 11/09/2023	Easting	
		Northing	
		TOC	

Hydrology/Level Measurements

Date	Time	DT-Bottom	DT-Product	DT-Water	(Product Thickness)	(Water Column)	(Gallons/ft x Water Column)
					DTP-DTW	DTB-DTW	Pore Volume
10/24/2023	11:29			5.38			

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

Water Quality Data

Purge Method	Time	Purge Vol (gal)	Flowrate (l/min)	pH	Temp (C)	E Cond (uS/cm)	DO (mg/L)	ORP	Turbidity	Water Level
(2) Peristaltic Pump	11:32:00 AM			6.45	16.8	553.0	1.38	54.6		
	11:34:00 AM			6.39	16.9	534.0	1.15	47.7		
Final Parameters	11:38:00 AM			6.35	16.9	494.3	1.40	37.8		

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

Water Quality Observations:

Clean, odorless.

Sample Information

Sampling Method	Sample Type	Sampling Time	Container Code/Preservative	#	Filtered
			VOA-Glass		
			Amber Glass		
			White Poly		
			Yellow Poly		
			Green Poly		
			Red Total Poly		
			Red Dissolved Poly		
			Total Bottles	0	

General Sampling Comments

Began purging at 11:32.
Well located in non-high traffic area, under a tree.
No sample collected.

Signature _____

Appendix C

Historical Groundwater Contour Maps



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Source: INCA Engineers, Inc. site survey, May 2008.

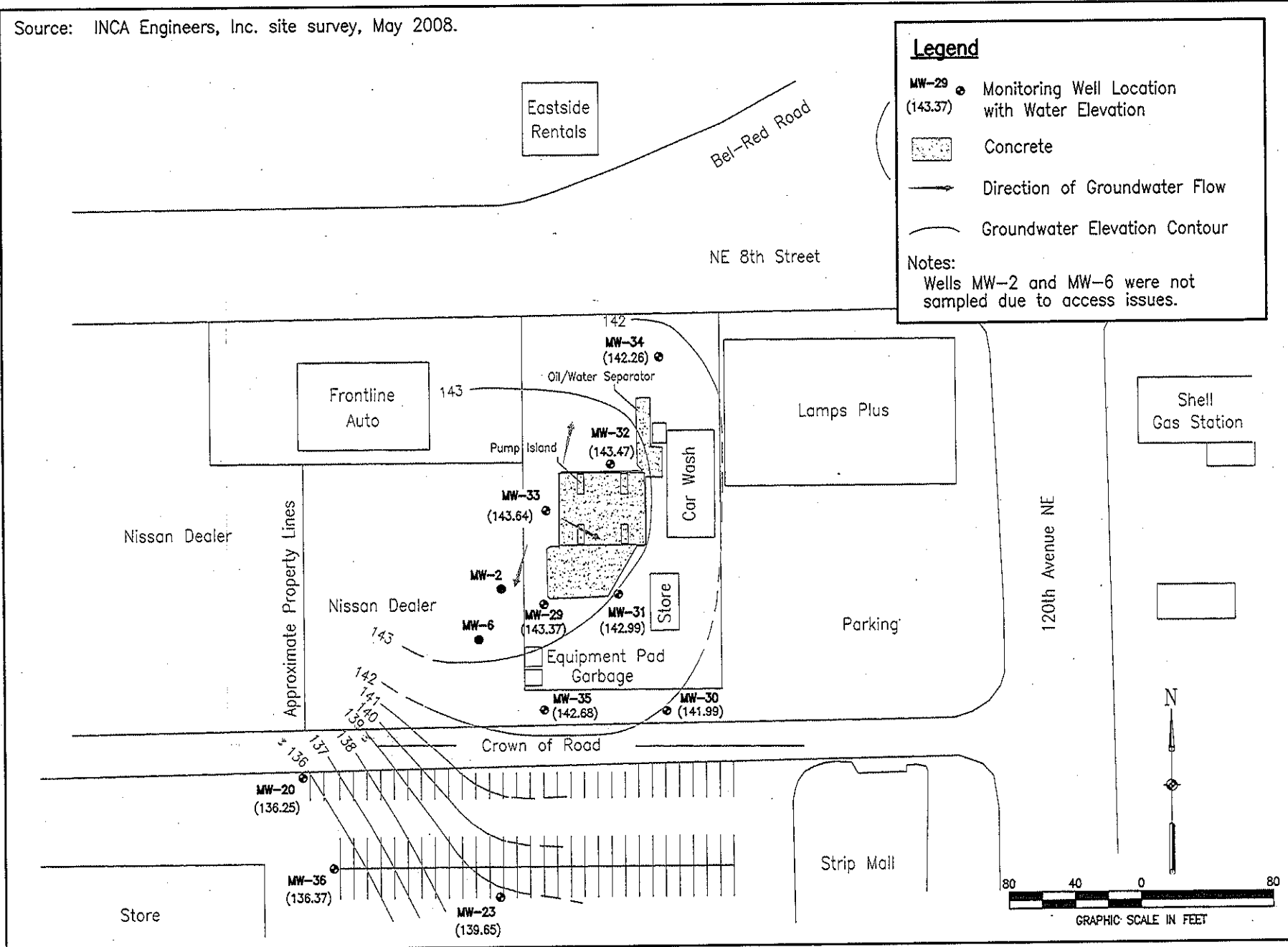


Figure 3. Groundwater Elevations and Flow Direction, June 2008, Tiki Car Wash.



Source: INCA Engineers, Inc. site survey, May 2008.

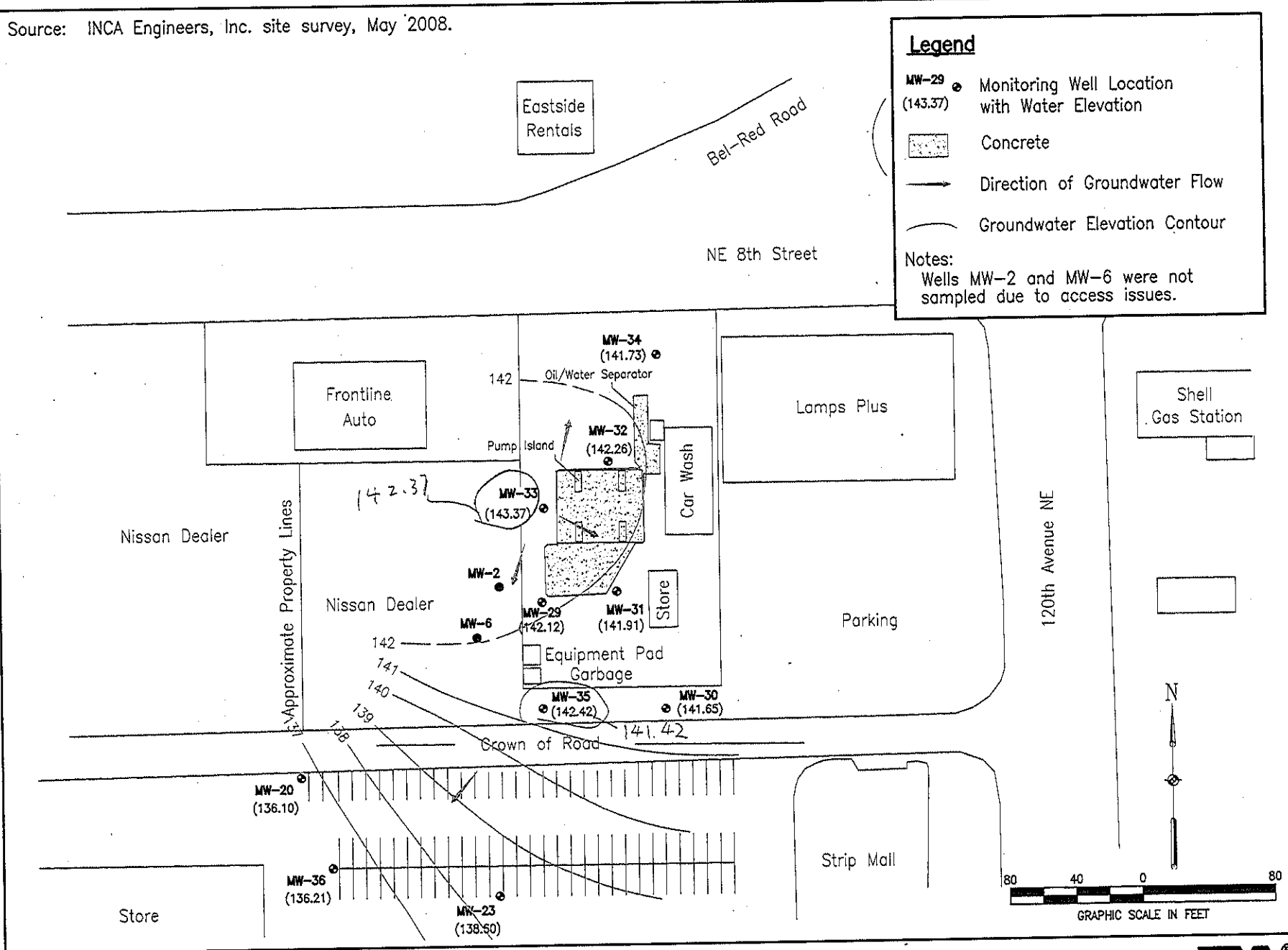


Figure 4. Groundwater Elevations and Flow Direction, October 2008, Tiki Car Wash.



