PROPERTY-SPECIFIC CLOSURE REPORT FOR PARKING LOT PARCEL

Morrell's Dry Cleaners

Prepared for: D.E. Wickham, Successor to Walker Chevrolet

Project No. 080190-006 • August 2020 Ecology Review Draft

Aspect CONSULTING

earth + water

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1 Introduction with Opinion Request

This report presents the property-specific closure of the Parking Lot Parcel (Parcel) that is a subset of the larger the Morrell's Dry Cleaners site (Site[1]; Figure 1). Site contamination is primarily the result of chlorinated solvent releases from historical dry cleaner operations[2] at 608 North First Street in Tacoma, Washington (Property) from 1929 until 2009 when PCE was no longer used in the process. The Site includes the Property and any off-Property soil or groundwater confirmed or suspected of being impacted by the chlorinated solvents released at the Property. The Site is enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) and assigned VCP No. SW1039.

This report is intended to demonstrate compliance with environmental cleanup requirements under the Washington State Model Toxics Control Act (MTCA), 70.105D Revised Code of Washington (RCW), and its implementing regulations. While remediation efforts have been ongoing at the Site since 2014, contamination remains both on and off the Property and engineering analyses conclude that further treatment is impracticable based on a disproportionate cost assessment (DCA, presented herein). The objective is to obtain concurrence in the site characterization and cleanup action in the form of a No Further Action Likely determination from Ecology based on implementation of a monitored natural attenuation remedy in conjunction with an environmental covenant.

The Property consists of two parcels, referred to in this report as the Building Parcel and the Parking Lot Parcel (Figure 2). The chlorinated solvent releases occurred on the Building Parcel. Results of investigation and remediation efforts to date suggest that the magnitude and extent of soil and groundwater contamination on the Building Parcel are such that cleanup will have a long restoration timeframe unless the building is first demolished to improve access to underlying contamination and very aggressive (and costly) remedial technologies are applied.[3] By contrast, the magnitude and extent of groundwater impacts on the hydraulically upgradient Parking Lot Parcel are minor. There are no soil impacts on the Parking Lot Parcel per 2019 boring results, discussed in Section 2.5 below.

The first portion of this report describes the Site and summarizes environmental investigations and interim cleanup actions conducted to date. It also includes results of *in-situ* treatments which have been evaluated to address residual groundwater contamination. The second portion of the report develops a conceptual model for the

[1] The Site includes the area where hazardous substances were released (i.e., the "source area") and anywhere contamination has come to be located.

[2] As discussed in this report, petroleum hydrocarbons are also present in the subsurface, and represent a significant fraction of the total contaminant mass. The source of the petroleum hydrocarbons is unknown. Historical dry-cleaning operations, which may have used petroleum hydrocarbons (e.g., Stoddard solvent) before chlorinated solvents came into use, are a possible source.

[3] The owners of the Property are not in favor of building demolition.

Parking Lot Parcel and evaluates cleanup alternatives with respect to the MTCA criteria for selecting cleanup actions (Washington Administrative Code [WAC] 173-340-360). The preferred cleanup alternative is then selected based on the results of a DCA and required remedy components for property-specific closure of the Parking Lot Parcel are outlined.

1.1 Site Description and History

Table 1 provides general Site and parcel information.

Table 1. General Site and Parcel Information

Site Name	Morrell's Dry Cleaners
Facility/Site ID	18489568
Cleanup Site ID	386
VCP No.	SW1039
VCP Site Manager	Adam Harris
Consultant and VCP Customer	Aspect Consulting, LLC Doug Hillman, LHG 710 2nd Avenue, Suite 550 Seattle, WA 98104
Site Address	608 North First Street, Tacoma, Washington 98403
Site Coordinates	47.264174ºN, 122.448441ºW
Public Land System Location	T21N, R3E, S32, SW¼ of NE¼
City of Tacoma Zoning	Community Commercial Mixed-Use (CCX)
On-Property Parcels	
Building Parcel Pierce County Parcel No. Address Property Owner Tenant/Business Names	 2030-12-0031 608 North First Street, Tacoma, Washington 98403 Thriftway Properties, LLC Morrell's Dry Cleaners, Tease Chocolates
Parking Lot Parcel Pierce County Parcel No. Address Property Owner	 2030-12-0033 618 North First Street, Tacoma, Washington 98403 Thriftway Properties, LLC
Off-Property Parcels with Confirmed Impacts from Chlorinated Solvent Releases at the Property	
Pierce County Parcel No. Address	2030-12-0012 16 North Tacoma Avenue, Tacoma, Washington 98403
Pierce County Parcel No. Address	2030-12-0013 2 North Tacoma Avenue, Tacoma, Washington 98403

The Building Parcel is approximately 7,930 square feet and contains a single-story, approximately 3,700-square-foot building[4] of slab-on-grade construction (hereafter

[4] As shown on Figure 2, the extreme northern portion of the building extends onto off-property Parcel 2030-12-0012.

referred to as the Morrell's building), which is currently occupied by Morrell's Dry Cleaners and Tease Chocolates. The Parking Lot Parcel is approximately 13,450 square feet and is used primarily by patrons of the south-adjacent grocery store (see next paragraph). The entire Site outside the Morrell's building footprint is paved with asphalt and concrete.

The adjoining property to the south is the Former Walker Chevrolet Site (VCP No. SW1040). A Thriftway grocery store on that property abuts the southern boundary of the Parking Lot Parcel. The adjoining properties to the northeast contain commercial and office space. The north-adjacent building is separated from the Morrell's building by an approximately 5-foot-wide paved, gated alley.

According to reverse city directories, dry cleaning operations have been performed continuously on the Property beginning in 1929. Tetrachloroethene (PCE) was used in successive dry-cleaning machines from the beginning of the Morrell's tenancy in 1972[5] until early 2009, when Morrell's purchased the existing dry-cleaning machine, which does not use PCE.

The Property is zoned by the City of Tacoma as Neighborhood Commercial Mixed-Use District (NCX), allowing for a mix of residential, office, retail, and commercial service uses. There are currently no firm plans for redeveloping the Property. For the purposes of this report it is assumed that future land use will conform to the existing zoning.

1.2 Environmental Setting

1.2.1 Topography and Surface Cover

The Site is located in the Stadium District of Tacoma between Wright Park and Commencement Bay (Figure 1). The Stadium District is located above an escarpment that descends to Commencement Bay. The Parking Lot Parcel is about elevation 278 feet (NAVD88) and the top of the escarpment is about elevation 240 feet. The top of the escarpment is about 500 feet north of the Site boundary. The bottom of the escarpment is about elevation 20 feet at Schuster Parkway, which extends along Commencement Bay. The lateral distance from the top to the bottom of the escarpment is approximately 400 feet; an giving the escarpment an approximate 55 percent grade.

The Stadium District is predominantly covered with impervious surfaces. The exception is Wright Park, a 32-acre park located south of the Site. A pond in Wright Park is the closest surface water to the Site, located about 900 feet from the Site. This surface water is at a higher elevation (approximately 290 feet) and upgradient from the Site. Commencement Bay is the closest surface water body downslope at approximately 1,200 feet from the Site.

1.2.2 Hydrogeologic Conditions

The Site is underlain primarily by dense, fine-grained soils with groundwater occurrence at depths below 50 feet. Figure 3 provides hydrogeologic cross sections beneath the Site (see Figure 2 for cross-section locations). Site soils consist of approximately 35 feet of silty sand and gravel, interpreted as ice-contact deposits (Qvi) and glacial till (Qvt),

[5] PCE was likely used for dry cleaning at the Site prior to 1972 as well, but records are not available.

overlying approximately 30 feet of sand, interpreted as Advance Outwash (Qva). Underlying the outwash sand is a sequence consisting primarily of silt and silty sand, with a limited thickness of interbedded slightly silty sand, which is interpreted as Olympia bed interglacial deposits (Qob). This sequence of silt, silty sand, and sand extends to at least 146 feet below ground surface (bgs), the maximum depth drilled on the Site.

The Advance Outwash is the uppermost groundwater-bearing unit at the Site, and the base of the outwash ranged from about 63 to 74 feet bgs in the Site boring logs. The depth to groundwater is about 52 feet bgs beneath the Parking Lot Parcel. All Site monitoring wells except the seven called out in the next paragraph are completed in the Advance Outwash. The five Advance Outwash wells constructed along Tacoma Avenue North and North First Street (MW-3, MW-4, MW-6, MW-9, and MW-10) did not yield water over multiple years of monitoring and were decommissioned in 2010. On this basis, the upper water bearing unit is estimated to terminate along the approximate boundary shown on Figure 4 and is interpreted as a perched aquifer.

Borings for MW-3, MW-5, MW-8D, MW-10, MW-11, and MW-12D to MW-14D penetrated through the Advance Outwash into the Olympia bed interglacial deposits, which are characterized as a leaky lower-confining unit with discontinuous, low-yield sandy intervals. Deeper water-bearing zones were encountered within thin sandy intervals of the Olympia bed interglacial deposits. Wells MW-8D and MW-12D to MW-14D were completed in the interglacial deposits and yield limited quantities of groundwater during sample collection. The intersected water bearing units are under unconfined conditions. The discontinuous, low-yield, water-bearing units in the Olympia bed interglacial deposits likely contain non-potable groundwater based on low yield (WAC 173-340-720(2)(b)(i)), and unlikely interconnection with potential future sources of drinking water (WAC 173-340-720(2)(c)). Impacted groundwater within the interglacial deposits would be unlikely to reach surface water, which is about 140 feet beneath and 1,200 feet north of the Site boundary.

Advance Outwash groundwater gradients are very small on the Parking Lot Parcel. Inferred groundwater flow direction can vary widely from one monitoring round to the next. Figure 4 shows Advance Outwash groundwater elevations measured on December 22, 2010 and estimated groundwater elevation contours.[6] The inferred groundwater flow direction is to the north, consistent with the local topography and the presence of Wright Park (an elevated recharge area) upgradient to the south.

1.3 Previous Reports and Ecology Review

The following is a chronological listing of technical reports submitted to Ecology and an Ecology opinion letter regarding investigation and cleanup of the Site. The contents of each is briefly summarized.

[6] Groundwater elevation measurements on this date included wells MW-1 and MW-11 on the Former Walker Chevrolet Site. Inclusion of these wells allows for more accurate interpretation of groundwater elevation contours, given the very small gradients across the Morrell's Site. More recent contours including MW-1 and MW-11 are not available because those wells have since been decommissioned.

- **Site Conditions Summary** dated July 14, 2009 (Aspect, 2009). This technical memorandum documents due-diligence investigation results performed by Stemen Environmental, Inc. (Stemen) between 2006 and 2008, and follow-up investigations by Aspect in 2009, at the Morrell's Dry Cleaners and adjacent Walker Chevrolet sites. Investigations were initiated at the Morrell's Dry Cleaners Site after water was encountered beneath the Morrell's building floor slab, and an analysis of the water bill of Tully's Coffee (located across the alley to the north) indicated that an estimated 600,000 gallons of drinking water had been released between May 2006 and September 2007.
- **Remedial Investigation (RI) Report** dated February 18, 2011 (Aspect, 2011). This report describes the historical uses and environmental setting, documents investigations completed to date, and develops a preliminary conceptual site model for the Morrell's Dry Cleaners and Walker Chevrolet sites.
- **Ecology's "further action" opinion letter** dated September 26, 2011 (Ecology, 2011) provides review comments on the RI Report (Ecology, 2011). It states that the perched groundwater in the Advance Outwash was adequately delineated but requested additional delineation of the deeper groundwater within the interglacial deposits. Ecology also recommended performing a Tier II indoor air sampling assessment in and adjacent to the Morrell's building.
- **Focused Feasibility Study** dated March 26, 2012 (Aspect, 2012a). Separate focused feasibility study (FFS) reports were prepared for the Morrell's Dry Cleaners and Walker Chevrolet sites. The Morrell's Dry Cleaners FFS report (Aspect, 2012a) develops cleanup action objectives, and develops and evaluates cleanup alternatives in accordance with MTCA criteria in WAC 173-340-360. The report identifies sub-slab depressurization, soil vapor extraction (SVE) treatment, and biostimulation as viable cleanup technologies that could be implemented under the current Site use. SVE was recommended to remove chlorinated volatile organic compounds (VOCs) from beneath the Morrell's building floor slab and the glacial till and Advance Outwash sand beneath the building, using perimeter SVE trenches and peripheral SVE wells that extend beneath the building. Biostimulation was recommended to enhance the natural reductive dechlorination of PCE in groundwater.
- **Data Gaps Investigation** dated May 1, 2012 (Aspect, 2012b). This technical memorandum documents investigations that were conducted to address data gaps identified in Ecology's "further action" opinion letter.
- **Interim Cleanup Action Construction and Design Report** dated May 16, 2014 (Aspect, 2014a). This report documents construction and baseline groundwater sampling of wells to be used for biostimulant injection, and construction and pilot testing of wells and a trench to be used for SVE treatment. Pilot test and groundwater sampling results were used to finalize remediation system design and to design a groundwater monitoring and biostimulation program to enhance degradation of contaminants in groundwater.
- **Interim Cleanup Action Construction Completion Report** dated December 23, 2014 (Aspect, 2014b). This report describes the June 2014 biostimulant injection

event and specifications, construction, startup, and initial testing of the SVE system.

- **Supplemental Focused Feasibility Study (Draft)** dated August 10, 2018 (Aspect, 2018). This report evaluates biostimulation injection and SVE treatment performance to date and uses that information to develop and evaluate on-Property remedial alternatives for the Site. Active technologies evaluated include expanded biostimulation, expanded SVE, electrical resistance heating (ERH), and heat-enhanced plume attenuation (HEPA). An alternative which utilizes a combination of SVE and biostimulant injection was recommended for interim implementation.

2 Site Investigation

This section describes Site investigations and summarizes investigation results. Investigations conducted in 2006 through 2014 are documented in previous reports submitted to Ecology under the VCP. Those investigations are briefly summarized below, and the reader is referred to previous reports for more detailed documentation (e.g., laboratory reports). Detailed documentation is provided for investigations conducted after 2014. Results for the entire investigation period are summarized in tables and figures, as described at the end of this section.

2.1 Investigation Documented in Site Conditions Summary

As noted above, the Site Conditions Summary (Aspect, 2009) documents investigations at both Morrell's and the adjacent Walker Chevrolet site. The following investigation activities, completed in 2006 through 2009, were associated with the Morrell's Dry Cleaners Site:

- Reconnaissance water samples were collected from beneath the Morrell's building floor slab and the adjacent parking lot pavement during the Tully's drinking water leak and after the leak was repaired (see Section 5.2).
- Soil samples were collected in and around the footprint of the Morrell's building.
- Construction and sampling of nine monitoring wells (MW-2 through MW-10) screened in the Advance Outwash and one well (MW-8D) screened in a deeper water-bearing zone.
- A camera survey was conducted of the sewer lines beneath and adjacent to the Morrell's building.
- Soil gas samples were collected from beneath the alley and parking lot pavement adjacent to the Morrell's building and from sewer line utility corridors.
- Air samples were collected on two occasions inside the Morrell's building.

2.2 Investigation Documented in Remedial Investigation Report

As noted above, the RI Report (Aspect, 2011) documents investigations at both Morrell's and the adjacent Walker Chevrolet site. The following investigation activities, completed in 2010, were associated with the Morrell's Dry Cleaners Site:

- A Gore-Sorber survey was conducted to evaluate the extent of vapor-phase VOCs beneath and in the immediate vicinity of the Morrell's building.
- Soil samples were collected from direct-push soil borings at locations inside the Morrell's building, in the alley north of the building, and on the sidewalk east of the building.
- Construction and sampling of two wells (MW-12D, MW-13D) screened in deeper water-bearing zones.
- Decommissioning of three wells (MW-3, MW-4, and MW-6) which had been dry since installation in 2007 and 2008.

2.3 Investigation Documented in Data Gaps Investigation Technical Memorandum

The following investigation activities, completed in 2012, were documented in the Data Gaps Investigation Technical Memorandum (Aspect, 2012b):

- Construction of one well (MW-14D) screened in a deeper water-bearing zone.
- Sampling of direct-push soil borings on the south and east sides of the Morrell's building and in the parking lot.
- Sampling of groundwater, indoor air, and soil gas in the alley along the north side of the building.

2.4 Investigation Documented in Interim Cleanup Action Construction and Design Report

The following investigation activities, completed in 2013 and 2014, were documented in the Interim Cleanup Action Construction and Design Report (Aspect, 2014a); refer to Figure 5 for well locations:

- Construction of four SVE wells (VE-1 through VE-4) screened in vadose zone soils.
- Construction of a SVE trench in the alley along the north side of the Morrell's building.
- Construction of seven biostimulant injection wells screened in the Advance Outwash, including four angled wells (MW-15 through MW-18) and three vertical wells (MW-19 through MW-21).
- Baseline groundwater sampling of the new and pre-existing Site wells.

2.5 2019 Borings and Well Installations

Four angled SVE wells (VE-5 through VE-8) and 13 vertical monitoring wells (MW-23 through MW-35) were installed at the Site between January 28 and July 11, 2019. Figure 5 shows the well locations. The angled borings were drilled under the Morrell's building and the wells were screened in vadose zone soils to expand the influence of SVE treatment (refer to Section 3). The vertical monitoring wells were drilled in the Morrell's parking lot and the wells were screened in the Advance Outwash saturated zone to investigate the magnitude and extent of soil and groundwater contamination. The initial vertical wells were drilled adjacent to the Morrell's building, and subsequent well locations were "stepped out" southward and eastward. Drilling, well installation, and investigation derived waste (IDW) management are discussed in this section. Boring logs and well construction diagrams are provided in Appendix A.

2.5.1 Vertical Borings and Well Installations

The new vertical monitoring well installations, designated MW-23 through MW-35, were drilled and installed using hollow-stem auger (HSA) drilling technology. During drilling, soil samples were collected at 5-foot depth intervals except for well MW-35. All thirteen wells are constructed with 2-inch-diameter PVC, 10- to 20-mesh sand filter packs, and flush-mount monuments. Their 0.020-inch slotted screens intersect the saturated interval of the Advance Outwash in the approximate depth range of 45 to 60 feet below ground surface.[7] The wells will be used for groundwater monitoring and possibly injection-based treatment.[8] In addition to the deep screens, shallow screens in the approximate depth range of 10 to 20 feet bgs were installed in wells MW-23 and MW-31 for possible connection to the SVE system due to their proximity to the source area.

Wells MW-23, MW-30, and MW-31 were drilled and installed during the daytime. However, tenants with parking lot privileges complained that daytime drilling negatively impacted their businesses (i.e., fewer customers). Therefore, all other drilling and well installation activities were completed at night. This required obtaining noise variances from the City of Tacoma and distributing nighttime drilling notices (on three separate occasions) to all occupied buildings (approximately 90 buildings) located within 700 feet of the parking lot.

A fourth boring (intended well MW-22) was also attempted during the daytime approximately 11 feet east of the northeast corner of the Morrell's building, between angled wells VE-1 and VE-3. Subsurface utilities were expected at that location, and a vacuum truck with air knife was used to remove soil beneath the asphalt. However, the driller was unable to gain access through the subsurface utilities, and that boring location was abandoned.

The new wells were developed to reduce turbidity and establish hydraulic connection with the surrounding aquifer, and top-of-casing (TOC) elevations were surveyed.

[7] Slightly shallower screens were installed for MW-34 (44 to 59 feet bgs) and MW-35 (43 to 58 feet bgs).
[8] MW-34 and MW-35 were installed specifically for the MW-20 injection test discussed in Section 4.2.

2.5.2 Angled Borings and Well Installations

The new angled SVE well installations, designated VE-5 through VE-8, were drilled at a 45-degree angle and installed using SONIC drilling technology. Boring lengths were approximately 45 feet for VE-5 and VE-7 and 65 feet for VE-6 and VE-8. Twenty-foot-long screens were installed at the bottom of each boring. Therefore, VE-5 and VE-7 are screened in the approximate depth range of 18 to 32 feet bgs, and VE-6 and VE-8 are screened in the approximate depth range of 32 to 46 feet bgs. These wells will be used to enhance removal of vapor-phase contaminants from vadose zone soils in the source area.

As shown on Figure 5, the wells were drilled as close as possible to the east side of the Morrell's building and angled under the building. Due to subsurface congestion in this area (primarily pre-existing angled SVE wells and conveyance piping), a vacuum truck with air knife was used at each drilling location to remove shallow soil beneath the asphalt. All drilling and well installation activities were done at night for the reasons discussed above. During drilling, continuous soil cores were field-screened and sampled. The wells are constructed with 4-inch-diameter PVC, 10- to 20-mesh sand filter packs, and 0.020-inch slotted screens. The top of each well was capped at less than 1 foot bgs, and the asphalt was patched pending connection of the wells to the SVE system (discussed in Section 3).

2.5.3 Soil Screening and Sampling

Soil samples collected during drilling were screened in the field for evidence of contamination using visual and olfactory methods, and by headspace screening using a photoionization detector[9] (PID). Samples with elevated PID readings were preferentially selected for laboratory analysis of VOCs using EPA Method 8260. At least two samples from each boring were analyzed,[10] and up to five samples were analyzed from borings with elevated PID readings. For all borings that extended below the water table (i.e., all vertical borings), at least one soil sample collected from below the water table was analyzed for VOCs. Laboratory reports are provided in Appendix C.

2.5.4 IDW Management

All soil cuttings and water generated from equipment decontamination and well development and purging were placed in 55-gallon drums, which were temporarily stored along the northern edge of the parking lot. Laboratory analytical results from soil sampling during drilling and groundwater sampling from the completed wells were used to profile the waste streams for disposal in accordance with the Washington Dangerous Waste regulations (Chapter 173-303 WAC). The following waste streams were generated:

- 26 drums of water were disposed of as F002 hazardous waste due to detectable concentrations of PCE.

[9] Soil sample was placed in a zip-lock bag and, after waiting several minutes, the PID tip was inserted into the bag to measure the total volatile organic compound (VOC) concentration in the headspace. PID readings are provided on the boring logs (Appendix A).

[10] No soil samples from MW-34 and MW-35 were submitted for laboratory analysis since VOCs were not detected in nearby wells MW-24, MW-25, and MW-26.

- Two drums of water were disposed of as non-regulated waste.
- Cuttings from borings in which soil samples contained no detectable PCE (49 drums) were disposed of as non-hazardous investigation-derived waste (IDW).
- A portion of the cuttings from boring VE-7 were placed in a separate drum because they appeared to contain separate-phase (non-aqueous) liquid. That drum designated as F002 hazardous waste and required incineration due to the high PCE concentration.
- All other cuttings from borings with detectable PCE in one or more soil samples were disposed of as F002 hazardous waste not requiring incineration. These cuttings were initially stored in drums but were transferred to a roll-off container prior to disposal. A total of 10.95 tons of F002 hazardous waste cuttings were disposed of in this manner.

Non-hazardous wastes were transported to Waste Management's Columbia Ridge Subtitle D facility and hazardous wastes to the Chemical Waste Management Subtitle C facility, both located in Arlington, Oregon. Waste disposal documentation is provided as Appendix B.

2.6 Post-2014 Groundwater Sampling

From 2015 through early 2020, groundwater samples were periodically collected from selected Site wells for laboratory analysis. During 2015 through 2018, the primary purpose of groundwater sampling was to monitor the performance of the June 2014 biostimulant injection (discussed in Section 4.1). New wells were sampled soon after they were installed during the 2019 investigation, and several rounds of sampling were conducted later that year to monitor the performance of the MW-20 injection test (discussed in Section 4.2). Finally, a comprehensive round of sampling conducted in March 2020 included all site wells.

Prior to sampling, depth-to-water was measured, and the wells were purged. Purge water was tested for temperature, dissolved oxygen (DO), specific conductivity, oxidation-reduction potential (ORP), pH, and turbidity using a flow-through cell, and purging continued until these parameters stabilized or three well casing volumes were purged, whichever occurred first. All groundwater samples were submitted for laboratory analysis of VOCs using EPA Method 8260. In addition, samples from selected wells were submitted for analysis of biogeochemical parameters to evaluate natural attenuation:

- Chloride, nitrate, nitrite, and sulfate by EPA Method 300.0
- Total iron by EPA Method 6020
- Total organic carbon (TOC) by SM 5310
- Dissolved gases methane, ethene, and ethane by RSK-175

Laboratory reports are provided in Appendix C. Selected groundwater samples were also tested for ferrous iron using a field test kit.

2.7 Summary of Investigation Results

2.7.1 MTCA Cleanup Levels and Screening Levels

Contaminant concentrations detected during Site investigations are screened against MTCA Method A and B cleanup levels in order to identify contaminants of concern (COCs) in soil, groundwater, and indoor air. Method A cleanup levels have been established for a relatively small number of contaminants in soil and groundwater, including selected chlorinated VOCs and petroleum hydrocarbons. Method A cleanup levels for unrestricted (residential) land use are at least as restrictive as requirements under applicable federal and other state regulations. In this report, Method A cleanup levels are used as screening levels whenever they are available.

Under Method B, cleanup levels are established using applicable state and federal laws and the risk equations and other requirements specified in the MTCA rules for each medium. In addition, Method B soil cleanup levels must be protective of terrestrial ecological receptors. In this report, Method B cleanup levels provided in Ecology's Cleanup Level and Risk Calculation (CLARC) data tables are used for screening indoor air results, and for screening soil and groundwater results when Method A cleanup levels are not available for specific analytes. When both carcinogenic and noncarcinogenic values are presented in the CLARC data tables, the more restrictive value is used.

For soil gas sampling results, the screening levels used in this report are the Method B sub-slab soil gas screening levels provided in Ecology's CLARC data tables. When both carcinogenic and noncarcinogenic values are presented in the tables, the more restrictive value is used.

2.7.2 Summary Tables and Figures

Investigation results are summarized in tables and figures as discussed below. All available boring logs and well construction diagrams are provided in Appendix A. Laboratory reports for investigations conducted prior to 2015 are provided as appendices to previous Aspect reports (Aspect, 2009, 2011, 2012b, and 2014a). Laboratory reports for more recent investigations are provided in Appendix C.

Soil

- **Table 2** shows PCE, trichloroethene (TCE), and naphthalene concentrations detected in soil samples. TCE is a degradation product of PCE, and it was also likely used in historical dry-cleaning operations. Naphthalene is a petroleum hydrocarbon near the heavy end of the gasoline range. Except for methylene chloride exceedances (that were likely due to laboratory contamination[11]), these were the only contaminants detected in soil at concentrations exceeding their respective screening levels. For all samples with TCE screening level exceedances, the PCE exceedance was greater than the TCE exceedance. Although PCE was not detected in the lone sample that exceeded the naphthalene screening level (3-foot depth at DP-8), PCE exceedances were detected in other

[11] Methylene chloride was detected above its screening level of 0.02 mg/kg (MTCA Method A soil cleanup level) in three of the soil samples collected from MW-23. The laboratory report noted that those detections were likely due to laboratory contamination.

soil samples collected in the immediate vicinity. Therefore, PCE serves as an "indicator compound" for screening level exceedances in soil.

- **Figure 7** shows the estimated lateral extent of PCE exceedances in soil.

Water

- **Table 1** provides well information (installation date, vertical angle, screen interval, and top-of-casing [TOC] elevation) and groundwater elevation data for all Site monitoring wells.
- **Figure 4** shows measured elevations and inferred groundwater elevation contours for Advance Outwash groundwater on December 22, 2010.
- **Table 3** shows concentrations of contaminants with screening level exceedances in reconnaissance water samples collected in 2006 through 2008 (associated with the Tully's drinking water leak). These include bromodichloromethane, PCE, TCE, cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC). Bromodichloromethane is a byproduct of drinking water disinfection. Its presence is attributable to the Tully's drinking water leak, and it was not detected above its screening level in any subsequent groundwater samples. VC and cDCE are degradation products of PCE and TCE.
- **Table 4** shows concentrations of contaminants with screening level exceedances in Advance Outwash groundwater samples. These include PCE, TCE, cDCE and VC. For samples with screening level exceedances that were not impacted by the June 2014 biostimulant injection, PCE always exceeded its screening level by the widest margin. Therefore, similar to contaminant concentrations in soil, PCE serves as an indicator compound for screening level exceedances in Advance Outwash groundwater that has not been impacted by biostimulant injection.
- **Table 5** shows natural attenuation parameters for Advance Outwash groundwater samples.
- **Table 6** shows concentrations of contaminants with screening level exceedances (PCE and cDCE) and natural attenuation parameters for groundwater samples collected from deeper water-bearing zones. Results for Well MW-8D are notable in that screening level exceedances have been detected for cDCE but PCE has never been detected.
- **Figure 8** shows the estimated extent of PCE exceedances in Advance Outwash groundwater.

Soil Gas

- **Figure 6** shows PCE interpolated results for the GORE® survey conducted beneath the Morrell's building and building perimeter in 2010.
- **Table 7** shows soil gas sampling results prior to initiation of SVE treatment. All analytes detected in at least one sample are included in this table. Although it was not detected in any sample, naphthalene is also included in the table because naphthalene detection limits were above the soil gas screening level. Contaminants with screening level exceedances include PCE, TCE, VC, and the petroleum hydrocarbons benzene and xylenes. Naphthalene is also assumed to be

present in soil gas above its screening level since it was detected in a shallow soil sample (3-foot depth at DP-8).

Indoor Air

- **Table 8** shows indoor air sampling results. All analytes detected in at least one sample are included in this table. Although it was not detected in any sample, naphthalene is also included in the table because naphthalene detection limits were above the indoor air screening level. Detected contaminants with screening level exceedances include PCE, TCE, benzene, and xylenes. Naphthalene may have also been present in indoor air above its screening level.

2.7.3 Evaluation of Soil Quality

Screening level exceedances appear to be highest beneath the eastern portion of the dry cleaner tenant space and do not extend onto the Parking Lot Parcel. As shown in Table 2, COCs detected in soil include PCE, TCE, and naphthalene. Petroleum hydrocarbons are generally collocated with the chlorinated VOCs and represent a significant fraction of the total contaminant mass.[12] Historical dry-cleaning operations, which may have used petroleum hydrocarbons (e.g., Stoddard solvent) before chlorinated solvents came into use are a possible source of the petroleum hydrocarbons as well as the chlorinated VOCs.[13]

Selected PCE concentrations in soil and the estimated lateral extent of screening level exceedances for all soil COCs are shown on Figure 7. With respect to depth, the vast majority of contaminant mass appears to be in the upper portion of vadose zone soils. Screening level exceedances were detected deeper than 26 feet bgs in only five soil samples at four locations (MW-21, MW-23, MW-30, and MW-31), and the highest COC detection (for PCE) was only 0.1 milligrams per kilogram (mg/kg).

During the 2019 investigation, soil cuttings from boring VE-7 in the depth ranges of 7 to 10 and 15 to 16 feet bgs had a strong solvent odor and appeared to contain separate-phase liquid. A soil sample collected from 15 to 16 feet bgs yielded PCE and TCE detections of 120 mg/kg and 1.5 mg/kg, respectively. This is the only instance to date of separate-phase liquid being tentatively identified at the Site, and the highest soil PCE and TCE detections to date. The soil sample also exhibited the highest concentrations of petroleum hydrocarbons detected in the 2019 investigation.

2.7.4 Evaluation of Groundwater Quality

2.7.4.1 Groundwater Quality in Advance Outwash

As shown in Table 4, COCs detected in Advance Outwash groundwater include PCE, TCE, cDCE, and VC. The highest concentrations for all four COCs were measured in MW-2 when it was first sampled in August 2007. Injection of biostimulants to nine wells (including MW-2) in June 2014 is highlighted in the table. As discussed in Section 4.1,

[12] This conclusion is primarily based on the results of soil gas sampling associated with SVE treatment, which are documented in Aspect, 2018.

[13] Dry cleaners have continuously operated in the current dry cleaner building since 1929. Morrell's reportedly used PCE dry cleaner machines between 1972, the first year of their tenancy, and 2009, when they switched to a non-PCE solvent. It is not known whether PCE was used by prior tenants.

the injection resulted in lower concentrations of PCE and TCE and higher concentrations of VC in those wells; however, the effects of the injection did not extend very far outward from the wells.

PCE concentrations detected in the most recent groundwater monitoring round are shown on Figure 4, along with the estimated lateral extent of screening level exceedances in groundwater[14]. Note that screening level exceedances extend a considerable distance south and east of the source area beneath the dry cleaners even though the inferred flow direction of Advance Outwash groundwater is to the north. This upgradient and cross-gradient transport of contamination is likely attributable to the 2006/2007 drinking water release at Tully's Coffee north-adjacent to the dry cleaners (refer to Section 5.2 for further discussion).

2.7.4.2 Groundwater Quality in Deeper Water-Bearing Zones

As shown in Table 6, COCs detected in deeper water-bearing zones include PCE and cDCE. Exceedances of the PCE screening level have been intermittent. It was exceeded only once in MW-12D, when that well was first sampled in December 2010. PCE exceedances were detected on three occasions in MW-13D and on two occasions in MW-14D. No PCE exceedances have been detected in deeper water-bearing zone wells since January 2017.

The screening level for cDCE was exceeded in wells MW-12D, MW-13D, and MW-14D when they were first sampled (in 2010 and 2012), but concentrations have decreased over time and are now below the screening level. Concentrations of cDCE in well MW-8D have increased fairly steadily since it was first sampled in 2009 and have exceeded the screening level in all but that initial sample.

3 Soil Vapor Extraction Treatment

An SVE system has operated in the source area since October 2014 and has been the primary remediation applied at the Site. The Interim Cleanup Action Construction and Design Report (Aspect, 2014a) documents system design and installation of the SVE wells. The Interim Cleanup Action Construction Completion Report (Aspect, 2014b) documents SVE system construction and start-up. The SVE system is designed to remove VOC contaminant mass from beneath the Morrell's building and to control the migration of soil vapor. The SVE system's soil gas extraction components and conveyance piping are shown on Figure 5. Soil gas is extracted from: angled wells VE-1 through VE-4; a 48-foot-long SVE trench in the alley on the north side of the Morrell's building; and a sub-slab suction pit (VE-SS) inside the building. SVE wells VE-1 and VE-2 are completed in the glacial till, with screen intervals of 18 to 32 feet bgs. SVE wells VE-3 and VE-4 are completed in the Advance Outwash, with screen intervals of 30 to 45 feet bgs. SVE treatment equipment is situated in the alley and includes a 2-horsepower single-phase regenerative blower, a 55-gallon moisture separator with automatic water transfer pump,

[14] The nine biostimulant injection wells are indicated with blue haloes. PCE concentrations in those wells are lower than in the surrounding aquifer.

and two 55-gallon vapor-phase granular activated carbon (GAC) drums connected in series.

System modifications are planned to expand the influence of SVE treatment. Five wells installed in 2019 (MW-23 and angled wells VE-5 through VE-8) will be connected to the existing SVE blower via a piping manifold located inside a new vault to be installed in the northwest corner of the parking lot. SVE expansion construction is expected to be completed in the second half of 2020.

SVE treatment will continue to remove contaminant mass from the source area (Building Parcel), where VOC concentrations in soil gas are relatively high. However, SVE treatment is not a potentially applicable technology for cleanup of the Parking Lot Parcel, since SVE is for vadose zone soil contamination, which does not extend to the Parking Lot Parcel. Therefore, SVE system monitoring and performance evaluation are not addressed in this report. See the Supplemental Focused Feasibility Study (Aspect, 2018) for performance information.

4 *In Situ* Injection Treatment

4.1 2014 Biostimulant Injection

The June 2014 biostimulant injection to nine wells was documented in the Interim Cleanup Action Construction Completion Report (Aspect, 2014b), and injection performance was evaluated in the Supplemental Focused Feasibility Study (Aspect, 2018). Remediation products provided by Regenesis were injected into all impacted groundwater wells screened in the Advance Outwash except MW-5.[15] (Injection wells are indicated on Figure 4.) Each of the nine wells received approximately 550 gallons of a dilute mixture of 3D-Microemulsion (3DMe® Factory Emulsified) and Hydrogen Release Compound (HRC Primer®).

Post-injection groundwater monitoring results (Table 4) indicate that PCE concentrations have been successfully reduced by up to two orders of magnitude in all of the June 2014 injection wells[16] with little or no rebound, and are now below the PCE cleanup level in four of those wells (MW-15, MW-16, MW-19, and MW-20). TCE concentrations have also decreased significantly, and total molar concentrations of chlorinated VOCs have been greatly reduced overall. However, VC concentrations have increased such that the cleanup level exceedance factor for VC is now greater than the exceedance factor for PCE in all of the 2014 injection wells. This suggests that the rate of PCE dechlorination to VC has been faster than the rate of VC dechlorination, resulting in the accumulation of VC.

[15] Well MW-5 was not included in the June 2014 injection because results of the January 2014 sampling of MW-5 indicated no screening level exceedances. As is evident in Table 4, these were clearly erroneous results.

[16] MW-18 has not been sampled post-injection due to a well obstruction, but groundwater quality in that well is expected to be similar to MW-16.

The ROI influence of the 2014 injection appears to be very limited based on persistent COCs in near proximity (within 10 feet of an injection well) monitoring wells installed in 2019 (MW-24, MW-25, MW-31, and MW-34.[17] This conclusion is further supported by the natural attenuation parameter results shown in Table 5. For example, the total organic carbon (TOC) concentration in MW-20 remains elevated (179 milligrams per liter [mg/L] in the February 2019 groundwater sample) as a result of the 2014 injection to that well, whereas TOC concentrations in nearby wells MW-24 and MW-34 are less than 4 mg/L. Also, the sulfate concentration in MW-20 remains low, whereas sulfate concentrations recently detected in MW-24 and MW-34 are similar to the pre-injection concentration in MW-20.

4.2 2019 Remediation Injection Pilot Test

The 2019 injection test focused on remediation of Advance Outwash groundwater in the Parking Lot Parcel. A total of approximately 5,000 gallons of a remediation product solution and microorganisms were injected into well MW-20 over a two-night injection period in mid-July. The monitoring well network for the test consisted of wells MW-34, MW-24, MW-35, and MW-26, which are located approximately 7, 10, 15, and 20 feet, respectively, from the injection well. Data loggers were installed in the five wells to continuously monitor conductivity and water level to evaluate ROI. In addition, three rounds of post-injection groundwater monitoring were conducted at roughly 6 weeks, 5 months, and 8 months after injection to evaluate ROI and remediation effectiveness. Injection test details and results are discussed in this section.

4.2.1 Background and Test Objectives

The June 2014 biostimulant injection included injection to two wells in the Parking Lot Parcel, MW-19 and MW-20. As discussed in Section 4.1, PCE concentrations were successfully reduced in those wells but treatment was incomplete, causing VC concentrations to increase. Given the high cost of installing injection wells, a larger ROI had to be achieved so that fewer injection wells would be needed to treat the large volume of impacted groundwater in the Parking Lot Parcel.

It was then decided to conduct a single-well injection test in the Parking Lot Parcel to further evaluate ROI and to see if dechlorination performance could be improved. More specifically, objectives of the 2019 injection test included the following:

- Determine the relationship between injection volume (per well) and ROI so that a full-scale injection can be designed to address the entire Parking Lot Parcel area with PCE concentrations exceeding the Method A cleanup level.
- Determine whether a modified injection formulation effectively reduces PCE concentrations without resulting in cleanup level exceedances for degradation byproducts (particularly VC).

[17] Injection impacts are expected to be most pronounced downgradient of an injection well. While the inferred flow direction is to the north, the groundwater gradient is very small. Measured gradients on different dates for the same well combinations indicate wide variations. There is also a significant downward flow component.

- Determine whether a per-well injection volume an order of magnitude higher than that used in the June 2014 injection is feasible.

4.2.2 Test Wells

Well MW-20 was selected as the injection well for the following reasons:

- It is located in the area of the Parking Lot Parcel with the highest PCE concentrations in Advance Outwash groundwater.
- MW-20 required a lower pumping pressure than MW-19 in the 2014 injection (in fact, it had the lowest pumping pressure of all nine injection wells).
- New wells MW-24 and MW-26 had recently been installed approximately 10 and 20 feet, respectively, from MW-20 in the Parking Lot Parcel that could serve as injection test monitoring wells.

To complete the monitoring well network for the test, wells MW-34 and MW-35 were installed approximately 7 and 15 feet, respectively, from the injection well.

4.2.3 Remediation Products Injected

The following remediation products were injected to MW-20:

3DMe® (400 lbs). Provided by Regenesis, this blend of lactate, polylactate esters, and free fatty acids and fatty acid esters was effective at degrading PCE and TCE in the 2014 biostimulant injection.

CRS® (182 lbs). Also provided by Regenesis, Chemical Reducing Solution (CRS®) is an iron-based amendment for *in situ* chemical reduction of chlorinated VOCs. CRS® was included to provide a chemical (i.e., abiotic) pathway for contaminant degradation.

KB-1® (3 liters). Provided by SiREM, KB-1® is a naturally occurring microbial culture that contains Dehalococcoides sp. (Dhc), the only group of microorganisms documented to promote the complete dichlorination of chlorinated VOCs to ethene. KB-1® was provided to enhance the indigenous population of Dhc.

Prior to injection, the 3DMe® and CRS® were combined and diluted with well water (approximately 4,500 gallons) supplied by the injection contractor. Anaerobic water (approximately 450 gallons), produced by adding KB-1 Primer (also provided by SiREM), 3DMe®, and sodium ascorbate to well water, was injected before and after injection of the KB-1® to support the viability of the microbial culture.

4.2.4 Injection Summary

The injection event was completed on the nights of July 15/16 and 16/17, 2019.[18] Data loggers were installed in the five test wells several days prior to start of injection. The data logger in well MW-20 was removed during the injection period and replaced immediately upon completion of injection.

[18] Injection activities and post-injection groundwater monitoring were completed at night so that the businesses of tenants with parking lot privileges would not be negatively impacted (i.e., by reduced parking lot access and fewer parking spaces for customers).

The 3DMe®/CRS® solution was injected first and represented over 90 percent of the total injection volume. 3DMe®, CRS®, and dilution water were mixed in batch volumes up to 550 gallons (the maximum capacity of onsite tankage) immediately prior to injection. About 4,000 gal of solution was injected the first night and 550 gal the second night. Pressure injection of the 3DMe®/CRS® solution was not necessary; it flowed by gravity as fast as the injection contractor could pour it into the well (about 50 gallons per minute). Following injection of 3DMe®/CRS® solution on the second night, half of the anaerobic water was injected, followed by the KB-1®, and finally the remainder of the anaerobic water. Aspect monitored the entire injection event and assisted the contractor with injection of the KB-1®.[19]

The injection event went smoothly except for some trouble achieving the DO and ORP targets prior to injecting the anaerobic water on the second night. To scavenge oxygen from the 450-gallon batch of well water, the injection contractor added 2.25 lbs of sodium ascorbate and 4 lbs of 3DMe® roughly 6 hours before the anticipated completion of 3DMe®/CRS® solution injection on the second night. The targets recommended by SiREM for the anaerobic water prior to injection were:

- ORP < -75 millivolts (mV)
- pH between 6 and 8
- DO < 0.5 mg/L

Approximately 7 hours after adding the sodium ascorbate and 3DMe®, ORP was measured at -12 mV, pH at 7.2, and DO at 6.2 mg/L. KB-1 Primer (enough to treat 250 gal of water) was then added to further promote the scavenging of oxygen. Two hours later, ORP was measured at -63 mV, pH at 7.7, DO at 3.5 to 4.2 mg/L. Although DO and ORP remained higher than the recommended values, it was decided to begin injection of the solution.

4.2.5 Injection Test Performance

Injection test results were evaluated to: 1) assess the radius of influence of the injection for possible full-scale implementation; and 2) assess the performance of the injection design in fully degrading chlorinated VOCs to ethene/ethane. Chlorinated VOC concentrations and natural attenuation parameters measured in groundwater samples collected from the injection well and the four nearby monitoring wells are summarized in Tables 9 and 10, respectively. Laboratory reports are provided in Appendix C and a graphical representation of data logger output is provided as Appendix E.

The first post-injection sampling round was conducted in late August 2019, approximately 6 weeks after injection. A sample could not be collected from the injection well due to pump screen biofouling in that well. Results showed no clear evidence that the injection resulted in contaminant degradation at the monitoring wells.

The second post-injection sampling round was conducted in mid-December 2019, roughly 5 months after injection. A sample was successfully collected from the injection well during this sampling round. Compared to the pre-injection sampling round (in late

[19] The KB-1® injection procedure provided by SiREM is fairly complex. Inert compressed gas is used to eject the microbial culture from the stainless steel vessel it is supplied in.

November 2018), PCE and cDCE concentrations were reduced in the injection well, and the VC concentration increased marginally. Results at the monitoring wells were more favorable than in the first post-injection sampling round. More importantly, there was also evidence of dechlorination at monitoring wells located 7 ft and 15 ft from the injection well, but not at locations 10 ft and 20 ft. The magnitude of PCE concentration reduction between the August and December rounds was 56 percent at 7 ft and 41 percent at 15 ft. The decrease in PCE concentration at those two wells was accompanied by an increase in cDCE concentration.

The third post-injection sampling round was conducted in late March 2020, roughly 8 months after injection. The VC concentration in the injection well decreased to below the pre-injection concentration measured in late November 2018 but still exceeded the VC cleanup level. Results at the monitoring wells did not indicate significant dechlorination activity compared to the second post-injection round results.

Analysis for microorganisms (Dhc) was included in the test to monitor the persistence of the injected microorganism temporally. However, sampling in August and December did not yield detectable Dhc in either the injection well or the monitoring wells.[20] Analysis for microorganisms was not included in the March 2020 sampling event.

Geochemical parameters were also analyzed for in order to monitor the effect of the injection on natural attenuation potential. Background groundwater concentrations of TOC at this Site are <2 mg/L. Post-injection TOC concentrations at the monitoring wells are indicative of the degree to which injected organics have dispersed radially outward from the injection well. A TOC concentration of 132 mg/L was measured 15 ft from the injection well (the highest TOC concentration measured in a monitoring well) in the first post-injection sampling round. However, TOC concentration at that well declined to 3.7 mg/L in December 2019 and to 0.7 mg/L in March 2020; a rapid decline and return to natural levels over a period of 7 months. At 7 ft from the injection well, the TOC concentration increase was not as pronounced, and also declined to natural levels 8 months after injection.

The post-injection dechlorination activity observed at the 7 ft and 15 ft wells appears to correlate with the elevated TOC concentrations measured at those wells. Similarly, the lack of significant dechlorination activity observed between the second and third post-injection sampling rounds is consistent with the rapid decline in TOC concentrations.

Results of the 2019 injection test indicate the VC concentration has neither increased (indicating a reduction of DCE to VC) nor declined (indicating a reduction to ethene) significantly in the injection well, meaning that dechlorination may be stalling out at DCE, and the reduction we see from the injection (59 µg/L to 10 µg/L) may be due to dilution rather than dechlorination. Regardless, geochemical parameters confirm that final dechlorination end products ethene and ethane are non-detect in the injection well and wells within the radius of influence. It is concluded that neither the 2014 nor 2019 injection methodology are likely to reduce PCE to end products.

The primary objective of the injection test was to determine the remediation products' radius of influence to design the next round of injections. Influence has been observed at

[20] Results could be due to the field filtering sampling methodology.

7 ft and 15 ft but not at 10 ft, apparently due to preferential flow paths. In addition, it appears that dechlorination, at wells where observed, will not continue to completion in a reasonable time frame.

5 Parking Lot Parcel Conceptual Model

5.1 Hydrogeologic Setting

Groundwater occurrence is deep, lateral hydraulic continuity is limited, and there are no complete exposure pathways. We note the following about groundwater observed within the Advance Outwash unit at depths below 50 feet:

- There are no known on-Site recharge sources, due to continuous impervious cover. Leaky storm and/or sanitary sewer lines could be contributing to onsite recharge. Precipitation and irrigation at upgradient Wright Park are also potential sources of recharge.
- Groundwater within the Advance Outwash perches on the underlying leaky confining unit formed by the dense and finer-grained Olympia beds.
- Based on local topography and area recharge originating from Wright Park, Site groundwater in the Advance Outwash likely migrates laterally towards the north / northwest. Extensive drilling and well installations demonstrate that the Advance Outwash water bearing unit is laterally discontinuous within 50 to 100 feet downgradient of the subject Property boundary.
- With the extent of lateral groundwater flow limited, it is apparent that perched groundwater concurrently leaks downward through the Olympia beds, fully infiltrating and leaving the Advance Outwash dry to the northwest and northeast of the Site.

5.2 Groundwater Impacted by 2006/2007 Drinking Water Release

Water was encountered beneath the building foundation floor slab in 2007, and an analysis of the water bill of Tully's Coffee (located across the alley to the north) indicated that an estimated 600,000 gallons of drinking water had been released between May 2006 and September 2007. This is documented in the Stemen Environmental letter dated 5/17/09 provided in Appendix D.

It is Aspect's conclusion that this significant drinking water release is correlated with groundwater contamination on the Parking Lot Parcel. The Stemen letter notes that when the water leak was repaired, the water beneath the Morrell's Building floor slab drained in a few hours. Thus, water was able to move quickly away from the source, likely laterally through the compacted gravel subgrade from the Building Parcel to the Parking

Lot Parcel, and then percolated downward to the Advance Outwash layer. It is also possible but less likely that contaminated water infiltrated directly down beneath the building and then spread radially outward in the Advance Outwash layer. Aspect did not start measuring water levels in the MWs until February 27, 2008, so no firm conclusions on how the water leak effected water levels in the Advance Outwash aquifer can be made. Since the water leak was fixed in 2007, it is not considered to be a likely source of continued recharge or recontamination.

5.3 Evidence of Natural Attenuation

There is evidence of natural attenuation on the parking lot parcel demonstrated through long-term groundwater quality monitoring at MW-5. This Parking Lot Parcel well was installed in 2008 and was never used as an injection well, nor is it within the radius of influence of other injection wells.[21] At MW-5, COC concentrations in groundwater have decreased from 67 µg/L in 2008 to 9.6 µg/L in 2020. There was an uncharacteristic increase in concentrations in 2010 and 2012, possibly due to the full magnitude of impacts from the water leak reaching the well temporally delayed due to slow percolation downward through the glacial till overlying the aquifer. However, COC concentrations have continued to decline since 2012.

Secondary evidence of natural attenuation occurring in groundwater on the Parking Lot Parcel is the decrease in concentration of PCE in groundwater in wells of similar distance from the source over time. For example, MW-20 (about 14 feet from estimated soil impacts) had 140 µg/L when first sampled in 2014 and MW-24 (about 10 feet from estimated soil impacts) had only 66 µg/L when first sampled in 2019. Similarly, MW-8 (about 16 feet from estimated soil impacts) had 1,300 µg/L in 2008 and MW-32 (about 12 feet from estimated soil impacts) had only 36 µg/L when first sampled in 2019. See Table 4 for shallow groundwater quality.

5.4 Low Potential for Future Contaminant Migration from Building Parcel

The collective data on the source of groundwater contamination on the Parking Lot Parcel indicates that it was the result of a drinking water release from an adjacent property causing contamination to migrate laterally from the Building Parcel, an event which is not likely to be repeated. This drinking water release is documented in Section 5.2 above and in the Stemen Environmental letter provided in Appendix D. Further, as shown in Figure 4, the regional inferred groundwater gradient is to the north consistent with local topography. Perched water in the Advance Outwash aquifer is recharged in Wright Park, moves north through the Site and then fully infiltrates through the Olympia beds, leaving the Advance Outwash dry to the northwest and northeast of the Site. Groundwater contamination beneath the Parking Lot Parcel originated from a one-time water leak as opposed to natural conditions/gradients. Thus, the risk of recontamination is considered unlikely.

[21] MW-5 is over 40 feet from the nearest injection well, MW-20.

6 Description of Remedial Alternatives for Parking Lot Parcel

Three remedial alternatives were developed for comparison with MTCA criteria for cleanup actions using the technologies retained in the initial screening:

1. Monitored Natural Attenuation with Institutional Controls
2. Injection-based *In-Situ* Treatment
3. Injection-based *In-Situ* Treatment with Heat-Enhanced Plume Attenuation

These alternatives are described in the following sections. Feasibility-level cost estimates (+50/-30 percent) were developed for each remedial alternative in accordance with EPA cost estimating guidance (EPA, 2000) and professional experience with similar projects. These costs are adjusted for net present value (NPV) using real discount rates published by the Office of Management and Budget for 2020 (OMB, 2019). Cost estimate details and assumptions are provided in Tables 11 through 13 for each Alternatives 1 through 3, respectively.

6.1 Alternative 1 - Monitored Natural Attenuation with Institutional Controls

Natural attenuation (NA) has been proven effective in reducing contaminant concentrations in groundwater when appropriate conditions are present. This process relies on the attenuation of COCs in groundwater by natural processes, including biodegradation, abiotic degradation, adsorption, dilution, and dispersion.

A formal monitored NA (MNA) remediation alternative includes groundwater monitoring to document remediation progress and verify plume stability (WAC 173-340-370(7)(a)). Because it does not include significant mechanical infrastructure, MNA can be readily implemented and generally has low maintenance requirements and long timelines.

Based on the decreasing groundwater concentrations of COCs at the Site since 2007[22] (albeit slowly), NA processes are occurring. A restoration timeline of 20 years is used to model this alternative based on the regression of PCE concentrations in Parking Lot Parcel Advance Outwash monitoring wells since 2007 which can be found in Appendix F.

The purpose of this alternative is to provide protection of human health and the environment through institutional controls until it can be demonstrated that natural attenuation has reduced COC concentrations below applicable cleanup levels to meet cleanup objectives for the Site. While there are no existing complete exposure pathways, institutional controls would ensure that condition remains. Alternative 1 involves the following elements:

[22] MW-5 had an increase in COC concentrations in 2010 – 2012, but this could be a delayed response from the drinking water release in 2006 – 2007.

- Preparation of a Cleanup Action Plan for long-term monitored natural attenuation, including a compliance monitoring plan and contingency action plan
- Implement institutional controls
- Perform groundwater sampling

For cost estimating purposes, the duration of this alternative is estimated to be 20 years. The estimated cost of this alternative is $280,000 (Table 11). The alternative has a relatively high degree of uncertainty as to whether cleanup standards will be achieved in the estimated time frame.

6.2 Alternative 2 – Injection-Based In-Situ Treatment

Alternative 2 is intended to be a full-scale version of the remediation product injection test discussed in Section 4.2, above. *In Situ* Injection-based treatment involves bioaugmentation, biostimulation, and chemical reduction to encourage complete dechlorination of VOCs to nontoxic end products: ethene/ethane, carbon dioxide, and trace amounts of hydrogen gas. In these reactions, bacteria use the chlorinated COCs as electron acceptors, removing chlorine atoms that are replaced with hydrogen.

During anaerobic biodegradation of chlorinated COCs, chloride ions are sequentially removed. The more highly chlorinated (more oxidized) compounds, such as PCE and TCE, are degraded more readily than the less chlorinated (less oxidized) compounds, such as DCE and vinyl chloride, which require more energy and a more highly anaerobic environment to support the bacterial strains capable of complete reductive dechlorination to ethene and ethane. Therefore, to increase the potential for complete dechlorination, the biological and chemical conditions of the aquifer must be controlled.

Bioaugmentation involves the injection of a consortium of beneficial bacteria that would increase the rate of biodegradation and result in complete reduction of vinyl chloride to ethene/ethane. For the proposed injection-based treatment, Dehaloccoised sp. (DhC) would be injected via a SiREM product, KB-1.® DhC is an anaerobic microorganism, conditions in which it can thrive must also be created.

Biostimulation provides an electron donor to enhance the reducing conditions for the dechlorination process. Electron donors serve as a source of food for bacteria and include substances such as simple sugars, lactate, vegetable oils, or engineered compounds specifically designed to promote enhanced biodegradation for extended time periods. For the proposed injection-based treatment, a Regenesis product, 3DMe® composed of lactate, polylactate esters, and free fatty acids would be used as it has been shown to be effective at this Site.

Chemical reduction can also dechlorinate PCE. Nitrate, ferric iron, manganese (IV), sulfate, carbon dioxide, oxidized metals, or other organic compounds also replace oxygen as an electron acceptor/energy source to fuel the reaction and growth of beneficial bacteria. For the proposed injection-based treatment, an iron-amendment would be injected into the subsurface in the form of a Regenesis product, CRS® to provide an abiotic reduction pathway.

Injection-based treatment is a proven method for reducing the chlorinated COCs at the Site with a demonstrated reduction in PCE concentrations in wells on the Morell's

Building Parcel as well as the Parking Lot Parcel as a result of the 2014 and 2019 injections. However, results of the injection tests indicate that the radius of influence does not extend far from the wells (just 7 to 15 feet, averaging to assume a 10-foot ROI); thus, the number of wells required to cover the Parking Lot Parcel is estimated at 24 as shown on Figure 9.

Alternative 2 consists of the following elements:

- Full-scale injection implementation would expand the injection network to target the full extent of groundwater exceedances on the Parking Lot Parcel and maintain biogeochemical conditions sufficiently long to achieve complete reductive dechlorination of PCE to nontoxic end products.
- To achieve this objective, the existing injection well network would be supplemented with installation of 15 new injection wells to achieve coverage at the assumed 10-foot radius of influence in the Advance Outwash water bearing unit, Figure 9 shows the existing and proposed new injection wells.
- Two injection-based treatment events modeled after the 2019 Injection Test would be performed on all 24 Parking Lot Parcel wells. During each of the two injection events, each well would receive: 3DMe (400 lbs; 48 gal),[23] CRS (182 lbs; 20.75 gal),[24] KB-1 (3 liters), Sodium Ascorbate (2.25 lbs) with mixing water to total approximately 5,000 gallons per well.
- The restoration time frame with injection-based treatments is estimated as 5 years. Injection events would occur in the beginning of the year 1 (time zero) and the end of year 2/beginning of year 3.
- Performance groundwater sampling at six of the Parcel's monitoring wells on the following schedule:
  - Year 1: 6 months after the first injection-based treatment
  - Year 2: before the second injection-based treatment
  - Year 3: six months after the second injection-based treatment
  - Year 4: one event to monitor long term injection effectiveness, preconfirmation sampling
- Once Site COCs have attenuated to below MTCA Method A Cleanup Levels, four consecutive quarters of confirmation groundwater sampling will be performed. This is assumed to occur in year 5.
- Preparation of a Construction Completion Report after implementation, including a compliance monitoring plan and contingency action plan.
- Full-scale injection-based treatment is assumed to be successful, so institutional controls would not be needed on the property. Site Closure Documents would be

[23] 3DMe is a liquid solution with a density about the same as that of water (i.e., about 8.34 lb/gal or 1,000 g/L).

[24] CRS is a liquid solution with a density of about 8.77 lb/gal or 1,050 g/L.

prepared to request a parcel-specific No Further Action Determination from Ecology.

The estimated cost of this alternative is $1,262,000 (Table 12). The alternative has a moderate degree of uncertainty as to whether cleanup standards will be achieved in the estimated time frame.

6.3 Alternative 3 – Injection-Based In-Situ Treatment with Heat-Enhanced Plume Attenuation

Alternative 3 is intended to be the most aggressive treatment plan to provide the most assurance of groundwater plume treatment by adding Heat-Enhanced Plume Attenuation (HEPA) technology to the injection-based treatment proposed in Alternative 2. A subset of wells installed for injection would be designed to also contain HEPA electrodes. Following injection-based treatment, electrodes would be installed in the wells and the groundwater heated by 10-15 degrees Celsius to a target temperature of 50 degrees Celsius. This temperature would be maintained for an extended period of time to enhance biodegradation of dissolved contaminates. For the purpose of evaluating Alternative 3, it is assumed a total of 16 new injection / HEPA treatment wells would be installed[25] as shown in Figure 10, and that the elevated groundwater temperature would be maintained for approximately 1 month. Alternative 3 consists of the following elements:

- Full-scale injection with HEPA treatment implementation would expand the injection network to target the full extent of groundwater exceedances on the Parking Lot Parcel and maintain heated groundwater sufficiently long to aid injected microbes to achieve complete reductive dechlorination of PCE to nontoxic end products.

  To achieve this objective, the existing injection well network would be supplemented with installation of 16 new HEPA injection wells (12-inch diameter borehole) to achieve coverage at the assumed 10-foot radius of influence in the Advance Outwash water bearing unit. In addition to the new HEPA wells, one additional traditional injection well will be installed to complete the coverage, as shown in Figure 10.

- One injection-based treatment event modeled after the 2019 Injection Test would be performed on 24 Parking Lot Parcel wells. Each well would receive: 3DMe (400 lbs; 48 gal),[26] CRS (182 lbs; 20.75 gal),[27] KB-1 (3 liters), Sodium Ascorbate (2.25 lbs) with mixing water to total approximately 5,000 gallons per well.

- HEPA specifications were provided by TRS Group Inc. for the purpose of cost estimating and include:

[25] Number of HEPA wells based on HEPA technology vendor recommendation. Existing wells cannot be used for HEPA treatment.

[26] 3DMe is a liquid solution with a density about the same as that of water (i.e., about 8.34 lb/gal or 1,000 g/L).

[27] CRS is a liquid solution with a density of about 8.77 lb/gal or 1,050 g/L.

  - For the 16 proposed HEPA wells, the groundwater would be heated by 10-15 degrees Celsius to target a temperature of approximately 50 degrees Celsius.
  - This would be done with an average input energy of 245 kW, for a heating time of approximately one month, totaling approximately 160,000 kWh.
  - TRS would construct, operate, and decommission the system.
- The restoration time frame with injection-based treatments is estimated as 2 years. The injection event would occur in the beginning of the year 1.
- Alternative 3 is assumed to attain cleanup levels within the first year of treatment. Four quarters of confirmation groundwater sampling at six of the Parking Lot's wells would be implemented in the second year.
- Preparation of a Construction Completion Report after implementation, including a compliance monitoring plan and contingency action plan.
- The injection-based treatment with HEPA is assumed to be successful, so institutional controls would not be needed on the property. Site Closure Documents would be prepared to request a parcel-specific No Further Action Determination from Ecology.

The estimated cost of this alternative is $1,622,000 (Table 13). The alternative has a moderate degree of uncertainty as to whether cleanup standards will be achieved in the estimated time frame.

7 Evaluation of Remedial Alternatives for Parking Lot Parcel

The three remedial alternatives described in Section 6 are evaluated with respect to MTCA criteria in this section.

7.1 Feasibility Study Evaluation Criteria

This section reviews the minimum requirements and procedures for selecting cleanup actions under MTCA (WAC 173-340-360).

7.1.1 MTCA Threshold Requirements

MTCA requires that remedial alternatives for a site satisfy certain "threshold" criteria, as specified in WAC173-340-360(2)(a). All cleanup actions must:

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

7.1.2 MTCA Selection Criteria

Remedial alternatives that meet the threshold requirements must be evaluated with respect to these "other" requirements, as specified in WAC173-340-360(2)(b):

- **Use of permanent solutions to the maximum extent practicable.** A disproportionate cost analysis (DCA) is conducted to assess the extent to which the remedial alternatives address this criterion.
- **Provide for a reasonable restoration timeframe.** MTCA places a preference on remedial alternatives that can be implemented in a shorter period of time.
- **Consider public concerns.** Consideration of public concerns is an inherent part of the Parcel cleanup process under MTCA and the public is a component of the DCA.

7.1.3 MTCA Disproportionate Cost Analysis

MTCA allows for consideration of cost in selecting among remedial alternatives that meet the threshold criteria, per WAC173-340-360(3)(e). If the cost of one alternative is disproportionately higher than another when compared to the benefits afforded, then the lower cost alternative can be selected. The test for making this determination is stated in MTCA as follows: "Costs are disproportionate to benefits if the incremental costs of the alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by the alternative over the other lower cost alternative." MTCA requires evaluation of the following criteria when conducting a disproportionate cost analysis (DCA) per WAC173-340-360(3)(f):

- Protectiveness
- Permanence
- Cost
- Effectiveness over the long term
- Management of short-term risks
- Technical and administrative implementability
- Consideration of public concerns

The DCA is based on a comparative evaluation of an alternative's cost against the other six criteria (environmental benefits). The DCA quantifies the environmental benefits of each remedial alternative, and then compares alternative benefits versus costs. Alternatives that exhibit disproportionate costs are considered "impracticable" under MTCA.

7.2 Evaluation with Respect to MTCA Threshold Requirements

All alternatives provide for performance and compliance monitoring and are expected to be protective of human health and the environment. They vary significantly in contaminant mass removal achieved, and only Alternatives 2 and 3 are expected to fully comply with cleanup standards in a reasonable time frame. Alternatives that do not fully

comply with the MTCA threshold criteria are typically not carried forward in the evaluation process. In this case, however, where only the high-cost alternatives fully comply, multiple alternatives may be carried forward to the next stage of evaluation.

7.3 Disproportionate Cost Analysis

The DCA is performed in Table 14. Environmental benefit is quantified by first rating the alternatives with respect to each of the criteria (except cost[28]) discussed in Section 6.2.2. Rating values are assigned on a scale of 1 to 6, where 1 indicates the criterion is satisfied to a very low degree, and 5 indicates the criterion is satisfied to a very high degree. Since Ecology does not consider the criteria to be of equal importance, each criterion is assigned a "weighting factor." Based on Ecology input for feasibility studies conducted at other sites, weighting factors are assigned as follows:

- Overall protectiveness: 30 percent
- Permanence: 20 percent
- Long-term effectiveness: 20 percent
- Short-term effectiveness: 10 percent
- Implementability: 10 percent
- Consideration of public concerns: 10 percent

A MTCA benefits ranking is then obtained for each alternative by multiplying the six rating values by their corresponding weighting factors and summing the weighted values. Finally, the benefits ranking of each alternative is divided by the alternative's estimated cost (in $million) to obtain a benefit/cost ratio, which is a relative measure of the cost effectiveness of the alternative.

7.3.1 Benefits Rankings, Estimated Costs, and Benefit/Cost Ratios

The MTCA benefits rankings, estimated costs, and benefit/cost ratios for Alternatives 1 and 2 are presented at the bottom of Table 13. Based on this evaluation, the overall benefit to human health and the environment are comparable for all alternatives (active remediation with injection-based treatment and HEPA both offer a slightly higher benefit over institutional controls and MNA alone as the timeline is dramatically reduced). However, the incremental benefits of Alternatives 2 and 3 are disproportionate to the additional costs incurred for the *in-situ* treatment. The relative benefit to cost ratio for each alternative is illustrated on Figure 10 and shows a clear disproportionality. Benefit/cost ratios range from a high of 10.4 for Alternative 1 to a low of 2.8 for Alternative 2.

7.3.2 Disproportionate Cost Analysis Recommendation

Among the alternatives evaluated, Alternative 1 (MNA) achieved the highest benefit/cost ratio. While Alternative 1 is expected to be protective of human health, it will not achieve groundwater cleanup levels in a reasonable time frame (less than 30 years). Therefore, the intent of this Property Specific Closure Report is to request a No Further Action

[28] The cost criterion factors into the DCA after the environmental benefit is quantified.

Likely determination, to show that Ecology concurs with the DCA and selected remedy in advance of applying for a No Further Action Determination in the future.

Alternative 2, which would expand the application of remedial technologies already pilot tested on the Property but comes with a disproportionately high cost and low cost-benefit ratio. This alternative is expected to achieve groundwater cleanup levels in roughly a 5-year time frame. At that point, the Parcel would likely be eligible for a Property-Specific NFA determination from Ecology.

Alternative 3, which would combine multiple remedial technologies and presents both the most aggressive cleanup alternative and she shortest timeframe, comes with a disproportionately high cost and low cost-benefit ratio. Alternative 3 is expected to achieve groundwater cleanup levels in roughly 2 years. At which point the parcel would likely be eligible for a Property-Specific NFA determination from Ecology.

Based on the above considerations, Alternative 1 is recommended for implementation. While Alternative 1 (MNA) has the longest restoration timeline, it is expected to be protective of human health, permanent, cost effective, readily implementable, agreeable to the public, and have low short-term risk. This is in part due to the Parking Lot Parcel setting; it is located beneath an active urban parking lot with adjacent businesses being served by public water supply. The contaminated groundwater is at 50 feet below ground surface and consumption and/or exposure is highly unlikely. The existing exposure pathway has been determined to be incomplete. Further, Alternative 1 provides for the implementation an institutional control to ensure existing conditions are maintained.

8 Proposed Parking Lot Parcel Remedy for Ecology Opinion

The proposed remedy for the Parking Lot Parcel is monitored natural attenuation of contamination in Advance Outwash groundwater and institutional controls to ensure protectiveness until MTCA groundwater cleanup levels are achieved. Groundwater monitoring will be performed in accordance with an Ecology-approved Groundwater and Cover Monitoring Plan that will include contingency measures. The impervious surfacing cover on the property would also be inspected periodically as part of the monitoring plan. Institutional controls will be implemented via an environmental covenant to be placed on the property. The proposed Groundwater Monitoring Plan and environmental covenant are briefly discussed in this section.

8.1 Groundwater and Cover Monitoring Plan with Contingency Measures

The Groundwater and Cover Monitoring Plan will address performance groundwater monitoring for the MNA remedy implemented on the Parking Lot Parcel. Six perimeter monitoring wells on the Parking Lot Parcel would be monitored annually for the first 5 years to gather additional data on the rate of NA onsite. After 5 years, monitoring would transition to once every 5 years for Ecology 5-year reviews until cleanup levels are

achieved in a single event. Once cleanup levels are achieved, the monitoring frequency will then be changed to quarterly for three additional monitoring rounds, to satisfy Ecology's requirement that compliance with cleanup levels be demonstrated for four consecutive quarters. If a cleanup level exceedance occurs during quarterly monitoring, the monitoring frequency will revert to a 5-year interval. This process will be repeated until compliance is achieved in four consecutive quarters. Reporting to Ecology will occur with the 5-year reviews, and the Parking Lot Parcel would be eligible for an unrestricted property-specific NFA should confirmation sampling be completed with no cleanup level exceedances.

The groundwater monitoring plan will also specify concentrations in groundwater that would induce contingency reporting, which would include the following:

- An assessment of what may be causing or contributing to the elevated concentration(s).
- A statement on further confirmation sampling to occur as indicated below:
  - Additional confirmation sampling for the same analytes at the same well would occur within 30 days of initial receipt of results, and additional contingency reporting submitted to Ecology within 30 days laboratory result receipt.
  - Should the additional confirmation sampling confirm that concentrations are still unexpectedly high, a draft work plan for further evaluation of Site conditions will be submitted to Ecology within 60 days of confirmation sampling results receipt.

As shown in Table 4, the highest PCE concentrations detected to date on the Parking Lot Parcel (in MW-20 on January 8, 2014) was 140 µg/L. Contingency reporting will be triggered if PCE exceeds 150 µg/L in any Parking Lot Parcel Monitoring Well.[29]

The parcel's impervious surfacing would also be inspected during monitoring visits for significant alterations or damage since the last monitoring round. Removal or damage to the impervious surfacing would increase potential infiltration. Should this occur, Ecology would be notified within 30 days of the discovery site visit.

8.2 Property-Specific Environmental Covenant

As part of the selected remedy (Alternative 1, MNA) a property-specific environmental covenant would be placed on the Parking Lot Parcel until confirmation sampling concludes, which is estimated to be a 21-year timeline. This covenant would protect human health and the environment by restricting groundwater use and monitoring the protective impervious surfacing. The environmental covenant would be executed between the current (and any future) property owners and Ecology. The environmental covenant could eligible for removal once confirmation sampling is completed and reviewed by Ecology. Should it be determined that the Building Parcel would need an environmental covenant as well, that would be applied for and recorded separately, at the time of Building Parcel Closure.

[29] This concentration corresponds to fifteen times the MTCA Method A cleanup level for PCE.

9 Conclusions and Recommendations

This report presents the property-specific closure scenario for the Parking Lot Parcel that is a subset of the larger Morell's Dry Cleaner Site. This Site is enrolled in the VCP with Ecology and active remediation has been ongoing at the Site since 2014. Despite completing a biostimulant injection in 2014, an additional remediation injection pilot test in 2019, and continually operating a SVE system on the Building Parcel since October 2014, contamination remains both on and off of the Property in the vadose zone as well as a dissolved phase plume. Investigation results to date indicate that the magnitude and extent of soil and groundwater contamination on the Building Parcel are significantly more than that on the Parking Lot Parcel. The Parking Lot Parcel has no detected vadose zone soil contamination and relatively low concentrations of COCs in groundwater.

Engineering analyses of both parcels (the Building Parcel (Aspect [2012a] and Aspect [2018]) and the Parking Lot Parcel herein) indicate that the cleanup will have a very long timeline on the Building Parcel unless the building is first demolished to improve access to the underlying contamination and very aggressive remedial technologies are applied. Alternatively, the recommended alternative for the Parking Lot Parcel presented herein is MNA with Institutional Controls. This alternative will be permanent when monitored to completion and cleanup levels are attained and is protective of human health and the environment throughout. Alternative 1 – MNA with institutional controls, is preferred over the more aggressive technologies, which are disproportionately more expensive than the benefit they provide are worth. Aspect concludes that Alternative 1 would satisfy the MTCA threshold requirements and proposes the Parking Lot Parcel is granted a No Further Action Likely determination as record of Ecology's agreement with the proposed cleanup alternative. Should that be accepted, it is proposed that a Cleanup Action Plan complete with a Long Term Groundwater Monitoring Plan (with contingencies) is prepared and agreed upon by Ecology and Stakeholders to implement the proposed remedy.

References and Selected Reports

Aspect Consulting, LLC (Aspect), 2009, Site Conditions Summary, Former Walker Chevrolet Property in Tacoma, July 14, 2009.

Aspect Consulting, LLC (Aspect), 2011, Remedial Investigation Report, Morrell's Dry Cleaners, Prepared for: David Shaw, Successor to Walker Chevrolet, February 18, 2011.

Aspect Consulting, LLC (Aspect), 2012a, Focused Feasibility Study, Morrell's Dry Cleaners, Prepared for: David Shaw, Successor to Walker Chevrolet, March 26, 2012.

Aspect Consulting, LLC (Aspect), 2012b, Data Gaps Investigation, Former Walker Chevrolet and Morrell's Dry Cleaners, VCP Site SW1039, May 1, 2012.

Aspect Consulting, LLC (Aspect), 2014a, Interim Cleanup Action Construction and Design Report, Morrell's Dry Cleaners, Prepared for David Shaw, Successor to Walker Chevrolet, May 16, 2014.

Aspect Consulting, LLC (Aspect), 2014b, Interim Cleanup Action Construction Completion Report, Morrell's Dry Cleaners, Prepared for David Shaw, Successor to Walker Chevrolet, December 23, 2014.

Aspect Consulting, LLC (Aspect), 2018, Supplemental Focused Feasibility Study, Morrell's Dry Cleaners Site, Prepared for David Shaw, Successor to Walker Chevrolet, August 10, 2018 Draft.

Office of Management and Budget (OMB), 2019, Memorandum – 2020 Discount Rates for OMB Circular No. A-94, dated December 17, 2019.

Washington State Department of Ecology (Ecology), 2011, Letter to Aspect Consulting (J. Morrice) re Further Action at the Morrell's Dry Cleaning Site, September 26, 2011.

Limitations

Work for this project was performed for D.E. Wickham, Successor to Walker Chevrolet (Client), and this report was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This report does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

TABLES

Table 1. Monitoring Well Information and Groundwater Elevation Data

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Monitoring Well ID and Installation Date	Date	Vertical Angle	Screened Intervals (feet bgs)	Top of Casing Elevation (feet, site datum)	Depth to Water (feet)	Groundwater Elevation (feet, site datum)
Wells Screened in Advance Outwash						
MW-2	2/27/2008	0	50 to 65	278.14	51.50	226.64
Installed 1/22/2007	10/2/2008				51.84	226.30
	5/12/2009				52.42	225.72
	12/22/2010				52.44	225.70
	2/7/2012				51.77	226.37
	12/12/2013				52.74	225.40
	6/24/2014		Injection of Regenesis products 3DMe and HRC Primer			
	1/21/2015				51.83	226.31
	9/8/2015				51.77	226.37
	2/2/2016				52.14	226.00
	11/28/2018				50.74	227.40
	2/27/2019				50.42	227.72
	4/12/2020				50.73	227.41
	3/26/2020				51.12	227.02
	4/28/2020				51.01	227.13
MW-3	2/27/2008	0	51 to 66	277.77	dry	dry
Installed 2/1/2007	10/2/2008				dry	dry
	5/11/2009				dry	dry
	10/25/2010		Decommissioned			
MW-4	2/27/2008	0	49 to 64	278.01	dry	dry
Installed 1/9/2008	10/2/2008				dry	dry
	5/11/2009				dry	dry
	10/25/2010		Decommissioned			
MW-5	2/27/2008	0	50 to 65	278.13	50.87	227.26
Installed 1/11/2008	10/2/2008				51.65	226.48
	5/11/2009				52.28	225.85
	12/22/2010				52.21	225.92
	2/7/2012				51.60	226.53
	1/9/2014				52.68	225.45
	4/28/2015				51.38	226.75
	9/9/2015				51.61	226.52
	2/2/2016				51.52	226.61
	11/28/2018				50.39	227.74
	3/25/2020				51.09	227.04
	4/28/2020				50.94	227.19
MW-6	2/27/2008	0	49 to 64	277.55	dry	dry
Installed 1/16/2008	10/2/2008				dry	dry
	5/11/2009				dry	dry
	10/25/2010		Decommissioned			
MW-7	2/27/2008	0	50 to 65	279.44	52.90	226.54
Installed 1/18/2008	10/2/2008				53.08	226.36
	5/11/2009				53.69	225.75
	12/22/2010				53.73	225.71
	2/6/2012				52.98	226.46
	1/7/2014				54.10	225.34
	3/26/2020				52.95	226.49
	4/28/2020				52.91	226.53
MW-8	10/2/2008	0	51 to 61	278.14	52.68	225.46
Installed 4/17/2008	5/12/2009				53.28	224.86
	12/22/2010				53.32	224.82
	2/7/2012				52.58	225.56
	12/7/2013				53.64	224.50
	6/23/2014		Injection of Regenesis products 3DMe and HRC Primer			
	1/20/2015				52.70	225.44
	9/10/2015				49.76	228.38
	2/1/2016				52.31	225.83
	11/28/2018				51.64	226.50
			(Re-surveyed in 2019 with new MW installations)	278.80		
	4/12/2019				51.65	227.15
	3/25/2020				51.73	227.07
	4/28/2020				51.79	227.01
MW-9	5/11/2009	0	60 to 70	278.78	dry	dry
Installed 5/5/2009	12/22/2010				dry	dry
	2/6/2012				dry	dry
	12/16/2013				dry	dry
	4/29/2015		Decommissioned			
MW-10	5/11/2009	0	60 to 70	279.45	dry	dry
Installed 5/7/2009	12/22/2010				dry	dry
	2/6/2012				dry	dry
	12/16/2013				dry	dry
	4/29/2015		Decommissioned			
MW-15	12/17/2013	37	44 to 60	278.84	53	226
Installed 10/14/2013	6/23/2014		Injection of Regenesis products 3DMe and HRC Primer			
	9/8/2015				49	230
	2/1/2016				49	230
	11/28/2018				49	230
	3/23/2020				49	230
MW-16	12/13/2013	23	41 to 60	277.88	53	225
Installed 10/15/2013	6/23/2014		Injection of Regenesis products 3DMe and HRC Primer			
	1/21/2015				56	222
	11/28/2018				50	228
	3/25/2020				51	227
MW-17	12/13/2013	32	43 to 60	277.97	53	225
Installed 10/15/2013	6/24/2014		Injection of Regenesis products 3DMe and HRC Primer			
	3/24/2020				51	227
MW-18	12/12/2013	45	46 to 60	277.80	60	217
Installed 10/16/2013	6/24/2014		Injection of Regenesis products 3DMe and HRC Primer			
	3/25/2020				dry	dry
MW-19	1/8/2014	0	45 to 60	278.15	52.72	225.43
Installed 10/17/2013	6/24/2014		Injection of Regenesis products 3DMe and HRC Primer			
	1/21/2015				NM	-
	9/9/2015				51.71	226.44
	2/2/2016				51.64	226.51
	11/28/2018				50.55	227.60
	4/12/2019				50.63	227.52
	3/24/2020				51.12	227.03
	4/28/2020				51.08	227.07
MW-20	1/8/2014	0	45 to 60	278.03	52.64	225.39
Installed 10/11/2013	6/24/2014		Injection of Regenesis products 3DMe and HRC Primer			
	1/20/2015				52.24	225.79
	9/9/2015				51.83	226.20
	2/2/2016				51.95	226.08
	11/28/2018				50.43	227.60
	2/28/2019				50.30	227.73
	4/12/2019				50.44	227.59
	7/15/2019				50.95	227.08
			Injection of Regenesis products 3DMe and microorganisms			

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Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Monitoring Well ID and Installation Date	Date	Vertical Angle	Screened Intervals (feet bgs)	Top of Casing Elevation (feet, site datum)	Depth to Water (feet)	Groundwater Elevation (feet, site datum)
	8/27/2019				51.01	227.02
	12/12/2019				51.35	226.68
	3/24/2020				51.04	226.99
	4/28/2020				50.75	227.28
MW-21	12/17/2013	0	45 to 60	279.03	53.66	225.37
Installed 10/17/2013	6/23/2014		Injection of Regenesis products 3DMe and HRC Primer			
	1/20/2015				52.78	226.25
	9/8/2015				52.83	226.20
	2/1/2016				53.21	225.82
	11/28/2018				51.6	227.43
	4/12/2019				51.57	227.46
	3/25/2020				52.15	226.88
	4/28/2020				52.12	226.91
MW-23	3/14/2019	0	10 to 20 and 45 to 60	277.94	50.61	227.33
Installed 2/6/2019	4/12/2019				50.71	227.23
	3/26/2020				51.22	226.72
	4/28/2020				51.01	226.93
MW-24	2/13/2019	0	10 to 20 and 45 to 60	278.08	50.92	227.16
Installed 1/31/2019	4/12/2019				50.88	227.20
	8/27/2019				51.17	226.91
	12/12/2019				51.57	226.51
	3/26/2020				51.54	226.54
	4/28/2020				51.3	226.78
MW-25	2/13/2019	0	45 to 60	278.16	50.81	227.35
Installed 1/29/2019	4/12/2019				50.86	227.30
	3/26/2020				51.42	226.74
	4/28/2020				51.15	227.01
MW-26	2/13/2019	0	45 to 60	278.10	50.74	227.36
Installed 1/20/2019	4/12/2019				50.89	227.21
	8/28/2019				51.14	226.96
	12/13/2019				51.54	226.56
	3/25/2020				51.62	226.48
	4/28/2020				51.24	226.86
MW-27	2/13/2019	0	45 to 60	277.75	50.47	227.28
Installed 2/1/2019	4/12/2019				50.68	227.07
	3/24/2020				51.39	226.36
	4/28/2020				51.06	226.69
MW-28	3/26/2019	0	45 to 60	277.68	50.4	227.28
Installed 3/14/2019	4/12/2019				50.6	227.08
	3/25/2020				50.13	227.55
	4/28/2020				50.99	226.69
MW-29	3/26/2019	0	45 to 60	277.87	50.64	227.23
Installed 3/11/2019	4/12/2019				50.76	227.11
	3/25/2020				51.34	226.53
	4/28/2020				51.16	226.71
MW-30	2/25/2019	0	45 to 60	278.27	51.24	227.03
Installed 2/7/2019	4/12/2019				51.29	226.98
	3/26/2020				51.9	226.37
	4/28/2020				51.6	226.67
MW-31	2/25/2019	0	10 to 20 and 45 to 60	278.87	51.84	227.03
Installed 2/5/2019	4/12/2019				51.93	226.94
	3/26/2020				51.3	227.57
	4/28/2020				52.25	226.62
MW-32	3/26/2019	0	45 to 60	278.40	51.23	227.17
Installed 3/13/2019	4/12/2019				51.3	227.10
	3/26/2020				51.85	226.55
	4/28/2020				51.64	226.76
MW-33	3/26/2019	0	45 to 60	279.21	51.95	227.26
Installed 3/13/2019	4/12/2019				52.15	227.06
	3/26/2020				52.55	226.66
	4/28/2020				52.52	226.69
MW-34	7/15/2019	0	44 to 59	278.10	51.03	227.07
	8/27/2019				51.27	226.83
Installed 7/9/2019	12/13/2019				51.5	226.60
	3/25/2020				51.9	226.20
	4/28/2020				51.32	226.78
MW-35	8/27/2019	0	43 to 58	278.15	51.25	226.90
Installed 7/11/2019	12/13/2019				51.64	226.51
	3/25/2020				51.74	226.41
	4/28/2020				51.25	226.90
Wells Screened in Deeper Water-Bearing Zones						
MW-8D	5/11/2009	0	96 to 116	278.11	112.56	165.55
Installed 5/6/2009	12/22/2010				112.58	165.53
	2/6/2012				112.52	165.59
	1/10/2014				112.56	165.55
	4/28/2015				112.45	165.66
	9/8/2015				118.92	159.19
	2/2/2016				112.53	165.58
	4/9/2019				112.48	165.63
	3/24/2020				112.67	165.44
MW-12D	12/22/2010	0	113 to 123	277.72	129.96	147.76
Installed 10/27/2010	2/6/2012				129.80	147.92
	1/10/2014				129.94	147.78
	4/29/2015				129.89	147.83
	9/10/2015				130.90	146.82
	2/2/2016				131.03	146.69
	3/24/2020				130.47	147.25
MW-13D	12/22/2010	0	125 to 145	276.96	137.88	139.08
Installed 10/29/2010	2/7/2012				137.43	139.53
	12/16/2013				137.70	139.26
	4/29/2015				137.13	139.83
	9/9/2015				137.22	139.74
	2/2/2016				137.14	139.82
	4/9/2019				137.62	139.34
	3/24/2020				138.26	138.70
MW-14D	2/6/2012	0	123 to 143	277.46	134.02	143.44
Installed 2/2/2012	1/23/2014				134.26	143.20
	4/29/2015				133.82	143.64
	9/9/2015				134.16	143.30
	2/2/2016				134.11	143.35
	4/9/2019				134.3	143.16
	3/24/2020				134.41	143.05

Notes:
bgs = below ground surface
nm = not measured

Table 2. Soil Quality

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Sample Location	Sample Date	Sample Depth (feet bgs)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Naphthalene
B-1	06/29/07	0-2	**0.04**	0.02 U	--
		2-3	**0.04**	0.02 U	--
DC1	08/31/06	8	0.02 U	0.02 U	0.05 U
DP-1	10/21/10	1	**2.1**	0.03 U	0.05 U
		2	**1.0**	0.03 U	0.05 U
DP-2	10/21/10	1	**0.8**	0.03 U	0.05 U
DP-4	10/20/10	2	**1.8**	0.03 U	0.05 U
DP-5	10/20/10	3	**1.4**	0.03 U	0.05 U
		6	**0.54**	0.03 U	0.05 U
DP-7	10/21/10	2	**2.7**	0.03 U	0.05 U
		2.5	**36**	**0.14**	0.05 U
DP-8	10/20/10	3	0.025 U	0.03 U	**28**
		4.5	0.025 U	0.03 U	**0.22**
DP-9	10/20/10	3	0.025 U	0.03 U	0.05 U
		6	**0.13**	0.03 U	0.05 U
DP-10	02/08/12	8.5	**0.24**	0.03 U	0.05 U
DP-12	02/08/12	5.5	0.025 U	0.03 U	0.05 U
DP-13	02/08/12	7	0.025 U	0.03 U	0.05 U
DP-14	02/08/12	7	0.025 U	0.03 U	0.05 U
F-12	07/31/07	1	**1.5**	0.02 U	--
F-20	07/31/07	1.7	**2.1**	0.02 U	--
MW-21	10/11/13	11	**0.63**	0.03 U	0.05 U
		15.5	**44**	**0.57**	0.05 U
		25	0.025 U	0.03 U	0.05 U
		40	0.025 U	0.03 U	0.05 U
		55	**0.095**	**0.032**	0.05 U
MW-23[3]	02/06/19	5.5	0.025 U	0.02 U	0.05 U
		10.5	**0.40**	**0.18**	0.05 U
		20.5	**0.045**	0.02 U	0.05 U
		25.5	**2.3**	0.02 U	0.05 U
		55.5	**0.095**	0.02 U	0.05 U
MW-24	1/30/19 & 1/31/19	5.5	0.025 U	0.02 U	0.05 U
		30.5	0.025 U	0.02 U	0.05 U
		50.5	0.025 U	0.02 U	0.05 U
MW-25	1/28/19 & 1/29/19	5.5	0.025 U	0.02 U	0.05 U
		30.5	0.025 U	0.02 U	0.05 U
		50.5	0.025 U	0.02 U	0.05 U
MW-26	1/29/19 & 1/30/19	5.5	0.025 U	0.02 U	0.05 U
		30.5	0.025 U	0.02 U	0.05 U
		50.5	0.025 U	0.02 U	0.05 U
MW-27	1/31/19 & 2/1/19	5.5	0.025 U	0.02 U	0.05 U
		30.5	0.025 U	0.02 U	0.05 U
		50.5	0.025 U	0.02 U	0.05 U
MW-28	03/14/19	30.5	**0.038**	0.02 U	0.05 U
		55.5	0.025 U	0.02 U	0.05 U
MW-29	03/11/19	15	**0.043**	0.02 U	0.05 U
		50	**0.043**	0.02 U	0.05 U
MW-30	02/07/19	10.5	**0.084**	**0.021**	0.05 U
		35.5	**0.10**	0.02 U	0.05 U
		60.5	**0.026**	0.02 U	0.05 U

Table 2. Soil Quality

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Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

MW-31	02/05/19	5.5	0.025 U	0.02 U	0.05 U
		40.5	0.025 U	0.02 U	0.05 U
		55.5	**0.058**	0.02 U	0.05 U
		60.5	**0.058**	0.02 U	0.05 U
MW-32	03/13/19	15.5	0.025 U	0.02 U	0.05 U
		55.5	0.025 U	0.02 U	0.05 U
MW-33	3/12/19 & 3/13/19	10	0.025 U	0.02 U	0.05 U
		55.5	0.025 U	0.02 U	0.05 U
R-12	07/31/07	1	**1.9**	**0.28**	--
R-18	07/31/07	1.5	**18**	**0.85**	--
T-1	06/29/07	0-1.75	**0.04**	0.02 U	--
TRENCH-BT-C	12/09/13	4.5	**0.26**	0.03 U	0.05 U
TRENCH-BT-E	12/09/13	4.5	**0.16**	0.03 U	0.05 U
TRENCH-BT-W	12/09/13	4.5	**0.25**	0.03 U	0.05 U
VE-5	02/26/19	15.9	0.025 U	0.02 U	0.05 U
		22.6	0.025 U	0.02 U	0.05 U
VE-6	02/28/19	9.2	**0.47**	0.02 U	0.05 U
		26.9	0.025 U	0.02 U	0.05 U
		40.3	0.025 U	0.02 U	0.05 U
VE-7	03/01/19	6.7	**1.4**	**0.16**	0.05 U
		15.6	**120**	**1.5**	**0.44**
		26.2	0.025 U	0.02 U	0.05 U
VE-8	02/27/19	9.9	**0.089**	0.02 U	**0.1**
		24.0	**7.3**	**0.15**	0.05 U
		33.2	**0.047**	0.02 U	0.05 U
Screening Level[4]			0.05	0.03	5

-- not analyzed

U not detected at the indicated detection limit

bgs below ground surface

Notes:

1) All concentrations are in milligrams per kilogram (mg/kg). Only analytes with concentrations exceeding their respective screening levels in at least one sample are included in this table (see Notes 3 and 4 for exceptions). Detections are bolded. Screening level exceedances are shaded. Refer to Section 2.7 for discussion of other analyte detections.

2) Soil sampling was also conducted for the purpose of profiling soil for off-site disposal. Those sampling results are not included in this table.

3) Methylene chloride was detected above its screening level of 0.02 mg/kg (MTCA Method A soil cleanup level) in three of the soil samples collected from MW-23. The laboratory report noted that those detections were likely due to laboratory contamination.

4) The screening levels for PCE, TCE, and naphthalene are Model Toxics Control Act (MTCA) Method A soil cleanup levels.

Table 3. Reconnaissance Water Sample Quality

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Chemical Name[1]	Screening Level[2]	DC-PLAS-2-W Beneath parking lot east of Morrell's during Tully's drinking water leak[3] 09/18/06	B-1 Beneath adjoining lease space foundation south of Morrell's during Tully's drinking water leak[3] 06/29/07	PW-1 Beneath Morrell's foundation during Tully's drinking water leak[3] 07/11/07	GW-7 Beneath Morrell's foundation after repair of Tully's drinking water leak[3] 05/08/08	GW-8 Beneath Morrell's foundation after repair of Tully's drinking water leak[3] 05/08/08
Bromodichloromethane[4]	0.71	1.5	1.5	2.3	1 U	1 U
Tetrachloroethylene (PCE)	5	--	**52**	**1,700**	**13,000**	**1,300**
Trichloroethylene (TCE)	5	--	**6**	**17**	**33**	**21**
cis-1,2-Dichloroethene (cDCE)	16	--	**8.7**	**24**	1 U	**7.9**
Vinyl chloride (VC)	0.2	--	**19**	**0.51**	0.2 U	0.2 U

-- not analyzed bgs below ground surface U not detected at the indicated detection limit

Notes:

1) All concentrations are in micrograms per liter (µg/L). Only analytes with concentrations exceeding their respective screening levels in at least one sample are included in this table. Detections are bolded. Screening level exceedances are shaded. Refer to Section 3.1.3 for discussion of other analyte detections.

2) Screening levels are Model Toxics Control Act (MTCA) Method B groundwater cleanup levels for bromodichloromethane and cDCE, and MTCA Method A groundwater cleanup levels for the other analytes.

3) An estimated 600,000 gallons of drinking water was released between May 2006 and September 2007 (per analysis of water bills) by Tully's Coffee, which occupied the retail space at the southeast corner of Tacoma Avenue and North First Street.

4) Bromodichloromethane is a byproduct of drinking water disinfection. Its presence is attributable to the Tully's drinking water leak.

Table 4. Advance Outwash Groundwater Quality

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	Vinyl Chloride (VC)
MW-2	08/28/07	**2,900**	**1,800**	**7,100**	**19**
	01/30/08	**1,400**	**520**	**2,000**	0.2 U
	10/02/08	**1,900**	**880**	**2,300**	**3.1**
	05/12/09	**1,600**	**930**	**2,400**	**2.7**
	12/22/10	**2,100**	**1,100**	**2,100**	**2.7 J**
	02/07/12	**1,600**	**810**	**1,400**	0.2 U
	12/12/13	**1,600**	**830**	**1,200**	**0.84**
	*** Biostimulants injected in June 2014 ***				
	01/21/15	**19**	**25**	**150**	**0.77**
	07/30/15	**17**	**46**	**600**	**15**
	09/08/15	**18**	**77**	**610**	**17**
	02/02/16	**22**	**190**	**640**	**15**
	09/22/16	**16**	**110**	**480**	**7.8**
	01/04/17	**18**	**80**	**520**	**7.4**
	11/28/18	**28**	**14**	**490**	**5.9**
	03/26/20	**24**	**7.1**	**540**	**5.6**
MW-5[3]	01/22/08	**67**	**3**	**13**	0.2 U
	01/30/08	**31**	**1.1**	**4.5**	0.2 U
	10/02/08	**75**	**3.2**	**17**	0.2 U
	05/11/09	**17**	**1.1**	**44**	0.2 U
	12/22/10	**190**	**14**	**41**	0.2 U
	02/07/12	**140**	**8.7**	**25**	0.2 U
	01/09/14	0.2 U	**0.46**	0.2 U	0.2 U
	04/28/15	**67**	**6.2**	**6.4**	0.2 U
	09/09/15	**31**	**3.6**	**3.6**	0.2 U
	02/02/16	**27**	**2.7**	**2.5**	0.2 U
	09/07/16	**12**	**1.4**	**1.4**	0.2 U
	01/04/17	**14**	**1.4**	**1.3**	0.2 U
	11/28/18	**13**	**1.4**	1 U	0.2 U
	03/25/20	**9.6**	1 U	1 U	0.2 U
MW-7[3]	01/22/08	**6.6**	1 U	1 U	0.2 U
	01/30/08	**1.5**	1 U	1 U	0.2 U
	10/02/08	1 U	1 U	1 U	0.2 U
	05/11/09	**1.1**	1 U	1 U	0.2 U
	12/22/10	**1.4**	1 U	1 U	0.2 U
	02/06/12	1 U	1 U	1 U	0.2 U
	01/07/14	**1.4**	1 U	1 U	0.2 U
	03/26/20	1 U	1 U	1 U	0.2 U
MW-8	04/22/08	**1,300**	**780**	**2,400**	0.2 U
	10/02/08	**680**	**390**	**3,600**	**6.9**
	05/12/09	**780**	**370**	**2,600**	**2**
	12/22/10	**470**	**150**	**1,800**	**1.4**
	02/07/12	**960**	**610**	**1,600**	20 U
	12/17/13	**940**	**560**	**1,300**	10 U
	*** Biostimulants injected in June 2014 ***				
	01/20/15	**14**	**8.5**	**1,200**	**9.4**
	07/30/15	**41**	**17**	**740**	**8.9**
	09/10/15	**18**	**13**	**1,000**	**12**
	02/01/16	**21**	**13**	**830**	**7.1**
	09/07/16	50 U	50 U	**560**	10 U
	09/22/16	**16**	**11**	**500**	**5.4**
	01/05/17	**19**	**12**	**480**	**5.6**

Table 4. Advance Outwash Groundwater Quality

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	Vinyl Chloride (VC)
	11/28/18	**14**	**5.2**	**280**	**3.7**
	03/25/20	**8.4**	**2.9**	**210**	**2.4**
MW-15	12/17/13	**460**	**110**	**380**	2 U
	*** Biostimulants injected in June 2014 ***				
	09/08/15	**86**	**53**	**220**	**4**
	02/01/16	**43**	**25**	**290**	**7.4**
	09/07/16	**15**	**8.4**	**330**	**4**
	01/04/17	**6.6**	**3.3**	**520**	**4.9**
	11/28/18	**3.3**	**1.6**	**65**	**0.78**
	03/23/20	**1.2**	1 U	**67**	**7.9**
MW-16	12/13/13	**450**	**98**	**360**	**0.49**
	*** Biostimulants injected in June 2014 ***				
	01/21/15	**14**	**6.3**	**180**	**2.2**
	11/28/18	**11**	**2.8**	**230**	**2.6**
	03/25/20	**3.7**	1 U	**74**	**0.83**
MW-17	12/13/13	**170**	**24**	**81**	0.2 U
	*** Biostimulants injected in June 2014 ***				
	11/28/18	**9.7**	**2.1**	**83**	**0.72**
	03/24/20	**5.4**	1 U	**77**	**0.86**
MW-18	12/12/13	**460**	**57**	**360**	**0.53**
	*** Biostimulants injected in June 2014 ***				
MW-19	01/08/14	**62**	**4.8**	**20**	0.2 U
	*** Biostimulants injected in June 2014 ***				
	01/21/15	**9.7**	5 U	**45**	1 U
	09/09/15	**7.6**	**3.9**	**35**	**1.5**
	02/02/16	**8.5**	**5.1**	**43**	**1.5**
	09/07/16	20 U	20 U	20 U	4 U
	09/22/16	**8.5**	**4.1**	**16**	**0.43**
	01/04/17	**12**	**4.6**	**36**	**0.97**
	11/28/18	**2.5**	**1.6**	**53**	**0.56**
	03/24/20	1 U	1 U	**46**	**0.51**
MW-20	01/08/14	**140**	**16**	**43**	0.2 U
	*** Biostimulants injected in June 2014 ***				
	01/20/15	**7.4**	**5.3**	**79**	**1.8**
	09/09/15	**11**	**5.8**	**150**	**1.5**
	02/02/16	1 U	1 U	**250**	**1.9**
	09/07/16	20 U	20 U	**250**	4 U
	09/22/16	**4.9**	**1.7**	**250**	**1.8**
	01/04/17	**6.2**	**2**	**240**	**2.5**
	11/28/18	**4.9**	1 U	**59**	**0.84**
	*** Remediation products and microorganisms injected in July 2019 ***				
	08/27/19	(Unable to collect water sample due to pump screen biofouling)			
	12/12/19	1 U	1 U	**14**	**1.5**
	03/24/20	**1.5**	1 U	**9.8**	**0.65**
MW-21	12/17/13	**500**	**130**	**460**	2 U
	*** Biostimulants injected in June 2014 ***				
	01/20/15	**15**	**12**	**270**	1 U
	09/08/15	**7.1**	**9.2**	**510**	**7.4**
	02/01/16	**18**	**17**	**650**	**9.7**
	09/22/16	**12**	**13**	**320**	**4.1**
	01/04/17	**15**	**14**	**340**	**4.2**
	11/28/18	**14**	**7.6**	**190**	**2.3**
	03/25/20	**19**	**9.6**	**230**	**1.5**

Table 4. Advance Outwash Groundwater Quality

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	Vinyl Chloride (VC)
MW-23	03/14/19	**100**	**25**	**18**	0.2 U
	03/26/20	**140**	**23**	**20**	0.2 U
MW-24	02/13/19	**66**	**12**	**5.4**	0.2 U
	08/27/19	**42**	**10**	**5.1**	0.2 U
	12/12/19	**50**	**11**	**4.2**	0.2 U
	03/26/20	**58**	**11**	**4.1**	0.2 U
MW-25	02/13/19	**37**	**3.6**	**3.0**	0.2 U
	03/25/20	**36**	**3.2**	**3.0**	0.2 U
MW-26	02/13/19	**20**	**2.4**	**2.1**	0.2 U
	08/27/19	**20**	**2.7**	**2.2**	0.2 U
	12/13/19	**19**	**2.3**	**2.0**	0.2 U
	03/25/20	**15**	**1.4**	1 U	0.2 U
MW-27	02/13/19	**9.4**	**1.6**	1 U	0.2 U
	03/24/20	**9.3**	**1.5**	1 U	0.2 U
MW-28	03/26/19	**20**	**5.1**	**2.1**	0.2 U
	03/25/20	**20**	**2.7**	**1.8**	0.2 U
MW-29	03/26/19	**12**	**1.1**	1 U	0.2 U
	03/25/20	**14**	**1.4**	1 U	0.2 U
MW-30	02/25/19	**27**	**6.2**	**6.3**	0.2 U
	03/26/20	1 U	1 U	1 U	0.2 U
MW-31	02/25/19	**150**	**45**	**28**	0.2 U
	03/26/20	**160**	**40**	**34**	0.2 U
MW-32	03/26/19	**36**	**8.7**	**2.8**	0.2 U
	03/26/20	**45**	**9.1**	**4.9**	0.2 U
MW-33	03/26/19	**28**	**3.9**	**1.6**	0.2 U
	03/26/20	**34**	**5.4**	**2.4**	0.2 U
MW-34	07/15/19	**18**	**1.4**	1 U	0.2 U
	08/27/19	**25**	**2.2**	**1.3**	0.2 U
	12/13/19	**11**	**1.4**	**20**	0.2 U
	03/25/20	**17**	**2.5**	**10**	0.2 U
MW-35	08/27/19	**39**	**4.9**	**2.8**	0.2 U
	12/13/19	**23**	**3.2**	**7.2**	0.2 U
	03/25/20	**22**	**3.6**	**4.9**	0.2 U
Screening Level[2]		5	5	16	0.2

U not detected at the indicated detection limit

Notes:

1) All concentrations are in micrograms per liter (µg/L). Only analytes with concentrations exceeding their respective screening levels in at least one sample are included in this table. Detections are bolded. Screening level exceedances (see Note 2) are shaded.

2) Screening levels are Model Toxics Control Act (MTCA) Method B groundwater cleanup level for cDCE and MTCA Method A groundwater cleanup levels for the other analytes.

3) Potential impacts from Tully's Coffee water leak. An estimated 600,000 gallons of drinking water were released between May 2006 and Sept 2007 (per analysis of water bills).

Table 5. Advance Outwash Groundwater Natural Attenuation Parameters

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Date	DO (mg/L)	pH	ORP (mV)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Iron, total (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	Methane (mg/L)	Ethene (mg/L)	Ethane (mg/L)	Dhc Assay[2]
MW-1	10/2/08	4.27	6.49	28.4											
	5/11/09	2.05	5.91	-220.1											
	2/7/12	8.14	6.8	162											
	1/10/14	0.4	6.41	114		0.2	<0.1	8.8	4.07		<1.5				
MW-2	10/2/08	2.04	6.51	75.4											
	5/11/09	3.79	7.02	43.3											
	2/7/12	5.27	7.06	215											
	12/12/13	4.4	6.74	141		0.959	NA	9.26	6.17		<0.25				
	*** Biostimulants injected in June 2014 ***														
	1/21/15	1.6	6.25	33					294						
	9/8/15	0.17	5.78	44.7											
	2/2/16	0.45	5.74	7.2											
	9/22/16	0.22	5.6	11.2											
	1/4/17	0.41	5.62	11.2											
	11/28/18	3.45	5.36	68.8											
	2/27/19	0.5	5.5	58	50.6	<0.1	0.675	1.22	49.2	2.5	209				
	3/26/20	0.51	5.09	59.3		0.452	0.726	<0.6	38		209				
MW-5	10/2/08	4.77	6.86	-773											
	5/11/09	6.63	7.28	-49.1											
	2/7/12	6.2	6.78	87											
	1/9/14	2.1	6.51	74		0.7	<0.1	20.6	11.5		<1.5				
	4/28/15	4.2	6.4	106.4											
	9/9/15	7.06	6.5	116.3											
	2/2/16	6.73	6.44	14.2											
	9/6/16	8.67	6.27	100.8											
	1/4/17	8.55	6.72	76.7											
	11/28/18	8.74	6.32	90.6											
	3/25/20	8.11	6.39	51.6		0.492	<0.1	6.84	4.03		2.66				
MW-7	10/2/08	3.61	6.68	-21											
	5/11/09	2.22	7.06	-175.2											
	2/6/12	3.03		93.8											
	1/7/14	8.5	6.87	53		1.39	0.006	28.4	14.3		<0.25				
	3/26/20	5.68	6.5	97.6		1.75	<0.2	29.6	21.1		<0.5				
MW-8	10/2/08	0.82	6.47	-88.5											
	5/12/09	0.47	7.41	-62.7											
	2/7/12	1.34	6.81	-55											
	12/17/13	0.4		23		0.33	0.004	20.9	77.3		<0.25				
	*** Biostimulants injected in June 2014 ***														
	1/20/15	0.4	5.68	36					89.1						
	9/10/15	0.25	5.22	49.1											
	2/1/16	0.22	5.17	71.4											
	9/9/16	0.26	5.26	-11.8											
	9/22/16	0.22	5.4	19.5											
	1/5/17	0.18	5.34	49.7											
	11/28/18	0.61	5.75	12.5											
	3/25/20	0.58	5.95	27.7		<0.1	<0.1	0.557	20.3		157				
	12/17/13	4.1		75		2.08	<0.002	15.4	0.968		<0.25				
	*** Biostimulants injected in June 2014 ***														

Table 5. Advance Outwash Groundwater Natural Attenuation Parameters

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Date	DO (mg/L)	pH	ORP (mV)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Iron, total (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	Methane (mg/L)	Ethene (mg/L)	Ethane (mg/L)	Dhc Assay[2]
MW-15	09/08/15	0.23	6.23	8.30											
	02/01/26	0.50	6.43	18.90											
	09/09/16	0.17	6.56	-87.50											
	01/04/17	0.24	6.76	-21.10											
	11/28/18	0.37	6.57	-30.80											
	03/23/20	0.38	6.42	4.8		<0.1	<0.1	16	3.63		6.59				
MW-16	12/13/13	2.4	6.83	50		1.76	0.004	17	4.13		<0.25				
	*** Biostimulants injected in June 2014 ***														
	1/21/15	4.4	6.3	-3					62.5						
	11/28/18	0.33	6.1	-40.6											
	3/25/20	7.79	6.86	-0.8		0.122	<0.1	2.09	21.5		63.4				
MW-17	12/13/13	1.7	7.09	63		1.51	0.004	14.9	32.8		<0.25				
	*** Biostimulants injected in June 2014 ***														
	11/28/18	0.26	5.88	79.90											
	03/24/20	0.9	6.31	23		0.222	0.402	1.93	36.4		258				
MW-18	12/12/13	3.8	6.67	122		0.681	NA	17.8	0.216		0.639				
	*** Biostimulants injected in June 2014 ***														
MW-19	1/8/14	2.4	6.57	97		2.66	0.006	22.7	113		0.254				
	*** Biostimulants injected in June 2014 ***														
	1/21/15	0.4	5.62	42					59.4						
	9/9/15	0.22	5.78	96.6											
	2/2/16	0.56	5.98	13.7											
	9/7/16	0.33	5.8	38.5											
	9/22/16	0.32	5.53	-23.2											
	1/4/17	3.29	5.69	42.1											
	11/28/18	0.79	5.83	35.5											
	3/24/20	0.4	6.41	-52.6		<0.5	<0.5	<0.6	89		142				
MW-20	1/8/14	5.9	6.65	114		2.02	0.007	16.9	40.8		<0.25				
	*** Biostimulants injected in June 2014 ***														
	1/20/15	2.3	5.8	47					50.6						
	9/9/15	1.95	5.93	100.4											
	2/2/16	0.39	6.2	-7.8											
	9/7/16	0.22	5.75	69.4											
	9/22/16	0.15	5.54	18.8											
	1/4/17	1.17	5.92	40.4											
	11/28/18	0.39	6.1	-47.3											
	2/27/19	3.6	6.51	73	31.4	<0.1	0.128	<0.3	71	1.5	179				
	7/15/19	0.12	5.75	-11								10.2	<0.015	<0.016	$<1 \times 10^4$
	*** Remediation products and microorganisms injected in July 2019 ***														
	8/27/19	(Unable to collect water sample due to pump screen biofouling)													
	12/12/19	1.05	6.0	-44		0.252	2.74	<0.3	114		809	3.73	<0.015	<0.016	$<1 \times 10^4$
	3/24/20	0.29	5.9	-3.5		<0.2	1.3	<0.3	73		304				
MW-21	12/17/13	2.6		56		2.12	0.005	13.9	79.1		<0.25				
	*** Biostimulants injected in June 2014 ***														
	1/20/15	1.1	6.0	45					42.2						
	9/8/15	0.1	5.4	116.5											
	2/1/16	0.1	5.4	64.6											
	9/22/16	0.0	5.1	28.7											

Table 5. Advance Outwash Groundwater Natural Attenuation Parameters

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Date	DO (mg/L)	pH	ORP (mV)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Iron, total (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	Methane (mg/L)	Ethene (mg/L)	Ethane (mg/L)	Dhc Assay[2]
	1/4/17	0.1	5.2	44.4											
	11/28/18	0.3	5.1	-9.4											
	3/25/20	0.6	5.6	56		0.566	1.1	8.42	34.3		241				
MW-23	3/14/19	8.5	6.9	56.1											
	3/26/20	6.9	6.9	46.3		0.912	<0.2	24.9	9.95		<0.5				
MW-24	2/13/19	1.2	7.2	44	32.9	0.606	0.186	12.6	3.64	<0.5	0.751				
	8/27/19	7.0	7.0	26		0.566	<0.2	11.6	41.4		3.36	0.028	<0.015	<0.016	
	12/12/19	1.1	6.9	28		0.307	<0.1	9.69	4.07		2.43	2.3	<0.015	<0.016	
	3/26/20	2.0	6.9	49		<0.1	<0.1	8.86	3.47		3.25				
MW-25	2/13/19	0.5	7.04	55	48.5	0.624	0.308	16.1	1.67	<0.5	0.862				
	3/26/20	0.38	6.37	66		0.556	<0.1	13.3	0.829		<0.5				
MW-26	2/13/19	7.6	7.03	53	46.9	1.78	0.154	14.4	4.24	<0.5	<0.5				
	8/27/19	7.7	6.5	75		1.92	<0.2	13.7	49.4		<0.5				
	12/13/19	7.0	6.7	17		1.85	<0.1	12.9	51.7		<1.0				
	3/25/20	7.5	6.3	34		1.69	<0.1	13.4	45.3		<1.0				
MW-27	2/13/19	3.7	6.94	72	298	2.41	<1	18.9	3.22	<0.5	0.719				
	3/24/20	5.57	6.52	24		2.01	<0.2	23.1	6.94		0.506				
MW-28	3/26/19	6.24	7.06	121.3											
	3/25/20	4.07	6.43	55.3		1.76	<0.2	18.5	3.06		<0.5				
MW-29	3/26/19	3.96	7.14	92.8											
	3/25/20	7.16	6.94	35.8		1.29	<0.1	14.6	17.2		<0.5				
MW-30	2/25/19	8.3	6.99	70	10.1	1.17	<0.2	24.2	4.53	<0.5	1.24				
	3/26/20	7.54	6.28	65		1.71	<0.2	35.3	6.92		<0.5				
MW-31	2/25/19	3.6	6.9	75	23.7	1.09	0.166	13.3	8.68	<0.5	0.723				
	3/26/20	3.64	6.79	51		0.462	<0.2	13.3	8.82		0.541				
MW-32	3/26/19	8	6.9	85.1											
	3/26/20	7.87	6.37	83.4		2.95	<0.2	17	2.76		<0.5				
MW-33	3/26/19	6.85	6.8	117.5											
	3/26/20	7.34	6.5	95.3		11.4	<0.2	27.3	5.28		<0.5				
MW-34	7/15/19	0.96	6.74	9		0.484	0.125	15.1	3.65		3.9	0.031	<0.015	<0.016	$<1 \times 10^4$
	8/27/19	0.94	7.0	13		0.285	<0.4	7.48	6.09		20.5	<0.0086	<0.015	<0.016	$<4 \times 10^3$
	12/13/19	0.52	7.1	53		<0.1	<0.1	4.26	7.32		6.76	0.065	<0.015	<0.016	$<3 \times 10^3$
	3/25/20	1.3	6.6	6.6		0.445	<0.1	8.65	2.37		1.23				
MW-35	8/27/19	0.65	6.6	-28		0.268	1.17	7.27	6.17		132				
	12/13/19	1.5	6.8	-38		0.388	<0.1	13.2	4.66		3.66	<0.0086	<0.015	<0.016	$<6 \times 10^3$
	3/25/20	2.0	6.5	72		0.611	<0.1	13.1	2.22		0.699				

bgs below ground surfac mg/L milligrams per liter NA natural attenuation TOC total organic carbon
DO dissolved oxygen mV millivolts ORP oxidation-reduction potential

Notes:

1) Blank cell indicates sample was not analyzed for that parameter.

2) Gene-Trac® dehalococcoides (Dhc) assay based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the 1-liter sample.

Table 6. Groundwater Quality and Natural Attenuation Parameters, Deeper Water-Bearing Zones

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Sample Date	Tetrachloroethene (PCE)	cis-1,2-Dichloroethene (cDCE)	DO (mg/L)	pH	ORP (mV)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Iron, total (mg/L)	TOC (mg/L)
MW-8D	05/11/09	< 1 U	**11**	5.15	6.31	-209.5					
	12/22/10	< 1 U	**21**								
	02/06/12	< 1 U	**26**	5.31	3.47	126.5					
	01/10/14	< 0.2 U	**42**	7.6	6.67	112	1.6	<0.1	22.8	0.79	<1.5
	04/28/15	< 1 U	**54**	5.2	6.61	145					
	09/08/15	< 1 U	**65**	5.2	6.62	55					
	02/02/16	< 1 U	**62**	4.2	6.69	18					
	09/07/16	< 1 U	**69**	5	6.61	15					
	01/12/17	< 1 U	**77**								
	04/09/19	< 1 U	**97**	8.36	6.62	76					
	03/23/20	< 1 U	**110**	4.95	6.71	75.4	2.13	<0.1	21.2	0.502	6.59
MW-12D	12/22/10	**6.1**	**22**								
	02/06/12	< 1 U	**17**	7.26	6.09	139.3					
	01/10/14	**0.7**	**22**	8.8	7.35	114					
	04/29/15	< 1 U	**13**	8.3	7.63	130					
	09/10/15	< 1 U	**9.1**	8	7.52	23					
	02/02/16	< 1 U	**9.2**	7.8	7.58	18					
	09/07/16	< 1 U	**3.4**	0.8	7.87	-9					
	01/12/17	< 1 U	**3.0**								
	03/24/20	< 1 U	**8.9**	8.02	7.75	61.5	4.06	<0.1	19.1	6.42	<0.5
MW-13D	12/22/10	**14**	**30**								
	02/07/12	**4.2**	**28**	5.98	6.93	252					
	12/16/13	**5.9**	**32**	5.4	6.59	85					
	04/29/15	< 1 U	**14**	7.9	6.88	152					
	09/09/15	**4.1**	**22**	6	6.66	138					
	02/02/16	**2.2**	**23**	6.8	6.72	17					
	09/07/16	**2.3**	**13**	4.5	6.48	19					
	01/12/17	**11**	**16**								
	04/09/19	**3.1**	**12**	8.65	6.31	126					
	03/24/20	**3.7**	**13**	6.53	6.76	67.4	3.45	<0.1	19.8	26.9	0.538
	02/06/12	**4.2**	**28**	5.45							
	01/23/14	**2.4**	**4.5**	5.26	6.37	720					
	04/29/15	**2.2**	**2.5**	6.2	6.6	143					

Table 6. Groundwater Quality and Natural Attenuation Parameters, Deeper Water-Bearing Zones

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Sample Date	Tetrachloroethene (PCE)	cis-1,2-Dichloroethene (cDCE)	DO (mg/L)	pH	ORP (mV)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Iron, total (mg/L)	TOC (mg/L)
MW-14D	09/09/15	**9.2**	**15**	5	6.54	99					
	02/02/16	**1.8**	**2.2**	5.8	6.9	-24					
	09/07/16	**3.2**	**3.6**	5.1	6.33	74					
	01/12/17	**7.4**	**4.8**								
	04/09/19[3]	< 1 U	< 1 U	6.26	6.58	100.1					
	03/25/20	1.8	1.8	5.93	6.51	80.8	3.5	<0.1	20.2	8.65	<0.5
Screening Level[2]		5	16								

U not detected at the indicated detection limit

Notes:

1) All concentrations are in micrograms per liter (µg/L). Only analytes with concentrations exceeding their respective screening levels in at least one sample are included in this table. Detections are bolded. Screening level exceedances are shaded.

2) Screening levels are Model Toxics Control Act (MTCA) Method A groundwater cleanup level for PCE and MTCA Method B groundwater cleanup level for cDCE.

3) Extensive Sound Transit construction in North First St adjacent to MW-14D may have impacted concentrations at that well on 04/09/19.

Table 7. Soil Gas Sampling Results prior to SVE Treatment

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Sample Location		GV-4	GV-5	GV-6	SV-1	SV-2	SV-3	SV-4	VP-1	VP-2	VP-3	VP-4	VP-7
Sample Date		5/8/08	5/8/08	5/8/08	1/21/09	1/21/09	1/21/09	1/21/09	2/9/12	2/9/12	2/9/12	10/15/14	10/15/14
Chemical	MTCA Method B Subslab Soil Gas Screening Level[2]	East of Morrell's Dry Cleaners entry in parking lot	South of Morrell's building in parking lot	South of Morrell's building	Southwest of Morrell's building near sewer main	Alley north of Morrell's building, west of middle	Sewer main, 125 feet west of Property	Southwest of Morrell's building, near sewer connection and GV-6	Alley north of Morrell's building, west side	Alley north of Morrell's building, middle	Alley north of Morrell's building, east side	Approximate Center of Morrell's lease space	Tease Chocolates lease space
Chlorinated Volatile Organic Compounds													
Tetrachloroethylene (PCE)	320	**12,000**	**1,600**	**70,000**	200 U	**6,500**	**400**	**200**	**270**	**150,000**	**380**	**680,000**	**3,200**
Trichloroethylene (TCE)	12	20 U	**2,700**	**7,800**	200 U	200 U	200 U	200 U	**1.1**	230 U	**1.9**	**5,100**	**140**
cis-1,2-Dichloroethylene (cDCE)		**16,000**	**320**	**2,500**	200 U	200 U	200 U	200 U	0.72 U	170 U	1.2 U	880 U	**8.6**
Vinyl Chloride	9.4	**540**	200 U	200 U	200 U	200 U	200 U	200 U	0.47 U	110 U	0.78 U	560 U	4.5 U
Petroleum Hydrocarbons													
Benzene	11	**140**	**390**	**230**	200 U	200 U	200 U	200 U	0.58 U	140 U	0.97 U	**1,300**	5.6 U
Toluene	76,000	**100**	**270**	**200**	200 U	200 U	200 U	200 U	**1.9**	160 U	**6**	**2,600**	6.6 U
Ethylbenzene	15,000	100 U	100 U	100 U	200 U	200 U	200 U	200 U	0.79 U	180 U	**1.8**	**1,700**	7.6 U
m,p-Xylenes	1,500	--	--	--	**500**	400 U	400 U	400 U	**3.2**	180 U	**7.2**	**3,400**	7.6 U
o-Xylene	1,500	--	--	--	**200**	200 U	200 U	200 U	**0.92**	180 U	**2.1**	**1,200**	7.6 U
Total Xylenes	1,500	100 U	100 U	100 U	**700**	600 U	600 U	600 U	**4.12**	180 U	**9.3**	**4,600**	7.6 U
Naphthalene[3]	2.5	100 U	100 U	100 U	200 U	200 U	200 U	200 U	4.8 U	900 U	8.0 U	--	--
Other Volatile Organic Compounds													
Acetone		1,000 U	1,000 U	1,000 U	**1,000**	1,000 U	1,000 U	1,000 U	--	--	--	--	--

-- not analyzed U not detected at the indicated reporting limit

Notes:

1) All samples were analyzed by EPA Method TO-15 for volatile organic compounds (VOCs). Concentrations are in micrograms per cubic meter. Analytes detected in at least one sample are included in this table. Detections are bolded. Concentrations that exceed the screening level are shaded.

2) When both carcinogenic and noncarcinogenic values are presented in Ecology's CLARC data table, the more restrictive value is used.

3) Although it was not detected in any sample, naphthalene is included in this table because naphthalene detection limits were above the MTCA Method B sub-slab soil gas screening level.

Table 8. Indoor Air Sampling Results

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Sample Location		Office Can #1	Office Can #2	Bakery Can #3	Bakery Can #4	Back Bakery	Front Bakery	Back Office	Thriftway Office	Morrell's
Sample Date		5/22/07	5/22/07	5/22/07	5/22/07	2/8/08	2/8/08	2/8/08	2/9/12	2/9/12
Chemical[1]	MTCA Method B Air Cleanup Level[2]	Collected within lease space currently occupied by Tease Chocolates. The eastern and western portions of the lease space were occupied by a bakery and an office, respectively.								Collected within Morrell's lease space
Tetrachloroethylene (PCE)	9.6	**1,040**	**1,470**	**2,050**	**2,710**	**650**	**6,700**	**2,500**	**15**	**22**
Trichloroethylene (TCE)	0.37	**12**	**19**	**13**	9 U	1,000 U	1,000 U	1,000 U	**5.7**	**9.0**
cis-1,2-Dichloroethylene (cDCE)		**10**	**18**	6 U	6 U	1,000 U	1,000 U	1,000 U	0.14 U	0.14 U
Benzene	0.32	5 U	5 U	5 U	5 U	**380**	1,000 U	1,000 U	**2.2**	**2.2**
Toluene	2,300	**7.5**	**6.0**	6 U	6 U	**190**	1,000 U	1,000 U	**9.0**	**7.3**
Ethylbenzene	460	7 U	7 U	7 U	7 U	1,000 U	1,000 U	1,000 U	**2.2**	**2.0**
m,p-Xylenes	46	13 U	13 U	13 U	14 U	--	--	--	**8.1**	**7.2**
o-Xylene	46	7 U	7 U	7 U	7 U	--	--	--	**3.1**	**2.8**
Total Xylenes	46	20 U	20 U	20 U	21 U	**190**	1,000 U	1,000 U	**11.2**	**10.0**
Naphthalene[3]	0.074	--	--	--	--	1,000 U	1,000 U	1,000 U	4.6 U	4.8 U

-- not analyzed U not detected at the indicated reporting limit

Notes:

1) All concentrations are in micrograms per cubic meter. Analytes detected in at least one sample are included in this table. Detections are bolded. Concentrations that exceed the screening level are shaded.

2) When both carcinogenic and noncarcinogenic values are presented in Ecology's CLARC data table, the more restrictive value is used.

3) Although it was not detected in any sample, naphthalene is included in this table because naphthalene detection limits were above the MTCA Method B air cleanup level.

Table 9. Groundwater Quality Results, Remediation Product Injection Test

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Distance from Injection Well (ft)	Sample Date	Tetrachloroethene (PCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	Vinyl Chloride (VC)
MW-20 (Injection Well)	--	01/08/14	**140**	**16**	**43**	0.2 U
		*** Biostimulants injected in June 2014 ***				
		01/20/15	**7.4**	**5.3**	**79**	**1.8**
		09/09/15	**11**	**5.8**	**150**	**1.5**
		02/02/16	1 U	1 U	**250**	**1.9**
		09/07/16	20 U	20 U	**250**	4 U
		09/22/16	**4.9**	**1.7**	**250**	**1.8**
		01/04/17	**6.2**	**2**	**240**	**2.5**
		11/28/18	**4.9**	1 U	**59**	**0.84**
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***				
		08/27/19	(Unable to collect water sample due to pump screen biofouling)			
		12/12/19	1 U	1 U	**14**	**1.5**
		03/24/20	**1.5**	1 U	**9.8**	**0.65**
MW-34	7	07/15/19	**18**	**1.4**	1 U	0.2 U
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***				
		08/27/19	**25**	**2.2**	**1.3**	0.2 U
		12/13/19	**11**	**1.4**	**20**	0.2 U
		03/25/20	**17**	**2.5**	**10**	0.2 U
MW-24	10	02/13/19	**66**	**12**	**5.4**	0.2 U
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***				
		08/27/19	**42**	**10**	**5.1**	0.2 U
		12/12/19	**50**	**11**	**4.2**	0.2 U
		03/26/20	**58**	**11**	**4.1**	0.2 U
MW-35	15	*** Injection to MW-20, July 15, 16, & 17, 2019 ***				
		08/27/19	**39**	**4.9**	**2.8**	0.2 U
		12/13/19	**23**	**3.2**	**7.2**	0.2 U
		03/25/20	**22**	**3.6**	**4.9**	0.2 U
MW-26	20	02/13/19	**20**	**2.4**	**2.1**	0.2 U
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***				
		08/27/19	**20**	**2.7**	**2.2**	0.2 U
		12/13/19	**19**	**2.3**	**2.0**	0.2 U
		03/25/20	**15**	**1.4**	1 U	0.2 U
Screening Level[2]			5	5	16	0.2

U not detected at the indicated detection limit

Notes:

1) All concentrations are in micrograms per liter (µg/L). Detections are bolded. Screening level exceedances (see Note 2) are shaded.

2) Screening levels are Model Toxics Control Act (MTCA) Method B groundwater cleanup level for cDCE and MTCA Method A groundwater cleanup levels for the other analytes.

Table 10. Groundwater Natural Attenuation Parameters, Remediation Product Injection Test

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Well ID	Distance from Injection Well (ft)	Date	DO (mg/L)	pH	ORP (mV)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Sulfate (mg/L)	Iron, total (mg/L)	Ferrous Iron (mg/L)	TOC (mg/L)	Methane (mg/L)	Ethene (mg/L)	Ethane (mg/L)	Dhc Assay[2]
MW-20 (Injection Well)	--	1/8/14	5.9	6.65	114		2.02	0.007	16.9	40.8		<0.25				
		*** Biostimulants injected in June 2014 ***														
		1/20/15	2.3	5.8	47					50.6						
		9/9/15	1.95	5.93	100.4											
		2/2/16	0.39	6.2	-7.8											
		9/7/16	0.22	5.75	69.4											
		9/22/16	0.15	5.54	18.8											
		1/4/17	1.17	5.92	40.4											
		11/28/18	0.39	6.1	-47.3											
		2/27/19	3.6	6.51	73	31.4	<0.1	0.128	<0.3	71	1.5	179				
		7/15/19	0.12	5.75	-11								10.2	<0.015	<0.016	$<1 \times 10^4$
		*** Biostimulants and microorganisms injected in July 2019 ***														
		8/27/19	(Unable to collect water sample due to pump screen biofouling)													
		12/12/19	1.05	6.0	-44		0.252	2.74	<0.3	114		809	3.73	<0.015	<0.016	$<1 \times 10^4$
		3/24/20	0.29	5.9	-3.5		<0.2	1.3	<0.3	73		304				
MW-34	7	7/15/19	0.96	6.7	9		0.484	0.125	15.1	3.65		3.9	0.031	<0.015	<0.016	$<1 \times 10^4$
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***														
		8/27/19	0.94	7.0	13		0.285	<0.4	7.48	6.09		20.5	<0.0086	<0.015	<0.016	$<4 \times 10^3$
		12/13/19	0.52	7.1	53		<0.1	<0.1	4.26	7.32		6.76	0.065	<0.015	<0.016	$<3 \times 10^3$
		3/25/20	1.3	6.6	6.6		0.445	<0.1	8.65	2.37		1.23				
MW-24	10	2/13/19	1.2	7.2	44	32.9	0.606	0.186	12.6	3.64	<0.5	0.751				
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***														
		8/27/19	7.0	7.0	26		0.566	<0.2	11.6	41.4		3.36	0.028	<0.015	<0.016	
		12/12/19	1.1	6.9	28		0.307	<0.1	9.69	4.07		2.43	2.3	<0.015	<0.016	
		3/26/20	2.0	6.9	49		<0.1	<0.1	8.86	3.47		3.25				
MW-35	15	*** Injection to MW-20, July 15, 16, & 17, 2019 ***														
		8/27/19	0.65	6.6	-28		0.268	1.17	7.27	6.17		132				
		12/13/19	1.5	6.8	-38		0.388	<0.1	13.2	4.66		3.66	<0.0086	<0.015	<0.016	$<6 \times 10^3$
		3/25/20	2.0	6.5	72		0.611	<0.1	13.1	2.22		0.699				
MW-26	20	2/13/19	7.6	7.0	53	46.9	1.78	0.154	14.4	4.24	<0.5	<0.5				
		*** Injection to MW-20, July 15, 16, & 17, 2019 ***														
		8/27/19	7.7	6.5	75		1.92	<0.2	13.7	49.4		<0.5				
		12/13/19	7.0	6.7	17		1.85	<0.1	12.9	51.7		<1.0				
		3/25/20	7.5	6.3	34		1.69	<0.1	13.4	45.3		<1.0				

bgs below ground surface; mg/L milligrams per liter; NA natural attenuation; TOC total organic carbon

DO dissolved oxygen; mV millivolts; ORP oxidation-reduction potential

Notes:

1) Blank cell indicates sample was not analyzed for that parameter.

2) Gene-Trac® dehalococcoides (Dhc) assay based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the 1-liter sample. According to the analytical laboratory (SiREM), an assay result of 105 to 106 cells/liter may or may not be associated with observable dechlorination activity, and a result above 107 cells/liter is often indicative of significant dichlorination rates.

Table 11. Remedial Alternative 1 Cost Estimate - Monitored Natural Attenuation with Institutional Controls

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Site:	Morell's Parking Lot Parcel
Remedial Action Description:	Monitored Natural Attenuation with Capping and Institutional Controls
Cost Estimate Accuracy:	Disproportional Cost Assessment Level (+50/-30 percent)
Key Assumptions and Quantities:	No additional monitoring wells required. Wells to be decomissioned after Site Closure.

MONITORING COSTS

Item	Quantity	Unit	Unit Cost	Total Cost	Notes
Professional Services					
Cleanup Action Plan	1	ls	$ 30,000	$ 30,000	Including Compliance Monitoring and Contingency Plan, obtain Ecology approval
Environmental Covenants	1	ls	$ 30,000	$ 30,000	For Parking Lot Parcel due to long cleanup timeline
Subtotal				*$ 60,000*	
Monitoring (6 wells, annually to once every 5 years)					
Labor (per event)	18	hr	$ 150	$ 2,700	Based on number of proposed wells in monitoring well network
Equipment (per event)	1	ls	$ 1,000	$ 1,000	Based on current equipment rates
Analytical (per event)	6	ea	$ 520	$ 3,118	VOCs, Nitrate, Nitrite, Sulfate, Iron, TOC, Dissolved gasses
Purge Water Disposal (per event)	2	drum	$ 550	$ 1,100	2 drums for profiling and disposal
Sampling and analysis - each event				*$ 7,918*	
1st - 5th year (annual)				*$ 7,918*	
6th - 20th years (1 event - 5 year review period)				*$ 7,918*	
21st year confirmation monitoring (4 events- quarterly) [2]				*$ 31,671*	
Project Management and Reporting (annual average)					
Project Management	8	hr	$ 230	$ 1,840	
Data Management	1	ls	$ 1,500	$ 1,500	
Data Evaluation	1	ls	$ 1,000	$ 1,000	
Annual Memorandum	1	ls	$ 5,000	$ 5,000	
Subtotal				*$ 9,340*	
Contingency for 20-yr Monitoring Cost [3]	*20*	*%*		*$ 47,815*	
Total 20-yr Monitoring Cost				$ 287,000	
TOTAL ESTIMATED NPV COST[4]				**$ 280,000**	

Notes:

(1) Technical support includes engineering services beyond what is anticipated and is 20% of total 20-year monitoirng cost.

(2) Assumes confirmation soil sampling will not be required based on empirical groundwater demonstration and environmental covenants.

(3) Contingency costs for monitoring are set at 10% (5% scope, 5% bid)

(4) Costs are Net Present Value in 2020 dollars based on a 0.4% discount rate. The costs shown are rounded to three significant figures.

(5) Sales tax has been excluded from this estimate

Table 12. Remedial Alternative 2 Cost Estimate - Injection-based *In-Situ* Treatment

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

Site:	Morell's Parking Lot Parcel
Remedial Action Description:	Biostimulation Injection and Monitored Natural Attenuation
Cost Estimate Accuracy:	Disproportional Cost Assessment Level (+50/-30 percent)
Key Assumptions and Quantities:	15 new wells needed to achieve 10-foot ROI coverage 24 wells to be injected with 5,000-gallons of solution, once Wells to be decomissioned after Site Closure.

Biostimulation Injection Costs

Item	Quantity	Unit	Unit Cost	Total Cost	Notes
Professional Services					
Project Management	6	%	$ 398,087	$ 23,885	Percentage of capital costs per USACE guidance
Remedial Design	12	%	$ 398,087	$ 47,770	Percentage of capital costs per USACE guidance
Construction Management	8	%	$ 398,087	$ 31,847	Percentage of capital costs per USACE guidance
Subtotal - Professional Services				*$ 103,502*	
Injection-Based Treatment					
Mobilization/Demobilization	5	%	$ 379,130	$ 18,957	Percentage of Capital Costs
Injection Well Installation	15	per well	$ 4,150	$ 62,250	Install injection wells via HSA
Injection Water and Labor	24	per well	$ 7,500	$ 180,000	Holt Labor and Parts
Injection Chemicals	24	per well	$ 5,370	$ 128,880	3DMe,CRS, KB-1, Sodium Ascorbate, 1 genetic test, shipping
IDW Disposal	1	ls	$ 8,000	$ 8,000	Soil cuttings and decon water; based on previous work on this project
Subtotal - Injection-based Treatment (per event)				*$ 398,087*	
1st Injection				*$ 398,087*	
2nd Injection (end of year 2)				*$ 308,880*	
Contigency for Biostimulation Injection Costs [1]	25	%		*$ 225,000*	
Total Biostimulation Injection Costs				*$ 1,035,469*	

MONITORING COSTS

Item	Quantity	Unit	Unit Cost	Total Cost	Notes
Professional Services					
Construction Completion Report	1	ls	$ 50,000	$ 50,000	Including Confirmation Monitoring Plan, Obtain Ecology Approval in year 3
Site Closure Documents	1	ls	$ 30,000	$ 30,000	NFA Request Package and Ecology Review in year 5
Subtotal				*$ 80,000*	
On-Property Monitoring (6 wells per event)					
Labor (per event)	18	hr	$ 150	$ 2,700	Based on number of proposed on-property monitoring wells
Equipment (per event)	1	ls	$ 1,000	$ 1,000	Based on current equipment rates
Analytical (per event)	6	ea	$ 520	$ 3,118	VOCs, Nitrate, Nitrite, Sulfate, Iron, TOC, Dissolved gasses
Purge Water Disposal (per event)	2	drum	$ 550	$ 1,100	2 drums for profiling and disposal
Sampling and Analysis - On-Property - Each Event				*$ 7,918*	
1st year (1 event - 6 mo post 1st injection)				*$ 7,918*	
2nd year (1 event - pre 2nd injection)				*$ 7,918*	
3rd year (1 event - 6 mo post 2nd injection)				*$ 7,918*	
4th year (1 event)				*$ 7,918*	
5th year confirmation sampling (4 events - quarterly) [2]				*$ 31,671*	
Project Management and Reporting (annual average)					
Project Management	10	hr	$ 230	$ 2,300	
Data Management	1	ls	$ 1,500	$ 1,500	
Data Evaluation	1	ls	$ 1,000	$ 1,000	
Annual Memorandum	1	ls	$ 5,000	$ 5,000	
Subtotal				*$ 9,800*	
Contingency for 5-yr Monitoring Cost [3]	20	%		*$ 40,000*	
Total 5-year Monitoring Cost				*$ 232,343*	
Total Cost (Injection-Based Trreatment and Monitoring)				$ 1,268,000	
TOTAL ESTIMATED NPV COST[4,5]				**$ 1,262,000**	

Notes:

(1) Contingency costs for injections are set at 25% (15% scope, 10% bid)
(2) Assumes confirmation soil sampling will not be required based on empirical groundwater demonstration and environmental covenants.
(3) Contingency costs for monitoring are set at 20% (scope)
(4) Costs are Net Present Value in 2020 dollars based on a 0.4% discount rate. The costs shown are rounded to four significant figures.
(5) Sales tax has been excluded from this estimate

Table 13. Remedial Alternative 2 Cost Estimate - Injection-based *In-Situ* Treatment with HEPA

DRAFT

Project No. 080190

Site:	Morell's Parking Lot Parcel
Remedial Action Description:	Biostimulation Injection and Monitored Natural Attenuation
Cost Estimate Accuracy:	Disproportional Cost Assessment Level (+50/-30 percent)
Key Assumptions and Quantities:	15 new wells needed to achieve 10-foot ROI coverage
	24 wells to be injected with 5,000-gallons of solution, once
	Wells to be decomissioned after Site Closure.

Biostimulation Injection Costs

Item	Quantity	Unit	Unit Cost	Total Cost	Notes
Professional Services					
Project Management	6	%	$ 444,182	$ 26,651	Percentage of capital costs per USACE guidance
Remedial Design	12	%	$ 444,182	$ 53,302	Percentage of capital costs per USACE guidance
Construction Management	8	%	$ 444,182	$ 35,535	Percentage of capital costs per USACE guidance
Subtotal - Professional Services				*$ 115,487*	
Injection-Based Treatment					
Mobilization/Demobilization	5	%	$ 423,030	$ 21,152	Percentage of Capital Costs
Injection Well Installation	1	per well	$ 4,150	$ 4,150	Install injection wells via HSA, 2"
Injection / HEPA Well Installation	16	Per well	$ 6,000	$ 96,000	Install HEPA injections wells via Sonic, 12"
Injection Water and Labor	24	per well	$ 7,500	$ 180,000	Holt Labor and Parts
Injection Chemicals	24	per well	$ 5,370	$ 128,880	3DMe,CRS, KB-1, Sodium Ascorbate, 1 genetic test, shipping
IDW Disposal	1	LS	$ 14,000	$ 14,000	Soil cuttings and decon water; based on previous work on this project
Subtotal - Injection-Based Treatment				*$ 444,182*	
Heat Enhanced Plume Attenuation					
(TRS Costs)					
Design, Work Plan, HASP	1	ls	$ 58,800	*$ 58,800*	TRS Quote
Mobilization	1	ls	$ 109,200	*$ 109,200*	TRS Quote
Heater Installation	1	ls	$ 218,400	*$ 218,400*	TRS Quote
Surface Infrastructure Installation and Start-up	1	ls	$ 132,000	*$ 132,000*	TRS Quote
System Operation	1	ls	$ 31,200	*$ 31,200*	TRS Quote
Demobilization & Reporting	1	ls	$ 52,800	*$ 52,800*	
				$ 602,400.00	
(Other Subcontractor Costs)					
Energy Consumption	160,000	kWh	$ 0.09	$ 13,600	City of Tacoma Electrical Rates charged to this Site
Electrical Permit?	1	LS	$ 10,000	$ 10,000	(Do we need this, SVE System already)
				$ 23,600	
Contigency for Biostimulation Injection Costs [1]	25	%		*$ 296,000*	
Total Biostimulation Injection Costs				*$ 1,481,669*	

MONITORING COSTS

Item	Quantity	Unit	Unit Cost	Total Cost	Notes
Professional Services					
Construction Completion Report	1	ls	$ 50,000	$ 50,000	Including Confirmation Monitoring Plan, obtain Ecology approval in year 2
Site Closure Documents	1	ls	$ 30,000	$ 30,000	NFA Request Package and Ecology Review in year 2
Subtotal				*$ 80,000*	
On-Property Monitoring (6 wells per event)					
Labor (per event)	18	hr	$ 150	$ 2,700	Based on number of proposed on-property monitoring wells
Equipment (per event)	1	ls	$ 1,000	$ 1,000	Based on current equipment rates
Analytical (per event)	6	ea	$ 520	$ 3,118	VOCs, Nitrate, Nitrite, Sulfate, Iron, TOC, Dissolved gasses
Purge Water Disposal (per event)	2	drum	$ 550	$ 1,100	2 drums for profiling and disposal
Confirmation Sampling - Each Event				*$ 7,918*	
2nd year confirmation sampling (4 events - quarterly) [2]				*$ 31,671*	
Confirmation Sampling Management					
Project Management	10	hr	$ 230	$ 2,300	
Data Management	1	ls	$ 1,500	$ 1,500	
Data Evaluation	1	ls	$ 1,000	$ 1,000	
Subtotal				*$ 4,800*	
Contingency for Confirmation Monitoring Cost [3]	20	%		*$ 24,000*	
Total Confirmation Monitoring Cost				*$ 140,471*	
Total Cost (Injection-Based Treatment, HEPA, and Monitoring)				$ 1,623,000	
TOTAL ESTIMATED NPV COST [4,5]				**$ 1,622,000**	

Notes:

(1) Contingency costs for injections are set at 25% (15% scope, 10% bid)
(2) Assumes confirmation soil sampling will not be required based on empirical groundwater demonstration and environmental covenants.
(3) Contingency costs for monitoring are set at 20% (scope)
(4) Costs are Net Present Value in 2020 dollars based on a 0.4% discount rate. The costs shown are rounded to four significant figures.
(5) Sales tax has been excluded from this estimate

Table 14. Disproportionate Cost Analysis

DRAFT

Project No. 080190, Morrell's Dry Cleaners (VCP No. SW1039), Tacoma, Washington

		Disproportionate Cost Analysis		
		Alternative 1 - Monitored Natural Attenuation with Institutional Controls	**Alternative 2 - Injection-based *in-situ* Treatment**	**Alternative 3 - Injection-based *in-situ* Treatment with HEPA**
Criteria to Evaluate Use of Permanent Solutions to the Maximum Extent Practicable	Protectiveness (30% weighting factor)	Site exposure risks are currently low as the exposure pathway is incomplete. Existing groundwater concentrations will remain, necessitating continued institutional and engineering controls for the duration of MNA. (3)	Site exposure risks are currently low but, the restoration timeframe is quicker than MNA and does not require lasting institutional and engineering controls. (5)	Site exposure risks are currently low but, the restoration timeframe is much quicker than MNA and does not require lasting institutional and engineering controls. (6)
	Permanence (20% weighting factor)	Source material on the Building Parcel remains. Natural attenuation permanently will reduce the toxicity and volume of contamination on the Parking Lot Parcel over extended timeframe. (2)	Source material on the Building Parcel remains. Active remediation will permanently reduce toxicity, mobility, and volume of contamination to a greater degree than MNA alone. (3)	Source material on the building parcel remains. Active remediation will permanently reduce toxicity, mobility, and volume of contamination to a greater degree than MNA alone. (3)
	Long-Term Effectiveness (20% weighting factor)	There is a moderate degree of uncertainty given the length of time contamination is expected to persist at the Site. However the magnitude of residual risk is low and controls are effective. (3)	Active remediation will reduced the length of time contamination is expected to persist at the Site, and reduce the degree of uncertainty over MNA alone. (4)	Active remediation with HEPA with expidite the Site cleanup, and reduce the degree of uncertainty over MNA alone. (5)
	Short-Term Risk Management (10% weighting factor)	There is a low short-term risk to human health and the enviornment posed by moniotirng activities. (5)	There is a low to moderate short-term risk to human health and the enviornment posed by injection and moniotirng activities. (4)	There is a low to moderate short-term risk to human health and the enviornment posed by injection and moniotirng activities. (4)
	Implementability (10% weighting factor)	MNA is readily implementable. The only action is groundwater monitoring. (6)	Injections are implementable; through careful planning and engineering design they can be implemented effectively.There is unncertainty in dechlorinating all the way to ethene. (3)	Injections are implementable; through careful planning and engineering design they can be implemented effectively.There is unncertainty in dechlorinating all the way to ethene. (3)
	Public Concerns (10% weighting factor)	The public may be concerned with the timeline to cleanup. (3)	The public may be concerned with many nights of drilling. (5)	The public may be concerned with many nights of drilling and the high demand of the HEPA equipment. (5)
MTCA Benefits Ranking[2]		3.3	4.1	4.6
Estimated Cost[3]		$280,000	$1,262,000	$1,622,000
Benefit/Cost Ratio[4]		**11.8**	**3.2**	**2.8**

MTCA Model Toxics Control Act

Notes:

1) A numeric scale of 1 to 7 is used to rate the alternatives with respect to the criteria to evaluate use of permanent solutions to the maximum extent practicable, as follows:

1 - meets criterion to a very low degree 3 - meets criterion to a moderate degree 5 - meets criterion to a high degree

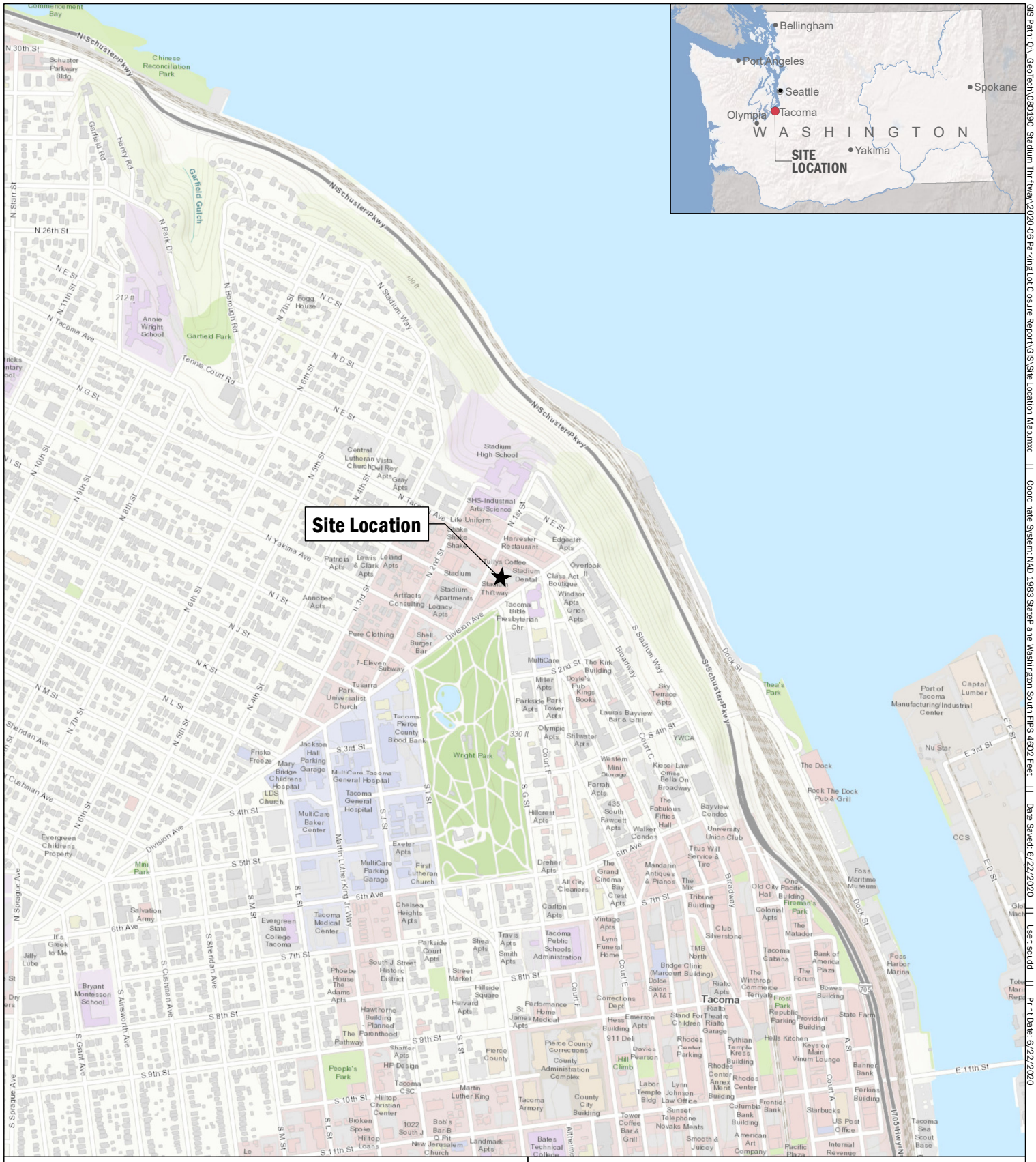
2 - meets criterion to a low degree 4 - meets criterion to a moderate-high degree 6 - meets criterion to a very high degree

2) The MTCA benefits ranking is obtained by multiplying the rating for each criterion by its weighting factor, and summing the results for the six criteria.

3) Costs are Net Present Value in 2019 dollars based on a 0.4% discount rate. The costs shown are rounded to three significant figures. Detailed cost estimates are provided in the Tables.

4) The benefit/cost ratio is obtained by dividing the alternative's MTCA benefits ranking by its estimated cost (in $NPV million).

FIGURES



N

0 1,000 2,000

Feet

Site Location Map

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaner (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

Aspect Consulting	JUN-2020	BY: DAH/SCC	FIGURE NO. 1
	PROJECT NO. 080190	REV BY: SCC	

GIS Path: Q:_GeoTech\080190 Stadium Thriftway\2020-06 Parking Lot Closure Report\GIS\Site Location Map.mxd | | Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet | | Date Saved: 6/22/2020 | | User: scudd | | Print Date: 6/22/2020

TACOMA AVENUE

T.P.N. 2031-12-0050

T.P.N. 2030-12-0012

T.P.N. 2030-12-0013

FORMER TULLEY'S COFFEE

MORRELL'S DRY CLEANERS

TEASE CHOCOLATES

MORRELL'S BUILDING PARCEL T.P.N. 2030-12-0031

MORRELL'S PARKING LOT PARCEL T.P.N. 2030-12-0033

T.P.N. 2031-13-0025

FORMER WALKER CHEVROLET SITE (VCP NO. SW1040) T.P.N. 2030-12-0032

NORTH FIRST STREET

DIVISION AVENUE

MW-13D MW-4 MW-12D MW-9 MW-10 MW-6 MW-14D MW-21 MW-8D MW-7 MW-5 MW-3

DP-01 DP-02 DP-04 DP-05 DP-07 DP-08 DP-09 DP-10 DP-11 DP-12 DP-13 DP-14 DP-15 DP-16 DP-17

PW-1/GW-1 GW-8 F-12/F-20 R-12/R-18 DC-1 DC-PLAS-2 T-1 B-1

A A' B B'

LEGEND

- Soil Sample Location
- Monitoring Well Location
- Decommissioned Monitoring Well Location
- Reconnaissance Water Sample Location
- Parcel Boundaries
- Property Boundary
- A A' Cross Section Location

0 30 60 Feet

Site Plan Showing Pre-2013 Explorations

Property-Specific Closure Report for Parking Lot Parcel

Morrell's Dry Cleaner (VCP No. SW1039)

608 North 1st Street, Tacoma, Washington

FIGURE NO.

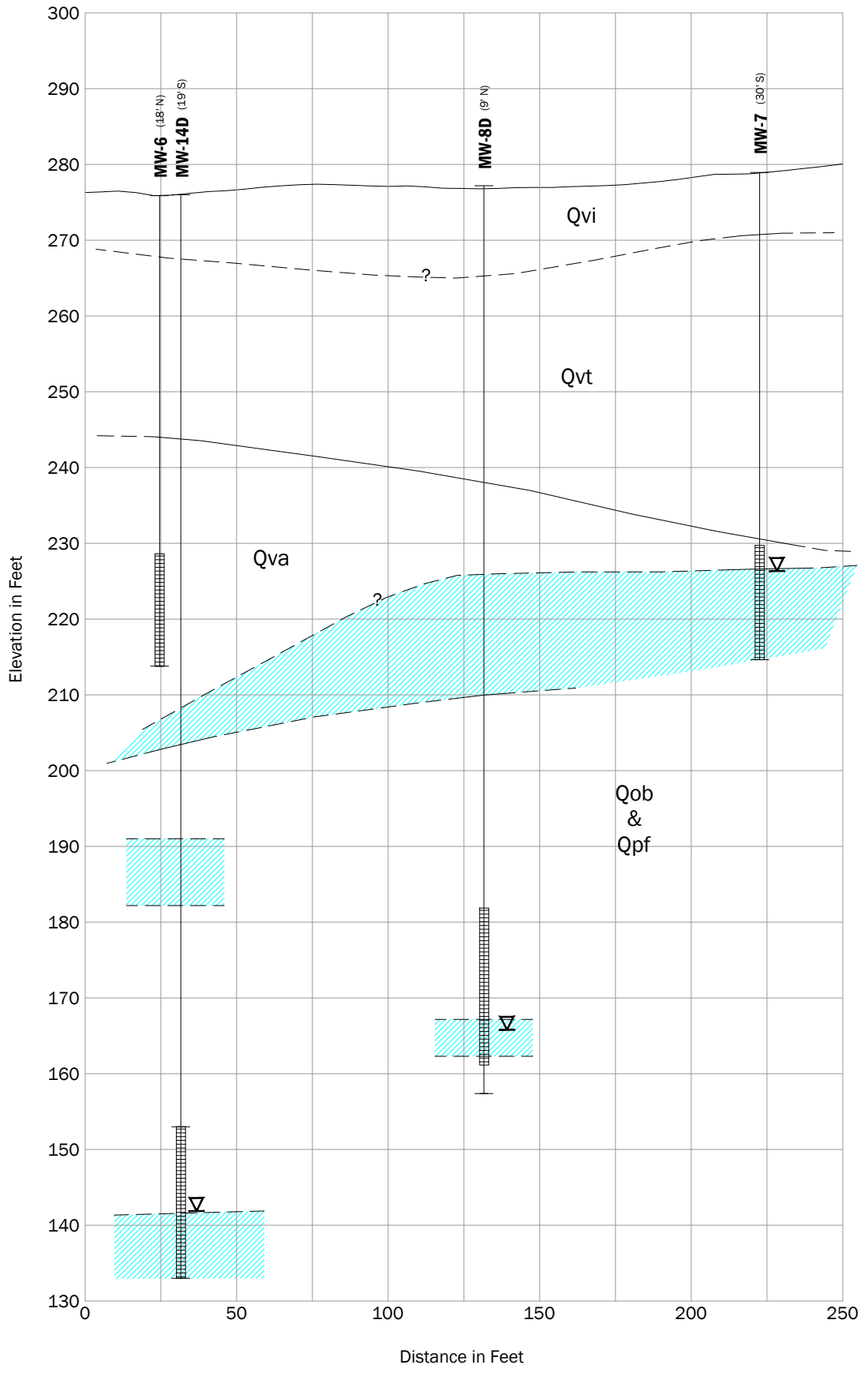
2

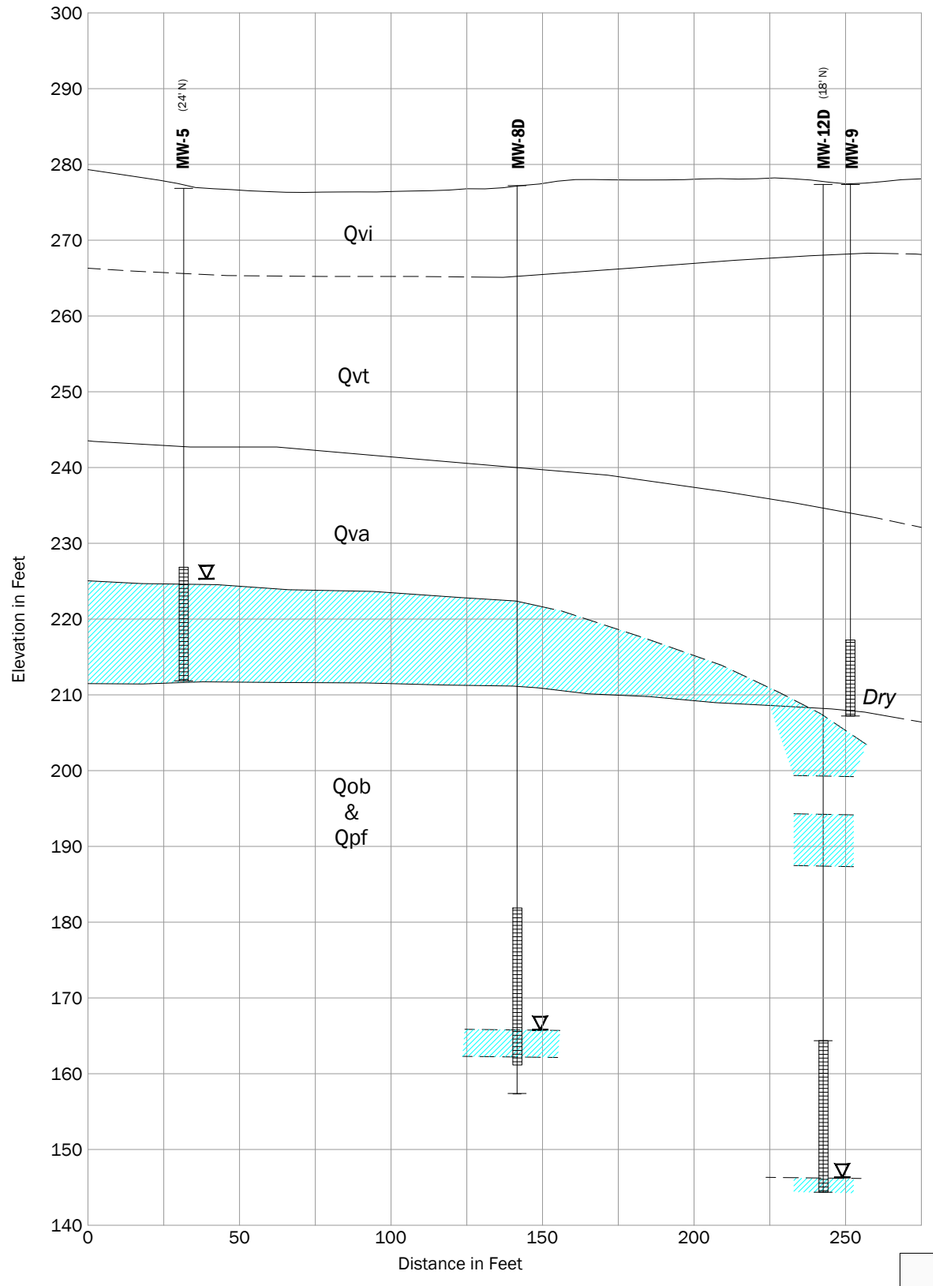
Aspect CONSULTING

DATE:	REVISION:	PROJECT NUMBER:	DESIGNED BY:	DRAWN BY:	REVISED BY:
Jun-2020	-	080190	DAH	SCC	SCC

REV.	DESCRIPTION	DATE	APPR.

CAD Path: O:_GeoTech\080190 Stadium Thriftway\2020-06 Parking Lot Closure Report\080190-03 Site Plan and GW.dwg 1-2 Site Plan Pre-2013 Explorations | | Coordinate System: NAD 1983 State Plane Washington North FIPS 4601 Feet | | Date Saved: Jun 29, 2020 12:40pm | | User: sscott





LEGEND

MW-8 (45' NW) — Monitoring Well Location and Designation

Water Level (Dec 2010)

Screened Interval

Saturated Interval

Qvi - Vashon Stade Ice-Contact Deposits

Qvt - Vashon Stade Glacial-Till Deposits

Qva - Advance Outwash Deposits

Qob - Olympia Bed Interglacial Deposits

Qpf - Pre-Fraser Glacial and Interglacial Deposits

Horizontal Scale: 1" = 50'
Vertical Scale: 1" = 20'
Vertical Exaggeration 2.5x

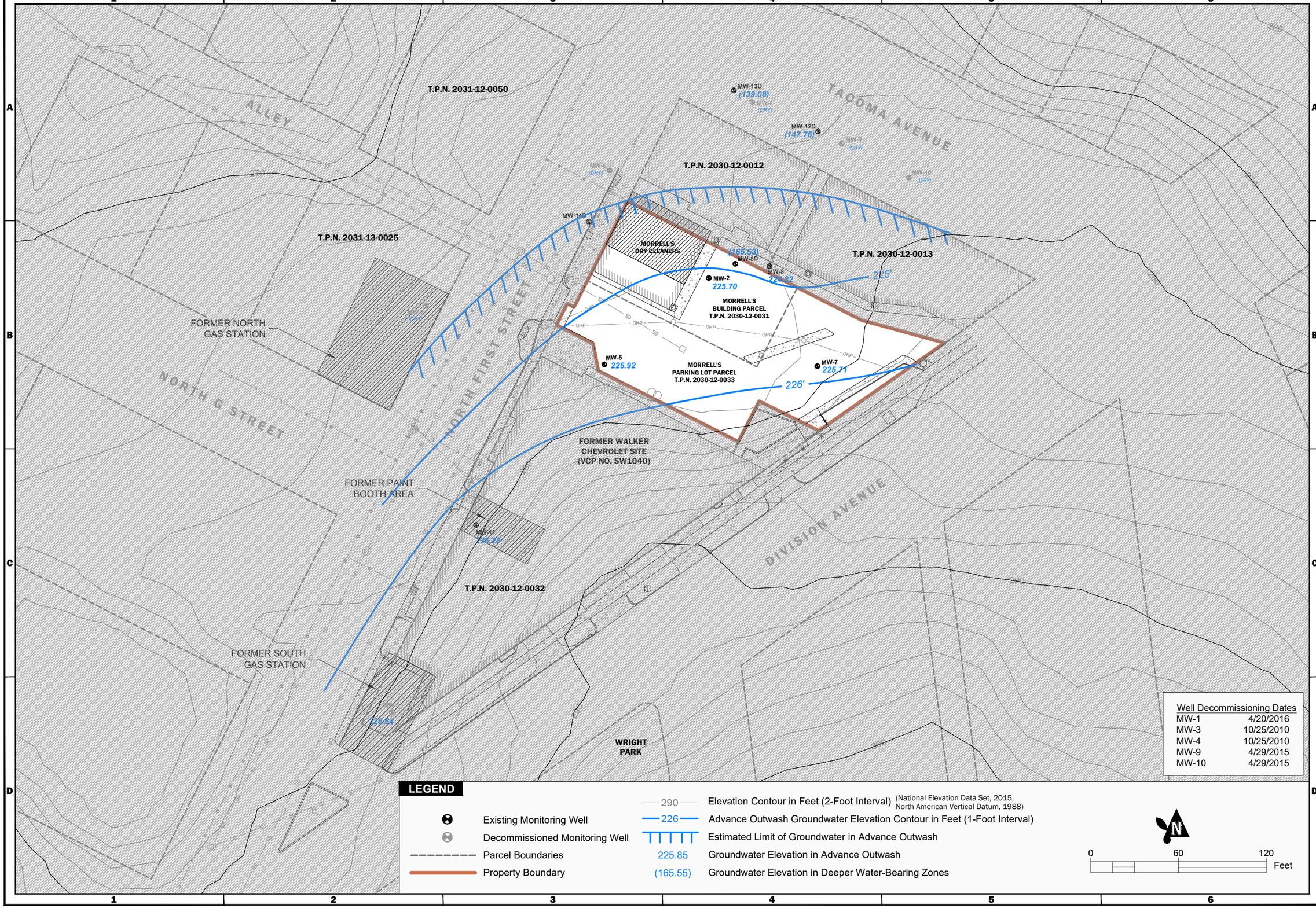
0 50 100 Feet

Cross Sections A-A' and B-B'

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaners (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

Aspect Consulting	Jun-2020	BY: DAH/SCC	FIGURE NO. 3
	PROJECT NO. 080190	REVISED BY: SCC	

CAD Path: Q:_GeoTech\080190 Stadium Thriftway\2020-06 Parking Lot Closure Report\080190-AABB.dwg 11x17 L || Date Saved: Jun 29, 2020 12:43pm || User: scudd



Well Decommissioning Dates	
MW-1	4/20/2016
MW-3	10/25/2010
MW-4	10/25/2010
MW-9	4/29/2015
MW-10	4/29/2015

REV.	DESCRIPTION	DATE	APPR.

Aspect CONSULTING

Groundwater Elevations & Gradient Map in Advance Outwash-December 22, 2010

Property-Specific Closure Report for Parking Lot Parcel

Morrell's Dry Cleaners (VCP No. SW1039)

608 North 1st Street, Tacoma, Washington

FIGURE NO.

4

DATE: Jun-2020 | REVISION: - | PROJECT NUMBER: 080190

DESIGNED BY: AN | DRAWN BY: SCC | REVISED BY: SCC

C:\3D Prints Q:_GeoTech\080190 Stadium Thriftway 2020-06 Parking Lot Closure Report\080190-04 GW Gradient Map.dwg 04 GW Gradient Map 12-10 | | Coordinate System: NAD 1983 State Plane Washington North FIPS 4601 Feet | | Date Saved: Jun 29, 2020 12:48pm | | User: studd

T.P.N. 2030-12-0012

T.P.N. 2030-12-0013

NORTH FIRST STREET

MORRELL'S DRY CLEANERS

MORRELL'S BUILDING PARCEL T.P.N. 2030-12-0031

MORRELL'S PARKING LOT PARCEL T.P.N. 2030-12-0033

TEASE CHOCOLATES

DIVISION AVENUE

FORMER WALKER CHEVROLET SITE (VCP NO. SW1040) T.P.N. 2030-12-0032

SVE Blower

SVE Trench

MW-14D
MW-15
MW-21
MW-31
MW-8
MW-33
VE-5
VE-6
VE-1
VE-3
VE-2
VE-4
VE-SS
MW-8D
MW-16
VE-7
MW-17
MW-2
MW-18
VE-8
MW-23
MW-30
MW-32
MW-29
MW-7
MW-25
MW-19
MW-35
MW-20
MW-24
MW-28
MW-34
MW-26
MW-27
MW-5

0 20 40 Feet

LEGEND

- Horizontal Projection
- Screened Interval
- Blue Halo Indicates Injection of Biostimulants in June 2014
- Vertical Monitoring Well
- Angled Monitoring Well
- Angled SVE Well
- Sub-Slab Suction Pit
- SVE Conveyance Pipe
- Property Boundary
- On-Property Parcel Boundary
- Off-Property Parcel Bounday

REV.	DESCRIPTION	DATE	APPR.

REVISED BY: SCC
DRAWN BY: SCC
DESIGNED BY: DAH
Date Saved: Jun 29, 2020 12:50pm || User: ssudd

Aspect CONSULTING

PROJECT NUMBER: 080190
REVISION: -
DATE: Jun-2020

Coordinate System: NAD 1983 State Plane Washington North FIPS 4601 Feet || Stadium Thriftway 2020-06 Parking Lot Closure Report\080190-05 Site Plan with Wells and SVE.dwg || Site Plan

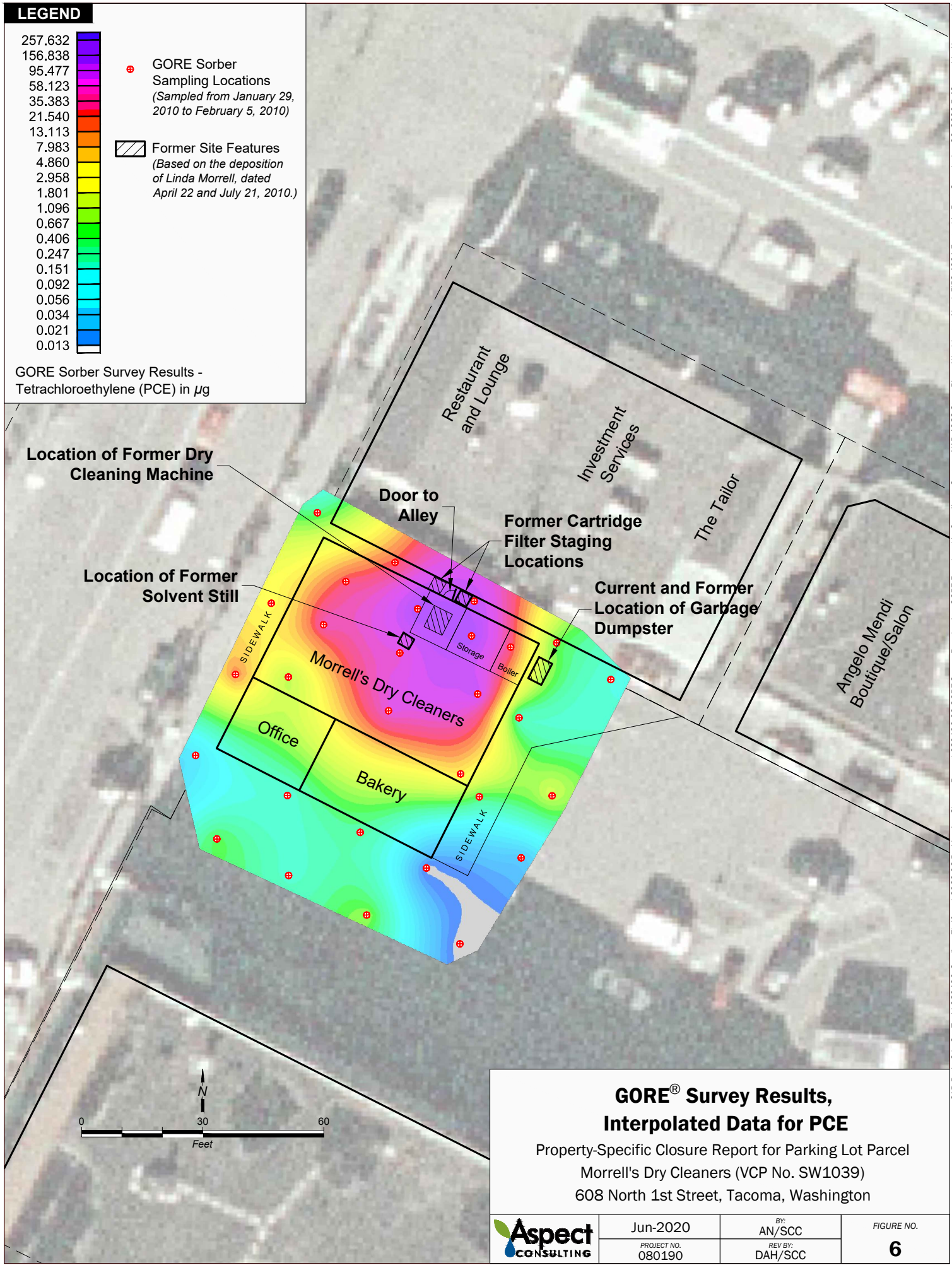
Site Plan Showing Wells and SVE System

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaner (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

FIGURE NO.

5

CAD Path: Q:_GeoTech\080190 Stadium Thriftway\2020-06 Parking Lot Closure Report\080190-05 Site Plan with Wells and SVE.dwg



GORE® Survey Results, Interpolated Data for PCE

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaners (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

Aspect Consulting	Jun-2020	BY: AN/SCC	FIGURE NO. 6
	PROJECT NO. 080190	REV BY: DAH/SCC	

T.P.N. 2030-12-0012

T.P.N. 2030-12-0013

NORTH FIRST STREET

MORRELL'S DRY CLEANERS

MORRELL'S BUILDING PARCEL T.P.N. 2030-12-0031

MORRELL'S PARKING LOT PARCEL T.P.N. 2030-12-0033

TEASE CHOCOLATES

DIVISION AVENUE

FORMER WALKER CHEVROLET SITE (VCP NO. SW1040) T.P.N. 2030-12-0032

TRENCH-BT-W 0.25 at 4.5 ft

TRENCH-BT-C 0.26 at 4.5 ft

TRENCH-BT-E 0.16 at 4.5 ft

SVE Backwell

SVE Tightsh

VE-SS

VE-1 VE-2 VE-3 VE-4 VE-5 VE-6 VE-7 VE-8

DP-01 2.1 at 1 ft 1.0 at 2 ft

DP-10 0.24 at 8.5 ft

0.47 at 9.2 ft

120 at 15.6 ft

1.4 at 6.7 ft

7.3 at 24 ft

0.089 at 9.9 ft

0.63 at 11 ft

44 at 15.5 ft

ND at 25 ft

ND at 40 ft

0.095 at 55 ft

MW-14D

MW-15

MW-16

MW-17

MW-2

MW-18

MW-21

MW-31 ND at 5.5 ft ND at 40.5 ft 0.058 at 55.5 ft 0.058 at 60.5 ft

MW-8

MW-8D

MW-33 ND at 10 ft ND at 55.5 ft

MW-30 0.084 at 10.5 ft 0.10 at 35.5 ft 0.026 at 60.5 ft

MW-32 ND at 15.5 ft ND at 55.5 ft

MW-23 0.40 at 10.5 ft 0.045 at 20.5 ft 2.3 at 25.5 ft 0.095 at 55.5 ft

MW-29 0.043 at 15 ft 0.043 at 50 ft

MW-7

MW-25 ND at 5.5 ft ND at 30.5 ft ND at 50.5 ft

MW-19

MW-35

MW-20

MW-34

MW-24 ND at 5.5 ft ND at 30.5 ft ND at 50.5 ft

MW-28 0.038 at 30.5 ft ND at 55.5 ft

MW-26

MW-27

MW-5

0 20 40 Feet

Note: Only selected PCE results are shown on this figure.
Refer to Table 2 and Appendix C for additional soil quality results.

LEGEND

- Blue Halo Indicates Injection of Biostimulants in June 2014
- Yellow Halo Indicates Remediation Injection in July 2019
- Horizontal Projection
- Screened Interval
- Vertical Monitoring Well
- Angled Monitoring Well
- Angled SVE Well
- Sub-Slab Suction Pit
- Soil Sample Location
- SVE Conveyance Pipe
- Property Boundary
- On-Property Parcel Boundary
- Off-Property Parcel Bounday
- Estimated Extent of Soil with Cleanup Level Exceedances
- PCE Concentration in mg/kg (Purple Value Exceeds PCE Screening Level of 0.05 mg/kg) (ND = Non-Detect)
- 0.058 at 55.5 ft ← Depth Below Ground Surface in Feet

Estimated Extent of PCE Exceedances in Soil

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaner (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

Aspect CONSULTING

DATE: Aug-2020
REVISION: -
PROJECT NUMBER: 080190
DESIGNED BY: DAH
DRAWN BY: SCC
REVISED BY: BMG

FIGURE NO.

7

DATE APPR. DESCRIPTION REV.

D:\Aspect Q_GeoTech\080190 Stadium Thriftway\2020-08 Parking Lot Closure Report\080190-05 Site Plan with Wells and SVE.dwg T-PCE Soil || Coordinate System: NAD 1983 State Plane Washington North FIPS 4601 Feet || Date Saved: Aug 27, 2020 6:21am || User: bgreer

T.P.N. 2030-12-0012

T.P.N. 2030-12-0013

NORTH FIRST STREET

MORRELL'S DRY CLEANERS

MORRELL'S BUILDING PARCEL T.P.N. 2030-12-0031

MORRELL'S PARKING LOT PARCEL T.P.N. 2030-12-0033

TEASE CHOCOLATES

DIVISION AVENUE

SVE Blower

SVE Trench

VE-SS

VE-1

VE-2

VE-3

VE-4

VE-5

VE-6

VE-7

VE-8

MW-14D

MW-15 1.2

MW-21 19

MW-31 160

MW-8D

MW-8 8.4

MW-33 34

MW-16 3.7

MW-30 <1

MW-17 5.4

MW-2 24

MW-18

MW-23 140

MW-32 45

MW-29 14

MW-7 <1

MW-25 36

MW-19 <1

MW-35 22

MW-20 1.5

MW-34 17

MW-24 58

MW-28 20

MW-26 15

MW-27 9.3

MW-5 9.6

FORMER WALKER CHEVROLET SITE
(VCP NO. SW1040)
T.P.N. 2030-12-0032

0 20 40 Feet

Note: The PCE concentrations shown on this figure are for groundwater samples collected in March 2020. Refer to Table 3 for sampling dates and additional chlorinated VOC results.

LEGEND

- Blue Halo Indicates Injection of Biostimulants in June 2014
- Yellow Halo Indicates Remediation Injection in July 2019
- Horizontal Projection
- Screened Interval
- Vertical Monitoring Well
- Angled Monitoring Well
- Angled SVE Well
- Sub-Slab Suction Pit
- SVE Conveyance Pipe
- Property Boundary
- On-Property Parcel Boundary
- Off-Property Parcel Bounday
- Estimated Extent of Advance Outwash Groundwater with Cleanup Level Exceedances
- 12 ← PCE Concentration in µg/L (Orange Value Exceeds PCE Screening Level of **5 µg/L**)

Aspect CONSULTING

Estimated Extent of PCE Exceedances in Advance Outwash Groundwater

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaner (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

FIGURE NO.

8

DESIGNED BY: DAH | DRAWN BY: SCC | REVISED BY: SCC | PROJECT NUMBER: 080190 | REVISION: - | DATE: Aug-2020

CAD Path: Q:_GeoTech\080190 Stadium Thriftway\2020-06 Parking Lot Closure Report\080190-05 Site Plan with Wells and SVE.dwg 8-PCE GW | Coordinate System: NAD 1983 State Plane Washington North FIPS 4601 Feet | Date Saved: Aug 27, 2020 6:23am | User: tgraer

SVE Trench

MW-15
MW-21
MW-31
VE-5
VE-6
MW-8
VE-SS
VE-1
VE-3
VE-2
VE-4
MW-8D
MW-33
MW-16
MW-30
VE-7
MW-17
MW-2
MW-18
MW-32
VE-8
MW-23
MW-29
MW-7
MW-25
MW-19
MW-35
MW-20
MW-24
MW-28
MW-34
MW-26
MW-27
MW-5

MORRELL'S
DRY CLEANERS

TEASE
CHOCOLATES

**MORRELL'S
BUILDING PARCEL
T.P.N.
2030-12-0031**

**MORRELL'S
PARKING LOT
PARCEL
T.P.N. 2030-12-0033**

OHP
SS
SD
W

0 15 30 Feet

LEGEND

- Area of Interest: Parking Lot Parcel
- Blue Halo Indicates Injection of Biostimulants in June 2014
- Yellow Halo Indicates Remediation Injection in July 2019
- Horizontal Projection
- Screened Interval
- Existing Vertical Monitoring Well
- Existing Angled Monitoring Well
- Existing Angled SVE Well
- Existing Sub-Slab Suction Pit
- SVE Conveyance Pipe
- Parcel Bounday
- Property Boundary
- On-Property Parcel Boundary
- Estimated Extent of On-Property Advance Outwash Groundwater with Cleanup Level Exceedances
- Estimated Extent of On-Property Soil with Cleanup Level Exceedances
- New Injection Well with Span of 10-foot Radius of Influence (Injection into Existing Well shown in Blue)

REV.	DESCRIPTION	DATE	APPR.

DRAWN BY: SCC | REVISED BY: BMG
DESIGNED BY: DAH
PROJECT NUMBER: 080190
REVISION: -
DATE: Jul-2020

Aspect CONSULTING

Alternative 2 - Injection-Based Treatment

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaner (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

FIGURE NO.

9

SVE Trench

MW-15
MW-21
MW-31
VE-5
VE-6
MW-8
VE-SS
VE-1
VE-3
VE-2
VE-4
MW-8D
MW-33
MW-16
MW-30
VE-7
MW-17
MW-2
MW-18
MW-32
VE-8
MW-23
MW-29
MW-7

MORRELL'S
DRY CLEANERS

TEASE
CHOCOLATES

**MORRELL'S
BUILDING PARCEL
T.P.N.
2030-12-0031**

**MORRELL'S
PARKING LOT
PARCEL
T.P.N. 2030-12-0033**

MW-25
MW-19
MW-20
MW-24
MW-35
MW-34
MW-28
MW-26
MW-27
MW-5

OHP
SD
SS

0 15 30 Feet

LEGEND

- Area of Interest: Parking Lot Parcel
- Blue Halo Indicates Injection of Biostimulants in June 2014
- Yellow Halo Indicates Remediation Injection in July 2019
- Horizontal Projection
- Screened Interval
- Existing Vertical Monitoring Well
- Existing Angled Monitoring Well
- Existing Angled SVE Well
- Existing Sub-Slab Suction Pit
- SVE Conveyance Pipe
- Parcel Bounday
- Property Boundary
- On-Property Parcel Boundary
- Estimated Extent of On-Property Advance Outwash Groundwater with Cleanup Level Exceedances
- Estimated Extent of On-Property Soil with Cleanup Level Exceedances
- New HEPA Well with Span of 10-foot Radius of Influence (Existing Injection Wells Shown in Blue, New Injection Well Shown in Pink)

REV.	DESCRIPTION	DATE	APPR.

DRAWN BY: SCC | REVISED BY: BMG
DESIGNED BY: DAH
PROJECT NUMBER: 080190
REVISION: -
DATE: Jul-2020

Aspect CONSULTING

Alternative 2 - Injection Treatment with HEPA

Property-Specific Closure Report for Parking Lot Parcel
Morrell's Dry Cleaner (VCP No. SW1039)
608 North 1st Street, Tacoma, Washington

FIGURE NO.

10

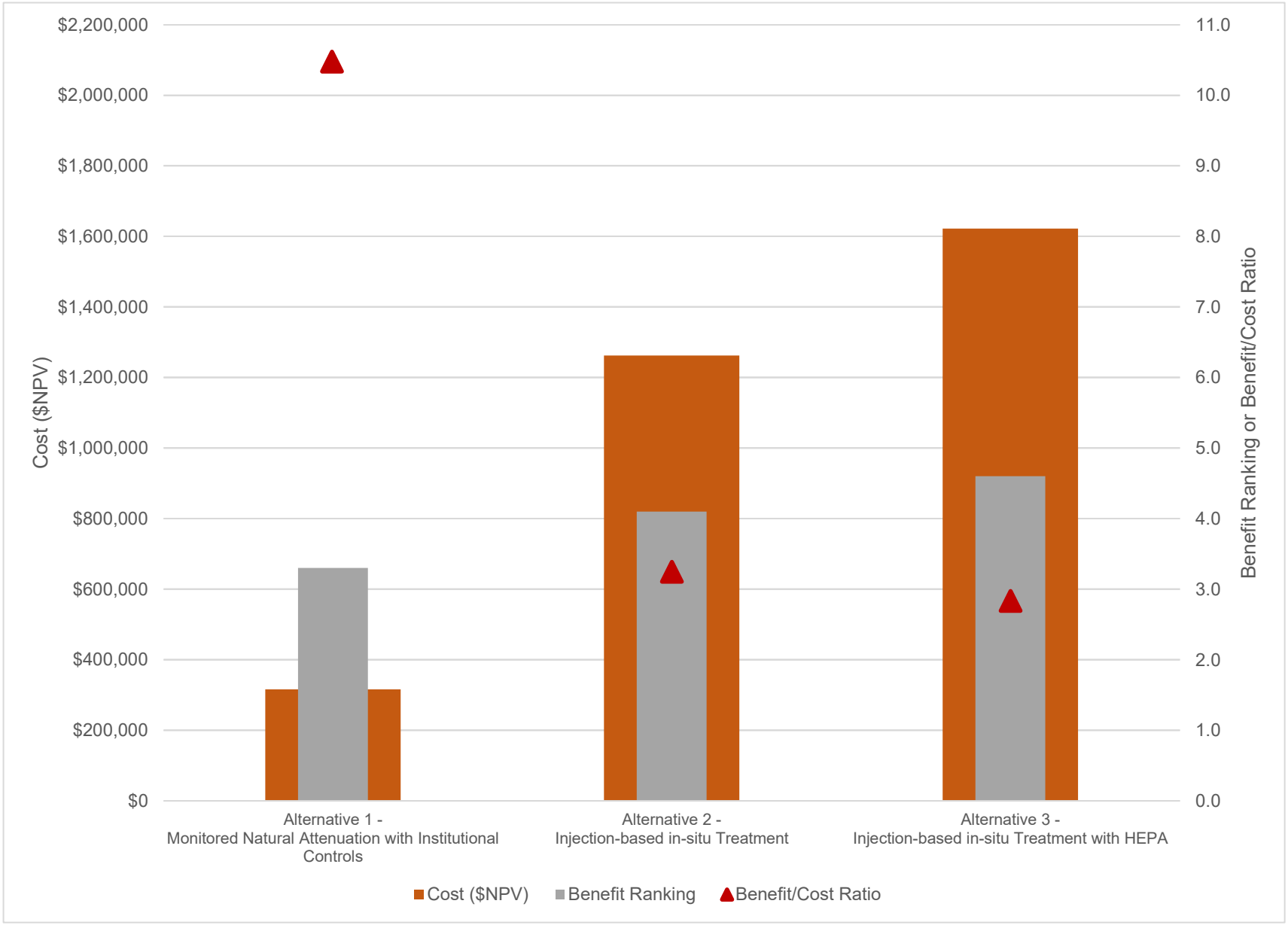
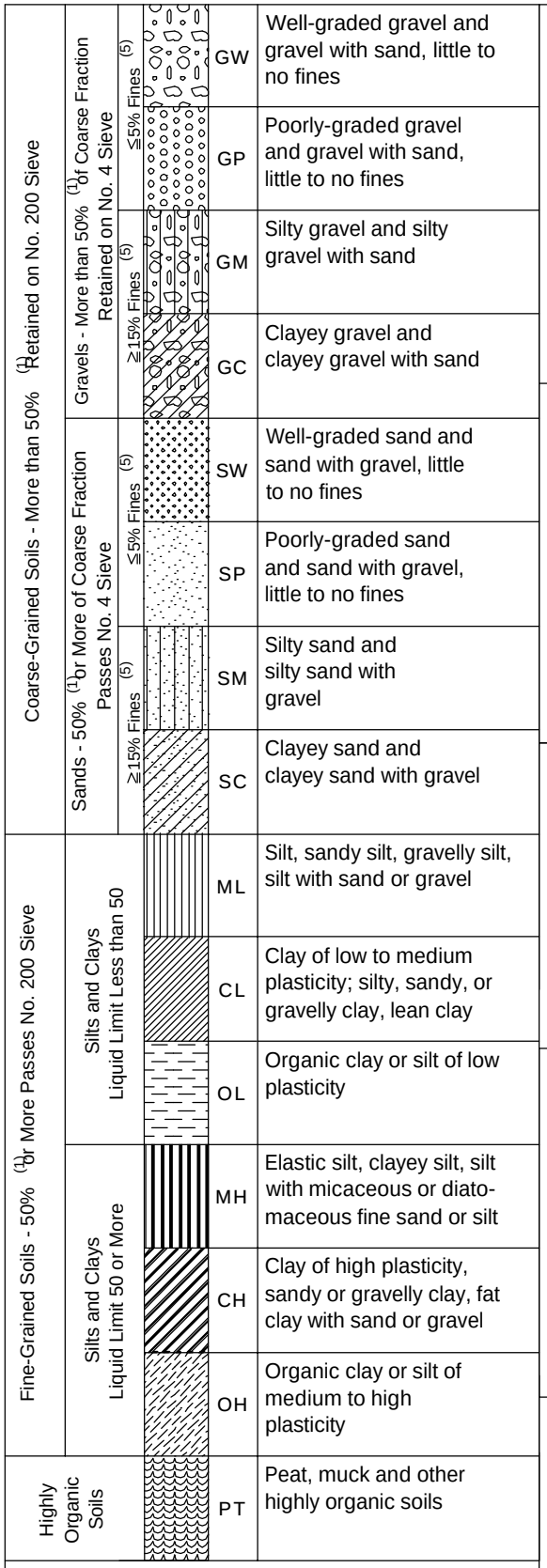


Figure 11. Disproportionate Cost Analysis

Project 080190

APPENDIX A

Boring and Well Construction Logs



Terms Describing Relative Density and Consistency

	Density	SPT (2) blows/foot
Coarse-Grained Soils	Very Loose	0 to 4
	Loose	4 to 10
	Medium Dense	10 to 30
	Dense	30 to 50
	Very Dense	>50
	Consistency	**SPT (2) blows/foot**
Fine-Grained Soils	Very Soft	0 to 2
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	>30

Test Symbols

FC = Fines Content
G = Grain Size
M = Moisture Content
A = Atterberg Limits
C = Consolidation
DD = Dry Density
K = Permeability
Str = Shear Strength
Env = Environmental
PiD = Photoionization Detector

Component Definitions

Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

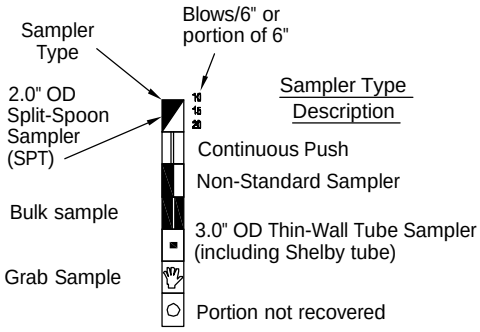
(3) Estimated Percentage

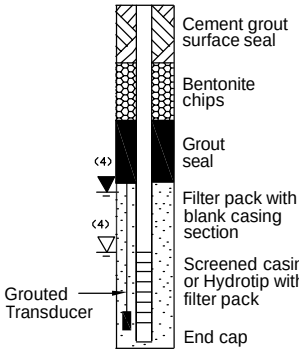
Percentage by Weight	Modifier
<5	Trace
5 to 15	Slightly (sandy, silty, clayey, gravelly)
15 to 30	Sandy, silty, clayey, gravelly)
30 to 49	Very (sandy, silty, clayey, gravelly)

Moisture Content

Dry - Absence of moisture, dusty, dry to the touch
Slightly Moist - Perceptible moisture
Moist - Damp but no visible water
Very Moist - Water visible but not free draining
Wet - Visible free water, usually from below water table

Symbols





(1) Percentage by dry weight
(2) (SPT) Standard Penetration Test (ASTM D-1586)
(3) In General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)
(4) Depth of groundwater — ATD = At time of drilling; Static water level (date); BGS = below ground surface
(5) Combined USCS symbols used for fines between 5% and 15% as estimated in General Accordance with Standard Practice for Description and Identification of Soils (ASTM D-2488)

Classifications of soils in this report are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D-2487 and D-2488 were used as an identification guide for the Unified Soil Classification System.

Aspect CONSULTING

Exploration Log Key

DATE:
DESIGNED BY:
DRAWN BY:
REVISED BY:

PROJECT NO.

FIGURE NO.
B-1

Q:_ACAD Standards\Standard Details\Exploration Log Key B1.dwg

Holt Drilling A Division of Boart Longyear Company

MW-1

Resource Protection Well Report

Project Name BRUCE TITUS CHEV

Date 1-22-07

Well Identification # ALM-064

County PIERCE SE 1/4 SE 1/4

Drilling Method SONIC 6"

Section 32 T 21N R 3E

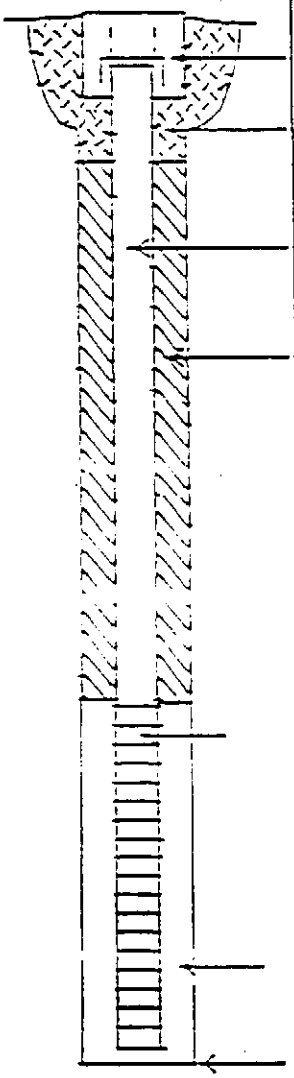
Driller Ken Phillips

Street Address 630 STADIUM WY

License # 2652

Start Card R-70639

Consulting Firm STEMEN ENV.



AS-BUILT

WELL DATA

ALM-

MONUMENT: 8" FLUSH

CONCRETE SURFACE SEAL: 2 FT

RISER: 2 "x 60'

BACKFILL: FT

TYPE: 3/8 CHIPS

SCREEN: 2 "x 15'

TYPE: PVC

SLOT SIZE: .020

SAND PACK: 17'

MATERIAL: 10x20 SILICA

WELL DEPTH: 65'

FORMATION DESCRPITION

0-15' FT
BROWN SILTY SAND + GRAVEL FILL 20-30% ~~SAND~~ FINES
FT

15-50' FT
GREY SILTY SAND TO SANDY SILT WITH OCCASSIONAL LARGE GRAVELS VERY DENSE DRY (TILL)
FT

50-65 FT
ORANGE/BROWN SAND MEDIUM DENSE TO DENSE WET @ 54' TURNING GREY IN COLOR @ 60' FT

REMARKS

Signature

Holt Drilling A Division of Boart Longyear Company

MW-2

Resource Protection Well Report

Project Name BRUCE TITUS CHEV

Well Identification # ALM-#69

Drilling Method SONIC 6"

Driller Ken Phillips

License # 2652

Date 1-22-07

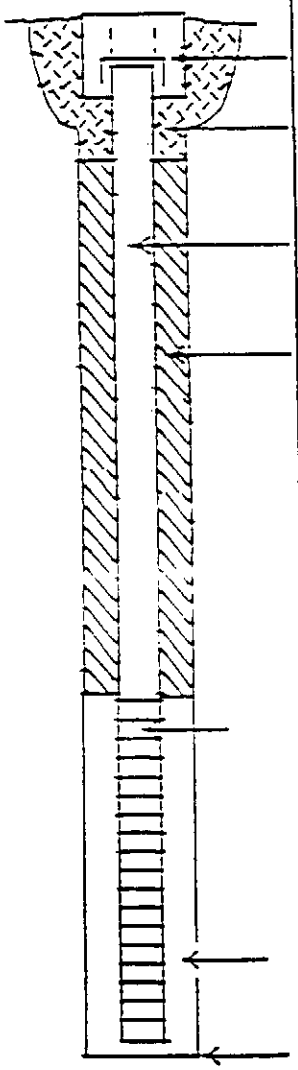
County PIERCE SE 1/4 SE 1/4

Section 32 T 21N R 3E

Street Address 630 STADIUM WY

Start Card R-70639

Consulting Firm STEMEN ENV.



AS-BUILT	WELL DATA	FORMATION DESCRPITION
	ALM-169	
	MONUMENT: 8" FLUSH	0-15' FT BROWN SILTY SAND + GRAVEL FILL 20-30% ~~SAND~~ FINES FT
	CONCRETE SURFACE SEAL: 2 FT	
	RISER: 2 "x 50'	
	BACKFILL: FT TYPE: 3/8 CHIPS	15-50' FT GREY SILTY SAND TO SANDY SILT WITH OCCASSIONAL LAGRE GRAVELS VERY DENSE DRY (TILL) FT
		50-65 FT ORANGE/BROWN SAND MEDIUM DENSE TO DENSE WET @ 54' TURNING GREY IN COLOR @ 60' FT
	SCREEN: 2 "x 15'	
	TYPE: PVC	
	SLOT SIZE: .020	
	SAND PACK: 17'	
	MATERIAL: 10x20 SILICA	REMARKS
	WELL DEPTH: 65'	

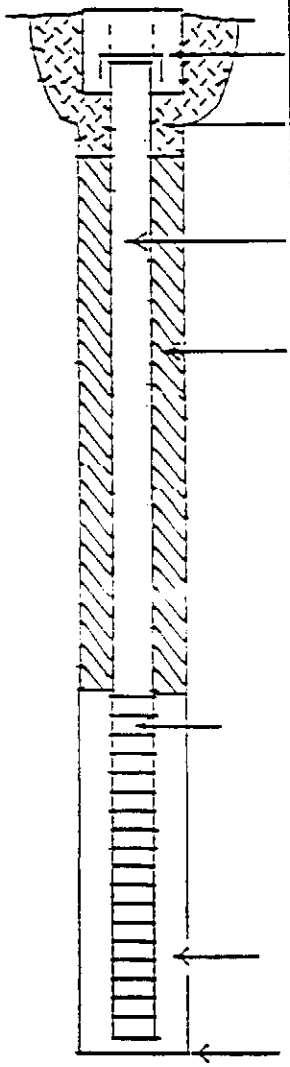
Signature K L Phillips

Holt Drilling A Division of Boart Longyear Company

Resource Protection Well Report

MW-3

Project Name BRUCE TITUS CHEV
Date 2-1-07
Well Identification # ALM-068
County PIERCE SE 1/4 SE 1/4
Drilling Method SONIC 6"
Section 32 T 21N R 3E
Driller Ken Phillips
Street Address 633 DIVISION
License # 2652
Start Card R70639
Consulting Firm STEMEN ENVIORMENTAL



AS-BUILT

WELL DATA

- MONUMENT: 8" FLUSH
- CONCRETE SURFACE SEAL: 2 FT
- RISER: 2 "x 52'
- BACKFILL: 48 FT
- TYPE: 3/8" CHIPS
- SCREEN: 2 "x 15'
- TYPE: FACTORY FLUSH
- SLOT SIZE: .020
- SAND PACK: 17'
- MATERIAL: 10x20 SILICA
- WELL DEPTH: 67'

FORMATION DESCRPITION

0-3 FT
2" ASPHALT BROWN COARSE SAND & GRAVEL 20-30% FINES (FILL)
FT

3-54 FT
GREY TO BROWN SILTY FINE SAND VERY DENSE DRY OCCASIONAL 20-30% FINES (TILL)

54-65 FT
MOIST BROWN SAND MEDIUM DENSE 10-15% FINES

65-67 FT
GREY VERY DENSE GREY SILTY FINE SAND WITH GRAVELS (TILL)
FT

REMARKS

Signature

BOART LONGYEAR E & I

MW-4

Resource Protection Well Report

Project Name Sladen Thrifty

Well Identification # BARn 164'

Drilling Method Sonic

Driller Thomas W. Croney

License # 2409

Date 1/9/08

County Pierce, NW¼ SE ¼

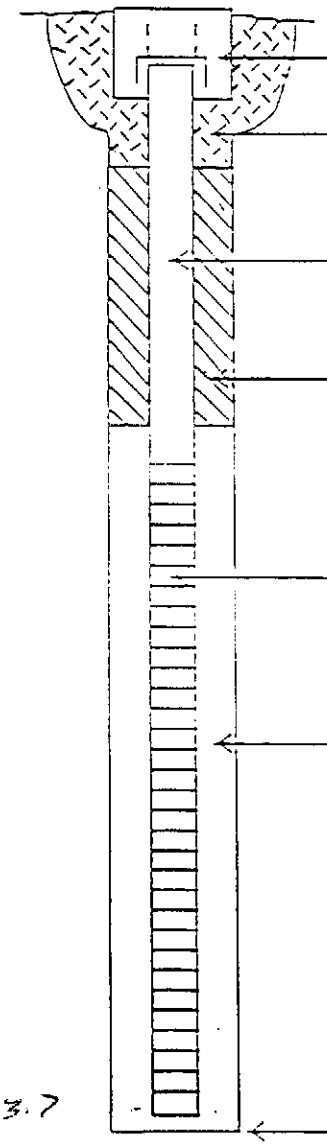
Section 32 T. 21N R. 3E

Street Address N 1st N Tacoma Ave

Start Card R 70843

Consulting Firm Stemen ENV

AS-BUILT | WELL DATA | FORMATION DESCRIPTION



MONUMENT TYPE: flush

CONCRETE SURFACE SEAL: 1-5 ±

PVC BLANK: 2 "48'

39 - neat cement

BACKFILL: 4 feet

TYPE: Bentonite

PVC SCREEN: 2 inch 15 feet

SLOT SIZE: 10

TYPE: flush thread

GRAVEL PACK: 18 ±

MATERIAL: 1020 silica

WELL DEPTH: 63.7 ft

0 - .52 ± Med Brn till U- Dense

.52 - 61 ± Compact Sand. Lt Brn gravel

61 - 65 ± compact gray till

REMARKS

Signature Thomas W. Croney

BOART LONGYEAR E & I

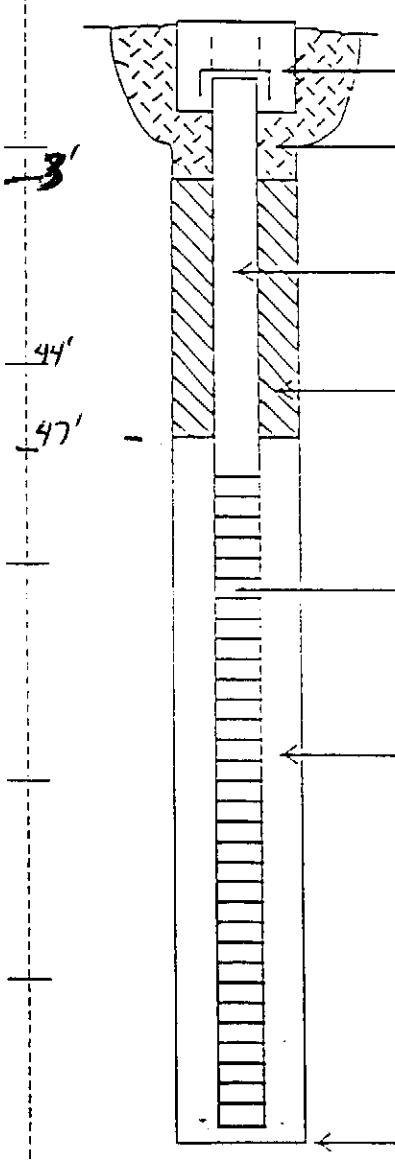
MW-5

Resource Protection Well Report

Project Name Stadium Thriftway
Well Identification # BAM 168'
Drilling Method Sonic
Driller Thomas Craney
License # 2409

Date 1-11-08
County Pierce NW ¼ SE ¼
Section 32 T. 21 N R. 3E
Street Address N. 1st ST & N. Tacoma AVE
Start Card R 70822
Consulting Firm Stemen Env.

AS-BUILT | WELL DATA | FORMATION DESCRIPTION



MONUMENT TYPE: Flush

CONCRETE SURFACE SEAL: 3 ±

PVC BLANK: 2 x 50'

BACKFILL: 44 ±
TYPE: Bentonite

PVC SCREEN: 2 x 15'
SLOT SIZE: 10
TYPE: Flush Thread

GRAVEL PACK: 18 ±
MATERIAL: 10x20 Silica

WELL DEPTH: 65'

0 - 30 ±
med Brn consolidated sand med. gravel

30 - 42 ±
med - dk Brn course sand wet

42 - 57 ±
med Brn Till

57 - 63 ±
med Brn course sand -- wet

63 - 65 ±
med Brn Till

REMARKS

Signature Thomas W. Craney

BOART LONGYEAR E & I

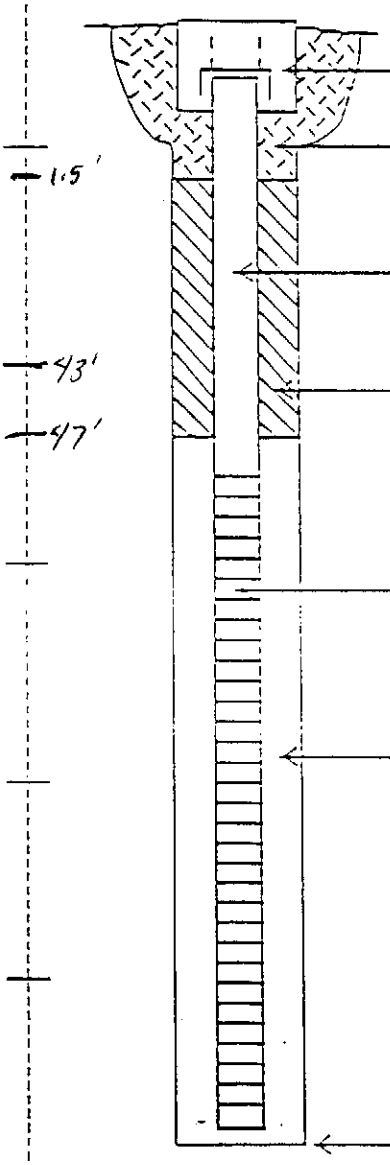
Resource Protection Well Report

MW-6

Project Name Stadium Thriftway
Well Identification # BAM 167
Drilling Method Sonic
Driller Thomas Cooney
License # 2409

Date 1-16-08
County Pierce NW ¼ SE ¼
Section 32 T. 21 N R. 3E
Street Address N 12th & N Tacoma Ave
Start Card R70822
Consulting Firm Stemen Env.

AS-BUILT | WELL DATA | FORMATION DESCRIPTION



MONUMENT TYPE: flush
CONCRETE SURFACE SEAL: 1 ft.
PVC BLANK 2 " x 49'
neat cement 41'
BACKFILL 4 ft.
TYPE: Bentonite
PVC SCREEN: 2 " x 15'
SLOT SIZE: 20
TYPE: Flush Thread
GRAVEL PACK 17 ft.
MATERIAL: 10x20 Silica
WELL DEPTH 64.2 ft.

1.5'
43'
47'

0 - 1 ft.
Asphalt - Road Base

1 - 60 ft.
Compact sand grvl med Brn V. Dense

60 - 65 ft.
Med - DK Brn sand

REMARKS

Signature Thomas W. Cooney

Holt Drilling A Division of Boart Longyear Company

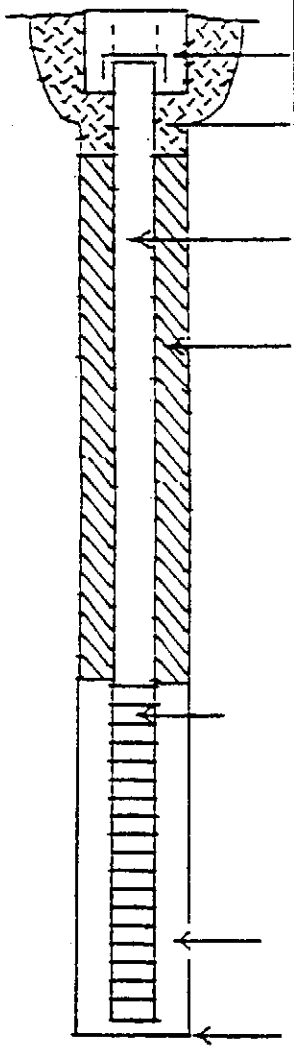
Resource Protection Well Report

MW-7

Project Name STADIUM THRIFTWAY
Well Identification # BAM-111
Drilling Method SONIC 4x6"
Driller Ken Phillips
License # 2652

Date 1.18.08
County PIERCE NW 1/4 SE 1/4
Section 32 T 21N R 3E
Street Address N. 1st St & Tacoma Ave
Start Card R70822
Consulting Firm STEMEN ENVIRONMENTAL

AS-BUILT



WELL DATA

BAM-111

MONUMENT: 8" FLUSH
CONCRETE SURFACE SEAL: 2 FT
RISER: 2 "x 50'
BACKFILL: FT
TYPE: 3/4 CHIPS
SCREEN: 2 "x 15'
TYPE: FACTORY FLUSH
SLOT SIZE: .020
SAND PACK: 18'
MATERIAL: 10x20 SILICA
WELL DEPTH: 65'

FORMATION DESCRPITION

0-1' FT
ASPHALT + BROWN SAND AND GRAVEL ROAD BASE

1-50' FT
BROWN SILTY SAND WITH LARGE GRAVELS VERY DENSE ~~WET~~ MOIST SAND @ 25'
(TILL) FT

50-65 FT
BROWN OXIDIZED SAND MEDIUM WET @ 55'

FT

FT

REMARKS

Signature

MW-8

BOART LONGYEAR

Resource Protection Well Report

Project Name Titus

Well Identification # BA5078

Drilling Method Sonic

Driller Brian Owens

License # 2997

Date 4/17/08

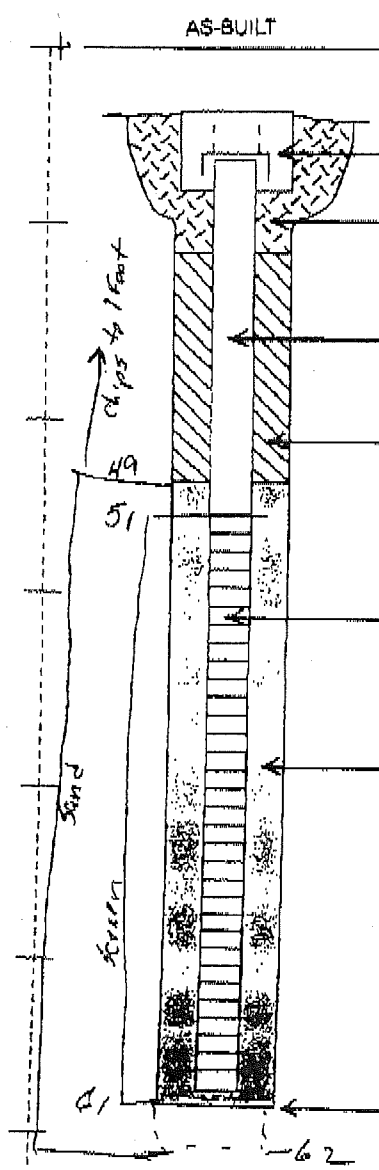
County Pierce NW ¼ SE ¼

Section 32 T. 21N R. 3E

Street Address N 1st N Tacoma Ave

Start Card R 70843

Consulting Firm Stemen



0 - 15 ft.
BROWN SILTY SAND & GRAVELLY FILL

ft.

15 - 50 ft.
GREY SILTY SANDS INTERMIXED WITH MEDIUM/LARGE GRAVELS

50 - 60 ft.
RUST/BROWN COLORED SAND MEDIUM DENSE/DENSE, WET AT SHALLOW.

60 - 65 ft.
GREY COLORED SANDS MEDIUM DENSE.

REMARKS

Signature Brian Owens

VAV03a.CDR

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-8D	1 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278.5
Location:	Tacoma, WA	Top of Casing Elev.	278.11
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/4/2009 - 5/6/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 – 278	Flushmount monument, lockable thermos cap, concrete seal 0'-1'						Blacktop and concrete.	1
2 – 277							Vacuumed to 3'.	2
3 – 276								3
4 – 275							**Qvi**	4
5 – 274							Very hard, slightly moist, light brown, slightly sandy, gravelly SILT (ML); fine sand; coarse to fine gravel, subrounded.	5
6 – 273								6
7 – 272								7
8 – 271								8
9 – 270							Grades to sandy.	9
10 – 269								10
11 – 268	2" diameter, schedule 40 PVC, threaded connections, 0'-96'							11
12 – 267							**Qvt**	12
13 – 266							Very hard, brown, slightly gravelly, silty SAND (SM); fine gravel, rounded.	13
14 – 265								14
15 – 264								15
16 – 263								16
17 – 262								17
18 – 261								18
19 – 260								19
20 – 259								20
21 – 258	Hydrated bentonite chips, 1'-92'							21
22 – 257							Gravelly.	22
23 – 256								23
24 – 255								24
25 – 254							Slightly gravelly.	25
26 – 253								26
27 – 252								27
28 – 251								28
29 – 250								29
30 – 249							Hard, brown, slightly gravelly, very sandy SILT (ML); fine gravel, rounded.	30
31 – 248								31
32 – 247								32
33 – 246								33
34 – 245							Hard, brown, slightly gravelly, very silty SAND (SM); fine gravel, rounded.	34
35 – 244								35
36 – 243								36
37 – 242								37
38 – 241							**Qva**	38
39 – 240							Moist, red-brown, slightly silty SAND (SP); medium sand.	39
40 – 239							Trace gravel.	40
41 – 238								41
42 – 237								42
43 – 236								43
44 – 235								44
45 – 234								45
46 – 233								46
47 – 232								47
48 – 231								48
49 – 230								49
229								

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: DFR

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-8D	2 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278.5
Location:	Tacoma, WA	Top of Casing Elev.	278.11
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/4/2009 - 5/6/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51 – 228								51
52 – 227								52
53 – 226								53
54 – 225								54
55 – 224	▽ 5/4/2009						Wet.	55
56 – 223								56
57 – 222								57
58 – 221								58
59 – 220								59
60 – 219								60
61 – 218								61
62 – 217								62
63 – 216		○						63
64 – 215								64
65 – 214								65
66 – 213	10/20 sand filter pack, 92'-120'						Brown.	66
67 – 212							**Qob** Very hard, moist, brown, sandy, silty GRAVEL (GM); non-plastic.	67
68 – 211								68
69 – 210								69
70 – 209								70
71 – 208								71
72 – 207								72
73 – 206								73
74 – 205							Brown, slightly gravelly, very silty SAND (SM); non-plastic.	74
75 – 204								75
76 – 203								76
77 – 202								77
78 – 201							Dark blue, slightly sandy SILT (ML); trace gravel.	78
79 – 200								79
80 – 199								80
81 – 198								81
82 – 197								82
83 – 196							Dry, gray, silty, very gravelly SAND (SM); fine sand.	83
84 – 195								84
85 – 194								85
86 – 193								86
87 – 192							Trace cobbles, subrounded.	87
88 – 191								88
89 – 190								89
90 – 189								90
91 – 188								91
92 – 187								92
93 – 186	2" diameter, 10-slot, schedule 40 PVC screen, 96'-106'						Very hard, dry, blue gray, sandy, very silty GRAVEL (GM).	93
94 – 185								94
95 – 184								95
96 – 183								96
97 – 182								97
98 – 181							Loose, slightly moist, brown, gravelly, very silty SAND (SM).	98
99 – 180								99
179								

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: DFR
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-8D	3 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278.5
Location:	Tacoma, WA	Top of Casing Elev.	278.11
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/4/2009 - 5/6/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
101 (178)								101
102 (177)							Hard, dry, dark blue gray, gravelly, sandy SILT (ML).	102
103 (176)								103
104 (175)								104
105 (174)								105
106 (173)							Hard, dry, light gray, silty, very gravelly SAND (SM); fine sand; fine to coarse gravel.	106
107 (172)								107
108 (171)								108
109 (170)								109
110 (169)	▽							110
111 (168)								111
112 (167)	▼ 5/11/2009						Loose, wet, brown, slightly silty SAND (SP); fine sand.	112
113 (166)								113
114 (165)								114
115 (164)								115
116 (163)	Threaded PVC endcap						Hard, dry, light gray, silty, very gravelly SAND (SM); fine sand.	116
117 (162)								117
118 (161)								118
119 (160)								119
120 (159)								120
121 (158)							Boring terminated 120 ft BGS. Depth to perched water was 55 ft BGS ATD. Depth to water table at 112.56 ft BGS on 5/11/2009.	121
122 (157)								122
123 (156)								123
124 (155)								124
125 (154)								125
126 (153)								126
127 (152)								127
128 (151)								128
129 (150)								129
130 (149)								130
131 (148)								131
132 (147)								132
133 (146)								133
134 (145)								134
135 (144)								135
136 (143)								136
137 (142)								137
138 (141)								138
139 (140)								139
140 (139)								140
141 (138)								141
142 (137)								142
143 (136)								143
144 (135)								144
145 (134)								145
146 (133)								146
147 (132)								147
148 (131)								148
149 (130)								149
	(129)							

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: DFR

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-9	1 of 2

Project Name:	Walker Chevrolet	Ground Surface Elev.	279.5
Location:	Tacoma, WA	Top of Casing Elev.	278.78
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/5/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 (279)	Flushmount monument, lockable thermos cap						Blacktop and concrete.	1
2 (278)							Vacuumed to 5'.	2
3 (277)								3
4 (276)								4
5 (275)								5
6 (274)							**Qvi**	6
7 (273)							Slightly moist, gray blue, gravelly, sandy SILT (ML).	7
8 (272)								8
9 (271)								9
10 (270)	Quickrite portland cement, 0'-30'						**Qvt**	10
11 (269)							Dry, light brown, very gravelly, sandy SILT (ML)	11
12 (268)							Brown, slightly moist, gravelly, silty SAND (SM).	12
13 (267)								13
14 (266)								14
15 (265)								15
16 (264)							Dry, light gray.	16
17 (263)								17
18 (262)								18
19 (261)								19
20 (260)	2" diameter, schedule 40 PVC, threaded connections, 0'-60'							20
21 (259)								21
22 (258)								22
23 (257)							Very dense, slightly moist, gray blue.	23
24 (256)								24
25 (255)								25
26 (254)								26
27 (253)							Dry, dark gray blue, sandy SILT (ML), trace gravel.	27
28 (252)								28
29 (251)							Slightly moist, brown, gravelly, very silty SAND (SM); fine to medium sand, predominantly fine.	29
30 (250)								30
31 (249)								31
32 (248)							Grades to trace gravel.	32
33 (247)								33
34 (246)							Moist.	34
35 (245)	Hydrated bentonite chips, 30'-57'							35
36 (244)								36
37 (243)								37
38 (242)							Very gravelly.	38
39 (241)								39
40 (240)							Trace gravel.	40
41 (239)								41
42 (238)								42
43 (237)							**Qva**	43
44 (236)							Loose, moist, dark brown-red SAND (SP), trace gravel; fine to medium sand, predominantly fine; fine gravel, subrounded.	44
45 (235)								45
46 (234)								46
47 (233)							Grades to slightly silty.	47
48 (232)								48
49 (231)								49
(230)								

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: DFR

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-9	2 of 2

Project Name:	Walker Chevrolet	Ground Surface Elev.	279.5
Location:	Tacoma, WA	Top of Casing Elev.	278.78
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/5/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51 – 229	Hydrated bentonite chips, 30'-57'						Grades to gravelly.	51
52 – 228								52
53 – 227								53
54 – 226	▽ 5/5/2009						Wet.	54
55 – 225								55
56 – 224								56
57 – 223							No gravel.	57
58 – 222	10/20 sand filter pack, 57'-70'							58
59 – 221								59
60 – 220								60
61 – 219								61
62 – 218								62
63 – 217								63
64 – 216	2" diameter, 10-slot, schedule 40 PVC screen, 60'-70'							64
65 – 215								65
66 – 214								66
67 – 213								67
68 – 212								68
69 – 211								69
70 – 210	Threaded PVC endcap							70
71 – 209							Boring terminted 70' BGS. Depth to water was 54 ft BGS ATD. Well was dry on 5/11/2009.	71
72 – 208								72
73 – 207								73
74 – 206								74
75 – 205								75
76 – 204								76
77 – 203								77
78 – 202								78
79 – 201								79
80 – 200								80
81 – 199								81
82 – 198								82
83 – 197								83
84 – 196								84
85 – 195								85
86 – 194								86
87 – 193								87
88 – 192								88
89 – 191								89
90 – 190								90
91 – 189								91
92 – 188								92
93 – 187								93
94 – 186								94
95 – 185								95
96 – 184								96
97 – 183								97
98 – 182								98
99 – 181								99
180								

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: DFR

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-10	1 of 2

Project Name:	Walker Chevrolet	Ground Surface Elev.	280
Location:	Tacoma, WA	Top of Casing Elev.	279.45
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/7/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 279	Flushmount monument, lockable thermos cap						Blacktop and concrete.	1
							Qvi	
2 278							Medium dense, wet, dark brown, slightly silty, very gravelly SAND (SP); fine to coarse sand; fine to coarse gravel, rounded.	2
3 277								3
4 276								4
5 275							Medium dense, mosit, gray purple, silty, very gravelly SAND (SM); fine to coarse sand; fine to coarse gravel, subrounded.	5
6 274								6
7 273							Dry to slightly moist, brown to dark brown.	7
8 272							Loose, moist, dark brown, slightly silty, gravelly SAND (SP); predominantly medium to coarse sand; fine gravel, subrounded.	8
9 271								9
10 270							Medium dense, dry to slightly moist, fine to coarse gravel.	10
11 269								11
12 268							Very dense, dry, gray purple boulder.	12
13 267							Medium dense, slightly moist, yellow-red to dark brown, gravelly, very silty SAND (SM); fine to coarse sand; fine to coarse gravel, subrounded.	13
14 266								14
15 265	Quickrite portland cement, 0'-41'						Very stiff, dry to slightly moist, brown, gravelly, very sandy SILT (ML); fine to coarse sand; fine to coarse gravel, subrounded.	15
16 264								16
17 263								17
18 262							Medium dense, slightly moist, dark brown, silty, very gravelly SAND (SP); fine to coarse sand; fine to coarse gravel, subrounded.	18
19 261								19
20 260							Medium dense, slightly moist, dark brown, slightly silty, very gravelly SAND (SP); predominantly medium to coarse sand; fine to coarse gravel, subrounded.	20
21 259								21
22 258							**Qvt**	22
23 257							Dense, dry to slightly moist, yellow-red to dark brown, silty, sandy GRAVEL (GM); fine to coarse sand; fine to coarse gravel, subrounded.	23
24 256								24
25 255	2" diameter, schedule 40 PVC, threaded connections, 0'-60'						Medium dense, dry to slightly moist, yellow-red to dark brown, slightly silty, gravelly to very gravelly SAND (SP); predominantly medium to coarse sand; fine to coarse gravel, subrounded, increasing gravel with depth.	25
26 254								26
27 253								27
28 252								28
29 251							Medium dense, dry to slightly moist, yellow-red to dark brown, silty, very gravelly SAND (SM); fine to coarse sand; fine gravel, subangular to subrounded.	29
30 250								30
31 249								31
32 248							Gradational decrease in silt. Becomes slightly silty, very gravelly SAND (SP).	32
33 247							Loose to medium dense, gravelly.	33
34 246							Medium dense, slightly moist, yellow-red, silty, very gravelly SAND (SM); fine to coarse sand; fine to coarse gravel, subrounded.	34
35 245								35
36 244							Loose, very silty, no gravel.	36
37 243							Medium dense, red-brown, gravelly.	37
38 242							**Qva**	38
39 241							Loose, slightly moist, yellow-red, slightly silty SAND (SP), trace gravel; perdominantly medium sand.	39
40 240								40
41 239							Medium dense to dense, gravelly; fine to coarse gravel, subrounded.	41
42 238								42
43 237								43
44 236								44
45 235	Hydrated bentonite chips, 41'-56'11"						Slightly gravelly; fine gravel.	45
46 234								46
47 233							Gravelly lense.	47
48 232								48
49 231							Gravelly lense.	49

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 8, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-10	2 of 2

Project Name:	Walker Chevrolet	Ground Surface Elev.	280
Location:	Tacoma, WA	Top of Casing Elev.	279.45
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/11/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/7/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–229	Hydrated bentonite chips, 41'-56'11"						Loose, moist. perdominantly medium to coarse sand.	51
52–228								52
53–227								53
54–226								54
55–225	▽ 5/7/2009						Medium dense, wet, trace gravel; predominantly medium sand; fine gravel.	55
56–224								56
57–223							Red-brown with black staining, slightly gravelly.	57
58–222	10/20 sand filter pack, 56'11"-70'							58
59–221								59
60–220							Black, fine to medium sand.	60
61–219							Loose to medium dense, very moist to wet, brown SAND (SP); no silt, no gravel.	61
62–218								62
63–217								63
64–216	2" diameter, 10-slot, schedule 40 PVC screen, 60'-70'							64
65–215								65
66–214								66
67–213								67
68–212								68
69–211							**Qob**	69
70–210	Threaded PVC endcap						Medium dense, wet, red-brown, slightly clayey; fine to medium sand.	70
71–209							Medium dense, wet, red-brown, slightly gravelly, clayey SAND (SC); predominantly fine to medium sand; fine gravel.	71
72–208	Natural backfill, 70'-75'							72
73–207								73
74–206							Medium dense, wet, dark brown, silty, gravelly SAND (SM); fine to coarse sand; fine gravel to cobbles, subrounded.	74
75–205							Medium dense, wet, dark brown to gray, slightly silty, very sandy GRAVEL (GP); fine to coarse sand; fine to coarse gravel, subrounded.	75
76–204							Boring terminated 75 ft BGS.	76
77–203							Depth to water was 55 ft BGS ATD. Well was dry on 5/11/2009.	77
78–202								78
79–201								79
80–200								80
81–199								81
82–198								82
83–197								83
84–196								84
85–195								85
86–194								86
87–193								87
88–192								88
89–191								89
90–190								90
91–189								91
92–188								92
93–187								93
94–186								94
95–185								95
96–184								96
97–183								97
98–182								98
99–181								99

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 8, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-11	1 of 2

Project Name:	Walker Chevrolet	Ground Surface Elev.	279
Location:	Tacoma, WA	Top of Casing Elev.	278.52
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/12/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/8/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 278	Flushmount monument, lockable thermos cap, concrete seal 0'-1'						Concrete.	1
2 277							**Qvi** Wet, light brown, silty, very gravelly SAND (SM); fine to coarse gravel, subround to subangular.	2
3 276								3
4 275							Slightly moist, very silty.	4
5 274								5
6 273							Wet, grades to gravelly, very silty SAND (SM); fine to coarse sand.	6
7 272							**Qvt**	7
8 271							Very dense, very silty, very sandy GRAVEL (GM); cobbles.	8
9 270								9
10 269	2" diameter, schedule 40 PVC, threaded connections, 0'-53'						Slightly moist, brown, silty, sandy GRAVEL (GM); fine to coarse sand; fine to coarse gravel.	10
11 268								11
12 267							Grades to brown-gray.	12
13 266								13
14 265							Gray, very silty.	14
15 264							Very moist, brown, silty, very sandy GRAVEL (GM).	15
16 263							Very hard, very moist, dark gray, gravelly, very silty SAND (SM) with sandy silt interbeds	16
17 262								17
18 261								18
19 260								19
20 259	Hydrated bentonite chips, 1'-49'11"						Dry, gray, silty, very sandy GRAVELLY (GM); fine to coarse sand; fine to coarse gravel.	20
21 258								21
22 257								22
23 256							Brown.	23
24 255							Dry, brown, trace to slightly silty, very sandy GRAVEL (GP).	24
25 254								25
26 253							Gray, sandy.	26
27 252								27
28 251							Moist, gray, sandy, very silty GRAVEL (GM).	28
29 250							Brown, silty, very sandy.	29
30 249							Very moist, red-brown to dark brown, slightly gravelly, very silty SAND (SM).	30
31 248								31
32 247								32
33 246							Trace gravel.	33
34 245								34
35 244								35
36 243							**Qva**	36
37 242							Very moist, red-brown to dark brown, slightly gravelly, slightly silty SAND (SM).	37
38 241								38
39 240							Interbedded red-brown, very silty SAND and gray, very sandy SILT (SM/ML)	39
40 239							Very moist, red-brown, slightly silty to silty SAND (SM), trace gravel; fine to medium sand, fine gravel.	40
41 238								41
42 237								42
43 236							Very moist, red-brown, slightly silty, gravelly SAND with interbeds of silty to very silty SAND (SP-SM). Sand is fine to medium.	43
44 235								44
45 234								45
46 233								46
47 232								47
48 231							Brown gray, silty SAND interbedded with sandy SILT (SM-ML).	48
49 230	▽ 5/8/2009						Dark brown, predominately medium sand.	49

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JTL

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-11	2 of 2

Project Name:	Walker Chevrolet	Ground Surface Elev.	279
Location:	Tacoma, WA	Top of Casing Elev.	278.52
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water	- 5/12/2009
Sampling Method:	Continuous Core	Start/Finish Date	5/8/2009

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51 228							Wet.	51
52 227	5/12/2009							52
53 226	10/20 sand filter pack, 49'11"-63'						Gravelly.	53
54 225							Trace gravel to slightly gravelly.	54
55 224							Wet, red-brown, interbedded silty SAND and slightly silty SAND (SM).	55
56 223								56
57 222	2" diameter, 10-slot, schedule 40 PVC screen, 53'-63'							57
58 221								58
59 220								59
60 219							Wet, brown, silty SAND (SM); fine sand.	60
61 218								61
62 217							Wet, brown, slightly silty, gravelly SAND (SP); fine to coarse sand.	62
63 216	Threaded PVC endcap						**Qob**	63
64 215							Slightly moist, gray, very sandy, very silty GRAVEL (GM).	64
65 214							Moist, brown.	65
66 213							Slightly moist, light brown, sandy.	66
67 212								67
68 211							Grades to slightly moist, gray, slightly sandy, gravelly SILT (ML); with wood.	68
69 210	Natural backfill, 63'-70'							69
70 209							Boring terminated 70 ft BGS. Depth to water was 52.20 ft BGS on 5/12/2009.	70
71 208								71
72 207								72
73 206								73
74 205								74
75 204								75
76 203								76
77 202								77
78 201								78
79 200								79
80 199								80
81 198								81
82 197								82
83 196								83
84 195								84
85 194								85
86 193								86
87 192								87
88 191								88
89 190								89
90 189								90
91 188								91
92 187								92
93 186								93
94 185								94
95 184								95
96 183								96
97 182								97
98 181								98
99 180								99

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JTL

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-12D	1 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278
Location:	Tacoma, WA	Top of Casing Elev.	277.72
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water (ft BGS)	- 10/29/2010
Sampling Method:	Continuous Core	Start/Finish Date	10/25/2010 - 10/27/2010

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 277	Flushmount monument, thermos cap	○					Air Vacuum - No Recovery	1
2 276								2
3 275							**Qvi**	3
4 274	Concrete seal, 0'-5.5'						Dry, gray-blue, slighlty gravelly, sandy SILT (ML); fine gravel; fine to medium sand	4
5 273							Dark brown, gravelly, very sandy SILT (ML); fine to coarse gravel (2")	5
6 272	Hydrated bentonite chips, 5.5'-110'						Gray-blue/dark brown, slightly gravelly, sandy SILT (ML)	6
7 271							Dry, brown, slightly silty, gravelly, SAND (SP-SM); fine to coarse gravel (2.5"), rounded to subrounded	7
8 270							Dry, dark brown, gravelly, silty SAND (SM); fine to coarse gravel (2"), rounded to subrounded; fine to coarse sand	8
9 269							Dry, dark brown, very sandy GRAVEL (GW); fine to coarse gravel (2"), rounded to subrounded; fine to coarse sand	9
10 268	2" diameter, Sch 40 PVC, 0.4'-113'						Dry, brown, slightly silty, gravelly SAND (SP-SM); fine to coarse gravel (2"), rounded to subrounded; fine to medium sand; with dark gray, slightly clayey, slightly gravelly, very sandy SILT (ML) lense (6")	10
11 267							**Qvt**	11
12 266							Dry, brown/light gray, silty, very gravelly SAND (SM); fine to coarse gravel (2"); fine to coarse sand	12
13 265							Red-brown/light gray, slightly gravelly, very silty SAND (SM)	13
14 264							Light gray with red-brown mottling, slightly gravelly, silty SAND (SM); fine gravel; predominantly fine to medium sand	14
15 263							Dark brown, gravelly, very silty SAND (SM)	15
16 262								16
17 261								17
18 260								18
19 259								19
20 258								20
21 257								21
22 256								22
23 255								23
24 254								24
25 253								25
26 252								26
27 251								27
28 250								28
29 249								29
30 248							Slightly gravelly, very silty SAND (SM)	30
31 247							**Qva**	31
32 246							Dry, dark brown SAND (SP); trace gravel and silt; fine gravel, rounded, predominantly medium sand	32
33 245							Dry, dark brown, slightly silty SAND (SP-SM); medium sand	33
34 244							Dry, dark brown, slightly gravelly, silty SAND (SM); fine gravel, subrounded; fine to medium sand	34
35 243							Dry, dark brown, slightly gravelly SAND (SP); trace silt; fine gravel, subrounded; fine to medium sand	35
36 242							Dark brown/yellow-red, gravelly SAND (SP); fine to coarse gravel (1"); predominantly medium sand	36
37 241							Red-brown, slightly gravelly SAND (SP); trace silt; fine to medium sand	37
38 240							Fine to coarse gravel (3"); medium sand	38
39 239								39
40 238								40
41 237								41
42 236								42
43 235								43
44 234								44
45 233								45
46 232							Dark brown, gravelly SAND (SP)	46
47 231							Dark brown/yellow-red, slightly gravelly SAND (SP); trace silt; fine gravel; fine to medium sand	47
48 230							Slightly gravelly SAND (SP); medium sand	48
49 229								49

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-12D	2 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278
Location:	Tacoma, WA	Top of Casing Elev.	277.72
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water (ft BGS)	- 10/29/2010
Sampling Method:	Continuous Core	Start/Finish Date	10/25/2010 - 10/27/2010

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51 227							Medium to coarse sand	51
52 226							Slightly gravelly SAND (SP); fine to coarse gravel (1.5"); predominantly medium sand	52
53 225								53
54 224								54
55 223							Trace silt; fine gravel	55
56 222								56
57 221								57
58 220							Dry, dark brown, silty SAND (SM); trace fine gravel; fine to medium sand	58
59 219								59
60 218							Dry, dark brown SAND (SP); medium sand	60
61 217								61
62 216								62
63 215								63
64 214								64
65 213								65
66 212								66
67 211							Gravelly SAND (SP); trace silt; fine to coarse gravel (3"), subrounded; medium to coarse sand	67
68 210								68
69 209								69
70 208							**Qob**	70
71 207							Slightly moist, dark brown, slightly silty, very sandy GRAVEL (GW-GM); fine to coarse gravel (2"); fine to coarse sand	71
72 206								72
73 205								73
74 204							Wet, dark brown/dark gray, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (2"); medium to coarse sand	74
75 203								75
76 202							Wet, red-brown, silty, very sandy GRAVEL (GM); fine to coarse gravel (2"); fine to coarse sand	76
77 201								77
78 200	▽						Wet, yellow-red, silty, gravelly SAND (SM); fine to coarse gravel (2"); fine to coarse sand	78
79 199								79
80 198							Moist/very moist, dark brown, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (1.5"); fine to coarse sand	80
81 197								81
82 196							Moist/very moist, yellow-red, silty, very gravelly SAND (SM); fine to coarse gravel (2"); fine to coarse sand	82
83 195								83
84 194							Moist/very moist, yellow-red, silty, very sandy GRAVEL (GM); fine to coarse gravel (3.5"); fine to coarse sand	84
85 193							Wet, red-brown/dark brown, slightly gravelly SAND (SP); fine gravel; predominantly medium sand	85
86 192								86
87 191							Wet, dark brown, slightly silty, gravelly SAND (SP-SM); fine to coarse gravel (2"); predominantly medium sand	87
88 190								88
89 189							Wet, brown, silty, very sandy GRAVEL (GM); fine to coarse gravel (2"); fine to coarse sand; with slightly silty, SAND (SP-SM) lense (6")	89
90 188								90
91 187							Wet, dark brown, silty, very gravelly SAND (SM); fine to coarse gravel (1"); predominantly coarse sand	91
92 186								92
93 185							Dry, gray SILT (ML)	93
94 184							Red-brown slightly gravelly, slightly sandy SILT (ML); fine gravel; fine to medium sand	94
95 183							Dry, brown, gravelly, very silty SAND (SM); fine gravel; fine to coarse sand	95
96 182								96
97 181							Dry, dark brown, gravelly, very sandy SILT (ML); fine to coarse gravel; fine to coarse sand	97
98 180								98
99 179							Yellow-red, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (2.5"); fine to coarse sand	99

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-12D	3 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278
Location:	Tacoma, WA	Top of Casing Elev.	277.72
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water (ft BGS)	- 10/29/2010
Sampling Method:	Continuous Core	Start/Finish Date	10/25/2010 - 10/27/2010

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
101–177							Slightly moist, dark brown, sandy, silty GRAVEL (GM); fine to coarse gravel (3"); fine to coarse sand	101
102–176								102
103–175								103
104–174							Slightly moist/moist, dark brown, silty, very gravelly SAND (SM); fine to coarse gravel (1.5"); fine to coarse sand	104
105–173								105
106–172							Moist, dark brown, silty, gravelly SAND (SM); fine to coarse gravel (3"); fine to coarse sand	106
107–171								107
108–170								108
109–169							Moist, dark brown, slightly silty, gravelly SAND (SP-SM); fine to coarse gravel (1.5"); fine to coarse sand	109
110–168	10/20 filter pack, 110'-134.5'							110
111–167							Moist, dark brown SAND (SP); trace fine gravel; medium sand	111
112–166								112
113–165	2" diameter, 10-slot, Sch 40 PVC screen, 113'-133'						Slightly moist, dark brown, silty, very sandy GRAVEL (GM); fine to coarse gravel (3"); fine to coarse sand	113
114–164								114
115–163								115
116–162							Slightly moist, gray, sandy, very silty GRAVEL (GM); fine to coarse gravel (3"); fine to coarse sand	116
117–161								117
118–160								118
119–159								119
120–158							Slightly moist, gray, gravelly, sandy SILT (ML); fine gravel; fine to coarse sand	120
121–157								121
122–156							Dry, dark brown/gray, sandy, silty GRAVEL (GM); fine gravel to cobbles, rounded to subrounded; fine to coarse sand	122
123–155								123
124–154							Moist, yellow-red/gray, slightly silty, sandy GRAVEL (GW-GM), fine to coarse gravel (3"); fine to coarse sand	124
125–153								125
126–152								126
127–151	▽ 10/26/2010							127
128–150								128
129–149	▼ 10/29/2010							129
130–148							Moist, gray, slightly sandy, gravelly SILT (ML); fine gravel; fine to coarse sand	130
131–147							Dry, dark brown/gray, sandy, gravelly SILT (ML); fine to coarse gravel (2"); fine to coarse sand	131
132–146								132
133–145	PVC endcap							133
134–144								134
135–143	Hydrated bentonite chips, 134.5'-140'						Very moist, gray, slightly sandy, gravelly SILT (ML); fine to coarse gravel (2"); fine to coarse sand	135
136–142							Very moist, brown, silty, sandy GRAVEL (GM); fine to coarse gravel (3"), rounded to subrounded; fine to coarse sand	136
137–141								137
138–140								138
139–139								139
140–138							Wet, brown, silty, sandy GRAVEL (GM); fine to coarse gravel (2"); fine to coarse sand	140
141–137								141
142–136								142
143–135								143
144–134								144
145–133								145
146–132								146
147–131								147
148–130								148
149–129								149

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-13D	1 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	277
Location:	Tacoma, WA	Top of Casing Elev.	276.96
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water (ft BGS)	- 10/29/2010
Sampling Method:	Continuous Core	Start/Finish Date	10/27/2010 - 10/29/2010

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 276	Flushmount monument, thermos cap						Air Vacuum - No Recovery	1
2 275		○						2
3 274								3
4 273	Concrete seal, 0'-6'							4
5 272							**Qvi** Dry, brown, gravelly SAND (SP); trace silt; fine to coarse gravel (1.5"); predominantly fine sand	5
6 271								6
7 270	Hydrated bentonite chips, 6'-121'						Dry, brown, slightly gravelly, silty SAND (SM); fine gravel; fine sand	7
8 269								8
9 268							Dry, dark brown, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (1.5"); fine to coarse sand	9
10 267	2" diameter, Sch 40 PVC, 0.4'-125'							10
11 266							Gray, slightly silty, very gravelly SAND (SP-SM) lense (2")	11
12 265								12
13 264							**Qvt** Dry/slightly moist, gray, gravelly, silty SAND (SM); fine to coarse gravel (1.5"); fine to coarse sand	13
14 263								14
15 262							Dry, yellow-red/gray, sandy, very gravelly SILT (ML); fine to coarse gravel (1.5"); fine to coarse sand	15
16 261								16
17 260							Dry, gray, silty, very gravelly SAND (SM); fine to coarse gravel (1"), rounded to subrounded; fine to coarse sand	17
18 259							Yellow-red/gray mottling, slightly gravelly, silty SAND (SM)	18
19 258								19
20 257							Dry, yellow-red/brown, silty SAND (SM); trace gravel; fine gravel; predominantly fine sand	20
21 256								21
22 255							Gray, silty, very gravelly SAND (SM); fine to coarse gravel (2.5"); fine to coarse sand	22
23 254								23
24 253								24
25 252								25
26 251								26
27 250								27
28 249							Dry, yellow-red, slightly silty, gravelly SAND (SP-SM); fine to coarse gravel (3"); predominantly fine to medium sand	28
29 248		○						29
30 247							Slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (1.5"); fine to coarse sand	30
31 246								31
32 245							**Qva**	32
33 244							Dry, yellow-red, slightly gravelly SAND (SP); trace silt; fine gravel, rounded; predominantly medium-fine sand	33
34 243								34
35 242								35
36 241							Fine to coarse gravel (1.5"); predominantly medium sand	36
37 240								37
38 239								38
39 238								39
40 237							Slightly moist, dark brown, gravelly SAND (SP); fine to coarse gravel (2"); predominantly medium sand	40
41 236								41
42 235							SAND (SP); medium sand	42
43 234								43
44 233								44
45 232							Silty, gravelly SAND (SM) lense (6")	45
46 231							Yellow-red, slightly gravelly SAND (SP); fine gravel	46
47 230								47
48 229							Dark brown, slightly gravelly SAND (SP); trace silt; fine to coarse gravel (2"); predominantly fine to medium sand	48
49 228								49

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: JMS
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect Consulting

Project Number	Well Number	Sheet
080190	MW-13D	2 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	277
Location:	Tacoma, WA	Top of Casing Elev.	276.96
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water (ft BGS)	- 10/29/2010
Sampling Method:	Continuous Core	Start/Finish Date	10/27/2010 - 10/29/2010

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51 226							Trace gravel	51
52 225								52
53 224								53
54 223								54
55 222							Fine gravel	55
56 221								56
57 220								57
58 219								58
59 218							Slightly moist, gray, silty SAND (SM); fine sand	59
60 217							Dry, dark brown/yellow-red SAND (SP); medium-fine sand	60
61 216								61
62 215								62
63 214							Slightly moist, dark brown, silty SAND (SM); fine to medium sand	63
64 213								64
65 212							Dry, yellow-red/dark brown SAND (SP); medium sand	65
66 211							Very gravelly SAND (SP) lense (6")	66
67 210								67
68 209								68
69 208								69
70 207							Dark brown silty SAND (SM) lense (6")	70
71 206							Slightly moist/moist, dark brown, gravelly SAND (SP); fine to coarse gravel (2"), rounded to subangular; medium-fine sand	71
72 205								72
73 204							Moist/very moist, dark brown SAND (SP); trace gravel	73
74 203							**Qob**	74
75 202							Wet, yellow-red/dark brown, silty, sandy GRAVEL (GM); fine to coarse gravel (2"); fine to coarse sand	75
76 201								76
77 200								77
78 199								78
79 198							Moist, gray, slightly gravelly, very silty SAND (SM); fine gravel; fine to coarse sand	79
80 197								80
81 196	▽						Wet, red-brown, silty, gravelly SAND (SM); fine to coarse gravel (1.5"); fine to coarse sand, predominantly coarse	81
82 195								82
83 194							Wet, red-brown, slightly silty, gravelly SAND (SP-SM); fine to coarse gravel (3"); predominantly medium sand	83
84 193								84
85 192							Moist, red-brown, sandy, silty GRAVEL (GM); fine to coarse gravel (3"), rounded to subrounded; fine to coarse sand	85
86 191								86
87 190							Wet, red-brown, slightly silty, gravelly SAND (SP-SM); fine gravel; fine to coarse sand, predominantly coarse	87
88 189								88
89 188							Moist/very moist, yellow-red/red-brown, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (2"), rounded to subangular; fine to coarse sand	89
90 187		○						90
91 186							Dry, dark brown, sandy, very gravelly SILT (ML); fine to coarse gravel (2.5"), rounded to subangular; fine to coarse sand	91
92 185								92
93 184							Wet, dark brown, sandy, very silty GRAVEL (GM); fine to coarse gravel (2"), rounded to subrounded; fine to coarse sand	93
94 183								94
95 182							No recovery	95
96 181								96
97 180		○						97
98 179								98
99 178								99

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-13D	3 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	277
Location:	Tacoma, WA	Top of Casing Elev.	276.96
Driller/Method:	Boart Longyear / Spider Sonic	Depth to Water (ft BGS)	- 10/29/2010
Sampling Method:	Continuous Core	Start/Finish Date	10/27/2010 - 10/29/2010

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
101–176							Moist, brown, silty, sandy GRAVEL (GM); fine gravel to cobbles (4"), rounded to angular; fine to coarse sand; with silty, gravelly SAND (SM) lense (6")	101
102–175								102
103–174							Moist, dark brown/gray, silty, gravelly SAND (SM); fine to coarse gravel (3"), rounded to subrounded; fine to coarse sand	103
104–173								104
105–172								105
106–171							Moist, brown/dark brown, sandy, silty GRAVEL (GM); fine to coarse gravel, rounded to subrounded; fine to coarse sand	106
107–170								107
108–169							Very moist, dark brown/yellow-red, silty, gravelly SAND (SM); fine to coarse gravel (1"); predominantly coarse sand	108
109–168								109
110–167							Very moist, brown/dark brown, sandy, very silty GRAVEL (GM); fine to coarse gravel (2.5"); fine to coarse sand	110
111–166								111
112–165							Slightly moist, red-brown/brown, slightly silty, gravelly SAND (SP-SM); fine to coarse gravel (2"); predominanlty fine sand	112
113–164								113
114–163							Dry, light brown, sandy, silty GRAVEL (GM); fine gravel to cobbles (3.5"), rounded to subrounded; fine to coarse sand	114
115–162								115
116–161							Moist, brown, silty, gravelly SAND (SM) lense (6")	116
117–160							Wet, dark brown, slightly silty, gravelly SAND (SP-SM) lense	117
118–159							Very moist, brown, sandy, very silty GRAVEL (GM); fine gravel to cobbles (4"); fine to coarse sand	118
119–158								119
120–157							Wet, yellow-red, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (3"); predominantly medium sand	120
121–156								121
122–155	10/20 filter pack, 121'-146'						Moist, brown, silty, very sandy GRAVEL (GM); fine to coarse gravel (2"); predominantly medium sand	122
123–154							Slightly moist, brown, sandy, silty GRAVEL (GM); fine to coarse gravel (2.5"); fine to coarse sand	123
124–153							Very moist/wet, brown, silty, sandy GRAVEL (GM); fine gravel to cobbles (4"); predominantly coarse sand	124
125–152	2" diameter, 10-slot, Sch 40 PVC screen, 125'-145'						Moist, gray, sandy, very silty GRAVEL (GM); fine to coarse gravel (2"); fine to coarse sand	125
126–151							Dry, dark brown/gray, silty, sandy GRAVEL (GM); fine to coarse gravel (3"), rounded to subangular; fine to coarse sand	126
127–150								127
128–149								128
129–148								129
130–147								130
131–146								131
132–145								132
133–144								133
134–143								134
135–142								135
136–141	▽ 10/28/2010						Wet, brown, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (2"); predominantly medium to coarse sand	136
137–140	▼ 10/29/2010							137
138–139							Moist, yellow-red, silty, very gravelly SAND (SM); fine to coarse gravel (3"); predominantly medium to coarse sand	138
139–138								139
140–137							Dry, gray-purple, slightly gravelly, sandy SILT (ML); fine gravel; fine to coarse sand	140
141–136								141
142–135							Wet, brown, slightly silty, very gravelly SAND (SP-SM); fine to coarse gravel (3"), predominantly coarse sand	142
143–134								143
144–133							Wet, brown, slightly silty, sandy GRAVEL (GW-GM); fine to coarse gravel (3"), rounded to angular; fine to coarse sand	144
145–132	PVC endcap							145
146–131								146
147–130								147
148–129								148
149–128								149

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: JMS

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-14D	1 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278
Location:	Tacoma, WA	Top of Casing Elev.	277.46 ft
Driller/Method:	Major Drilling - Jeffrey / Sonic Geoprobe 8140LS - track mounted	Depth to Water (ft BGS)	- 2/3/2012
Sampling Method:	Continuous Core	Start/Finish Date	1/30/2012 - 2/2/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1 277	Flush mounted steel well monument; thermos cap						Cleared for utilities using an air vacuum - No Recovery.	1
2 276	Cement surface seal from 0-2' bgs							2
3 275								3
4 274		○						4
5 273								5
6 272								6
7 271								7
8 270								8
9 269							**Qvt**	9
10 268	2" ID schedule 40 PVC casing, threaded connection, 0'-123'						Moist, brown, very gravelly, very silty SAND (SM); cobbles up to 5"; fine to medium sand, diamict fabric.	10
11 267								11
12 266								12
13 265								13
14 264							Slightly moist, sandy, very gravelly, SILT (ML); fine to medium sand; cobbles up to 4".	14
15 263	Bentonite chip seal (NSF/ANSI 60), 2'-121' bgs							15
16 262								16
17 261								17
18 260								18
19 259								19
20 258								20
21 257							Diamict fabric.	21
22 256								22
23 255								23
24 254							Moist, brown, gravelly, very silty SAND (SM); fine to medium sand; subangular gravel; diamict fabric; cobbles up to 4".	24
25 253							Orange-brown.	25
26 252							Brown.	26
27 251								27
28 250							Moist, brown, slightly silty, gravelly SAND (SP-SM); fine to medium sand; subrounded gravel.	28
29 249								29
30 248								30
31 247							Moist, gray, gravelly, silty SAND (SM); fine to medium sand; subangular gravel.	31
32 246							Brown.	32
33 245								33
34 244							**Qva**	34
35 243							Moist, brown, slightly gravelly SAND (SP); fine to medium sand.	35
36 242							1" pockets of pink, slightly silty SAND.	36
37 241								37
38 240								38
39 239								39
40 238								40
41 237								41
42 236							Moist, gray with iron stain mottling, gravelly, very sandy SILT (ML); fine to medium sand; subrounded gravel; diamict fabric.	42
43 235								43
44 234							Moist, gray, slightly silty, gravelly SAND (SP-SM); fine to medium sand.	44
45 233							Moist, orange-brown, slightly gravelly SAND (SP); trace silt.	45
46 232								46
47 231							Moist, brown with iron stain mottling, slightly gravelly, silty SAND (SM); 1" pockets of silt, fine to medium sand, subangular fine gravel with cobbles.	47
48 230								48
49 229								49

Sampler Type:
○ No Recovery
▮ Continuous Core

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-14D	2 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278
Location:	Tacoma, WA	Top of Casing Elev.	277.46 ft
Driller/Method:	Major Drilling - Jeffrey / Sonic Geoprobe 8140LS - track mounted	Depth to Water (ft BGS)	- 2/3/2012
Sampling Method:	Continuous Core	Start/Finish Date	1/30/2012 - 2/2/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51 227							Moist, dark gray brown, slightly gravelly SAND (SP); medium to coarse sand, fine subrounded gravel.	51
52 226							Moist, red-brown, slightly silty SAND (SP-SM); medium sand; trace gravel.	52
53 225								53
54 224							Gravelly.	54
55 223							Moist, yellow-brown SAND (SP); medium to coarse sand.	55
56 222								56
57 221								57
58 220								58
59 219							Moist, gray, slightly silty SAND (SP-SM); fine to medium sand, trace fine gravel; faint stratification	59
60 218								60
61 217							Moist, brown to dark brown SAND (SP); medium sand.	61
62 216							Red-orange, slightly gravelly.	62
63 215								63
64 214								64
65 213							Very moist to wet, brown, very silty SAND (SM); fine sand.	65
66 212								66
67 211							Grades to fine to medium sand.	67
68 210							Wet, dark red-brown, very gravelly SAND (SP); coarse sand; trace silt, with cobbles up to 3".	68
69 209								69
70 208								70
71 207							Wet, brown-gray SAND (SP); trace gravel; medium sand.	71
72 206								72
73 205							**Qob**	73
74 204							Wet, red-brown GRAVEL (GW); fine to coarse gravel; trace silt; trace coarse sand.	74
75 203								75
76 202							Moist, red-brown with iron staining, very gravelly SAND (SP); medium sand, fine to coarse rounded gravel with cobbles up to 3"; trace silt; diamict fabric.	76
77 201								77
78 200							Brown.	78
79 199							Dry, gray, gravelly, very sandy SILT (ML); fine to medium sand; subrounded to subangular gravel; cobbles up to 4".	79
80 198								80
81 197							Moist, brown-red, slightly gravelly SAND (SP); medium sand; subrounded gravel; trace silt.	81
82 196								82
83 195							Slightly moist, gray, gravelly, silty SAND (SM); fine to medium sand; fine to coarse subrounded to rounded gravel.	83
84 194								84
85 193								85
86 192							Wet, brown SAND (SP); fine to medium sand, trace gravel.	86
87 191							Wet, red-brown GRAVEL (GP); coarse gravel and cobbles.	87
88 190								88
89 189							Very moist to wet, brown, gravelly, sandy SILT (ML); diamict fabric, cobbles up to 4".	89
90 188							Gray.	90
91 187								91
92 186								92
93 185							Moist, gray-brown, slightly gravelly, silty SAND (SM); fine to medium sand.	93
94 184								94
95 183								95
96 182								96
97 181								97
98 180							Moist to wet, brown-gray SAND (SP); fine to medium sand.	98
99 179							Moist, gray-brown, slightly silty, gravelly SAND	99

Sampler Type:
- ◯ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: AET

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-14D	3 of 3

Project Name:	Walker Chevrolet	Ground Surface Elev.	278
Location:	Tacoma, WA	Top of Casing Elev.	277.46 ft
Driller/Method:	Major Drilling - Jeffrey / Sonic Geoprobe 8140LS - track mounted	Depth to Water (ft BGS)	- 2/3/2012
Sampling Method:	Continuous Core	Start/Finish Date	1/30/2012 - 2/2/2012

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
101–177							(SP-SM).	101
102–176							Moist to wet, brown, very sandy GRAVEL (GP); tr. silt, fine to coarse sand; fine subrounded to subangular gravel.	102
103–175								103
104–174								104
105–173							Slightly moist, gray and brown mottled, gravelly, sandy SILT (ML); fine to medium sand; fine to coarse gravel; diamict fabric.	105
106–172								106
107–171								107
108–170								108
109–169								109
110–168								110
111–167							Moist, brown and gray mottled, gravelly, silty SAND (SM); fine to medium sand; subrounded gravel up to 2".	111
112–166								112
113–165								113
114–164							Dry to slightly moist, gray with iron stain mottling, gravelly, sandy SILT (ML); diamict fabric.	114
115–163								115
116–162								116
117–161							Moist, brown-gray, slightly silty, very gravelly SAND (SP-SM); medium to coarse sand.	117
118–160							Moist, brown-gray, gravelly, silty SAND (SM); cobbles up to 3".	118
119–159								119
120–158								120
121–157							Slightly moist, gray, gravelly, sandy SILT (ML); fine to medium sand; cobbles up to 3".	121
122–156								122
123–155							Moist, brown, very silty, sandy GRAVEL (GM); cobbles up to 4", angular gravel, fine to coarse sand.	123
124–154								124
125–153	10x20 colorado silica sand filter pack, 121'-143.5' bgs						Dry to slightly moist, gray, gravelly, sandy SILT (ML); fine to medium sand, cobbles up to 4".	125
126–152								126
127–151								127
128–150								128
129–149							Moist, brown-gray with orange mottling, silty, very gravelly SAND (SM); fine to coarse sand; fine to coarse angular gravel with cobbles up to 3".	129
130–148	▽ 2/1/2012							130
131–147								131
132–146								132
133–145								133
134–144	▼ 2/3/2012						Moist to wet, gray-brown, gravelly, sandy SILT (ML); fine to coarse sand, fine to coarse subangular gravel; diamict fabric.	134
135–143	2" ID schedule 40 PVC 20-slot screen, 123.5'-143.5' bgs							135
136–142							Very gravelly.	136
137–141								137
138–140							Moist.	138
139–139								139
140–138							Wet.	140
141–137								141
142–136								142
143–135								143
144–134	Threaded PVC end cap							144
145–133							Bottom of boring at 145' BGS.	145
146–132								146
147–131								147
148–130								148
149–129								149

Sampler Type:
- ○ No Recovery
- ▮ Continuous Core

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: AET

Approved by: ALN

Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-15	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 278.84 ft
Depth to Water
Start/Finish Date 10/14/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-4'						Concrete.	1
2							No logging or sampling.	2
3								3
4								4
5							Boring drilled 37 degrees from vertical to intercept saturated soil under alley.	5
6								6
7								7
8								8
9								9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-55'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20	Hydrated bentonite chips, 4'-52'							20
21								21
22								22
23								23
24							Strong solvent-like odor in cuttings. (24 ft bgs)	24
25								25
26								26
27								27
28								28
29								29
30				36.7				30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38								38
39								39
40								40
41								41
42								42
43								43
44								44
45								45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Project Number	Well Number	Sheet
080190	MW-15	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 278.84 ft
Depth to Water
Start/Finish Date 10/14/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–74	10/20 sand filter pack, 52'-75' 2" diameter, 0.020-inch, schedule 40 PVC screen, 55'-75'						Well screen is completed in advance outwash beneath alley, 33 to 45 ft west-northwest of monument, and 44 to 60 ft below ground surface	51–74
75	Threaded PVC endcap						Bottom of boring is 60 feet below ground surface.	75
76–99								76–99

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-16	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 277.88 ft
Depth to Water
Start/Finish Date 10/15/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-4'						Asphalt over concrete.	1
2							No logging or sampling.	2
3								3
4								4
5							Boring drilled 23 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20	Hydrated bentonite chips, 4'-42'							20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38								38
39								39
40								40
41								41
42	10/20 sand filter pack, 42'-65'						Well screen is completed in advance outwash beneath Morrell's Dry Cleaners building, 18 to 25 feet west-northwest of monument, and 41 to 60 feet below ground surface	42
43								43
44								44
45								45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-16	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 277.88 ft
Depth to Water
Start/Finish Date 10/15/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–64	2" diameter, 0.020-inch, schedule 40 PVC screen, 45'-65'							51–64
65	Threaded PVC endcap						Bottom of boring is 60 feet below ground surface.	65
66–99								66–99

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-17	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 277.97 ft
Depth to Water
Start/Finish Date 10/15/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-4'						Asphalt over concrete.	1
2							No logging or sampling.	2
3								3
4								4
5							Boring drilled 32 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-51'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20	Hydrated bentonite chips, 4'-48'							20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38								38
39								39
40								40
41								41
42								42
43							Well screen is completed in advance outwash beneath Morrell's Dry Cleaners, 27 to 38 feet west-northwest of monument, and 43 to 60 feet below ground surface.	43
44								44
45								45
46								46
47								47
48								48
49	10/20 sand filter pack, 48'-71'							49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-17	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 277.97 ft
Depth to Water
Start/Finish Date 10/15/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–70	2" diameter, 0.020-inch, schedule 40 PVC screen, 51'-71'							51–70
71	Threaded PVC endcap						Bottom of boring is 60 feet below ground surface.	71
72–99								72–99

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-18	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 277.80 ft
Depth to Water
Start/Finish Date 10/16/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-4'						Asphalt over concrete.	1
2							No logging or sampling, strong solvent-like odor in cuttings.	2
3								3
4								4
5							Boring drilled 45 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-65'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20	Hydrated bentonite chips, 4'-62'							20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38								38
39								39
40								40
41								41
42								42
43								43
44								44
45								45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-18	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 277.80 ft
Depth to Water
Start/Finish Date 10/16/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–84	10/20 sand filter pack, 62'-85' 2" diameter, 0.020-inch schedule 40 PVC screen, 65'-85'						Well screen is completed in advance outwash beneath Morrell's Dry Cleaners, 46 to 60 feet west-northwest of monument, and 46 to 60 feet below ground surface	51–84
85	Threaded PVC endcap						Bottom of boring is 60 feet below ground surface.	85
86–99								86–99

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-19	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: Dames & Moore

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 278.15 ft
Depth to Water
Start/Finish Date 10/17/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1–49	Flushmount monument, lockable thermos cap, concrete seal 0'-2'						Asphalt.	1
							Qvt Very dense, moist, brown, slightly silty, gravelly SAND (SP-SM); diamict fabric, fine to medium sand, solvent-like odor.	2–19
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45'				50/6			10
20	Hydrated bentonite chips, 2'-42'				50/6		Very dense, moist, brown gray, silty, gravelly SAND (SM); diamict fabric, solvent-like odor, predominantly fine sand, fine to coarse gravel.	20
25					50/6		Trace gravel.	25
30					50/6		**Qva** Very dense, moist, orange brown, slightly gravelly SAND (SP); fine to medium sand, solvent-like odor.	30
35					21 21 30		Trace silt.	35
40					36 50/6		Trace fine gravel, slight solvent-like odor.	40
42	10/20 sand filter pack, 42'-60.5'							42
45					50/6			45
49								49

Sampler Type:
- No Recovery
- 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector
- Static Water Level
- Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-19	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: Dames & Moore

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 278.15 ft
Depth to Water
Start/Finish Date 10/17/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–99	2" diameter, 0.020-inch, schedule 40 PVC screen, 45'-60' Threaded PVC endcap				50/6 50/6		Wet, red brown. Very dense, wet, dark red brown SAND (SP); fine to coarse sand, trace fine gravel. Bottom of boring is 60.5 feet below ground surface.	51–99

Sampler Type:
- No Recovery
- 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector
- Static Water Level
- Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-20	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 278.03 ft
Depth to Water
Start/Finish Date 10/11/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-2'						Asphalt.	1
2							No logging or sampling.	2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20	Hydrated bentonite chips, 2'-42'							20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38								38
39								39
40								40
41								41
42								42
43	10/20 sand filter pack, 42'-60'							43
44								44
45								45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-20	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 278.03 ft
Depth to Water
Start/Finish Date 10/11/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–59	2" diameter, 0.020-inch, schedule 40 PVC screen, 45'-60'							51–59
60	Threaded PVC endcap						Bottom of boring is 60 feet below ground surface.	60
61–99								61–99

Sampler Type:
No Recovery

PID - Photoionization Detector
Static Water Level
Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-21	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: Dames & Moore

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 279.03 ft
Depth to Water
Start/Finish Date 10/17/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1–2	Flushmount monument, lockable thermos cap, concrete seal 0'-2'						Asphalt.	1–2
							Qvt Very dense, moist, brown, silty, gravelly SAND (SM); diamict fabric, fine to medium sand.	
5				0.0	50/6			5
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45'			10.5	26			10
11			VOC/FOC		50/6			11
15			VOC/FOC	165	50/6			15
20	Hydrated bentonite chips, 2'-42'			0.0	50/6			20
25			VOC/FOC	0.0	50/6			25
30				0.0	50/6			30
35				0.0	50/5		**Qva** Very dense, moist, red brown, slightly gravelly SAND (SP); fine to medium sand.	35
40			VOC/FOC	0.0	50/6		Brown.	40
42–43	10/20 sand filter pack, 42'-60.5'							42–43
45				0.0	50/6		Red brown, trace fine gravel.	45
49								49

Sampler Type:
- No Recovery
- 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector
- Static Water Level
- Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	MW-21	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: Dames & Moore

Ground Surface Elev. (site datum)
Top of Casing Elev. (site datum) 279.03 ft
Depth to Water
Start/Finish Date 10/17/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51				0.0	50/6		Very dense, moist, brown, slightly silty SAND (SP-SM); fine sand.	51
52								52
53								53
54								54
55	2" diameter, 0.020-inch, schedule 40 PVC screen, 45'-60'		VOC/FOC	0.0	50/6		Very dense, wet, brown, SAND (SP); fine to medium sand.	55
56								56
57								57
58								58
59								59
60	Threaded PVC endcap			0.0	50/6		Bottom of boring is 60.5 feet below ground surface.	60
61								61
62								62
63								63
64								64
65								65
66								66
67								67
68								68
69								69
70								70
71								71
72								72
73								73
74								74
75								75
76								76
77								77
78								78
79								79
80								80
81								81
82								82
83								83
84								84
85								85
86								86
87								87
88								88
89								89
90								90
91								91
92								92
93								93
94								94
95								95
96								96
97								97
98								98
99								99

Sampler Type:
- ○ No Recovery
- ◧ 3.25" OD D&M Split-Spoon Ring Sampler

PID - Photoionization Detector
- ▼ Static Water Level
- ▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's entrance, south of MW-17		*Coordinates* NA	*Exploration Number* **MW-23**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 160
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/6/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 52.7' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; with base course.	0
						TILL	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					SILTY SAND (SM); very dense, moist, gray brown; fine to medium sand; trace fine subround gravel; chemical odor.	1
2							2
3							3
4	2" diameter, schedule 40 PVC, threaded connections, 0'-45' bgs						4
5			B-23-5.5 VOCs by 8260C	PID=360 SPT=50/5			5
6							6
7							7
8							8
9							9
10			B-23-10.5 VOCs by 8260C	PID=31 SPT=29, 50/5			10
11							11
12							12
13							13
14							14
15				PID=1.2 SPT=50/6		GRAVEL (GP); very dense; gray; moist; fine subround gravel.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-8' bgs		B-23-20.5 VOCs by 8260C	PID=4.1 SPT=29, 50/4		SAND WITH SILT AND GRAVEL (SW-SM); very dense, moist, gray brown; fine to coarse sand; fine to coarse subround gravel.	20
21							21
22							22
23							23
24							24

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MVA
Approved by: DAH

Exploration Log MW-23

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's entrance, south of MW-17		*Coordinates* NA	*Exploration Number* **MW-23**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 160
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/6/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 52.7' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26			B-23-25.5 VOCs by 8260C	SPT=22, 50/6 PID=704		SILTY SAND WITH GRAVEL (SM); very dense, moist, gray to gray brown; fine to medium sand (trace coarse); fine gravel.	26
27						SAND WITH SILT (SP-SM); very dense, moist, gray brown; fine to medium sand; trace fine subround gravel.	27
28							28
29							29
30				PID=2.1 SPT=16, 50/5		SILTY SAND (SM); very dense, slightly moist, brown; fine to medium sand; trace fine subround gravel; slight chemical odor.	30
31							31
32							32
33							33
34							34
35				PID=1.8 SPT=24, 30, 50/6		SAND WITH SILT (SP-SM); very dense, moist, brown; fine to medium sand (trace coarse sand); trace fine subround gravel.	35
36							36
37							37
38							38
39							39
40				PID=0.2 SPT=33, 50/5		**OUTWASH** SAND (SP); dense to very dense, moist, red brown; fine to medium sand (with trace coarse sand); trace silt.	40
41							41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0.2			45
46				SPT=30, 32, 42			46
47							47
48							48
49							49

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MVA
Approved by: DAH

Exploration Log MW-23

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's entrance, south of MW-17		*Coordinates* NA	*Exploration Number* **MW-23**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 160
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/6/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 52.7' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51				SPT=18, 22, 32 PID=0.3		**OUTWASH** SAND (SP); dense to very dense, moist, red brown; fine to medium sand (with trace coarse sand); trace silt. (continued)	51
52	2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs ▽ 2/6/2019						52
53							53
54							54
55			B-23-55.5 VOCs by 8260C	PID=2.2			55
56				SPT=17, 21, 33			56
57							57
58							58
59						SILTY SAND (SM); very dense, very moist, brown; fine sand.	59
60	Threaded PVC endcap			PID=0.4			60
61				SPT=27, 35, 50/5			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type: ◧ Continuous core 1.125" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: MVA
Approved by: DAH

Exploration Log MW-23

Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's southeast corner		*Coordinates* NA	*Exploration Number* **MW-24**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 186
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/30/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.6' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; with base course.	0
						TILL	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					SAND WITH GRAVEL (SP); dense, moist, dark brown; fine to medium sand; fine subround gravel.	1
2							2
3							3
4	2" diameter, schedule 40 PVC, threaded connections, 0'-10' bgs						4
5			B-24-5.5 VOCs by 8260C	PID=0			5
6	Bentonite chips, 2'-8' bgs			SPT=13, 22, 50/5		SANDY SILT WITH GRAVEL (ML); hard, slightly moist, brown; low plasticity silt; fine to coarse sand; fine to coarse subround gravel.	6
7							7
8							8
9	12/20 sand filter pack, 8'-22' bgs						9
10				PID=0		SILTY SAND WITH GRAVEL (SM); very dense, slightly moist, gray brown; fine to coarse sand; fine to coarse subround gravel.	10
11				SPT=15, 47, 50/5			11
12							12
13							13
14							14
15	2" diameter 0.020", schedule 40 PVC screen, 10'-20' bgs			PID=0		SAND WITH SILT AND GRAVEL (SP-SM); very dense, slightly moist, brown; fine to medium sand; fine to course subround gravel.	15
16				SPT=14, 37, 50/5			16
17							17
18							18
19							19
20				SPT=50/5		SAND WITH SILT AND GRAVEL (SW-SM); very dense, moist, gray brown; fine to coarse sand; coarse subround gravel; on rock, blow counts overstated	20
21							21
22							22
23							23
24							24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-24

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's southeast corner		*Coordinates* NA	*Exploration Number* **MW-24**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 186
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/30/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.6' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26	2" diameter, schedule 40 PVC, threaded connections, 20'-45' bgs			SPT=24, 40, 50/5 PID=0		SILTY SAND (SM); very dense, moist, gray brown; fine to coarse sand; trace fine to coarse subround gravel.	26
27							27
28							28
29							29
30	Bentonite chips, 22'-42' bgs			PID=0.5 SPT=32, 50/5			30
31			B-24-30.5 VOCs by 8260C				31
32							32
33							33
34							34
35				PID=0 SPT=36, 50/5			35
36							36
37							37
38							38
39							39
40				PID=0		**OUTWASH**	40
41				SPT=38, 41, 24		SAND (SP); very dense, moist, brown; fine to medium sand; trace silt.	41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0 SPT=18, 50/6			45
46							46
47							47
48							48
49							49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-24
Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's southeast corner		*Coordinates* NA	*Exploration Number* **MW-24**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 186
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/30/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.6' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51	▽ 1/31/2019		B-24-50.5 VOCs by 8260C	SPT=24, 32, 34 PID=0		SAND WITH SILT (SP-SM); very dense, wet, red brown; fine sand.	51
52	2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs						52
53							53
54							54
55				PID=0			55
56				SPT=27, 40, 34		SAND (SP); very dense, wet, red brown; fine to medium sand (trace coarse); few fine to coarse subround gravel; trace silt.	56
57							57
58							58
59							59
60	Threaded PVC endcap			PID=0			60
61				SPT=23, 50/6			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-24
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of southwest Morell's building corner		*Coordinates* NA	*Exploration Number* **MW-25**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 184
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/28/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.9' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt	0
						Till	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					SILTY SAND WITH GRAVEL (SM); very dense, very moist, gray brown; fine to coarse sand, fine subround gravel	1
2							2
3							3
4							4
5			B-25-5.5 VOCs by 8260	PID=0 SPT=24, 50/5			5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45' bgs			PID=0		SAND (SP); dense. slightly moist gray brown; fine sand, 5% silt	10
11				SPT=14, 38, 50/4			11
12							12
13							13
14							14
15				PID=0 SPT=70/5		SAND WITH SILT (SW-SM); very dense, slightly moist, gray brown; fine to coarse sand, fine subround gravel	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=0 SPT=50/5		SILTY SAND (SM); very dense, moist, gray brown; fine to coarse sand, fine to coarse subround gravel	20
21							21
22							22
23							23
24							24

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-25

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of southwest Morell's building corner		*Coordinates* NA	*Exploration Number* **MW-25**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 184
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/28/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.9' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=70/6 PID=0		SAND (SP); very dense, moist, gray brown; fine to coarse sand, coarse subround gravel	26
27							27
28							28
29							29
30			B-25-30.5 VOCs by 8260	PID=0.2		SAND WITH SILT (SP-SM); very dense, moist, gray brown; 85% fine sand, 5% medium to coarse sand	30
31				SPT=22, 37, 50/6			31
32							32
33							33
34						SILT (ML); very stiff, moist, light brown; 10% fine sand	34
35				PID=0			35
36				SPT=14, 29, 38		SAND WITH SILT (SP-SM); very dense, moist, red brown; fine to medium sand	36
37							37
38							38
39							39
40				PID=0		**Outwash**	40
41				SPT=23, 38, 46		SAND (SP); very dense, moist, red brown; 5% silt, 5% coarse subround gravel	41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0			45
46				SPT=24, 32, 36			46
47							47
48							48
49							49

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-25

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of southwest Morell's building corner		*Coordinates* NA	*Exploration Number* **MW-25**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 184
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/28/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.9' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51			B-25-50.5 VOCs by 8260	SPT=33, 32, 50/5 PID=0.5		SILTY SAND (SM); very dense, moist, brown; fine sand	51
52	▽ 1/29/2019 2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs						52
53							53
54							54
55				PID=0			55
56				SPT=26, 32, 50/6		SAND (SP); very dense, wet, red brown; fine to medium sand (<5% coarse), 5% silt, up to 10% fine subround gravel	56
57							57
58							58
59							59
60	Threaded PVC endcap			PID=0			60
61				SPT=25, 50/6			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type: ◧ Continuous core 1.125" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-25

Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's, south of MW-25		*Coordinates* NA	*Exploration Number* **MW-26**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 185
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/29/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 52' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt	0
						CONCRETE; Concrete	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**TILL**	1
2						SILTY SAND (SM); dense to very dense, slightly moist, gray brown; fine to coarse sand, few fine to coarse subround gravel.	2
3							3
4							4
5			B-26-5.5 VOCs by 8260	PID=0 SPT=29, 50/5			5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-44' bgs			PID=0 SPT=27, 50/6			10
11							11
12							12
13							13
14							14
15				PID=0 SPT=19, 42, 50/5		SANDY SILT (ML); hard, slightly moist, light brown; low plasticity silt; fine to coarse sand; few fine to coarse subround gravel.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=0 SPT=19, 50/6		SILTY SAND WITH GRAVEL (SM); very dense, moist, gray brown; fine to coarse sand (mostly fine); fine subround gravel.	20
21							21
22							22
23							23
24							24

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-26

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's, south of MW-25		*Coordinates* NA	*Exploration Number* **MW-26**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 185
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/29/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 52' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=18, 50/6 PID=0		SILTY SAND WITH GRAVEL (SM); very dense, moist, gray brown; fine to coarse sand (mostly fine); fine subround gravel. (continued)	26
27							27
28							28
29							29
30			B-26-30.5 VOCs by 8260	PID=0 SPT=19, 34, 38		SAND WITH SILT (SP-SM); very dense, moist, red brown; fine to medium sand; up to trace course gravel; broken rock found in sampler.	30
31							31
32							32
33							33
34							34
35				PID=0 SPT=20, 25, 49		Becomes wet	35
36							36
37							37
38							38
39							39
40				PID=0 SPT=39, 50/5		**OUTWASH** SAND (SP); very dense, moist, red brown; fine to medium sand; trace silt; trace fine subround gravel.	40
41							41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0 SPT=46, 39, 36			45
46							46
47							47
48							48
49							49

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-26

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's, south of MW-25		*Coordinates* NA	*Exploration Number* **MW-26**
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 185
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/29/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 52' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51			B-26-50.5 VOCs by 8260	SPT=14, 40, 50/5 PID=0		**OUTWASH** SAND (SP); very dense, moist, red brown; fine to medium sand; trace silt; trace fine subround gravel. (continued) Becomes wet	51
52	▽ 1/30/2019 2" diameter 0.020", schedule 40 PVC screen, 44'-59' bgs						52
53							53
54							54
55				PID=0 SPT=21, 50/6			55
56							56
57							57
58							58
59	Threaded PVC endcap						59
60				PID=0			60
61				SPT=14, 23, 50/6			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type: ◧ Continuous core 1.125" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-26
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's, southeast of B-24		*Coordinates* NA	*Exploration Number* **MW-27** Ecology Well Tag No. BLI 158
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/31/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 46.3' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; with base course.	0
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**TILL** SAND (SP); dense, moist, gray; with bentonite; 2" long piece of concrete in sampler.	1
2							2
3							3
4							4
5			B-27-5.5 VOCs by 8260	PID=0 SPT=24, 50/4			5
6						SILTY SAND (SM); very dense, slightly moist, gray brown; fine to medium sand (trace coarse); few fine subround gravel.	6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-44' bgs			PID=0			10
11				SPT=10, 42, 50/3			11
12							12
13							13
14							14
15				PID=0 SPT=37, 50/5		SAND WITH SILT (SP-SM); very dense, slightly moist, gray brown; fine to medium sand; few fine subround gravel.	15
16							16
17							17
18							18
19						SAND (SP); very dense, slightly moist, gray brown; fine to medium sand; few fine to coarse subround gravel.	19
20	Bentonite chips, 2'-42' bgs			PID=0 SPT=30, 50/5.5			20
21						SILTY SAND (SM); very dense, slightly moist, gray brown; fine to medium sand (trace coarse sand); few fine to coarse subround gravel.	21
22							22
23							23
24							24

Legend

Sample Type: Continuous core 1.125" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-27
Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's, southeast of B-24		*Coordinates* NA	*Exploration Number* **MW-27** Ecology Well Tag No. BLI 158
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/31/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 46.3' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=23, 13, 23 PID=0		SILT (ML); very stiff, moist, light brown; non plastic, rapid dilatency.	26
27						SAND WITH SILT (SP-SM); dense, moist, brown; fine sand.	27
28							28
29							29
30				PID=1.5			30
31			B-27-30.5 VOCs by 8260	SPT=19, 29, 39		SILTY SAND (SM); very dense, moist, gray brown; fine to medium sand; trace fine round gravel.	31
32							32
33							33
34							34
35				PID=0 SPT=33, 50/6		SAND WITH SILT (SP-SM); very dense, wet, brown; fine to medium sand; trace coarse subround gravel.	35
36							36
37							37
38							38
39							39
40				PID=0 SPT=26, 50/6		**OUTWASH** SAND (SP); very dense, moist, red brown; fine to medium sand (trace coarse), few fine to coarse subround gravel; trace silt.	40
41							41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0.5			45
46	▽ 2/1/2019			SPT=20, 29, 32			46
47							47
48							48
49							49

Legend

Sample Type: Continuous core 1.125" ID

Water Level: ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-27

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's, southeast of B-24		*Coordinates* NA	*Exploration Number* **MW-27** Ecology Well Tag No. BLI 158
Contractor Holt	*Equipment* CME - 75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 1/31/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 46.3' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51			B-27-50.5 VOCs by 8260	SPT=18, 24, 36 PID=0.5		SAND WITH SILT (SP-SM); very dense, wet, red brown; fine sand.	51
52	2" diameter 0.020", schedule 40 PVC screen, 44'-59' bgs					SAND (SP); very dense, wet, red brown; fine to medium sand; trace silt.	52
53							53
54							54
55				PID=0			55
56				SPT=24, 35, 50/5			56
57							57
58							58
59	Threaded PVC endcap						59
60				PID=0			60
61				SPT=23, 48, 50/5			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-27
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Southeast of Morell's southeast corner		*Coordinates* NA	*Exploration Number* **MW-28**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 935
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/14/2019 to 3/15/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 49' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt	0
0.5						CONCRETE; Concrete	0.5
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**TILL** SANDY SILT (ML); Very dense, slightly moist, light brown; fine to medium sand; few fine subround gravel.	1
2							2
3							3
4							4
5				PID=0 SPT=17, 50/5			5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-44' bgs			PID=0.3 SPT=22, 50/4		SAND WITH SILT AND GRAVEL (SP-SM); Very dense, moist, light brown; fine to medium sand; fine subround gravel.	10
11							11
12							12
13							13
14							14
15				PID=0 SPT=22, 50/5		SILTY SAND WITH GRAVEL (SM); Very dense, slightly moist, light brown; fine to coarse sand; fine to coarse subround gravel.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=0 SPT=17, 39, 50/5		Gravel content decreases to trace.	20
21							21
22							22
23							23
24							24

Legend

Sample Type
- No Soil Sample Recovery
- Continuous core 1.125" ID

Water Level
- Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-28

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Southeast of Morell's southeast corner		*Coordinates* NA	*Exploration Number* **MW-28**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 935
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/14/2019 to 3/15/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 49' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=12, 34, 36 PID=0		SILTY SAND WITH GRAVEL (SM); Very dense, slightly moist, light brown; fine to coarse sand; fine to coarse subround gravel. (continued)	26
27							27
28							28
29							29
30				PID=3.5			30
31			B-28-30.5 VOCs by 8260	SPT=17, 39, 50/5		SANDY SILT (ML); Hard, moist, light brown; low plasticity silt; fine to medium sand; trace fine to coarse subround gravel.	31
32							32
33							33
34							34
35				PID=0			35
36				SPT=21, 34, 42		SAND (SP); Very dense, wet, red brown; find to medium sand; trace silt; trace fine to course subround gravel.	36
37							37
38							38
39							39
40				PID=0			40
41				SPT=24, 29, 32		SANDY SILT (ML); Hard, moist, tan; low plasticity silt; fine sand. SAND (SP); Very dense, moist, light brown; fine sand; trace silt.	41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0		**OUTWASH**	45
46				SPT=19, 29, 34		SAND (SP); Very dense, wet, red brown; find to medium sand; trace silt; trace fine to course subround gravel.	46
47							47
48							48
49	▼ 3/15/2019						49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-28

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Southeast of Morell's southeast corner		*Coordinates* NA	*Exploration Number* **MW-28**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 935
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/14/2019 to 3/15/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 49' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51				SPT=17, 22, 34 PID=0		**OUTWASH** SAND (SP); Very dense, wet, red brown; find to medium sand; trace silt; trace fine to course subround gravel. (continued)	51
52	2" diameter 0.020", schedule 40 PVC screen, 44'-59' bgs						52
53							53
54							54
55				PID=0			55
56			B-28-55.5 VOCs by 8260	SPT=40, 33, 29			56
57							57
58							58
59	Threaded PVC endcap						59
60				PID=0			60
61				SPT=43, 50/5			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-28
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Parking lot east of Morell's and MW-23		*Coordinates* NA	*Exploration Number* **MW-29**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 932
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/11/2019 to 3/12/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.18' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt	0
0.5						CONCRETE; Concrete	0.5
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**TLL** SILTY SAND (SM); Very dense, moist, grayfine to medium sand; trace fine to coarse subround gravel; trace cobble (broken cobble found in sampler). Blow counts possibly overstated.	1
2							2
3							3
4							4
5				PID=0 SPT=50, 50/5			5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45' bgs			PID=0 SPT=50/6			10
11							11
12							12
13							13
14							14
15			B-29-15.0 VOCs by 8260	PID=0 SPT=26, 50/5		No cobbles found in sample.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=0 SPT=12, 26, 42		SAND WITH SILT (SP-SM); Very dense, slightly moist; light brown; fine to medium sand.	20
21							21
22							22
23							23
24							24

Legend

Sample Type
- No Soil Sample Recovery
- Continuous core 1.125" ID

Water Level
- Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-29

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Parking lot east of Morell's and MW-23		*Coordinates* NA	*Exploration Number* **MW-29**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 932
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/11/2019 to 3/12/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.18' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=26, 50/5 PID=0		SAND WITH SILT (SP-SM); Very dense, slightly moist; light brown; fine to medium sand. (continued)	26
27							27
28							28
29							29
30				PID=0 SPT=50/6		SILTY SAND (SM); Very dense, slightly moist, light brown; fine to coarse sand; few cobbles (broken cobble found in sampler. Blow counts may be overstated.	30
31							31
32							32
33							33
34							34
35				PID=0		SAND (SP); Very dense, slightly moist, gray; fine to medium sand, trace silt. Heave?	35
36				SPT=11, 22, 33			36
37							37
38							38
39							39
40				PID=0.5		**OUTWASH**	40
41				SPT=18, 30, 37		SAND (SP); Very dense, slightly moist, red brown; fine to medium sand, trace silt.	41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0			45
46				SPT=17, 30, 40			46
47							47
48							48
49							49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-29
Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Parking lot east of Morell's and MW-23		*Coordinates* NA	*Exploration Number* **MW-29**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 932
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/11/2019 to 3/12/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.18' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51	3/12/2019		B-29-50.0 VOCs by 8260	SPT=30, 33, 35 PID=0.9		**OUTWASH** SAND (SP); Very dense, slightly moist, red brown; fine to medium sand, trace silt. (continued) Trace fine subangular gravel.	51
52	2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs						52
53							53
54							54
55				PID=0			55
56				SPT=8, 22, 33			56
57							57
58							58
59							59
60	Threaded PVC endcap			PID=0			60
61				SPT=18, 27, 38			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-29
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's entrance, east of MW-2		*Coordinates* NA	*Exploration Number* **MW-30**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 161
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/7/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.15' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt.	0
						CONCRETE; Concrete.	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**TILL**	1
2						SANDY SILT (ML); hard, slightly moist, gray brown; low plasticity, medium high dilatency silt; fine to medium sand; trace fine subround gravel.	2
3							3
4							4
5				PID=0 SPT=8, 50/3			5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45' bgs		B-30-10.5 VOCs by 8260	PID=4 SPT=23, 37, 50/3		SILTY SAND (SM); very dense, slightly moist, gray brown; fine to coarse sand; fine subround gravel.	10
11							11
12							12
13							13
14							14
15				SPT=50/1 PID=N/A			15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=0.2		SAND WITH SILT AND GRAVEL (SW-SM); very dense, slightly moist, gray brown; fine to coarse sand; fine to coarse subround gravel.	20
21				SPT=23, 43, 50/3			21
22							22
23							23
24							24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-30
Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's entrance, east of MW-2		*Coordinates* NA	*Exploration Number* **MW-30**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 161
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/7/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.15' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=35, 50/3 PID=0.5		SANDY SILT (ML); hard, slightly moist, light brown; fine to coarse sand; trace fine to coarse subround gravel.	26
27							27
28							28
29							29
30				PID=0.6 SPT=12, 50/6			30
31							31
32							32
33							33
34							34
35				PID=2.6			35
36			B-30-35.5 VOCs by 8260	SPT=33, 50/5		**OUTWASH** SAND (SP); very dense, slightly moist, red brown; fine to medium sand; trace silt; trace fine to coarse subround gravel.	36
37							37
38							38
39							39
40				PID=0			40
41				SPT=25, 34, 35			41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0			45
46				SPT=11, 30, 36			46
47							47
48							48
49							49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-30
Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's entrance, east of MW-2		*Coordinates* NA	*Exploration Number* **MW-30**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 161
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/7/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.15' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51	▼ 2/7/2019			SPT=16, 25, 31 PID=0		**OUTWASH** SAND (SP); very dense, slightly moist, red brown; fine to medium sand; trace silt; trace fine to coarse subround gravel. (continued)	51
52	2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs						52
53							53
54							54
55				PID=0		Becomes wet.	55
56				SPT=15, 24, 31			56
57							57
58							58
59							59
60	Threaded PVC endcap			PID=0.4			60
61			B-30-60.5 VOCs by 8260	SPT=16, 36, 42			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-30
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, MW corner of Morell's parking area		*Coordinates* NA	*Exploration Number* **MW-31**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 159
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/5/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.36' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt.	0
						CONCRETE; Concrete.	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**Till** GRAVELLY SILT WITH SAND (ML); very dense, wet, brown; low plasticity silt; fine to coarse sand; fine to coarse subround gravel.	1
2							2
3							3
4	2" diameter, schedule 40 PVC, threaded connections, 0'-9.5' bgs						4
5				PID=0 SPT=50/5			5
6	Bentonite chips, 2'-7.5' bgs						6
7							7
8							8
9	12/20 sand filter pack, 7.5'-21.5' bgs						9
10				PID=0.1		SAND WITH SILT (SP-SM); very dense, slightly moist, gray brown; fine to medium sand (trace coarse); trace coarse subround gravel.	10
11				SPT=15, 38, 50/5			11
12							12
13							13
14							14
15	2" diameter 0.020", schedule 40 PVC screen, 9.5'-19.5' bgs		B-31-15.5 VOCs by 8260	PID=0.1 SPT=20, 50/5		Gravel content increases to SAND WITH SILT AND GRAVEL.	15
16							16
17							17
18							18
19							19
20				PID=0.1 SPT=24, 50/6		SANDY SILT WITH GRAVEL (ML); hard, slightly moist, gray brown; low plasticity silt; fine to coarse sand, fine to coarse subround gravel.	20
21							21
22							22
23							23
24							24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-31
Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, MW corner of Morell's parking area		*Coordinates* NA	*Exploration Number* **MW-31**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 159
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/5/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.36' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26	2" diameter, schedule 40 PVC, threaded connections, 19.5'-44.5' bgs			SPT=18, 50/4 PID=0		SANDY SILT WITH GRAVEL (ML); hard, slightly moist, gray brown; low plasticity silt; fine to coarse sand, fine to coarse subround gravel. (continued)	26
27							27
28							28
29							29
30	Bentonite chips, 21.5'-41.5' bgs			PID=0.1 SPT=31, 50/3		SILTY SAND (SM); very dense, slightly moist, brown; fine to medium sand (trace coarse); trace coarse subround gravel.	30
31							31
32							32
33							33
34							34
35				PID=0.3 SPT=37, 50/6			35
36							36
37							37
38							38
39							39
40				PID=1.0		**OUTWASH**	40
41			B-31-40.5 VOCs by 8260	SPT=28, 42, 37		SAND (SP); very dense, moist, brown; fine to medium sand; trace silt; trace fine gravel.	41
42							42
43							43
44							44
45	12/20 sand filter pack, 41.5'-60' bgs			PID=0			45
46				SPT=17, 39, 46			46
47							47
48							48
49							49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-31
Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, MW corner of Morell's parking area		*Coordinates* NA	*Exploration Number* **MW-31**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 159
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 2/5/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.36' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51	▼ 2/5/2019 2" diameter 0.020", schedule 40 PVC screen, 44.5'-59.5' bgs			SPT=11, 39, 49 PID=0.3		**OUTWASH** SAND (SP); very dense, moist, brown; fine to medium sand; trace silt; trace fine gravel. (continued)	51
52							52
53							53
54							54
55				PID=1.5			55
56			B-31-55.5 VOCs by 8260	SPT=22, 31, 50/6			56
57							57
58							58
59	Threaded PVC endcap						59
60				PID=1.3			60
61			B-31-60.5 VOCs by 8260	SPT=20, 33, 50/5			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-31
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Parking Lot east of Morell's and B-30		*Coordinates* NA	*Exploration Number* **MW-32**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 934
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/13/2019 to 3/14/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.09' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt.	0
						CONCRETE; Concrete.	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs						1
2							2
3							3
4							4
5				SPT=50/3			5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45' bgs			SPT=50/4			10
11							11
12							12
13							13
14							14
15			B-32-15.5 VOCs by 8260	PID=1 SPT=24, 50/5		SILTY SAND (SM); Very dense, slightly moist, light brown; fine to medium sand, trace fine subround gravel.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=1 SPT=30, 50/5		SAND WITH SILT (SP-SM); Very dense, slightly moist, light brown; fine to medium sand; trace fine subround gravel.	20
21							21
22							22
23							23
24							24

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-32

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Parking Lot east of Morell's and B-30		*Coordinates* NA	*Exploration Number* **MW-32**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 934
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/13/2019 to 3/14/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.09' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=24, 50/4 PID=5		SANDY SILT (ML); Hard, slightly moist, light gray; low plasticity silt; trace fine sand.	26
27							27
28							28
29							29
30				PID=1.5 SPT=23, 50/6		SILTY SAND (SM); Very dense, moist, light brown; fine to medium sand; trace fine subround gravel.	30
31							31
32							32
33							33
34							34
35				PID=1.5 SPT=15, 50/6		No gravel.	35
36							36
37							37
38							38
39							39
40				PID=0 SPT=17, 28, 30		SAND (SP); Very dense, moist, red brown; fine to medium sand; trace silt.	40
41							41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs						45
46				SPT=44, 30/4			46
47							47
48							48
49							49

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-32

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, Parking Lot east of Morell's and B-30		*Coordinates* NA	*Exploration Number* **MW-32**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 934
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/13/2019 to 3/14/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.09' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51	3/14/2019			SPT=17, 24, 28 PID=0		SAND (SP); Very dense, moist, red brown; fine to medium sand; trace silt. (continued) Becomes wet.	51
52	2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs						52
53							53
54							54
55				PID=0			55
56			B-32-55.5 VOCs by 8260	SPT=21, 33, 40			56
57							57
58							58
59							59
60	Threaded PVC endcap			PID=0			60
61				SPT=34, 50/5			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type: Continuous core 1.125" ID

Water Level: Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-32

Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Copper Door in parking lot		*Coordinates* NA	*Exploration Number* **MW-33**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 933
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/12/2019 to 3/13/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.8' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
0						ASPHALT; Asphalt.	0
						CONCRETE; Concrete	
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					**TILL**	1
2						SANDY SILT (ML); Hard, very moist, gray; low plasticity silt; fine to coarse sand; few fine, subround to subangular gravel.	2
3							3
4							4
5							5
6				PID=2 SPT=18, 27, 50/3			6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-45' bgs		B-33-10.0 VOCs by 8260	SPT=8, 50/6 PID=2		SANDY SILT WITH GRAVEL (ML); Hard, moist, gray; low plasticity silt; fine to coarse sand; fine, subround to subangular gravel.	10
11							11
12							12
13							13
14							14
15				PID=0 SPT=27, 50/6		SILTY SAND WITH GRAVEL (SM); Very dense, slightly moist, light brown; fine to coarse sand; fine to coarse subround gravel.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=1 SPT=40, 50/6			20
21							21
22							22
23							23
24							24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-33

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Copper Door in parking lot		*Coordinates* NA	*Exploration Number* **MW-33**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 933
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/12/2019 to 3/13/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.8' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=26, 50/6 PID=0		SAND WITH SILT (SP-SM); Very dense, moist, light brown; fine to medium sand; few fine to coarse subround gravel.	26
27							27
28							28
29							29
30				PID=0 SPT=50/6		SAND WITH SILT (SW-SM); Very dense, slightly moist, light brown; fine to coarse sand; trace fine subround gravel.	30
31							31
32							32
33							33
34							34
35				PID=0.5		SAND (SP); Very dense, slightly moist, light brown; fine to medium sand; trace silt.	35
36				SPT=28, 30, 36			36
37							37
38							38
39							39
40				PID=0		**OUTWASH**	40
41				SPT=15, 24, 37		Becomes red brown.	41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs						45
46				PID=0 SPT=22, 31, 35			46
47							47
48							48
49							49

Legend

Sample Type
- No Soil Sample Recovery
- Continuous core 1.125" ID

Water Level
- Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-33
Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Copper Door in parking lot		*Coordinates* NA	*Exploration Number* **MW-33**
Contractor Holt	*Equipment* CME - 85	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLR 933
Operator John B	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 3/12/2019 to 3/13/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 51.8' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51				SPT=24, 35, 35 PID=0		SAND (SP); Very dense, slightly moist, light brown; fine to medium sand; trace silt. (continued) Becomes wet.	51
52	▼ 3/13/2019 2" diameter 0.020", schedule 40 PVC screen, 45'-60' bgs						52
53							53
54							54
55				PID=0		Trace fine subround gravel.	55
56			B-33-55.5 VOCs by 8260	SPT=24, 30, 37			56
57							57
58							58
59							59
60	Threaded PVC endcap			PID=0		SAND WITH SILT (SP-SM); Very dense, wet, light brown,; fine sand.	60
61				SPT=9, 24, 38			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-33
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's 5' SW of MW-20		*Coordinates* NA	*Exploration Number* **MW-34**
Contractor Holt	*Equipment* CME-75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BMF673
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 7/8/2019 to 7/9/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 47.7' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					ASPHALT; Asphalt SAND WITH SILT AND GRAVEL (SP-SM); Very dense, slightly moist, brown; fine to medium sand; low plasticity silt; fine to coarse subround gravel.	1
2							2
3							3
4							4
5							5
6				PID=2 SPT=42, 42, 50/3			6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-44' bgs			SPT=50/4 PID=N/A			10
11							11
12							12
13							13
14							14
15				PID=0.8 SPT=37, 50/4		SAND (SP); Very dense, slightly moist, brown; fine to medium sand; trace silt; trace fine subround gravel.	15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs			PID=N/A SPT=50/5			20
21							21
22							22
23							23
24							24

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-34

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's 5' SW of MW-20		*Coordinates* NA	*Exploration Number* **MW-34**
Contractor Holt	*Equipment* CME-75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BMF673
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 7/8/2019 to 7/9/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 47.7' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26				SPT=29, 50/5 PID=1.5		SILTY SAND (SM); Very dense, moist, gray brown; fine to medium sand; low plasticity silt; trace fine to coarse subangular gravel; broken rock in sampler, blow counts may be biased high.	26
27							27
28							28
29							29
30				PID=0.5			30
31				SPT=28, 45, 50/4			31
32							32
33							33
34							34
35				PID=0.5		SAND (SP); Very dense, moist, red brown; fine to medium sand; trace silt.	35
36				SPT=11, 40, 40			36
37							37
38							38
39							39
40				PID=0.5			40
41				SPT=42, 50/5			41
42							42
43							43
44							44
45	12/20 sand filter pack, 42'-61.5' bgs			PID=0			45
46				SPT=33, 35, 43			46
47	▽ 7/9/2019						47
48							48
49							49

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-34

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's 5' SW of MW-20		*Coordinates* NA	*Exploration Number* **MW-34**
Contractor Holt	*Equipment* CME-75	*Sampling Method* Autohammer; lb hammer; " drop	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BMF673
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 7/8/2019 to 7/9/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 47.7' (ATD)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51				SPT=24, 35, 42 PID=0.2		SAND (SP); Very dense, moist, red brown; fine to medium sand; trace silt. (continued) Becomes wet	51
52	2" diameter 0.020", schedule 40 PVC screen, 44'-59' bgs						52
53							53
54							54
55				PID=0.1 SPT=50/5			55
56							56
57							57
58							58
59	Threaded PVC endcap						59
60				PID=0.1		Becomes dense	60
61				SPT=12, 17, 30			61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type
- ◯ No Soil Sample Recovery
- ◧ Continuous core 1.125" ID

Water Level
- ▽ Water Level ATD

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-34
Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's 15' W of MW-20		*Coordinates* NA	*Exploration Number* **MW-35** Ecology Well Tag No. BMF672
Contractor Holt	*Equipment* CME-75	*Sampling Method* No Sampling	*Ground Surface (GS) Elev.* 0' (est)	
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 7/10/2019 to 7/11/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.8' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal, 0'-2' bgs					ASPHALT; Asphalt.	1
2						No logging or sampling	2
3							3
4							4
5							5
6							6
7							7
8							8
9							9
10	2" diameter, schedule 40 PVC, threaded connections, 0'-43' bgs						10
11							11
12							12
13							13
14							14
15							15
16							16
17							17
18							18
19							19
20	Bentonite chips, 2'-42' bgs						20
21							21
22							22
23							23
24							24

Legend

Sample Type

Water Level — Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-35

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's 15' W of MW-20		*Coordinates* NA	*Exploration Number* **MW-35**
Contractor Holt	*Equipment* CME-75	*Sampling Method* No Sampling	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BMF672
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 7/10/2019 to 7/11/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.8' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
26–49	12/20 sand filter pack, 42'-61.5' bgs						26–49

Legend

Sample Type

Water Level — Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-35

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, South of Morell's 15' W of MW-20		*Coordinates* NA	*Exploration Number* **MW-35** Ecology Well Tag No. BMF672
Contractor Holt	*Equipment* CME-75	*Sampling Method* No Sampling	*Ground Surface (GS) Elev.* 0' (est)	
Operator Kyle	*Exploration Method(s)* 8.5" OD X 4.25" ID Hollow-Stem Auger	*Work Start/Completion Dates* 7/10/2019 to 7/11/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* 50.8' (Static)

Depth (feet)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Depth (ft)
51	▼ 7/11/2019						51
52	2" diameter 0.020", schedule 40 PVC screen, 43'-58' bgs						52
53							53
54							54
55							55
56							56
57							57
58							58
59	Threaded PVC endcap						59
60							60
61							61
62						Bottom of exploration at 61.5 ft. bgs.	62
63							63
64							64
65							65
66							66
67							67
68							68
69							69
70							70
71							71
72							72
73							73
74							74

Legend

Sample Type

Water Level ▼ Static Water Level

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log MW-35

Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	VE-1	1 of 1

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum) 273.99 ft
Top of Casing Elev. (site datum)
Depth to Water
Start/Finish Date 10/21/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-2'						Concrete.	1
2							No logging or sampling, strong solvent-like odor in cuttings.	2
3								3
4								4
5	4" diameter, schedule 40 PVC, threaded connections, 0'-25'						Boring drilled 45 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	Hydrated bentonite chips, 2'-22'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23	10/20 sand filter pack, 22'-45'							23
24								24
25							Well screen is completed in glacial till beneath Morrell's Dry Cleaners building, 18 to 32 feet west-northwest of near-surface manifold, and 18 to 32 feet below ground surface	25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35	4" diameter, 0.020-inch, schedule 40 PVC screen, 25'-45'							35
36								36
37								37
38								38
39								39
40								40
41								41
42								42
43								43
44								44
45	Threaded PVC endcap						Bottom of boring is 32 feet below ground surface.	45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	VE-2	1 of 1

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum) 273.81 ft
Top of Casing Elev. (site datum)
Depth to Water
Start/Finish Date 10/21/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-2'						Concrete.	1
2							No logging or sampling, strong solvent-like odor in cuttings.	2
3								3
4								4
5	4" diameter, schedule 40 PVC, threaded connections, 0'-25'						Boring drilled 45 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	Hydrated bentonite chips, 2'-22'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23	10/20 sand filter pack, 22'-45'							23
24								24
25							Well screen is completed in glacial till beneath Morrell's Dry Cleaners building, 18 to 32 feet west-northwest of near-surface manifold, and 18 to 32 feet below ground surface.	25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35	4" diameter, 0.020-inch, schedule 40 PVC screen, 25'-45'							35
36								36
37								37
38								38
39								39
40								40
41								41
42								42
43								43
44								44
45	Threaded PVC endcap						Bottom of boring is 32 feet below ground surface.	45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	VE-3	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum) 273.92 ft
Top of Casing Elev. (site datum)
Depth to Water
Start/Finish Date 10/22/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-2'					Concrete.	Concrete.	1
2							No logging or sampling, strong solvent-like odor in cuttings.	2
3								3
4								4
5	4" diameter, schedule 40 PVC, threaded connections, 0'-44'						Boring drilled 45 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	Hydrated bentonite chips, 2'-41'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38								38
39								39
40								40
41								41
42	10/20 sand filter pack, 41'-64'						Well screen is completed in advance outwash beneath Morrell's Dry Cleaners building, 31 to 45 feet west-northwest of near-surface manifold, and 31 to 45 feet below ground surface.	42
43								43
44								44
45								45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	VE-3	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum) 273.92 ft
Top of Casing Elev. (site datum)
Depth to Water
Start/Finish Date 10/22/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–63	4" diameter, 0.020-inch, schedule 40 PVC screen, 44'-64'							51–63
64	Threaded PVC endcap						Bottom of boring is 45 feet below ground surface.	64
65–99								65–99

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	VE-4	1 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum) 273.53 ft
Top of Casing Elev. (site datum)
Depth to Water
Start/Finish Date 10/18/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
1	Flushmount monument, lockable thermos cap, concrete seal 0'-2'						Concrete.	1
2							No logging or sampling, strong solvent-like odor in cuttings.	2
3								3
4								4
5	4" diameter, schedule 40 PVC, threaded connections, 0'-39'						Boring drilled 40 degrees from vertical, perpendicular to the building.	5
6								6
7								7
8								8
9								9
10	Hydrated bentonite chips, 2'-37'							10
11								11
12								12
13								13
14								14
15								15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
32								32
33								33
34								34
35								35
36								36
37								37
38	10/20 sand filter pack, 37'-59'						Well screen is completed in advance outwash beneath Morrell's Dry Cleaners building, 25 to 38 feet west-northwest of near-surface manifold, and 30 to 45 feet below ground surface.	38
39								39
40								40
41								41
42								42
43								43
44								44
45								45
46								46
47								47
48								48
49								49

Sampler Type:
○ No Recovery

PID - Photoionization Detector
▼ Static Water Level
▽ Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Monitoring Well Construction Log

Aspect CONSULTING

Project Number	Well Number	Sheet
080190	VE-4	2 of 2

Project Name: Walker Chevrolet
Location: Tacoma, WA
Driller/Method: Cascade Drilling / Hollow Stem Auger - Angle
Sampling Method: No samples

Ground Surface Elev. (site datum) 273.53 ft
Top of Casing Elev. (site datum)
Depth to Water
Start/Finish Date 10/18/2013

Depth / Elevation (feet)	Borehole Completion	Sample Type/ID	Tests	PID (ppm)	Blows/ 6"	Material Type	Description	Depth (ft)
51–58	4" diameter, 0.020-inch, schedule 40 PVC screen, 39'-59'							51–58
59	Threaded PVC endcap							59
60							Bottom of boring is 45 feet below ground surface.	60
61–99								61–99

Sampler Type:
No Recovery

PID - Photoionization Detector
Static Water Level
Water Level (ATD)

Logged by: AET
Approved by: ALN
Figure No.

MONITORING WELL STADIUM THRIFTWAY.GPJ July 7, 2016

Morell's Dry Cleaners - 080190

Environmental Exploration Log

Aspect CONSULTING	*Project Address & Site Specific Location*: 608 N 1st Street, Tacoma WA 98403. Off of Morell's northeast corner, south of MW-21		*Coordinates*: NA	*Exploration Number*: **VE-5**
Contractor: Holt	*Equipment*: TerraSonic 150 cc	*Sampling Method*: Rotary core	*Ground Surface (GS) Elev.*: 0' (est)	Ecology Well Tag No. BLI 188
Operator: Ben	*Exploration Method(s)*: Sonic	*Work Start/Completion Dates*: 2/26/2019	*Top of Casing Elev.*: NA	*Depth to Water (Below GS)*: No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
							ASPHALT; Asphalt	
							TILL	
1	1						SILTY SAND WITH GRAVEL (SM); Slightly moist, gray brown; fine to medium and trace course sand; fine subround gravel.	1
2		No Monument, well completed sub surface for future SVE connection, lockable thermos cap						2
3	2							3
4					PID=7			4
5	3	Well installed at 45 degree angle			PID=12			5
6	4				PID=3			6
							SANDY SILT WITH GRAVEL (ML); Slightly moist, light brown; low plasticity silt ; fine to medium sand; fine subround gravel.	
7	5				PID=21			7
8		2" diameter, schedule 40 PVC, threaded connections, 1'-25' bgs			PID=15			8
9	6				PID=7			9
10	7						SILTY SAND WITH GRAVEL (SM); Very moist, gray; fine to medium sand; fine to course subround gravel; singular cobble.	10
11	8							11
12					PID=39			12
13	9				PID=30			13
14	10	Bentonite chips, 1'-22' bgs						14
15					PID=41			15
16	11							16
17	12						SAND WITH SILT AND GRAVEL (SP-SM); Very moist, gray brown; fine to medium sand; fine to course, subround gravel.	17
18					PID=24			18
19	13							19
					PID=14			
20	14						SILTY SAND WITH GRAVEL (SM); Moist, gray; fine to course sand; fine to course subround gravel.	20
21	15							21
22					PID=508			22
23	16			A-5-22.5 VOCs by 8260C	PID=666			23
24		12/20 sand filter pack, 22'-45' bgs						24

Legend

Sample Type: Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-5

Sheet 1 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403. Off of Morell's northeast corner, south of MW-21		*Coordinates* NA	*Exploration Number* **VE-5** Ecology Well Tag No. BLI 188
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/26/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
26	18				PID=100		SILTY SAND WITH GRAVEL (SM); Moist, gray; fine to course sand; fine to course subround gravel. (continued)	26
27	19							27
28	20				PID=109			28
29					PID=18			29
30	21	2" diameter 0.020", schedule 40 PVC screen, 25'-45' bgs					SAND WITH SILT AND GRAVEL (SP-SM); Very moist, light brown; fine to medium SAND; fine to course subround gravel.	30
31	22							31
32	23			A-5-32.0 VOCs by 8260C	PID=126			32
33					PID=24			33
34	24							34
35					PID=13		SILTY SAND (SM); Moist, light brown; fien to course sand; few fine subround gravel.	35
36	25				PID=7			36
37	26							37
38					PID=9			38
39	27							39
40	28				PID=21			40
41	29				PID=10			41
42								42
43	30				PID=16			43
44	31							44
45		Threaded PVC endcap			PID=14		Bottom of exploration at 45 ft. bgs. Note: A-5 was advanced at a 45 degree angle	45
46	32							46
47	33							47
48	34							48
49								49

Legend

Sample Type: ◧ Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-5
Sheet 2 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, south of A-5		*Coordinates* NA	*Exploration Number* **VE-6**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 190
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/27/2019 to 2/28/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
1	1						ASPHALT; Asphalt	1
2	2	No Monument, well completed sub surface for future SVE connection, lockable thermos cap					SILTY SAND (SM); Slightly moist, light brown; fine to course sand; trace fine subround gravel.	2
3								3
4	3				PID=10			4
5		Well installed at 45 degree angle						5
6	4				PID=3			6
7	5				PID=13			7
8		2" diameter, schedule 40 PVC, threaded connections, 1'-45' bgs					SAND WITH SILT (SP-SM); Very moist, light brown; fine to medium sand; fine subround gravel.	8
9	6				PID=19			9
10	7							10
11	8				PID=57			11
12								12
13	9			A-6-13.0 VOCs by 8260C	PID=126			13
14	10							14
15					PID=87		SAND WITH SILT AND GRAVEL (SP-SM); Moist, gray brown; fine to medium sand; fine to course, subround gravel.	15
16	11				PID=15			16
17	12				PID=12			17
18								18
19	13				PID=17			19
20	14							20
21	15				PID=99			21
22								22
23	16				PID=82			23
24							SAND (SP); Very moist, gray; fine to medium sand; trace silt.	24

Legend

Sample Type: Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-6

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, south of A-5		*Coordinates* NA	*Exploration Number* **VE-6**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 190
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/27/2019 to 2/28/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
26	18				PID=86		SILTY SAND WITH GRAVEL (SM); Moist, light brown; fine to medium sand; fine subround gravel.	26
27	19				PID=38			27
28	20				PID=25			28
29	21				PID=22			29
30		Bentonite chips, 1'-42' bgs						30
31	22				PID=25			31
32	23						Silt content dereases; gravel content decreases and is only fine.	32
33								33
34	24				PID=50			34
35	25						Becomes very moist, gravel content increases and is fine to course.	35
36								36
37	26							37
38	27			A-6-36.0 VOCs by 8260C	PID=57 PID=71			38
39					PID=43			39
40	28						SAND WITH SILT (SP-SM); Moist, brown; fine to medium sand; trace fine subround gravel.	40
41	29				PID=33			41
42	30				PID=28			42
43					PID=41			43
44	31							44
45	32	12/20 sand filter pack, 42'-65' bgs					SAND (SP); Moist, brown; fine to medium sand; trace silt.	45
46					PID=10			46
47	33							47
48	34				PID=35			48
49					PID=12		GRAVEL WITH SILT AND SAND (GW-GM); Moist, light brown; fine to course sand; fine to course subround gravel.	49

Legend

Sample Type: ◧ Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-6

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, south of A-5		*Coordinates* NA	*Exploration Number* **VE-6**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 190
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/27/2019 to 2/28/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
51	36	2" diameter 0.020", schedule 40 PVC screen, 45'-65' bgs			PID=8		SAND (SP); Very moist, light brown; fine to medium sand; trace silt.	51
52	37				PID=13		SILT WITH SAND (ML); Moist, light brown;low-plasticity silt, ; fine to medium sand.	52
53								53
54	38				PID=23		SAND (SP); Moist, red brown; fine to medium sand; few fine subround gravel.	54
55	39							55
56	40							56
57				A-6-57.5 VOCs by 8260C	PID=42			57
58	41							58
59	42							59
60					PID=33			60
61	43				PID=37		Gravel deminishes, trace silt.	61
62	44							62
63					PID=27			63
64	45							64
65	46	Threaded PVC endcap			PID=55		Bottom of exploration at 65 ft. bgs. Note: A-6 was advanced at a 45 degree angle	65
66	47							66
67								67
68	48							68
69	49							69
70								70
71	50							71
72	51							72
73								73
74	52							74

Legend

Sample Type: Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-6

Sheet 3 of 3

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, between MW-16 and MW-17		*Coordinates* NA	*Exploration Number* **VE-7**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 191
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/28/2019 to 3/1/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
1	1						ASPHALT; Asphalt	1
							CONCRETE; Concrete	
2		No Monument, well completed sub surface for future SVE connection, lockable thermos cap					**TILL** SILTY GRAVEL WITH SAND (GM); Slightly moist, gray; fine to medium sand; fine to course subround gravel.	2
3	2				PID=4			3
4							SILTY SAND WITH GRAVEL (SM); Slightly moist, light brown; fine to medium sand; fine subround gravel.	4
	3				PID=9			
5		Well installed at 45 degree angle						5
6	4						SANDY SILT WITH GRAVEL (MH); Slightly moist, light brown; low plasticity silt; fine to medium sand; fine subround gravel.	6
					PID=20			
7	5							7
8		2" diameter, schedule 40 PVC, threaded connections, 1'-25' bgs					SILTY SAND WITH GRAVEL (SM); Wet, dark gray; fine to medium sand; fine subround gravel. Strong solvent odor.	8
	6				PID=48			
9					PID=1921			9
10	7						Suspect separate-phase liquid 7'-10' bgs.	10
11								11
	8				PID=762			
12								12
	9				PID=210			
13								13
14	10	Bentonite chips, 1'-22' bgs			PID=256		SILTY SAND (SM); Moist, light brown; fine to course sand; few fine subround gravel. Strong solvent odor.	14
15								15
	11							
16					PID=1641			16
17	12				PID=700		SAND WITH SILT AND GRAVEL (SW-SM); Slightly moist, gray; fine to medium sand; fine to course subround gravel; few cobbles.	17
18					PID=30			18
	13							
19								19
20	14						GRAVEL WITH SILT AND SAND (GP-GM); Wet, gray; fine to course subround gravel, fine to course sand. Strong solvent odor.	20
21	15							21
22				A-7-22.0 VOCs by 8260C	PID=2489		SAND (SP); Slightly moist, gray; fine to medium sand; trace silt. Strong solvent odor. Separate-phase liquid suspected.	22
23	16				PID=30		SILTY SAND (SM); Slightly moist, gray; fine to medium sand; few fine subround gravel.	23
24		12/20 sand filter pack, 22'-45' bgs			PID=30			24

Legend

Sample Type: ◧ Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-7

Sheet 1 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, between MW-16 and MW-17		*Coordinates* NA	*Exploration Number* **VE-7**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 191
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/28/2019 to 3/1/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
26	18				PID=20		SILTY SAND (SM); Slightly moist, gray; fine to medium sand; few fine subround gravel. (continued)	26
27	19							27
28	20				PID=26		SILTY SAND WITH GRAVEL (SM); Slightly moist, gray; fine to medium sand; fine to course subround gravel.	28
29	21				PID=40			29
30	22	2" diameter 0.020", schedule 40 PVC screen, 25'-45' bgs			PID=75		Gravel content decreases, silt content increases.	30
31	23				PID=59			31
32	24							32
33	25							33
34	26			A-7- 37.0 VOCs by 8260C	PID=148		SANDY SILT WITH GRAVEL (ML); Moist, light brown; low palsticity silt, fine to medium sand; fine to course subround gravel.	34
35	27				PID=14			35
36	28							36
37	29				PID=30		SAND WITH SILT AND GRAVEL (SP-SM); Very moist, brown; fine to medium sand; fine to course subround gravel.	37
38	30				PID=8			38
39	31				PID=2			39
40	32	Threaded PVC endcap					Bottom of exploration at 45 ft. bgs. Note: A-7 was advanced at a 45 degree angle	40
41	33							41
42	34							42
43								43
44								44
45								45
46								46
47								47
48								48
49								49

Legend

Sample Type: ◧ Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-7

Sheet 2 of 2

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, South of MW-18		*Coordinates* NA	*Exploration Number* **VE-8** Ecology Well Tag No. BLI 189
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/26/2019 to 2/27/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
0	0						ASPHALT; Asphalt	0
0.5	0.5						CONCRETE; Concrete	0.5
1	1	No Monument, well completed sub surface for future SVE connection, lockable thermos cap			PID=18		SILTY SAND (SM); Moist, light brown; fine to course sand; few fine to course subround gravel.	1
2	2				PID=109			2
3	3				PID=683			3
4	4	Well installed at 45 degree angle						4
6	5				PID=192			6
7	6	2" diameter, schedule 40 PVC, threaded connections, 1'-45' bgs			PID=402		SILTY SAND WITH GRAVEL (SM); Slightly moist, light brown; fine to medium sand; fine to course subround gravel.	7
8	7				PID=965			8
9	8				PID=651			9
10	9				PID=440			10
11	10			A-8-14.0 VOCs by 8260C	PID=893		SAND WITH SILT (SP-SM); Moist, light brown; fine to course sand; few fine to course subround gravel.	11
12	11				PID=1508			12
13	12				PID=414			13
14	13				PID=228		SAND WITH SILT AND GRAVEL (SW-SM); Moist, gray; fine to course sand; fine to course subround gravel, few cobbles.	14
15	14				PID=1277			15
16	15				PID=343		Gravel content increases, no cobbles	16
17	16				PID=25		SAND (SP); Slightly moist, light gray; fine to medium sand; with silt; few fine subround gravel, and few cobbles.	17
18	17				PID=7		SAND WITH SILT AND GRAVEL (SP-SM); Slightly moist, gray; fine to medium sand, fine to course subround gravel.	18

Legend

Sample Type: Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-8

Sheet 1 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, South of MW-18		*Coordinates* NA	*Exploration Number* **VE-8**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 189
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/26/2019 to 2/27/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
26	18				PID=14			26
27	19						Few cobbles.	27
28	20				PID=6		SAND (SP); Moist, gray; fine to medium sand; trace silt; few fine subround gravel.	28
29	21							29
30	22	Bentonite chips, 1'-42' bgs					SILTY SAND (SM); Moist, light brown; fine to medium sand; few fine subround gravel.	30
31	23				PID=16			31
32	24				PID=341			32
33	25							33
34	26			A-8-34.0 VOCs by 8260C	PID=1404			34
35	27						SAND WITH SILT (SP-SM); Moist, light brown; fine to medium sand; trace fine subround gravel.	35
36	28							36
37	29				PID=820			37
38	30						SILTY SAND (SM); Moist, light brown; fine to course sand, fine to course subround gravel.	38
39	31				PID=69			39
40	32							40
41	33							41
42	34				PID=26			42
43	35				PID=36			43
44	36				PID=39			44
45	37	12/20 sand filter pack, 42'-65' bgs					SAND WITH SILT (SP-SM); Slightly moist, light brown; fine to medium sand; few fine subround gravel.	45
46	38						SILTY SAND (SM); Moist, light brown; fine to medium sand.	46
47	39			A-8-47.0 VOCs by 8260C	PID=68			47
48	40				PID=47		SAND WITH SILT (SP-SM); Slightly moist, gray; fine to medium sand; few fine subround gravel.	48
49	41							49

Legend

Sample Type: Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-8

Sheet 2 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

Aspect CONSULTING	Morell's Dry Cleaners - 080190		Environmental Exploration Log	
	Project Address & Site Specific Location 608 N 1st Street, Tacoma WA 98403, East of Morell's, South of MW-18		*Coordinates* NA	*Exploration Number* **VE-8**
Contractor Holt	*Equipment* TerraSonic 150 cc	*Sampling Method* Rotary core	*Ground Surface (GS) Elev.* 0' (est)	Ecology Well Tag No. BLI 189
Operator Ben	*Exploration Method(s)* Sonic	*Work Start/Completion Dates* 2/26/2019 to 2/27/2019	*Top of Casing Elev.* NA	*Depth to Water (Below GS)* No Water Encountered

Dist. Along (feet)	Depth (feet bgs)	Exploration Completion and Notes	Sample Type/ID	Analytical Sample Number & Lab Test(s)	Field Tests	Material Type	Description	Dist. Along (ft)
51	36	2" diameter 0.020", schedule 40 PVC screen, 45'-65' bgs			PID=7		SAND (SP); Very moist, red brown; fine to medium sand, trace silt.	51
52	37				PID=12.5			52
53								53
54	38				PID=14			54
55	39							55
56				A-8-56.0 VOCs by 8260C	PID=19			56
57	40							57
58	41				PID=7			58
59								59
60	42							60
61	43							61
62	44				PID=4.5			62
63					PID=3.5			63
64	45				PID=2			64
65	46	Threaded PVC endcap					Bottom of exploration at 65 ft. bgs. Note: A-8 was advanced at a 45 degree angle	65
66	47							66
67								67
68	48							68
69	49							69
70								70
71	50							71
72	51							72
73	52							73
74								74

Legend

Sample Type: Continuous core 7" ID

Water Level: No Water Encountered

See Exploration Log Key for explanation of symbols

Logged by: BMG
Approved by: DAH

Exploration Log VE-8

Sheet 3 of 3

NEW STANDARD EXPLORATION LOG TEMPLATE \\BISERVER1.ASPECT.LOCAL\PROJECTS\GINTW\PROJECTS\MORELL'S 080190 2019.GPJ July 31, 2019

APPENDIX B

Waste Disposal Documentation

467863

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	WAD988477873	1	(800) 337-7455	TP-020819-GE 01

GENERATOR

5. Generator's Name and Mailing Address: Thriftway Properties LLC, 710 2nd Ave., Ste: 550, Seattle, WA 98104
Generator's Site Address (if different than mailing address): Thriftway Properties LLC, 608 North 1st Street, Tacoma, WA 98403
Generator's Phone: (206) 838-5831 Attn: Dave Heffner

6. Transporter 1 Company Name: DH Environmental, Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management of the Northwest — U.S. EPA ID Number: ORD089452353

8. Designated Facility Name and Site Address: Chemical Waste Management of the Northwest, 17629 Cedar Springs Lane, Arlington, OR 97812 — U.S. EPA ID Number: ORD089452353
Facility's Phone: (541) 454-2643

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Material Not Regulated by DOT (non-Regulated IDW ~~water~~ soil)	17	DM	11,500	P	X004
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
OR328266 – LF01/STA801, non-reg
1. IDW soil

WMM970272

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.
Generator's/Offeror's Printed/Typed Name: On behalf of Thriftway Properties LLC Leonard J. Warnock — Signature: Leonard J. Warnock — Month 05 Day 15 Year 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Leonard J. Warnock — Signature: Leonard J. Warnock — Month 05 Day 23 Year 19
Transporter 2 Printed/Typed Name: G. Pinard/9 — Signature: [illegible] — Month 2 Day 5 Year 19

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Dawn Dingo — Signature: [signature] — Month 2 Day 14 Year 19

169-BLC-O 6 10498 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

467863

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
WAD 988427873	2 OF 2		TP-020419-01

5. Generator's Name and Mailing Address: THRIFTWAY PROPERTIES LLC

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: Union Pacific Rail Road — U.S. EPA ID Number: NED001792910

7. Transporter 2 Company Name: Columbia Ridge land fill — U.S. EPA ID Number: ORD987173457

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1.					
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

WMXH 970272

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
James Ruppert		2	8	19
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year
Jan L Gabbey	Jan L Gabbey	2	12	19

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) | Month | Day | Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name | Signature | Month | Day | Year

4684484

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: WAD027555184
2. Page 1 of: 2
3. Emergency Response Phone: (800)-337-7455
4. Manifest Tracking Number: 020121083 JJK

GENERATOR

5. Generator's Name and Mailing Address
Thriftway Properties LLC
401 2nd Ave S #201
Seattle WA 98104
Att: Alan Noell
Generator's Phone: 208 - 838 - 6592

Generator's Site Address (if different than mailing address)
Thriftway Properties LLC
633 Division Ave
Tacoma WA 98403

6. Transporter 1 Company Name: DH Environmental Inc.
U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management
U.S. EPA ID Number: ORD089452353

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3082, Hazardous waste, liquid, n.o.s. (Trichloroethene, Tetrachloroethane) 9, PGIII	015	DM	4,500	P	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1)(T) OR328943 ERG#171
55
WMXU980684

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Travis Forslund on behalf of Thriftway
Signature:
Month: 3 Day: 4 Year: 19

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Travis Forslund
Signature:
Month: 3 Day: 4 Year: 19

Transporter 2 Printed/Typed Name: Michael Castaneda
Signature:
Month: 3 Day: 4 Year: 19

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Dawn Dunlap
Signature:
Month: 3 Day: 20 Year: 19

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

RM

468484

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: WAD027555184

22. Page 2 of 2

23. Manifest Tracking Number: 020121083JJK

24. Generator's Name: THRIFTWAY PROPERTIES LLC.

25. Transporter 3 Company Name: UPRR — U.S. EPA ID Number: NED007792910

26. Transporter 4 Company Name: COLUMBIA RIDGE LANDFILL — U.S. EPA ID Number: ORD987173457

EMS 3-29-19

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

WMXU980684

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: James Ryppa — Signature — Month 3 Day 7 Year 19

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: Jan L Gabbey — Signature — Month 3 Day 11 Year 19

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

468770

3/31

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number WA D 988477873	2. Page 1 of 1	3. Emergency Response Phone (800)-337-7455	4. Manifest Tracking Number 020121088 JJK

5. Generator's Name and Mailing Address
Thriftway Properties LLC
401 2nd Ave S #201
Seattle WA 98104
Att: Alan Noell
Generator's Phone: 206 838-8592

Generator's Site Address (if different than mailing address)
Thriftway Properties LLC
~~822 Division Ave~~ 608 N 1ST ST
Tacoma WA 98403
608 4-3-19 per Scott St John/CHMW

6. Transporter 1 Company Name
R Transport Inc
U.S. EPA ID Number
WAH000028338

7. Transporter 2 Company Name
Chemical Waste Management
U.S. EPA ID Number
ORD089452353

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812
Facility's Phone: 541 454-2643
U.S. EPA ID Number
ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (Tetrachloroethene, Soil) 9, PGIII	001	CM	10	T	F002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1) OR341087-Bulk ERG#171

WMXY 8753

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: On Behalf of Thriftway Properties Travis Forslund
Signature:
Month 3 Day 7 Year 19

INT'L
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER
17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jason Edmonds
Signature:
Month 3 Day 11 Year 19
Transporter 2 Printed/Typed Name: James Ruppert
Signature:
Month 3 Day 11 Year 19

DESIGNATED FACILITY
18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Dawn Dingo
Signature:
Month 4 Day 11 Year 19

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: WAD 027555184

22. Page: 2

23. Manifest Tracking Number: 020721088 JJK

24. Generator's Name: Thriftway Properties LLC

25. Transporter _____ Company Name: CRL — U.S. EPA ID Number: ORD987173457

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

WM XU 8753

TRANSPORTER

33. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name: Jan L Gabbey — Signature: Jan L Gabbey — Month: 4 — Day: 1 — Year: 19

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

Travis

Chemical Waste Management Of The Northwest

17629 Cedar Springs Lane
Arlington, Oregon 97812
541-454-2643
EPA I.D.# ORD089452353

LOAD NO. _____

MANIFEST DOC. NO. _____

INBOUND
T/D: 15:02:30 2019-04-11
ID: 468770 TRK ID: 8753 L14
70700 lb G

OUTBOUND
T/D: 15:17:47 2019-04-11
ID: 468770 TRK ID: 8753 L14
70700 lb G
48800 lb PT
21900 lb N

NET 10.95 TONS

GENERATOR _____

468677

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number WAD988477873	2. Page 1 of 2	3. Emergency Response Phone (800) 337-7455	4. Manifest Tracking Number 020121003 JJK

5. Generator's Name and Mailing Address: Thriftway Properties LLC, 401 2nd Ave. S #201, Seattle, WA 98104, (206) 780-7729 Attn: Bob Hanford
Generator's Site Address (if different than mailing address): 808 North 1st Street, Tacoma, WA 98403
Generator's Phone:

6. Transporter 1 Company Name: DH Environmental Inc. — U.S. EPA ID Number: MAH000047917
7. Transporter 2 Company Name: Chemical Waste Management of the Northwest — U.S. EPA ID Number: ORD089452353
8. Designated Facility Name and Site Address: Chemical Waste Management of the Northwest, 17629 Cedar Springs Lane, Arlington, OR 97812 — Facility's Phone: — U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3077, Hazardous Waste Solid, n.o.s., 9, PG III (tetrachloroethylene) none Shipped	0	0	0	0	
X	2. NA3082, Hazardous Waste Liquid, n.o.s., 9 PG III (tetrachloroethene, trichloroethene)	11	DM	5000	P	
	3. Material Not Regulated by DOT, (non-regulated IDW soil) none Shipped	0	0	0	0	
	4.					

14. Special Handling Instructions and Additional Information
1. OR32803 --INCL, FOOD IDW WATER: (171)
2. OR32803 --STA115, F002 IDW water, waste LDR's ERG: (171)
3. OR32803 --LF01 non-regulated IDW soil

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Thriftway LLC Leonard J. Warnock — Signature: Leonard J Warnock — Month 03 Day 20 Year 19

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:
Transporter signature (for exports only):

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Leonard J. Warnock — Signature: Leonard J Warnock — Month 03 Day 20 Year 19
Transporter 2 Printed/Typed Name: [illegible] — Signature: [illegible] — Month 3 Day 20 Year 19

18. Discrepancy
18a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson — Signature: [signature] — Month 3 Day 28 Year 19

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

468678

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: WAD988477873
2. Page 1 of: 1
3. Emergency Response Phone: (800) 337-7455
4. Manifest Tracking Number: 017543359 JJK

5. Generator's Name and Mailing Address: Thirty Properties LLC, 401 2nd Ave S #307, Seattle, WA 98104 (206) 750-7709 Bob Hanford
Generator's Site Address (if different than mailing address): 608 North 1st Street, Tacoma, WA 98403

6. Transporter 1 Company Name: PH Environmental Inc.
U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management of the NW
U.S. EPA ID Number: ORD089452353

8. Designated Facility Name and Site Address: Chemical Waste Management of the NW, 17629 Cedar Springs Lane, Arlington, OR 97812
U.S. EPA ID Number: ORD089452353
Facility's Phone: (541) 454-2643

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN3077, Hazardous Waste Solid, N.O.S., 9, PG III (tetrachloroethylene)	001	DM	700	P	F002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information: 1. 02341 347297 - Inc 01, F002 IDW Soil ERG: (171)

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Jacob Briere (on behalf of Thirty properties LLC)
Signature:
Month: 3 Day: 20 Year: 19

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jacob Briere
Signature:
Month: 3 Day: 20 Year: 19

Transporter 2 Printed/Typed Name: Michael Castaneda
Signature:
Month: 3 Day: 21 Year: 19

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H040			

20. Designated Facility Owner or Operator Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Bobby Wilson
Signature:
Month: 3 Day: 28 Year: 19

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

468792

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	WAD988477873	1	(800) 337-7455	TPLLC-032019-01

GENERATOR

5. Generator's Name and Mailing Address: Thriftway Properties LLC, 401 2nd Ave. S #201, Seattle, WA 98104, (206) 788-7728 Attn: Bob Hanford

Generator's Site Address (if different than mailing address): 608 North 1st Street, Tacoma, WA 98403

Generator's Phone:

6. Transporter 1 Company Name: DH Environmental Inc. — U.S. EPA ID Number: WAH000047217

7. Transporter 2 Company Name: Chemical Waste Management of the Northwest — U.S. EPA ID Number: ORD089452353

8. Designated Facility Name and Site Address: Chemical Waste Management of the Northwest, 17629 Cedar Springs Lane, Arlington, OR 97812 — U.S. EPA ID Number: ORD089452353

Facility's Phone: (541) 454-2043

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Material Not Regulated by DOT, (non-regulated IDW soil)	019	DM	11,400	P	X004
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information: [illegible] non-regulated IDW soil

WMX4980614

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Jacob Brine (on behalf of Thriftway properties LLC) — Signature — Month: 3 Day: 20 Year: 19

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:

Transporter Signature (for exports only):

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jacob Brine — Signature — Month: 3 Day: 20 Year: 19

Transporter 2 Printed/Typed Name: TELE EXPRESS — Signature — Month: 3 Day: 20 19

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Dawn Dunlap — Signature — Month: 4 Day: 8 Year: 19

468792

NON-HAZARDOUS WASTE MANIFEST (Continuation Sheet)

19. Generator ID Number: WAD988477873

20. Page 2 of 2

21. Waste Tracking Number: TPLLC-032019-01

22. Generator's Name: THRIFTWAY PROPERTIES LLC.

23. Transporter 3 Company Name: UPRR — U.S. EPA ID Number: NED 001792921

24. Transporter 4 Company Name: COLUMBIA RIDGE LANDFILL — U.S. EPA ID Number: ORD 987173457

	25. Waste Shipping Name and Description	26. Containers No.	26. Containers Type	27. Total Quantity	28. Unit Wt./Vol.	

29. Special Handling Instructions and Additional Information

WMX4 980614

TRANSPORTER

30. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: JR — Signature: [signature] — Month: 3 Day: 26 Year: 19

31. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name: Jan L Gabbey — Signature: Jan L Gabbey — Month: 3 Day: 28 Year: 19

DESIGNATED FACILITY

32. Discrepancy

170-BLC-O 6 10502 (Rev. 8/08)

DESIGNATED FACILITY TO GENERATOR

APPENDIX C

Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 9, 2015

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. Noell:

Included are the results from the testing of material submitted on January 21, 2015 from the Walker Chevrolet 080190, F&BI 501270 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0209R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 21, 2015 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chevrolet 080190, F&BI 501270 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
501270 -01	MW-20-012015
501270 -02	MW-21-012015
501270 -03	MW-8-012015

The samples were sent to Aquatic Research for nitrate, nitrite, and sulfate analyses. Review of the enclosed report indicates that all quality assurance were acceptable.

Samples MW-21-012015 and MW-8-012015 were diluted due to matrix effects (foamy). The reporting limits were raised accordingly.

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-20-012015	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/23/15	Lab ID:	501270-01 x50
Date Analyzed:	01/23/15	Data File:	501270-01 x50.055
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125

Analyte:	Concentration ug/L (ppb)
Iron	50,600

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-21-012015	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/23/15	Lab ID:	501270-02 x100
Date Analyzed:	01/23/15	Data File:	501270-02 x100.052
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	87	60	125

Analyte:	Concentration ug/L (ppb)
Iron	42,200

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-8-012015	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/23/15	Lab ID:	501270-03 x100
Date Analyzed:	01/23/15	Data File:	501270-03 x100.053
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	85	60	125

Analyte:	Concentration ug/L (ppb)
Iron	89,100

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/23/15	Lab ID:	I5-036 mb
Date Analyzed:	01/23/15	Data File:	I5-036 mb.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125

Analyte:	Concentration ug/L (ppb)
Iron	<50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-012015	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/22/15	Lab ID:	501270-01
Date Analyzed:	01/22/15	Data File:	012212.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	85	117
Toluene-d8	97	93	107
4-Bromofluorobenzene	96	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	7.4
Vinyl chloride	1.8	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	51	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	79	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	38	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	5.3	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	25	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-012015 cf	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/22/15	Lab ID:	501270-02 1/5
Date Analyzed:	01/22/15	Data File:	012213.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	98	93	107
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<5
Chloromethane	<50	Tetrachloroethene	15
Vinyl chloride	<1	Dibromochloromethane	<5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<5
Chloroethane	<5	Chlorobenzene	<5
Trichlorofluoromethane	<5	Ethylbenzene	<5
Acetone	200	1,1,1,2-Tetrachloroethane	<5
1,1-Dichloroethene	<5	m,p-Xylene	<10
Methylene chloride	<25	o-Xylene	<5
Methyl t-butyl ether (MTBE)	<5	Styrene	<5
trans-1,2-Dichloroethene	<5	Isopropylbenzene	<5
1,1-Dichloroethane	<5	Bromoform	<5
2,2-Dichloropropane	<5	n-Propylbenzene	<5
cis-1,2-Dichloroethene	270	Bromobenzene	<5
Chloroform	<5	1,3,5-Trimethylbenzene	<5
2-Butanone (MEK)	100	1,1,2,2-Tetrachloroethane	<5
1,2-Dichloroethane (EDC)	<5	1,2,3-Trichloropropane	<5
1,1,1-Trichloroethane	<5	2-Chlorotoluene	<5
1,1-Dichloropropene	<5	4-Chlorotoluene	<5
Carbon tetrachloride	<5	tert-Butylbenzene	<5
Benzene	<1.7	1,2,4-Trimethylbenzene	<5
Trichloroethene	12	sec-Butylbenzene	<5
1,2-Dichloropropane	<5	p-Isopropyltoluene	<5
Bromodichloromethane	<5	1,3-Dichlorobenzene	<5
Dibromomethane	<5	1,4-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,2-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dibromo-3-chloropropane	<50
Toluene	<5	1,2,4-Trichlorobenzene	<5
trans-1,3-Dichloropropene	<5	Hexachlorobutadiene	<5
1,1,2-Trichloroethane	<5	Naphthalene	<5
2-Hexanone	<50	1,2,3-Trichlorobenzene	<5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-012015	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/22/15	Lab ID:	501270-03 1/5
Date Analyzed:	01/22/15	Data File:	012214.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	96	93	107
4-Bromofluorobenzene	102	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<5
Chloromethane	<50	Tetrachloroethene	14
Vinyl chloride	9.4	Dibromochloromethane	<5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<5
Chloroethane	<5	Chlorobenzene	<5
Trichlorofluoromethane	<5	Ethylbenzene	<5
Acetone	71	1,1,1,2-Tetrachloroethane	<5
1,1-Dichloroethene	6.4	m,p-Xylene	<10
Methylene chloride	<25	o-Xylene	<5
Methyl t-butyl ether (MTBE)	<5	Styrene	<5
trans-1,2-Dichloroethene	<5	Isopropylbenzene	<5
1,1-Dichloroethane	<5	Bromoform	<5
2,2-Dichloropropane	<5	n-Propylbenzene	<5
cis-1,2-Dichloroethene	1,400 ve	Bromobenzene	<5
Chloroform	<5	1,3,5-Trimethylbenzene	<5
2-Butanone (MEK)	<50	1,1,2,2-Tetrachloroethane	<5
1,2-Dichloroethane (EDC)	<5	1,2,3-Trichloropropane	<5
1,1,1-Trichloroethane	<5	2-Chlorotoluene	<5
1,1-Dichloropropene	<5	4-Chlorotoluene	<5
Carbon tetrachloride	<5	tert-Butylbenzene	<5
Benzene	<1.7	1,2,4-Trimethylbenzene	<5
Trichloroethene	8.5	sec-Butylbenzene	<5
1,2-Dichloropropane	<5	p-Isopropyltoluene	<5
Bromodichloromethane	<5	1,3-Dichlorobenzene	<5
Dibromomethane	<5	1,4-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,2-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dibromo-3-chloropropane	<50
Toluene	<5	1,2,4-Trichlorobenzene	<5
trans-1,3-Dichloropropene	<5	Hexachlorobutadiene	<5
1,1,2-Trichloroethane	<5	Naphthalene	<5
2-Hexanone	<50	1,2,3-Trichlorobenzene	<5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-012015	Client:	Aspect Consulting, LLC
Date Received:	01/21/15	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/26/15	Lab ID:	501270-03 1/50
Date Analyzed:	01/27/15	Data File:	012716.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	94	93	107
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500	Tetrachloroethene	<50
Vinyl chloride	<10	Dibromochloromethane	<50
Bromomethane	<50	1,2-Dibromoethane (EDB)	<50
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	<50
Acetone	<500	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	<100
Methylene chloride	<250	o-Xylene	<50
Methyl t-butyl ether (MTBE)	<50	Styrene	<50
trans-1,2-Dichloroethene	<50	Isopropylbenzene	<50
1,1-Dichloroethane	<50	Bromoform	<50
2,2-Dichloropropane	<50	n-Propylbenzene	<50
cis-1,2-Dichloroethene	1,200	Bromobenzene	<50
Chloroform	<50	1,3,5-Trimethylbenzene	<50
2-Butanone (MEK)	<500	1,1,2,2-Tetrachloroethane	<50
1,2-Dichloroethane (EDC)	<50	1,2,3-Trichloropropane	<50
1,1,1-Trichloroethane	<50	2-Chlorotoluene	<50
1,1-Dichloropropene	<50	4-Chlorotoluene	<50
Carbon tetrachloride	<50	tert-Butylbenzene	<50
Benzene	<17	1,2,4-Trimethylbenzene	<50
Trichloroethene	<50	sec-Butylbenzene	<50
1,2-Dichloropropane	<50	p-Isopropyltoluene	<50
Bromodichloromethane	<50	1,3-Dichlorobenzene	<50
Dibromomethane	<50	1,4-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dichlorobenzene	<50
cis-1,3-Dichloropropene	<50	1,2-Dibromo-3-chloropropane	<500
Toluene	<50	1,2,4-Trichlorobenzene	<50
trans-1,3-Dichloropropene	<50	Hexachlorobutadiene	<50
1,1,2-Trichloroethane	<50	Naphthalene	<50
2-Hexanone	<500	1,2,3-Trichlorobenzene	<50

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chevrolet 080190, F&BI 501270
Date Extracted:	01/22/15	Lab ID:	05-0109 mb
Date Analyzed:	01/22/15	Data File:	012208.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	101	93	107
4-Bromofluorobenzene	100	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Date of Report: 02/09/15
Date Received: 01/21/15
Project: Walker Chevrolet 080190, F&BI 501270

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 501279-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	138	104	100	50-150	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	93	70-130

Date of Report: 02/09/15
Date Received: 01/21/15
Project: Walker Chevrolet 080190, F&BI 501270

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	113	114	54-149	1
Chloromethane	ug/L (ppb)	50	94	98	67-133	4
Vinyl chloride	ug/L (ppb)	50	98	101	73-132	3
Bromomethane	ug/L (ppb)	50	112	117	69-123	4
Chloroethane	ug/L (ppb)	50	102	105	68-126	3
Trichlorofluoromethane	ug/L (ppb)	50	102	106	70-132	4
Acetone	ug/L (ppb)	250	104	108	44-145	4
1,1-Dichloroethene	ug/L (ppb)	50	97	99	75-119	2
Methylene chloride	ug/L (ppb)	50	98	101	63-132	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	96	99	70-122	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	95	96	76-118	1
1,1-Dichloroethane	ug/L (ppb)	50	97	99	80-116	2
2,2-Dichloropropane	ug/L (ppb)	50	99	104	62-141	5
cis-1,2-Dichloroethene	ug/L (ppb)	50	96	99	81-111	3
Chloroform	ug/L (ppb)	50	96	100	81-109	4
2-Butanone (MEK)	ug/L (ppb)	250	97	97	53-140	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	98	102	79-109	4
1,1,1-Trichloroethane	ug/L (ppb)	50	101	104	80-116	3
1,1-Dichloropropene	ug/L (ppb)	50	98	100	78-112	2
Carbon tetrachloride	ug/L (ppb)	50	105	108	72-128	3
Benzene	ug/L (ppb)	50	93	95	81-108	2
Trichloroethene	ug/L (ppb)	50	95	97	77-108	2
1,2-Dichloropropane	ug/L (ppb)	50	103	105	82-109	2
Bromodichloromethane	ug/L (ppb)	50	107	110	76-120	3
Dibromomethane	ug/L (ppb)	50	98	102	80-110	4
4-Methyl-2-pentanone	ug/L (ppb)	250	107	108	59-142	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	112	115	76-128	3
Toluene	ug/L (ppb)	50	96	98	83-108	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	109	111	76-128	2
1,1,2-Trichloroethane	ug/L (ppb)	50	104	105	82-110	1
2-Hexanone	ug/L (ppb)	250	106	106	53-145	0
1,3-Dichloropropane	ug/L (ppb)	50	101	103	83-110	2
Tetrachloroethene	ug/L (ppb)	50	100	100	78-109	0
Dibromochloromethane	ug/L (ppb)	50	112	114	63-140	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	102	104	85-113	2
Chlorobenzene	ug/L (ppb)	50	96	98	84-108	2
Ethylbenzene	ug/L (ppb)	50	95	98	84-110	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	107	108	76-125	1
m,p-Xylene	ug/L (ppb)	100	99	100	84-112	1
o-Xylene	ug/L (ppb)	50	99	101	82-113	2
Styrene	ug/L (ppb)	50	102	103	84-116	1
Isopropylbenzene	ug/L (ppb)	50	98	100	81-122	2
Bromoform	ug/L (ppb)	50	107	110	40-161	3
n-Propylbenzene	ug/L (ppb)	50	95	95	81-115	0
Bromobenzene	ug/L (ppb)	50	95	96	80-113	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	100	100	83-117	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	103	104	79-118	1
1,2,3-Trichloropropane	ug/L (ppb)	50	96	97	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	95	95	79-112	0
4-Chlorotoluene	ug/L (ppb)	50	97	97	81-113	0
tert-Butylbenzene	ug/L (ppb)	50	101	101	81-119	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	101	83-116	1
sec-Butylbenzene	ug/L (ppb)	50	97	97	83-116	0
p-Isopropyltoluene	ug/L (ppb)	50	100	101	82-119	1
1,3-Dichlorobenzene	ug/L (ppb)	50	93	95	83-111	2
1,4-Dichlorobenzene	ug/L (ppb)	50	97	96	82-109	1
1,2-Dichlorobenzene	ug/L (ppb)	50	91	92	83-111	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	105	107	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	91	94	77-117	3
Hexachlorobutadiene	ug/L (ppb)	50	86	89	74-118	3
Naphthalene	ug/L (ppb)	50	100	103	75-131	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	91	94	82-115	3

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

IEH - AQUATIC RESEARCH

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**FBI013-69**		**PAGE 1**
REPORT DATE:	**02/04/15**		
DATE SAMPLED:	**01/20/15**	**DATE RECEIVED:**	**01/21/15**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 501270

CASE NARRATIVE

Three water samples were received by the laboratory in good condition and analyzed according to the chain of custody. Due to the high turbidity of two of the samples they had to be analyzed at a dilution of 100. No other difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	SULFATE (mg/L)	NO3+NO2 (mg/L)
MW-20-012015	<1.00	0.057
MW-21-012015	<100	4.06
MW-8-012015	<100	15.8

IEH - AQUATIC RESEARCH

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**FBI013-69**		**PAGE 2**
REPORT DATE:	**02/04/15**		
DATE SAMPLED:	**01/20/15**	**DATE RECEIVED:**	**01/21/15**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 501270

QA/QC DATA

QC PARAMETER	SULFATE (mg/L)	NO3+NO2 (mg/L)
METHOD	SM184500SO4E	SM184500N03F
DATE ANALYZED	01/28/15	01/21/15
DETECTION LIMIT	1.00	0.010
DUPLICATE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	16.0	0.112
DUPLICATE	16.2	0.113
RPD	0.90%	1.24%
SPIKE SAMPLE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	16.0	0.112
SPIKED SAMPLE	26.3	0.296
SPIKE ADDED	10.0	0.200
% RECOVERY	103.01%	91.99%
QC CHECK		
FOUND	10.0	0.402
TRUE	10.0	0.408
% RECOVERY	100.00%	98.53%
BLANK	<1.00	<0.010

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski
Project Manager

FB1013-59

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Aa. Research

PROJECT NAME/NO. 501270

PO # D-370

REMARKS

Please Email Results

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	NO_3/NO_2 353.2	SO_4 375.2			Notes
MW-20-012015		1/20/15	1000	water	1							x	x			7.6°C
MW-21-012015		"	1145	"	1							x	x			1
MW-8-012015		"	1250	"	1							x	x			3) 7.6°C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/21/15	430
Received by:		M. HENDRICKS	ARI	1/21/15	424:05
Relinquished by:					
Received by:					

501270

SAMPLE CHAIN OF CUSTODY

ME 01-21-15 - V6/ AI2

Page # 1 of 1

Send Report To Alan Noell
Company Aspect Consulting
Address 401 2nd Ave S, Ste. 201
City, State, ZIP Seattle, WA 98104
Phone # 206-838-6592 Fax # 206-838-5853

SAMPLERS (signature) Emyeart
PROJECT NAME/NO. Walker Chevrolet 080190
PO#
REMARKS e-mail results to anoell@aspectconsulting.com

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	NO2/NO3 BY 353.2	SO4 BY 375.2	TPF BY WTPH-D				Notes
MW-20-012015	01A-F	1/20/15	10:00	water	6				X			X	X	X				
MW-21-012015	02	1/20/15	11:45	water	6				X			X	X	X				
MW-8-012015	03	1/20/15	12:50	water	6				X			X	X	X				
														Sample received at 4 °C				

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Emyeart	Judy Emyeart	Aspect	1/20/15	15:00
Received by:		Nhan Pham	FCB_I	1/20/15	1120
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 9, 2015

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. Noell:

Included are the results from the testing of material submitted on January 22, 2015 from the Walker Chevrolet 080190, F&BI 501293 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0209R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 22, 2015 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chevrolet 080190, F&BI 501293 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
501293 -01	MW-19-012115
501293 -02	MW-16-012115
501293 -03	MW-2-012115

The samples were sent to Aquatic Research for nitrate, nitrite, and sulfate analyses. Review of the enclosed report indicates that all quality assurance were acceptable.

Samples MW-19-012015 and MW-16-012015 were diluted due to matrix effects (foamy). The reporting limits were raised accordingly.

Several 8260C compounds failed below the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-19-012115	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/23/15	Lab ID:	501293-01 x50
Date Analyzed:	01/23/15	Data File:	501293-01 x50.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125

Analyte:	Concentration ug/L (ppb)
Iron	59,400

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-16-012115	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/23/15	Lab ID:	501293-02 x50
Date Analyzed:	01/23/15	Data File:	501293-02 x50.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125

Analyte:	Concentration ug/L (ppb)
Iron	62,500

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-2-012115	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/23/15	Lab ID:	501293-03 x100
Date Analyzed:	01/23/15	Data File:	501293-03 x100.068
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125

Analyte:	Concentration ug/L (ppb)
Iron	294,000

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/23/15	Lab ID:	I5-036 mb
Date Analyzed:	01/23/15	Data File:	I5-036 mb.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125

Analyte:	Concentration ug/L (ppb)
Iron	<50

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-012115	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/26/15	Lab ID:	501293-01 1/5
Date Analyzed:	01/26/15	Data File:	012611.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<5
Chloromethane	<50	Tetrachloroethene	9.7
Vinyl chloride	<1	Dibromochloromethane	<5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<5
Chloroethane	<5	Chlorobenzene	<5
Trichlorofluoromethane	<5	Ethylbenzene	<5
Acetone	130	1,1,1,2-Tetrachloroethane	<5
1,1-Dichloroethene	<5	m,p-Xylene	<10
Methylene chloride	<25	o-Xylene	<5
Methyl t-butyl ether (MTBE)	<5	Styrene	<5
trans-1,2-Dichloroethene	<5	Isopropylbenzene	<5
1,1-Dichloroethane	<5	Bromoform	<5
2,2-Dichloropropane	<5	n-Propylbenzene	<5
cis-1,2-Dichloroethene	45	Bromobenzene	<5
Chloroform	<5	1,3,5-Trimethylbenzene	<5
2-Butanone (MEK)	57	1,1,2,2-Tetrachloroethane	<5
1,2-Dichloroethane (EDC)	<5	1,2,3-Trichloropropane	<5
1,1,1-Trichloroethane	<5	2-Chlorotoluene	<5
1,1-Dichloropropene	<5	4-Chlorotoluene	<5
Carbon tetrachloride	<5	tert-Butylbenzene	<5
Benzene	<1.7	1,2,4-Trimethylbenzene	<5
Trichloroethene	<5	sec-Butylbenzene	<5
1,2-Dichloropropane	<5	p-Isopropyltoluene	<5
Bromodichloromethane	<5	1,3-Dichlorobenzene	<5
Dibromomethane	<5	1,4-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,2-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dibromo-3-chloropropane	<50
Toluene	<5	1,2,4-Trichlorobenzene	<5
trans-1,3-Dichloropropene	<5	Hexachlorobutadiene	<5
1,1,2-Trichloroethane	<5	Naphthalene	<5
2-Hexanone	73	1,2,3-Trichlorobenzene	<5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-16-012115	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/26/15	Lab ID:	501293-02 1/5
Date Analyzed:	01/26/15	Data File:	012612.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<5
Chloromethane	<50	Tetrachloroethene	14
Vinyl chloride	2.2	Dibromochloromethane	<5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<5
Chloroethane	<5	Chlorobenzene	<5
Trichlorofluoromethane	<5	Ethylbenzene	<5
Acetone	210	1,1,1,2-Tetrachloroethane	<5
1,1-Dichloroethene	<5	m,p-Xylene	<10
Methylene chloride	<25	o-Xylene	<5
Methyl t-butyl ether (MTBE)	<5	Styrene	<5
trans-1,2-Dichloroethene	<5	Isopropylbenzene	<5
1,1-Dichloroethane	<5	Bromoform	<5
2,2-Dichloropropane	<5	n-Propylbenzene	<5
cis-1,2-Dichloroethene	180	Bromobenzene	<5
Chloroform	<5	1,3,5-Trimethylbenzene	<5
2-Butanone (MEK)	<50	1,1,2,2-Tetrachloroethane	<5
1,2-Dichloroethane (EDC)	<5	1,2,3-Trichloropropane	<5
1,1,1-Trichloroethane	<5	2-Chlorotoluene	<5
1,1-Dichloropropene	<5	4-Chlorotoluene	<5
Carbon tetrachloride	<5	tert-Butylbenzene	<5
Benzene	<1.7	1,2,4-Trimethylbenzene	<5
Trichloroethene	6.3	sec-Butylbenzene	<5
1,2-Dichloropropane	<5	p-Isopropyltoluene	<5
Bromodichloromethane	<5	1,3-Dichlorobenzene	<5
Dibromomethane	<5	1,4-Dichlorobenzene	<5
4-Methyl-2-pentanone	<50	1,2-Dichlorobenzene	<5
cis-1,3-Dichloropropene	<5	1,2-Dibromo-3-chloropropane	<50
Toluene	<5	1,2,4-Trichlorobenzene	<5
trans-1,3-Dichloropropene	<5	Hexachlorobutadiene	<5
1,1,2-Trichloroethane	<5	Naphthalene	<5
2-Hexanone	<50	1,2,3-Trichlorobenzene	<5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-012115 cf	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/26/15	Lab ID:	501293-03
Date Analyzed:	01/26/15	Data File:	012613.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	19
Vinyl chloride	0.77	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	160 ve	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	27	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	25	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	22	1,2,3-Trichlorobenzene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-012115	Client:	Aspect Consulting, LLC
Date Received:	01/22/15	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/26/15	Lab ID:	501293-03 1/50
Date Analyzed:	01/27/15	Data File:	012710.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<50	1,3-Dichloropropane	<50
Chloromethane	<500	Tetrachloroethene	<50
Vinyl chloride	<10	Dibromochloromethane	<50
Bromomethane	<50	1,2-Dibromoethane (EDB)	<50
Chloroethane	<50	Chlorobenzene	<50
Trichlorofluoromethane	<50	Ethylbenzene	<50
Acetone	<500	1,1,1,2-Tetrachloroethane	<50
1,1-Dichloroethene	<50	m,p-Xylene	<100
Methylene chloride	<250	o-Xylene	<50
Methyl t-butyl ether (MTBE)	<50	Styrene	<50
trans-1,2-Dichloroethene	<50	Isopropylbenzene	<50
1,1-Dichloroethane	<50	Bromoform	<50
2,2-Dichloropropane	<50	n-Propylbenzene	<50
cis-1,2-Dichloroethene	150	Bromobenzene	<50
Chloroform	<50	1,3,5-Trimethylbenzene	<50
2-Butanone (MEK)	<500	1,1,2,2-Tetrachloroethane	<50
1,2-Dichloroethane (EDC)	<50	1,2,3-Trichloropropane	<50
1,1,1-Trichloroethane	<50	2-Chlorotoluene	<50
1,1-Dichloropropene	<50	4-Chlorotoluene	<50
Carbon tetrachloride	<50	tert-Butylbenzene	<50
Benzene	<17	1,2,4-Trimethylbenzene	<50
Trichloroethene	<50	sec-Butylbenzene	<50
1,2-Dichloropropane	<50	p-Isopropyltoluene	<50
Bromodichloromethane	<50	1,3-Dichlorobenzene	<50
Dibromomethane	<50	1,4-Dichlorobenzene	<50
4-Methyl-2-pentanone	<500	1,2-Dichlorobenzene	<50
cis-1,3-Dichloropropene	<50	1,2-Dibromo-3-chloropropane	<500 ca
Toluene	<50	1,2,4-Trichlorobenzene	<50 ca
trans-1,3-Dichloropropene	<50	Hexachlorobutadiene	<50
1,1,2-Trichloroethane	<50	Naphthalene	<50 ca
2-Hexanone	<500	1,2,3-Trichlorobenzene	<50 ca

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chevrolet 080190, F&BI 501293
Date Extracted:	01/26/15	Lab ID:	05-0112 mb
Date Analyzed:	01/26/15	Data File:	012607.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Date of Report: 02/09/15
Date Received: 01/22/15
Project: Walker Chevrolet 080190, F&BI 501293

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 501279-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	138	104	100	50-150	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	93	70-130

Date of Report: 02/09/15
Date Received: 01/22/15
Project: Walker Chevrolet 080190, F&BI 501293

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

Laboratory Code: 501321-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	97	10-172
Chloromethane	ug/L (ppb)	50	<10	87	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	98	36-166
Bromomethane	ug/L (ppb)	50	<1	120	47-169
Chloroethane	ug/L (ppb)	50	<1	105	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	111	44-165
Acetone	ug/L (ppb)	250	<10	98	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	104	60-136
Methylene chloride	ug/L (ppb)	50	<5	103	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	99	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	100	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	98	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	98	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	71-127
Chloroform	ug/L (ppb)	50	<1	100	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	107	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	102	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	107	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	100	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	113	56-152
Benzene	ug/L (ppb)	50	<0.35	94	76-125
Trichloroethene	ug/L (ppb)	50	<1	101	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	98	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	107	61-150
Dibromomethane	ug/L (ppb)	50	<1	104	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	116	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	111	72-132
Toluene	ug/L (ppb)	50	<1	90	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	110	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	99	68-131
2-Hexanone	ug/L (ppb)	250	<10	117	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	98	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	97	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	118	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	104	69-134
Chlorobenzene	ug/L (ppb)	50	<1	97	77-122
Ethylbenzene	ug/L (ppb)	50	<1	94	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	111	73-137
m,p-Xylene	ug/L (ppb)	100	<2	94	69-135
o-Xylene	ug/L (ppb)	50	<1	98	60-140
Styrene	ug/L (ppb)	50	<1	92	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	94	65-142
Bromoform	ug/L (ppb)	50	<1	118	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	95	58-144
Bromobenzene	ug/L (ppb)	50	<1	98	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	96	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	100	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	101	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	95	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	95	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	100	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	96	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	97	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	94	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	93	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	96	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	74	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	67	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	81	60-143
Naphthalene	ug/L (ppb)	50	<1	43 vo	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	43 vo	69-148

Date of Report: 02/09/15
Date Received: 01/22/15
Project: Walker Chevrolet 080190, F&BI 501293

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	103	90	25-158	13
Chloromethane	ug/L (ppb)	50	94	90	45-156	4
Vinyl chloride	ug/L (ppb)	50	100	95	50-154	5
Bromomethane	ug/L (ppb)	50	118	118	55-143	0
Chloroethane	ug/L (ppb)	50	102	104	58-146	2
Trichlorofluoromethane	ug/L (ppb)	250	117	108	50-150	8
Acetone	ug/L (ppb)	250	102	96	53-131	6
1,1-Dichloroethene	ug/L (ppb)	50	103	96	67-136	7
Methylene chloride	ug/L (ppb)	50	99	95	39-148	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	98	95	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	97	93	68-128	4
1,1-Dichloroethane	ug/L (ppb)	50	97	93	79-121	4
2,2-Dichloropropane	ug/L (ppb)	50	93	96	55-143	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	100	96	80-123	4
Chloroform	ug/L (ppb)	50	98	94	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	98	93	57-149	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	95	73-132	5
1,1,1-Trichloroethane	ug/L (ppb)	50	105	100	83-130	5
1,1-Dichloropropene	ug/L (ppb)	50	99	94	77-129	5
Carbon tetrachloride	ug/L (ppb)	50	111	104	75-158	7
Benzene	ug/L (ppb)	50	94	89	69-134	5
Trichloroethene	ug/L (ppb)	50	97	93	80-120	4
1,2-Dichloropropane	ug/L (ppb)	50	97	93	77-123	4
Bromodichloromethane	ug/L (ppb)	50	106	101	81-133	5
Dibromomethane	ug/L (ppb)	50	102	97	82-125	5
4-Methyl-2-pentanone	ug/L (ppb)	250	109	103	65-138	6
cis-1,3-Dichloropropene	ug/L (ppb)	50	110	106	82-132	4
Toluene	ug/L (ppb)	50	91	86	72-122	6
trans-1,3-Dichloropropene	ug/L (ppb)	50	108	103	80-136	5
1,1,2-Trichloroethane	ug/L (ppb)	50	100	94	75-124	6
2-Hexanone	ug/L (ppb)	250	99	96	60-136	3
1,3-Dichloropropane	ug/L (ppb)	50	97	92	76-126	5
Tetrachloroethene	ug/L (ppb)	50	97	89	76-121	9
Dibromochloromethane	ug/L (ppb)	50	118	112	84-133	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	102	96	82-125	6
Chlorobenzene	ug/L (ppb)	50	96	91	83-114	5
Ethylbenzene	ug/L (ppb)	50	95	89	77-124	7
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	110	104	84-127	6
m,p-Xylene	ug/L (ppb)	100	95	90	83-125	5
o-Xylene	ug/L (ppb)	50	98	93	81-121	5
Styrene	ug/L (ppb)	50	93	88	84-119	6
Isopropylbenzene	ug/L (ppb)	50	95	89	85-117	7
Bromoform	ug/L (ppb)	50	118	113	74-136	4
n-Propylbenzene	ug/L (ppb)	50	94	88	74-126	7
Bromobenzene	ug/L (ppb)	50	96	90	80-121	6
1,3,5-Trimethylbenzene	ug/L (ppb)	50	94	88	78-123	7
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	99	93	66-126	6
1,2,3-Trichloropropane	ug/L (ppb)	50	96	91	67-124	5
2-Chlorotoluene	ug/L (ppb)	50	92	87	77-127	6
4-Chlorotoluene	ug/L (ppb)	50	93	87	78-128	7
tert-Butylbenzene	ug/L (ppb)	50	98	91	80-123	7
1,2,4-Trimethylbenzene	ug/L (ppb)	50	94	88	79-122	7
sec-Butylbenzene	ug/L (ppb)	50	96	89	80-125	8
p-Isopropyltoluene	ug/L (ppb)	50	94	87	81-123	8
1,3-Dichlorobenzene	ug/L (ppb)	50	95	90	85-116	5
1,4-Dichlorobenzene	ug/L (ppb)	50	91	85	84-121	7
1,2-Dichlorobenzene	ug/L (ppb)	50	94	89	85-116	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	104	99	57-141	5
1,2,4-Trichlorobenzene	ug/L (ppb)	50	99	91	72-130	8
Hexachlorobutadiene	ug/L (ppb)	50	97	88	53-141	10
Naphthalene	ug/L (ppb)	50	96	91	64-133	5
1,2,3-Trichlorobenzene	ug/L (ppb)	50	96	89	65-136	8

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

IEH - AQUATIC RESEARCH

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**FBI013-76**	**PAGE**	**1**
REPORT DATE:	**02/04/15**		
DATE SAMPLED:	**01/21/15**	**DATE RECEIVED:**	**01/22/15**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 501293

CASE NARRATIVE

Three water samples were received by the laboratory in good condition and analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	SULFATE (mg/L)	NO3+NO2 (mg/L)
MW-19-012115	<1.00	0.048
MW-16-012115	<1.00	0.055
MW-2-012115	1.01	0.134

IEH - AQUATIC RESEARCH

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**FBI013-76**		**PAGE 2**
REPORT DATE:	**02/04/15**		
DATE SAMPLED:	**01/21/15**	**DATE RECEIVED:**	**01/22/15**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM FRIEDMAN & BRUYA, INC. / PROJECT NO. 501293

QA/QC DATA

QC PARAMETER	SULFATE (mg/L)	NO3+NO2 (mg/L)
METHOD	SM184500SO4E	SM184500N03F
DATE ANALYZED	01/29/15	01/23/15
DETECTION LIMIT	1.00	0.010
DUPLICATE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	9.38	0.706
DUPLICATE	9.17	0.714
RPD	2.19%	1.11%
SPIKE SAMPLE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	9.38	0.706
SPIKED SAMPLE	18.7	0.903
SPIKE ADDED	10.0	0.200
% RECOVERY	92.84%	98.68%
QC CHECK		
FOUND	9.75	0.424
TRUE	10.0	0.408
% RECOVERY	97.50%	103.92%
BLANK	<1.00	<0.010

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TO LOW RELATIVE TOO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski
Project Manager

FB1013-76

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Ag. Research

PROJECT NAME/NO. 501293

PO # D-373

REMARKS

Please Email Results

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins and Furans by 8290	EPH	VPH	Nitrate	Sulfate	Alkalinity	NO_3 by 353.2	SO_4 by 375.2			Notes
MW-19-012115		1/21/15	1120	water								X	X			10°C
MW-16-012115		↓	1340	↓								X	X			↓
MW-2-012115		↓	1660	↓								X	X			↓

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	1/22/15	1:14
Received by:		Rachel Martin	ARI	1/22/15	230
Relinquished by:			(3) total		
Received by:					

501293

SAMPLE CHAIN OF CUSTODY

ME 01/22/15

V2/1 AES

Page # 1 of 1

Send Report To Alan Noell
Company Aspect Consulting
Address 401 2nd Ave. S., Ste. 201
City, State, ZIP Seattle, WA 98104
Phone # 206-838-6592 Fax # 206-838-5853

SAMPLERS (signature) Enyeart
PROJECT NAME/NO. Walker Chevrolet 080190
PO#
REMARKS e-mail results to anoell@aspectconsulting.com

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	NO2/NO3 by 353.2	SO4 by 375.2	Fe by 6020				Notes
MW-19-012115	01A-E	1/21/15	11:20	water	6			X	X			X	X	X				
MW-16-012115	02	1/21/15	1340	water	6				X			X	X	X				
MW-2-012115	03	1/21/15	16:00	water	6				X			X	X	X				
																		Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Enyeart	Judy Enyeart	Aspect	1/21/15	11:45
Received by: Nhan Phan	Nhan Phan	FCBT	1/22/15	1300
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

May 7, 2015

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. Noell:

Included are the results from the testing of material submitted on April 30, 2015 from the Walker Chevrolet, PO 080190, F&BI 504572 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0507R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 30, 2015 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chevrolet, PO 080190, F&BI 504572 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
504572 -01	MW-5-042815
504572 -02	MW-8D-042815
504572 -03	MW-13D-042915
504572 -04	MW-12D-042915
504572 -05	MW-14D-042915

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5-042815	Client:	Aspect Consulting, LLC
Date Received:	04/30/15	Project:	Walker Chevrolet, PO 080190
Date Extracted:	05/01/15	Lab ID:	504572-01
Date Analyzed:	05/01/15	Data File:	050108.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	67
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	6.4	Bromobenzene	<1
Chloroform	1.1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	2.1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	6.2	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8D-042815	Client:	Aspect Consulting, LLC
Date Received:	04/30/15	Project:	Walker Chevrolet, PO 080190
Date Extracted:	05/01/15	Lab ID:	504572-02
Date Analyzed:	05/01/15	Data File:	050109.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	54	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	1.7	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13D-042915	Client:	Aspect Consulting, LLC
Date Received:	04/30/15	Project:	Walker Chevrolet, PO 080190
Date Extracted:	05/01/15	Lab ID:	504572-03
Date Analyzed:	05/01/15	Data File:	050110.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	14	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12D-042915	Client:	Aspect Consulting, LLC
Date Received:	04/30/15	Project:	Walker Chevrolet, PO 080190
Date Extracted:	05/01/15	Lab ID:	504572-04
Date Analyzed:	05/01/15	Data File:	050111.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	13	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14D-042915	Client:	Aspect Consulting, LLC
Date Received:	04/30/15	Project:	Walker Chevrolet, PO 080190
Date Extracted:	05/01/15	Lab ID:	504572-05
Date Analyzed:	05/01/15	Data File:	050112.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	2.2
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	2.5	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chevrolet, PO 080190
Date Extracted:	05/01/15	Lab ID:	05-0797 mb
Date Analyzed:	05/01/15	Data File:	050107.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Date of Report: 05/07/15
Date Received: 04/30/15
Project: Walker Chevrolet, PO 080190, F&BI 504572

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

Laboratory Code: 504572-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	94	10-172
Chloromethane	ug/L (ppb)	50	<10	85	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	93	36-166
Bromomethane	ug/L (ppb)	50	<1	87	47-169
Chloroethane	ug/L (ppb)	50	<1	90	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	88	44-165
Acetone	ug/L (ppb)	250	<10	91	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	82	60-136
Methylene chloride	ug/L (ppb)	50	<5	86	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	82	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	87	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	84	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	76	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	2.5	83	71-127
Chloroform	ug/L (ppb)	50	<1	80	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	100	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	81	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	84	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	83	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	97	56-152
Benzene	ug/L (ppb)	50	<0.35	82	76-125
Trichloroethene	ug/L (ppb)	50	<1	85	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	83	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	90	61-150
Dibromomethane	ug/L (ppb)	50	<1	85	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	95	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	92	72-132
Toluene	ug/L (ppb)	50	<1	83	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	96	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	91	68-131
2-Hexanone	ug/L (ppb)	250	<10	95	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	88	71-128
Tetrachloroethene	ug/L (ppb)	50	2.2	85	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	101	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	95	69-134
Chlorobenzene	ug/L (ppb)	50	<1	83	77-122
Ethylbenzene	ug/L (ppb)	50	<1	83	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	94	73-137
m,p-Xylene	ug/L (ppb)	100	<2	85	69-135
o-Xylene	ug/L (ppb)	50	<1	86	60-140
Styrene	ug/L (ppb)	50	<1	85	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	85	65-142
Bromoform	ug/L (ppb)	50	<1	97	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	89	58-144
Bromobenzene	ug/L (ppb)	50	<1	88	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	88	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	93	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	87	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	87	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	89	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	87	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	88	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	87	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	85	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	83	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	86	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	103	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	85	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	87	60-143
Naphthalene	ug/L (ppb)	50	<1	93	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	88	69-148

Date of Report: 05/07/15
Date Received: 04/30/15
Project: Walker Chevrolet, PO 080190, F&BI 504572

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	102	110	25-158	8
Chloromethane	ug/L (ppb)	50	95	100	45-156	5
Vinyl chloride	ug/L (ppb)	50	107	110	50-154	3
Bromomethane	ug/L (ppb)	50	101	101	55-143	0
Chloroethane	ug/L (ppb)	50	102	104	58-146	2
Trichlorofluoromethane	ug/L (ppb)	250	100	101	50-150	1
Acetone	ug/L (ppb)	250	97	105	53-131	8
1,1-Dichloroethene	ug/L (ppb)	50	92	95	67-136	3
Methylene chloride	ug/L (ppb)	50	99	102	39-148	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	96	99	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	100	68-128	2
1,1-Dichloroethane	ug/L (ppb)	50	95	98	79-121	3
2,2-Dichloropropane	ug/L (ppb)	50	92	94	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	93	97	80-123	4
Chloroform	ug/L (ppb)	50	91	94	80-121	3
2-Butanone (MEK)	ug/L (ppb)	250	110	114	57-149	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	91	95	73-132	4
1,1,1-Trichloroethane	ug/L (ppb)	50	97	100	83-130	3
1,1-Dichloropropene	ug/L (ppb)	50	93	96	77-129	3
Carbon tetrachloride	ug/L (ppb)	50	112	114	75-158	2
Benzene	ug/L (ppb)	50	92	95	69-134	3
Trichloroethene	ug/L (ppb)	50	98	99	80-120	1
1,2-Dichloropropane	ug/L (ppb)	50	95	96	77-123	1
Bromodichloromethane	ug/L (ppb)	50	104	107	81-133	3
Dibromomethane	ug/L (ppb)	50	95	97	82-125	2
4-Methyl-2-pentanone	ug/L (ppb)	250	106	109	65-138	3
cis-1,3-Dichloropropene	ug/L (ppb)	50	107	111	82-132	4
Toluene	ug/L (ppb)	50	94	96	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	114	117	80-136	3
1,1,2-Trichloroethane	ug/L (ppb)	50	100	104	75-124	4
2-Hexanone	ug/L (ppb)	250	106	110	60-136	4
1,3-Dichloropropane	ug/L (ppb)	50	98	102	76-126	4
Tetrachloroethene	ug/L (ppb)	50	97	98	76-121	1
Dibromochloromethane	ug/L (ppb)	50	118	121	84-133	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	104	108	82-125	4
Chlorobenzene	ug/L (ppb)	50	92	95	83-114	3
Ethylbenzene	ug/L (ppb)	50	94	96	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	104	109	84-127	5
m,p-Xylene	ug/L (ppb)	100	95	98	83-125	3
o-Xylene	ug/L (ppb)	50	96	99	81-121	3
Styrene	ug/L (ppb)	50	96	99	84-119	3
Isopropylbenzene	ug/L (ppb)	50	96	99	85-117	3
Bromoform	ug/L (ppb)	50	116	121	74-136	4
n-Propylbenzene	ug/L (ppb)	50	100	103	74-126	3
Bromobenzene	ug/L (ppb)	50	98	102	80-121	4
1,3,5-Trimethylbenzene	ug/L (ppb)	50	100	105	78-123	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	103	107	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	50	105	109	67-124	4
2-Chlorotoluene	ug/L (ppb)	50	98	101	77-127	3
4-Chlorotoluene	ug/L (ppb)	50	97	102	78-128	5
tert-Butylbenzene	ug/L (ppb)	50	101	105	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	97	103	79-122	6
sec-Butylbenzene	ug/L (ppb)	50	101	104	80-125	3
p-Isopropyltoluene	ug/L (ppb)	50	98	102	81-123	4
1,3-Dichlorobenzene	ug/L (ppb)	50	96	99	85-116	3
1,4-Dichlorobenzene	ug/L (ppb)	50	93	96	84-121	3
1,2-Dichlorobenzene	ug/L (ppb)	50	95	100	85-116	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	116	122	57-141	5
1,2,4-Trichlorobenzene	ug/L (ppb)	50	96	100	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	102	104	53-141	2
Naphthalene	ug/L (ppb)	50	104	110	64-133	6
1,2,3-Trichlorobenzene	ug/L (ppb)	50	99	103	65-136	4

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

504573

SAMPLE CHAIN OF CUSTODY ME 04/30/15

v2

Page # 1 of 1

Send Report To Alan Noell
Company Aspect Consulting
Address 401 2nd Ave S, Ste. 201
City, State, ZIP Seattle WA 98104
Phone # 206-838-6592 Fax # 206-838-5853

SAMPLERS (signature) Jenyeart
PROJECT NAME/NO. Walker Chevrolet
PO# 080190
REMARKS e-mail results to anoell@aspectconsulting.com

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
MW-5-042815	01	4/28/15	08:35	groundwater	3				X									chlorinated VOCs only
MW-8D-042815	02	4/28/15	11:35	groundwater	3				X									
MW-13D-042915	03	4/29/15	07:40	groundwater	3				X									
MW-12D-042915	04	4/29/15	15:30	groundwater	3				X									
MW-14D-042915	05	4/29/15	16:30	groundwater	3				X									
																		Samples received at 3 °C

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Jenyeart	Judy Enyeart	Aspect	4/30/15	14:00
Received by: Nhan Pham for FB	Nhan Pham	FedEx	4/30	1400
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

August 7, 2015

Judy Enyeart, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Ms. Enyeart:

Included are the results from the testing of material submitted on August 3, 2015 from the Walker Chev, PO 080190, F&BI 508023 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0807R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 3, 2015 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chev, PO 080190, F&BI 508023 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
508023 -01	MW-2-073015
508023 -02	MW-8-073015

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-073015	Client:	Aspect Consulting, LLC
Date Received:	08/03/15	Project:	Walker Chev, PO 080190, F&BI 508023
Date Extracted:	08/04/15	Lab ID:	508023-01
Date Analyzed:	08/04/15	Data File:	080416.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	15
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	1.8
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	590 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	46
Tetrachloroethene	17

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-073015	Client:	Aspect Consulting, LLC
Date Received:	08/03/15	Project:	Walker Chev, PO 080190, F&BI 508023
Date Extracted:	08/03/15	Lab ID:	508023-01 1/10
Date Analyzed:	08/05/15	Data File:	080521.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	15
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	600
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	45
Tetrachloroethene	19

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-073015	Client:	Aspect Consulting, LLC
Date Received:	08/03/15	Project:	Walker Chev, PO 080190, F&BI 508023
Date Extracted:	08/04/15	Lab ID:	508023-02
Date Analyzed:	08/04/15	Data File:	080414.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	8.9
Chloroethane	<1
1,1-Dichloroethene	1.5
Methylene chloride	<5
trans-1,2-Dichloroethene	1.1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	700 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	17
Tetrachloroethene	41

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-073015	Client:	Aspect Consulting, LLC
Date Received:	08/03/15	Project:	Walker Chev, PO 080190, F&BI 508023
Date Extracted:	08/03/15	Lab ID:	508023-02 1/10
Date Analyzed:	08/05/15	Data File:	080522.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	8.6
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	740
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	19
Tetrachloroethene	56

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chev, PO 080190, F&BI 508023
Date Extracted:	08/04/15	Lab ID:	05-1515 mb
Date Analyzed:	08/04/15	Data File:	080409.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 08/07/15
Date Received: 08/03/15
Project: Walker Chev, PO 080190, F&BI 508023

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

Laboratory Code: 508025-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	102	36-166
Chloroethane	ug/L (ppb)	50	<1	129	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	104	60-136
Methylene chloride	ug/L (ppb)	50	<5	104	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	106	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	104	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	4.6	105	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	104	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	117	60-146
Trichloroethene	ug/L (ppb)	50	51	99 b	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	98	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	99	100	50-154	1
Chloroethane	ug/L (ppb)	50	125	124	58-146	1
1,1-Dichloroethene	ug/L (ppb)	50	101	102	67-136	1
Methylene chloride	ug/L (ppb)	50	103	103	39-148	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	104	68-128	2
1,1-Dichloroethane	ug/L (ppb)	50	103	103	79-121	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	103	80-123	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	103	103	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	115	113	83-130	2
Trichloroethene	ug/L (ppb)	50	100	101	80-120	1
Tetrachloroethene	ug/L (ppb)	50	98	97	76-121	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

508023

SAMPLE CHAIN OF CUSTODY

ME 08-03-15

V2

Page # 1 of 1

Send Report To Judy Enyeart

Company Aspect Consulting

Address

City, State, ZIP

Phone # 206.931.7437 Fax #

SAMPLERS (signature) Jenyeart

PROJECT NAME/NO. Walker Chev

PO# 080190

REMARKS jenyeart@aspectconsulting.com

TURNAROUND TIME
- ☑ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☑ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
MW-2-073015	01	7/30/15	15:50	Water	4				X									chlorinated
MW-8-073015	02	7/30/15	17:10	Water	4				X									VOCs only

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Jenyeart	Judy Enyeart	Aspect	7/31/15	16:15
Received by:		FB	8/3/15	15:15
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

September 21, 2015

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. Noell:

Included are the results from the testing of material submitted on September 10, 2015 from the Walker, PO 080190-13, F&BI 509175 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0921R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 10, 2015 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker, PO 080190-13, F&BI 509175 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
509175 -01	MW-8D-090815
509175 -02	MW-2-090815
509175 -03	MW-15-090815
509175 -04	MW-20-090915
509175 -05	MW-5-090915
509175 -06	MW-19-090915
509175 -07	MW-14D-090915
509175 -08	MW-13D-090915
509175 -09	MW-21-090815
509175 -10	MW-12D-091015
509175 -11	MW-8-091015

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8D-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-01
Date Analyzed:	09/11/15	Data File:	091119.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	65
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-02
Date Analyzed:	09/12/15	Data File:	091135.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	17
Chloroethane	<1
1,1-Dichloroethene	1.6
Methylene chloride	<5
trans-1,2-Dichloroethene	2.0
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	600 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	77
Tetrachloroethene	18

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-02 1/10
Date Analyzed:	09/11/15	Data File:	091120.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	17
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	610
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	85
Tetrachloroethene	26

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-03
Date Analyzed:	09/11/15	Data File:	091121.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.0
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	220 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	53
Tetrachloroethene	86

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/15/15	Lab ID:	509175-03 1/10
Date Analyzed:	09/15/15	Data File:	091516.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	3.1
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	220
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	53
Tetrachloroethene	86

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-090915	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-04
Date Analyzed:	09/11/15	Data File:	091122.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.5
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	150
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	5.8
Tetrachloroethene	11

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5-090915	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-05
Date Analyzed:	09/11/15	Data File:	091123.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	3.6
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.6
Tetrachloroethene	31

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-090915	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-06
Date Analyzed:	09/11/15	Data File:	091124.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.5
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	35
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.9
Tetrachloroethene	7.6

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14D-090915	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-07
Date Analyzed:	09/11/15	Data File:	091125.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	15
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.9
Tetrachloroethene	9.2

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13D-090915	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-08
Date Analyzed:	09/11/15	Data File:	091126.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	22
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.2
Tetrachloroethene	4.1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-09
Date Analyzed:	09/12/15	Data File:	091136.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.4
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	1.6
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	460 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	9.2
Tetrachloroethene	7.1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-090815	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-09 1/10
Date Analyzed:	09/11/15	Data File:	091127.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	8.1
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	510
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	10
Tetrachloroethene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12D-091015	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-10
Date Analyzed:	09/11/15	Data File:	091128.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	9.1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-091015	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-11
Date Analyzed:	09/12/15	Data File:	091137.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	12
Chloroethane	<1
1,1-Dichloroethene	4.2
Methylene chloride	<5
trans-1,2-Dichloroethene	1.5
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1,000 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	13
Tetrachloroethene	18

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-091015	Client:	Aspect Consulting, LLC
Date Received:	09/10/15	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	509175-11 1/10
Date Analyzed:	09/11/15	Data File:	091129.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	11
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	1,000
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	13
Tetrachloroethene	15

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker, PO 080190-13, F&BI 509175
Date Extracted:	09/11/15	Lab ID:	05-1848 mb
Date Analyzed:	09/11/15	Data File:	091107.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 09/21/15
Date Received: 09/10/15
Project: Walker, PO 080190-13, F&BI 509175

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

Laboratory Code: 509173-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	101	36-166
Chloroethane	ug/L (ppb)	50	<1	128	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	108	60-136
Methylene chloride	ug/L (ppb)	50	<5	97	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	98	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	97	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	101	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	110	60-146
Trichloroethene	ug/L (ppb)	50	<1	96	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	91	10-226

Date of Report: 09/21/15
Date Received: 09/10/15
Project: Walker, PO 080190-13, F&BI 509175

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	106	110	50-154	4
Chloroethane	ug/L (ppb)	50	130	137	58-146	5
1,1-Dichloroethene	ug/L (ppb)	50	113	116	67-136	3
Methylene chloride	ug/L (ppb)	50	100	106	39-148	6
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	108	68-128	5
1,1-Dichloroethane	ug/L (ppb)	50	101	103	79-121	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	105	107	80-123	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	104	106	73-132	2
1,1,1-Trichloroethane	ug/L (ppb)	50	115	116	83-130	1
Trichloroethene	ug/L (ppb)	50	101	101	80-120	0
Tetrachloroethene	ug/L (ppb)	50	94	96	76-121	2

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

509175

SAMPLE CHAIN OF CUSTODY

ME 09-10-15

V3

Page # 1 of 2

Send Report To Alan Noell

Company Aspect Consulting

Address 401 2nd Ave S, Ste. 201

City, State, ZIP Seattle, WA 98104

Phone # (206) 838-6592 Fax # (206) 838-5853

SAMPLERS (signature) Enyeart

PROJECT NAME/NO. Walker

PO# 08090-13

REMARKS email to: anoell@aspectconsulting.com

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270	HFS							Notes
MW-8D-090815	01A-D	9/8/15	13:40	water	4				X									chlorinated
MW-2-090815	02	9/8/15	14:35	water	4				X									only
MW-15-090815	03	9/8/15	15:35	water	4				X									
MW-20-090915	04	9/9/15	07:35	water	4				X									
MW-5-090915	05	9/9/15	08:30	water	4				X									
MW-19-090915	06	9/9/15	09:15	water	4				X									
MW-14D-090915	07	9/9/15	10:55	water	4				X									
MW-13D-090915	08	9/9/15	12:15	water	4				X									
MW-21-090815	09	9/8/15	16:45	water	4				X									
MW-12D-091015	10	9/10/15	08:25	water	4				X									Samples received at 5 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Enyeart	Judy Enyeart	Aspect	9/10/15	14:00
Received by:	DO VO	FedEx	11	15:30
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

509175

SAMPLE CHAIN OF CUSTODY

ME 09-10-15 V3

Page # 2 of 2

Send Report To Alan Noell
Company Aspect Consulting
Address 401 2nd Ave S., Ste 201
City, State, ZIP Seattle WA 98104
Phone #(206)838-6592 Fax #(206)838-5853

SAMPLERS (signature) JEnyeart
PROJECT NAME/NO. Walker
PO# 080910-13
REMARKS email to: anoell@aspectconsulting.com

TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260C	SVOCs by 8270	HFS							Notes
MW-8-091015	11A91	9/10/15	07:25	water	4				X									chlorinated only
																		Samples received at 5 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	JEnyeart	Judy Enyeart	Aspect	9/10/15	14:00
Received by:		DO	FedEx	"	15:30
Relinquished by:					
Received by:					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 11, 2016

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr. Noell:

Included are the results from the testing of material submitted on February 4, 2016 from the 080190-Walker Task 13, F&BI 602059 project. There are 21 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com, Parker Wittman
ASP0211R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 4, 2016 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC 080190-Walker Task 13, F&BI 602059 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
602059 -01	MW-8-020116
602059 -02	MW-21-020116
602059 -03	MW-15-020116
602059 -04	MW-20-020216
602059 -05	MW-5-020216
602059 -06	MW-19-020216
602059 -07	MW-12D-020216
602059 -08	MW-14D-020216
602059 -09	MW-8D-020216
602059 -10	MW-13D-020216
602059 -11	MW-2-020216

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-020116	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-01
Date Analyzed:	02/04/16	Data File:	020416.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.1
Chloroethane	<1
1,1-Dichloroethene	2.5
Methylene chloride	<5
trans-1,2-Dichloroethene	1.2
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	740 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	13
Tetrachloroethene	21

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-020116	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/09/16	Lab ID:	602059-01 1/10
Date Analyzed:	02/09/16	Data File:	020921.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.4
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	830
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	15
Tetrachloroethene	25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-020116	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-02
Date Analyzed:	02/04/16	Data File:	020430.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	105	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	9.7
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	1.7
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	640 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	17
Tetrachloroethene	18

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-020116	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-02 1/10
Date Analyzed:	02/05/16	Data File:	020515.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.7
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	650
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	15
Tetrachloroethene	17

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-020116	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-03
Date Analyzed:	02/04/16	Data File:	020431.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	108	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.4
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	280 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	25
Tetrachloroethene	43

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-020116	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-03 1/10
Date Analyzed:	02/05/16	Data File:	020516.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	6.6
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	290
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	23
Tetrachloroethene	37

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-04
Date Analyzed:	02/04/16	Data File:	020432.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	108	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.9
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	260 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-04 1/10
Date Analyzed:	02/05/16	Data File:	020517.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<2
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	250
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	<10
Tetrachloroethene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-05
Date Analyzed:	02/05/16	Data File:	020514.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	2.5
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.7
Tetrachloroethene	27

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-06
Date Analyzed:	02/04/16	Data File:	020434.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	107	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.5
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	43
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	5.1
Tetrachloroethene	8.5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12D-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-07
Date Analyzed:	02/04/16	Data File:	020435.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	112	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	9.2
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14D-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-08
Date Analyzed:	02/04/16	Data File:	020436.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	111	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	2.2
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	1.8

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8D-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-09
Date Analyzed:	02/05/16	Data File:	020437.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	111	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	62
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13D-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-10
Date Analyzed:	02/05/16	Data File:	020438.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	108	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	23
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.1
Tetrachloroethene	2.2

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	602059-11
Date Analyzed:	02/05/16	Data File:	020505.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	15
Chloroethane	<1
1,1-Dichloroethene	4.2
Methylene chloride	<5
trans-1,2-Dichloroethene	1.8
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	650 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	190 ve
Tetrachloroethene	22

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-020216	Client:	Aspect Consulting, LLC
Date Received:	02/04/16	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/09/16	Lab ID:	602059-11 1/10
Date Analyzed:	02/09/16	Data File:	020922.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	14
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	640
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	190
Tetrachloroethene	22

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	080190-Walker Task 13, F&BI 602059
Date Extracted:	02/04/16	Lab ID:	06-0205 mb
Date Analyzed:	02/04/16	Data File:	020407.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 02/11/16
Date Received: 02/04/16
Project: 080190-Walker Task 13, F&BI 602059

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

Laboratory Code: 602047-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	93	36-166
Chloroethane	ug/L (ppb)	50	<1	123	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	98	60-136
Methylene chloride	ug/L (ppb)	50	<5	107	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	99	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	101	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	100	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	98	60-146
Trichloroethene	ug/L (ppb)	50	<1	93	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	91	10-226

Date of Report: 02/11/16
Date Received: 02/04/16
Project: 080190-Walker Task 13, F&BI 602059

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	91	91	50-154	0
Chloroethane	ug/L (ppb)	50	120	117	58-146	3
1,1-Dichloroethene	ug/L (ppb)	50	99	99	67-136	0
Methylene chloride	ug/L (ppb)	50	105	103	39-148	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	98	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	101	100	79-121	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	100	80-123	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	101	99	73-132	2
1,1,1-Trichloroethane	ug/L (ppb)	50	100	99	83-130	1
Trichloroethene	ug/L (ppb)	50	95	94	80-120	1
Tetrachloroethene	ug/L (ppb)	50	91	88	76-121	3

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

602059

SAMPLE CHAIN OF CUSTODY ME 02/04/16

Page # 1 of 2

Send Report To Alan Noell

Company Aspect Consulting

Address 401 2nd Ave. S., Ste 201

City, State, ZIP Seattle, WA 98104

Phone # 206.838.6592 Fax # 206 838 5853

SAMPLERS (signature)

PROJECT NAME/NO.: 080190 - Walker

PO#: TASK 13

REMARKS: Email to: Anoell@aspectconsulting.com

TURNAROUND TIME
- ☒ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☒ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Notes
MW-8-020116	01A-D	2/1/16	1130	Water	4				X			Chlorinated VOCs
MW-21-020116	02	↓	1330	Water	4				X			only
MW-15-020116	03	↓	1510	Water	4				X			
MW-20-020216	04	2/2/16	0850	Water	4				X			
MW-5-020216	05	2/2/16	08:55	water	4				X			
MW-19-020216	06	2/2/16	09:40	water	4				X			
MW-12D-020216	07	2/2/16	10:47	water	4				X			
MW-14D-020216	08	2/2/16	1015	Water	4				X			
MW-8D-020216	09	2/2/16	11:47	water	4				X			
MW-13D-020216	10	2/2/16	1135	Water	4				X			

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Judy Enyeart	Aspect	2/4/16	7:45
Received by:		Nhan Phan	FedEx	2/4/16	0825
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

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602059

SAMPLE CHAIN OF CUSTODY

ME 02/04/16

V5

Page # 2 of 2

Send Report To Alan Noell
Company Aspect Consulting
Address 401 2nd Ave S. Ste 201
City, State, ZIP Seattle WA 98104
Phone #206·838·6592 Fax #

SAMPLERS (signature) JEnyeart
PROJECT NAME/NO. 080190-Walker
PO# TASK 13
REMARKS

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
MW-2-020216	11A-D	2/2/16	12:37	water	4				X									chlorinated VOCs only

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: JEnyeart	Judy Enyeart	Aspect	2/4/16	7:45
Received by: Nhan Pham	Nhan Pham	FCBI	2/4/16	0825
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 19, 2016

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr Noell:

Included are the results from the testing of material submitted on September 9, 2016 from the Walker Chev/Morell's 080190, F&BI 609166 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com
ASP0919R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 9, 2016 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chev/Morell's 080190, F&BI 609166 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
609166 -01	MW-20-090716
609166 -02	MW-5-090716
609166 -03	MW-19-090716
609166 -04	MW-14D-090716
609166 -05	MW-12D-090716
609166 -06	MW-13D-090716
609166 -07	MW-15-090916
609166 -08	MW-8D-090916
609166 -09	MW-8-090916

Samples MW-20-090716, MW-19-090716, MW-15-090916, and MW-8-090916 were diluted due to matrix effects (foamy). The reporting limits were raised accordingly.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-090716	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/13/16	Lab ID:	609166-01 1/20
Date Analyzed:	09/14/16	Data File:	091405B.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<4
Chloroethane	<20
1,1-Dichloroethene	<20
Methylene chloride	<100
trans-1,2-Dichloroethene	<20
1,1-Dichloroethane	<20
cis-1,2-Dichloroethene	250
1,2-Dichloroethane (EDC)	<20
1,1,1-Trichloroethane	<20
Trichloroethene	<20
Tetrachloroethene	<20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5-090716	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/12/16	Lab ID:	609166-02
Date Analyzed:	09/12/16	Data File:	091210.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1.4
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.4
Tetrachloroethene	12

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-090716	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/13/16	Lab ID:	609166-03 1/20
Date Analyzed:	09/14/16	Data File:	091407.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<4
Chloroethane	<20
1,1-Dichloroethene	<20
Methylene chloride	<100
trans-1,2-Dichloroethene	<20
1,1-Dichloroethane	<20
cis-1,2-Dichloroethene	<20
1,2-Dichloroethane (EDC)	<20
1,1,1-Trichloroethane	<20
Trichloroethene	<20
Tetrachloroethene	<20

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14D-090716	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/12/16	Lab ID:	609166-04
Date Analyzed:	09/12/16	Data File:	091213.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	3.6
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.1
Tetrachloroethene	3.2

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12D-090716	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/12/16	Lab ID:	609166-05
Date Analyzed:	09/12/16	Data File:	091214.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	3.4
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13D-090716	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/12/16	Lab ID:	609166-06
Date Analyzed:	09/12/16	Data File:	091215.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	13
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.7
Tetrachloroethene	2.3

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-090916	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/13/16	Lab ID:	609166-07 1/5
Date Analyzed:	09/13/16	Data File:	091325.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.0
Chloroethane	<5
1,1-Dichloroethene	<5
Methylene chloride	<25
trans-1,2-Dichloroethene	<5
1,1-Dichloroethane	<5
cis-1,2-Dichloroethene	330
1,2-Dichloroethane (EDC)	<5
1,1,1-Trichloroethane	<5
Trichloroethene	8.4
Tetrachloroethene	15

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8D-090916	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/12/16	Lab ID:	609166-08
Date Analyzed:	09/12/16	Data File:	091217.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	104	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	69
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-090916	Client:	Aspect Consulting, LLC
Date Received:	09/09/16	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/13/16	Lab ID:	609166-09 1/50
Date Analyzed:	09/14/16	Data File:	091408.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<10
Chloroethane	<50
1,1-Dichloroethene	<50
Methylene chloride	<250
trans-1,2-Dichloroethene	<50
1,1-Dichloroethane	<50
cis-1,2-Dichloroethene	560
1,2-Dichloroethane (EDC)	<50
1,1,1-Trichloroethane	<50
Trichloroethene	<50
Tetrachloroethene	<50

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chev/Morell's 080190
Date Extracted:	09/12/16	Lab ID:	06-1846 mb
Date Analyzed:	09/12/16	Data File:	091209.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 09/19/16
Date Received: 09/09/16
Project: Walker Chev/Morell's 080190, F&BI 609166

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

Laboratory Code: 609166-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	101	36-166
Chloroethane	ug/L (ppb)	50	<1	119	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	105	60-136
Methylene chloride	ug/L (ppb)	50	<5	105	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	103	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	1.4	107	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	94	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	103	60-146
Trichloroethene	ug/L (ppb)	50	1.4	99	66-135
Tetrachloroethene	ug/L (ppb)	50	12	116 b	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	100	99	50-154	1
Chloroethane	ug/L (ppb)	50	119	115	58-146	3
1,1-Dichloroethene	ug/L (ppb)	50	107	104	67-136	3
Methylene chloride	ug/L (ppb)	50	103	101	39-148	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	101	68-128	2
1,1-Dichloroethane	ug/L (ppb)	50	102	101	79-121	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	103	101	80-123	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	92	93	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	103	102	83-130	1
Trichloroethene	ug/L (ppb)	50	96	96	80-120	0
Tetrachloroethene	ug/L (ppb)	50	92	93	76-121	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

609166

SAMPLE CHAIN OF CUSTODY MC 9/9/16. V3

Report To [illegible]

Company [illegible]

Address 401 2nd Ave. S., Suite 1

City, State, ZIP Seattle, WA 98104

Phone(206) 838-6591 Email [illegible]

SAMPLERS (signature)

PROJECT NAME [illegible]

REMARKS

PO # [illegible]

INVOICE TO

Page # 1 of 1

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs by 8270D SIM	Notes
MW-20-090716	01 A-D	9/1/16	[illegible]	[illegible]	4					X			[illegible]
MW-5-090716	02		[illegible]							X			
MW-19-090716	03		[illegible]							X			
MW-14D-090716	04 A-C		[illegible]							X			
MW-12D-090716	05 A-D		[illegible]							X			
MW-15D-090716	06		[illegible]							X			
MW-15-090716	07		[illegible]							X			
MW-8D-090916	08		[illegible]							X			
MW-8-090916	09		[illegible]							X			

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [illegible]	E. KNOEDLER	ASRECT	9/9/16	1415
Received by: [illegible]	VINH	FBI	9/9/16	1415
Relinquished by:				
Received by:			4 °C	

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

October 3, 2016

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr Noell:

Included are the results from the testing of material submitted on September 23, 2016 from the Walker Chev Morrell's, PO 080190, F&BI 609415 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com
ASP1003R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 23, 2016 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chev Morrell's, PO 080190, F&BI 609415 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
609415 -01	MW-20-092216
609415 -02	MW-19-092216
609415 -03	MW-8-092216
609415 -04	MW-2-092216
609415 -05	MW-21-092216

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-01
Date Analyzed:	09/28/16	Data File:	092815.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	92	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.8
Chloroethane	<1
1,1-Dichloroethene	1.1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	250 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.7
Tetrachloroethene	4.9

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-01 1/10
Date Analyzed:	09/28/16	Data File:	092814.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.0
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	250
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	<10
Tetrachloroethene	<10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-02
Date Analyzed:	09/27/16	Data File:	092740.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.43
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	16
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	4.1
Tetrachloroethene	8.5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-03
Date Analyzed:	09/27/16	Data File:	092742.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	94	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.4
Chloroethane	<1
1,1-Dichloroethene	2.2
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	510 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	11
Tetrachloroethene	16

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-03 1/10
Date Analyzed:	09/28/16	Data File:	092813.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.0
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	500
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	11
Tetrachloroethene	15

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-04
Date Analyzed:	09/27/16	Data File:	092743.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	94	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.8
Chloroethane	<1
1,1-Dichloroethene	3.8
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	470 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	110
Tetrachloroethene	16

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-04 1/10
Date Analyzed:	09/27/16	Data File:	092738.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.7
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	480
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	110
Tetrachloroethene	17

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-05
Date Analyzed:	09/28/16	Data File:	092744.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	94	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.1
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	320 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	13
Tetrachloroethene	12

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-092216	Client:	Aspect Consulting, LLC
Date Received:	09/23/16	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	609415-05 1/10
Date Analyzed:	09/27/16	Data File:	092739.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	96	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.2
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	320
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	14
Tetrachloroethene	13

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chev Morrell's, PO 080190
Date Extracted:	09/27/16	Lab ID:	06-1974 mb
Date Analyzed:	09/27/16	Data File:	092715.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 10/03/16
Date Received: 09/23/16
Project: Walker Chev Morrell's, PO 080190, F&BI 609415

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

Laboratory Code: 609442-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	0.33	96	36-166
Chloroethane	ug/L (ppb)	50	<1	111	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	97	60-136
Methylene chloride	ug/L (ppb)	50	<5	95	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	94	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	92	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	1.9	94	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	85	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
Trichloroethene	ug/L (ppb)	50	<1	89	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	95	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	100	95	50-154	5
Chloroethane	ug/L (ppb)	50	115	112	58-146	3
1,1-Dichloroethene	ug/L (ppb)	50	103	98	67-136	5
Methylene chloride	ug/L (ppb)	50	98	96	39-148	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	95	68-128	3
1,1-Dichloroethane	ug/L (ppb)	50	96	94	79-121	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	98	97	80-123	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	88	87	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	99	96	83-130	3
Trichloroethene	ug/L (ppb)	50	93	94	80-120	1
Tetrachloroethene	ug/L (ppb)	50	100	98	76-121	2

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

609415

SAMPLE CHAIN OF CUSTODY

ME 09/23/16 V4

Page # 1 of 1

Report To Alan Noell

Company Aspect Consulting

Address 401 2nd Ave. S. Ste 201

City, State, ZIP Seattle, WA 98104

Phone _____ Email ANoell@aspectconsulting.com

SAMPLERS (signature)

PROJECT NAME: Walker Chev / Morrell's

PO #: 080190

REMARKS

INVOICE TO

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-20-092216	01 A-D	9/22/16	0925	Water	4					X							Chlorinated only
MW-19-092216	02		1040		4					X							
MW-8-092216	03		1200		4					X							
MW-2-092216	04		1400		4					X							
MW-21-092216	05		1515		4					X							
												Samples received at	2 °C				

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		E. Knoedler	Aspect	9/23/16	
Received by:		Tom F. Saksham	FEDEX	9/23/16	11:12Am
Relinquished by:		Tom F Saksham	FEDEX	9/23/16	11:43Am
Received by:		VINA	FBI	9/23/16	1143

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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Arina Podnozova, B.S.
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3012 16th Avenue West
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January 12, 2017

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr Noell:

Included are the results from the testing of material submitted on January 5, 2017 from the Morrell's, F&BI 701037 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com
ASP0112R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 5, 2017 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morrell's, F&BI 701037 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
701037 -01	MW-5-010417
701037 -02	MW-20-010417
701037 -03	MW-19-010417
701037 -04	MW-21-010417
701037 -05	MW-15-010417
701037 -06	MW-2-010417
701037 -07	MW-8-010517

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-01
Date Analyzed:	01/05/17	Data File:	010512.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1.3
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.4
Tetrachloroethene	14

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-02
Date Analyzed:	01/05/17	Data File:	010513.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.5
Chloroethane	<1
1,1-Dichloroethene	1.1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	240 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.0
Tetrachloroethene	6.2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-02 1/10
Date Analyzed:	01/06/17	Data File:	010609.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.4
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	240
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	<10
Tetrachloroethene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-03
Date Analyzed:	01/05/17	Data File:	010514.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.97
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	36
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	4.6
Tetrachloroethene	12

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-04
Date Analyzed:	01/05/17	Data File:	010515.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	340 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	14
Tetrachloroethene	15

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-04 1/10
Date Analyzed:	01/06/17	Data File:	010610.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	3.9
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	340
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	16
Tetrachloroethene	17

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-05
Date Analyzed:	01/05/17	Data File:	010516.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	4.9
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	460 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.3
Tetrachloroethene	6.6

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-05 1/10
Date Analyzed:	01/06/17	Data File:	010611.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.0
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	520
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	<10
Tetrachloroethene	<10

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-06
Date Analyzed:	01/05/17	Data File:	010517.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.4
Chloroethane	<1
1,1-Dichloroethene	3.8
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	490 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	80
Tetrachloroethene	18

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-010417	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-06 1/10
Date Analyzed:	01/06/17	Data File:	010612.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.7
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	520
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	90
Tetrachloroethene	21

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-010517	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-07
Date Analyzed:	01/05/17	Data File:	010518.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.6
Chloroethane	<1
1,1-Dichloroethene	1.8
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	440 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	12
Tetrachloroethene	19

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-010517	Client:	Aspect Consulting, LLC
Date Received:	01/05/17	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	701037-07 1/10
Date Analyzed:	01/06/17	Data File:	010613.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.6
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	480
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	12
Tetrachloroethene	21

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's, F&BI 701037
Date Extracted:	01/05/17	Lab ID:	07-031 mb
Date Analyzed:	01/05/17	Data File:	010510.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 01/12/17
Date Received: 01/05/17
Project: Morrell's, F&BI 701037

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

Laboratory Code: 701037-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	101	36-166
Chloroethane	ug/L (ppb)	50	<1	108	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	94	60-136
Methylene chloride	ug/L (ppb)	50	<5	98	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	94	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	1.3	94	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	91	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	99	60-146
Trichloroethene	ug/L (ppb)	50	1.4	94	66-135
Tetrachloroethene	ug/L (ppb)	50	14	91 b	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	91	93	50-154	2
Chloroethane	ug/L (ppb)	50	108	103	58-146	5
1,1-Dichloroethene	ug/L (ppb)	50	99	100	67-136	1
Methylene chloride	ug/L (ppb)	50	110	110	39-148	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	102	68-128	0
1,1-Dichloroethane	ug/L (ppb)	50	101	101	79-121	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	102	80-123	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	103	103	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	105	106	83-130	1
Trichloroethene	ug/L (ppb)	50	100	101	80-120	1
Tetrachloroethene	ug/L (ppb)	50	102	101	76-121	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SAMPLE CHAIN OF CUSTODY

701037 — ME 01-05-17 — VWY

Page # 1 of 1

Report To Alan Noell
Company Aspect Consulting
Address 401 2nd Ave S.
City, State, ZIP Seattle, WA 98104
Phone _____ Email ANoell@aspectconsulting.com

SAMPLERS (signature)

PROJECT NAME: Morell's
PO #:

REMARKS:
INVOICE TO:

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other _____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
MW-5-010417	01 A-D	1/4/17	0800	WATER	4					X							CHLORINATED VOCs ONLY
MW-20-010417	02		0900		4					X							
MW-19-010417	03		1020		4					X							
MW-21-010417	04		1135		4					X							
MW-15-010417	05		1330		4					X							
MW-2-010417	06		1450		4					X							
MW-8-010517	07	1/5/17	0830		4					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	E. Knoodler	Aspect	1/5/17	1450
Received by:			1/5/17	1430
Relinquished by:				
Received by:		Samples received at 3 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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fbi@isomedia.com
www.friedmanandbruya.com

January 18, 2017

Alan Noell, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr Noell:

Included are the results from the testing of material submitted on January 13, 2017 from the Morrell's 080190, F&BI 701134 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com
ASP0118R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 13, 2017 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morrell's 080190, F&BI 701134 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
701134 -01	MW-13D-011217
701134 -02	MW-14D-011217
701134 -03	MW-12D-011217
701134 -04	MW-8D-011217

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13D-011217	Client:	Aspect Consulting, LLC
Date Received:	01/13/17	Project:	Morrell's 080190, F&BI 701134
Date Extracted:	01/13/17	Lab ID:	701134-01
Date Analyzed:	01/13/17	Data File:	011314.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	102	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	16
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.2
Tetrachloroethene	11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14D-011217	Client:	Aspect Consulting, LLC
Date Received:	01/13/17	Project:	Morrell's 080190, F&BI 701134
Date Extracted:	01/13/17	Lab ID:	701134-02
Date Analyzed:	01/13/17	Data File:	011315.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	4.8
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.9
Tetrachloroethene	7.4

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12D-011217	Client:	Aspect Consulting, LLC
Date Received:	01/13/17	Project:	Morrell's 080190, F&BI 701134
Date Extracted:	01/13/17	Lab ID:	701134-03
Date Analyzed:	01/13/17	Data File:	011316.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	100	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	3.0
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8D-011217	Client:	Aspect Consulting, LLC
Date Received:	01/13/17	Project:	Morrell's 080190, F&BI 701134
Date Extracted:	01/13/17	Lab ID:	701134-04
Date Analyzed:	01/13/17	Data File:	011317.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	96	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	77
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's 080190, F&BI 701134
Date Extracted:	01/13/17	Lab ID:	07-072 mb
Date Analyzed:	01/13/17	Data File:	011313.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 01/18/17
Date Received: 01/13/17
Project: Morrell's 080190, F&BI 701134

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

Laboratory Code: 701134-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	105	61-139
Chloroethane	ug/L (ppb)	50	<1	96	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	104	71-123
Methylene chloride	ug/L (ppb)	50	<5	109	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	108	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	101	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	3.0	106	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	100	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	102	75-121
Trichloroethene	ug/L (ppb)	50	<1	101	75-109
Tetrachloroethene	ug/L (ppb)	50	<1	97	72-113

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	107	109	70-119	2
Chloroethane	ug/L (ppb)	50	100	100	66-149	0
1,1-Dichloroethene	ug/L (ppb)	50	105	105	75-119	0
Methylene chloride	ug/L (ppb)	50	108	109	63-132	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	106	107	76-118	1
1,1-Dichloroethane	ug/L (ppb)	50	102	103	80-116	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	107	106	80-112	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	101	100	79-109	1
1,1,1-Trichloroethane	ug/L (ppb)	50	104	105	80-116	1
Trichloroethene	ug/L (ppb)	50	103	102	77-108	1
Tetrachloroethene	ug/L (ppb)	50	99	97	78-109	2

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

701134

SAMPLE CHAIN OF CUSTODY

ME 01-13-17

Page # 1 of 1

Report To ALAN NOEL

Company ASPECT CONSULTING

Address 401 2ND AVE. S STE 201

City, State, ZIP SEATTLE, WA 98104

Phone _____ Email ANOEL@ASPECTCONSULTING.com

SAMPLERS (signature)

PROJECT NAME: MORELL'S 080190

PO #

REMARKS: -THANKS-

INVOICE TO

TURNAROUND TIME
- [X] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-13D-011217	01 A-D	1/12/17	1135	WATER	4					X							CHLORINATED VOCs ONLY
MW-14D-011217	02		1340		4					X							
MW-12D-011217	03		1450		4					X							
MW-8D-011217	04		1555		4					X							

Samples received at 3 °C

Samples received at °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	E. KNOEDLER	ASPECT	1/13/17	
Received by:	Rick Wygant	Fedex	1-13-17	10:14
Relinquished by:				
Received by:	Nhan Phan	FEDEX	1/13/17	10:53

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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fbi@isomedia.com
www.friedmanandbruya.com

December 10, 2018

Delia Massey, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Ms Massey:

Included are the results from the testing of material submitted on November 29, 2018 from the Morrell's Dry Cleaners Walker Chevrolet 080190, F&BI 811461 project. There are 18 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Dave Heffner
ASP1210R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 29, 2018 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morrell's Dry Cleaners Walker Chevrolet 080190, F&BI 811461 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
811461 -01	MW-5-112818
811461 -02	MW-19-112818
811461 -03	MW-20-112818
811461 -04	MW-8-112818
811461 -05	MW-21-112818
811461 -06	MW-15-112818
811461 -07	MW-2-112818
811461 -08	MW-16-112818
811461 -09	MW-17-112818

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-01
Date Analyzed:	11/30/18	Data File:	113012.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	13
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	1.3	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.4	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-02
Date Analyzed:	11/30/18	Data File:	113013.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	2.5
Vinyl chloride	0.56	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	53	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.6	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	19		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-03
Date Analyzed:	11/30/18	Data File:	113039.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	4.9
Vinyl chloride	0.84	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	59	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	34	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	32		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-04
Date Analyzed:	11/30/18	Data File:	113014.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	14
Vinyl chloride	3.7	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	170	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	260 ve	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	130	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	5.2	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	56		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-04 1/10
Date Analyzed:	12/03/18	Data File:	120311.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	12
Vinyl chloride	3.7	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<10	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	<10
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	280	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	120	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-05
Date Analyzed:	11/30/18	Data File:	113015.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	14
Vinyl chloride	2.3	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	210 ve	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	27	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	7.6	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	27		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-21-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-05 1/10
Date Analyzed:	12/03/18	Data File:	120312.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	13
Vinyl chloride	2.1	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<10	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	<10
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	190	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-06
Date Analyzed:	11/30/18	Data File:	113016.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

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

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	3.3
Vinyl chloride	0.78	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	65	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.6	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-07
Date Analyzed:	11/30/18	Data File:	113017.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	28
Vinyl chloride	5.9	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	3.8	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	510 ve	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	14	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	120		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-07 1/10
Date Analyzed:	12/03/18	Data File:	120314.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	23
Vinyl chloride	5.5	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<10	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	<10
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	490	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	14	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	120		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-16-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-08
Date Analyzed:	11/30/18	Data File:	113018.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	11
Vinyl chloride	2.6	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	230 ve	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.8	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-16-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-08 1/10
Date Analyzed:	12/03/18	Data File:	120313.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	13
Vinyl chloride	2.8	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<10	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	<10
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	230	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-17-112818	Client:	Aspect Consulting, LLC
Date Received:	11/29/18	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	811461-09
Date Analyzed:	11/30/18	Data File:	113019.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	9.7
Vinyl chloride	0.72	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	83	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	31	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	31		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's Dry Cleaners
Date Extracted:	11/30/18	Lab ID:	08-2680 mb
Date Analyzed:	11/30/18	Data File:	113009.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 12/10/18
Date Received: 11/29/18
Project: Morrell's Dry Cleaners Walker Chevrolet 080190, F&BI 811461

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

Laboratory Code: 811461-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	112	55-137
Chloromethane	ug/L (ppb)	50	<10	97	61-120
Vinyl chloride	ug/L (ppb)	50	<0.2	96	61-139
Bromomethane	ug/L (ppb)	50	<1	98	20-265
Chloroethane	ug/L (ppb)	50	<1	104	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	99	71-128
Acetone	ug/L (ppb)	250	<50	79	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	96	71-123
Hexane	ug/L (ppb)	50	<1	90	44-139
Methylene chloride	ug/L (ppb)	50	<5	85	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	96	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	93	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	84	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	89	63-126
Chloroform	ug/L (ppb)	50	1.3	91	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	85	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	95	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	91	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	97	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	90	70-132
Benzene	ug/L (ppb)	50	<0.35	91	75-114
Trichloroethene	ug/L (ppb)	50	1.4	92	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	97	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	93	78-117
Dibromomethane	ug/L (ppb)	50	<1	90	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	103	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	93	76-120
Toluene	ug/L (ppb)	50	<1	89	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	91	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	89	81-116
2-Hexanone	ug/L (ppb)	250	<10	96	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	94	80-113
Tetrachloroethene	ug/L (ppb)	50	13	87 b	72-113
Dibromochloromethane	ug/L (ppb)	50	<1	92	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	95	79-120
Chlorobenzene	ug/L (ppb)	50	<1	89	75-115
Ethylbenzene	ug/L (ppb)	50	<1	93	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	88	76-130
m,p-Xylene	ug/L (ppb)	100	<2	94	63-128
o-Xylene	ug/L (ppb)	50	<1	100	64-129
Styrene	ug/L (ppb)	50	<1	98	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	99	74-122
Bromoform	ug/L (ppb)	50	<1	91	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	94	65-129
Bromobenzene	ug/L (ppb)	50	<1	92	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	98	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	93	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	91	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	94	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	92	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	99	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	97	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	96	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	98	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	91	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	85	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	90	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	93	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	97	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	90	53-136
Naphthalene	ug/L (ppb)	50	<1	95	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	89	59-130

Date of Report: 12/10/18
Date Received: 11/29/18
Project: Morrell's Dry Cleaners Walker Chevrolet 080190, F&BI 811461

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	116	121	50-157	4
Chloromethane	ug/L (ppb)	50	97	101	62-130	4
Vinyl chloride	ug/L (ppb)	50	94	101	70-128	7
Bromomethane	ug/L (ppb)	50	95	100	62-188	5
Chloroethane	ug/L (ppb)	50	101	106	66-149	5
Trichlorofluoromethane	ug/L (ppb)	50	97	101	70-132	4
Acetone	ug/L (ppb)	250	86	89	44-145	3
1,1-Dichloroethene	ug/L (ppb)	50	97	101	75-119	4
Hexane	ug/L (ppb)	50	93	97	51-153	4
Methylene chloride	ug/L (ppb)	50	88	90	63-132	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	99	104	70-122	5
trans-1,2-Dichloroethene	ug/L (ppb)	50	96	100	76-118	4
1,1-Dichloroethane	ug/L (ppb)	50	94	98	77-119	4
2,2-Dichloropropane	ug/L (ppb)	50	83	84	62-141	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	91	95	76-119	4
Chloroform	ug/L (ppb)	50	92	96	78-117	4
2-Butanone (MEK)	ug/L (ppb)	250	93	97	49-147	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	98	103	78-114	5
1,1,1-Trichloroethane	ug/L (ppb)	50	91	95	80-116	4
1,1-Dichloropropene	ug/L (ppb)	50	98	102	78-119	4
Carbon tetrachloride	ug/L (ppb)	50	91	95	72-128	4
Benzene	ug/L (ppb)	50	92	96	75-116	4
Trichloroethene	ug/L (ppb)	50	94	98	72-119	4
1,2-Dichloropropane	ug/L (ppb)	50	101	107	79-121	6
Bromodichloromethane	ug/L (ppb)	50	95	100	76-120	5
Dibromomethane	ug/L (ppb)	50	92	97	79-121	5
4-Methyl-2-pentanone	ug/L (ppb)	250	108	114	54-153	5
cis-1,3-Dichloropropene	ug/L (ppb)	50	97	102	76-128	5
Toluene	ug/L (ppb)	50	92	96	79-115	4
trans-1,3-Dichloropropene	ug/L (ppb)	50	95	99	76-128	4
1,1,2-Trichloroethane	ug/L (ppb)	50	92	98	78-120	6
2-Hexanone	ug/L (ppb)	250	102	109	49-147	7
1,3-Dichloropropane	ug/L (ppb)	50	98	103	81-115	5
Tetrachloroethene	ug/L (ppb)	50	92	95	78-109	3
Dibromochloromethane	ug/L (ppb)	50	95	99	63-140	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	97	104	82-118	7
Chlorobenzene	ug/L (ppb)	50	92	96	80-113	4
Ethylbenzene	ug/L (ppb)	50	95	100	83-111	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	90	95	76-125	5
m,p-Xylene	ug/L (ppb)	100	95	101	84-112	6
o-Xylene	ug/L (ppb)	50	102	107	81-117	5
Styrene	ug/L (ppb)	50	101	106	83-121	5
Isopropylbenzene	ug/L (ppb)	50	99	105	81-122	6
Bromoform	ug/L (ppb)	50	92	97	40-161	5
n-Propylbenzene	ug/L (ppb)	50	98	103	81-115	5
Bromobenzene	ug/L (ppb)	50	96	101	80-113	5
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	107	83-117	6
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	96	103	79-118	7
1,2,3-Trichloropropane	ug/L (ppb)	50	95	101	74-116	6
2-Chlorotoluene	ug/L (ppb)	50	98	103	79-112	5
4-Chlorotoluene	ug/L (ppb)	50	96	100	80-116	4
tert-Butylbenzene	ug/L (ppb)	50	102	109	81-119	7
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	105	81-121	5
sec-Butylbenzene	ug/L (ppb)	50	98	105	83-123	7
p-Isopropyltoluene	ug/L (ppb)	50	100	106	81-122	6
1,3-Dichlorobenzene	ug/L (ppb)	50	94	99	80-115	5
1,4-Dichlorobenzene	ug/L (ppb)	50	88	92	77-112	4
1,2-Dichlorobenzene	ug/L (ppb)	50	92	97	79-115	5
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	96	103	62-133	7
1,2,4-Trichlorobenzene	ug/L (ppb)	50	99	105	75-119	6
Hexachlorobutadiene	ug/L (ppb)	50	92	99	70-116	7
Naphthalene	ug/L (ppb)	50	98	104	72-131	6
1,2,3-Trichlorobenzene	ug/L (ppb)	50	91	98	74-122	7

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

811461

SAMPLE CHAIN OF CUSTODY

ME 11-29-18 Page 1 of 1 UW4

Report To Delia Massey / Dave Heffner
Company Aspect Consulting
Address 710 2nd Ave, Ste 550
City, State, ZIP Seattle, WA, 98104
Phone 206-812-4744 Email dmassey@aspectconsulting.com

SAMPLERS (signature)
PROJECT NAME: Morrell's Dry Cleaners / Walker Chevrolet
PO #: 080140
REMARKS
INVOICE TO: Accts Payable

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- ~~Rush charges authorized by:~~

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-5-112818	01 A-C	11/28/18	0835	W	3					X							
MW-19-112818	02		0935														
MW-20-112818	03		1025														
MW-8-112818	04		1045														
MW-21-112818	05		1145														
MW-15-112818	06		1315														
MW-2-112818	07		1445														
MW-16-112818	08		1450														
MW-17-112818	09		1545														

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Kristin Beek	Aspect	11/29/18	
Received by:	Dalton Blair	Fedex	11.29.18	1 PM
Relinquished by:	Liz Webber-Bruya	F?B1	11/29/18	1530
Received by:		Samples received at	3	°C

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
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3012 16th Avenue West
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www.friedmanandbruya.com

February 1, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on January 29, 2019 from the Morell's Walker Chevy 080190, F&BI 901382 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0201R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 29, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's Walker Chevy 080190, F&BI 901382 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
901382 -01	B-25-5.5
901382 -02	B-25-10.5
901382 -03	B-25-15.5
901382 -04	B-25-20.5
901382 -05	B-25-25.5
901382 -06	B-25-30.5
901382 -07	B-25-35.5
901382 -08	B-25-40.5
901382 -09	B-25-45.5
901382 -10	B-25-50.5
901382 -11	B-25-55.5
901382 -12	B-25-60.6

The 8260C dichlorodifluoromethane failed below the acceptance criteria in the matrix spike samples. In addition, hexane failed the relative percent difference. The laboratory control sample met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-25-5.5	Client:	Aspect Consulting, LLC
Date Received:	01/29/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	01/29/19	Lab ID:	901382-01
Date Analyzed:	01/29/19	Data File:	012932.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-25-30.5	Client:	Aspect Consulting, LLC
Date Received:	01/29/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	01/29/19	Lab ID:	901382-06
Date Analyzed:	01/29/19	Data File:	012933.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-25-50.5	Client:	Aspect Consulting, LLC
Date Received:	01/29/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	01/29/19	Lab ID:	901382-10
Date Analyzed:	01/29/19	Data File:	012934.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's Walker Chevy 080190
Date Extracted:	01/29/19	Lab ID:	09-0192 mb
Date Analyzed:	01/29/19	Data File:	012909.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	90	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/01/19
Date Received: 01/29/19
Project: Morell's Walker Chevy 080190, F&BI 901382

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

Laboratory Code: 901386-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	6 vo	7 vo	10-142	15
Chloromethane	mg/kg (ppm)	2.5	<0.5	28	30	10-126	7
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	26	28	10-138	7
Bromomethane	mg/kg (ppm)	2.5	<0.5	43	48	10-163	11
Chloroethane	mg/kg (ppm)	2.5	<0.5	36	40	10-176	11
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	24	29	10-176	19
Acetone	mg/kg (ppm)	12.5	0.46	69	70	10-163	1
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	35	40	10-160	13
Hexane	mg/kg (ppm)	2.5	<0.25	10	13	10-137	26 vo
Methylene chloride	mg/kg (ppm)	2.5	<0.5	52	55	10-156	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	60	64	21-145	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	43	47	14-137	9
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	50	55	19-140	10
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	45	51	10-158	12
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	52	57	25-135	9
Chloroform	mg/kg (ppm)	2.5	<0.05	54	58	21-145	7
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	66	70	19-147	6
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	55	59	12-160	7
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	46	52	10-156	12
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	42	49	17-140	15
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	43	49	9-164	13
Benzene	mg/kg (ppm)	2.5	<0.03	50	55	29-129	10
Trichloroethene	mg/kg (ppm)	2.5	<0.02	48	54	21-139	12
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	56	63	30-135	12
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	56	62	23-155	10
Dibromomethane	mg/kg (ppm)	2.5	<0.05	57	62	23-145	8
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	67	72	24-155	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	59	65	28-144	10
Toluene	mg/kg (ppm)	2.5	<0.05	48	55	35-130	14
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	54	60	26-149	11
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	57	63	10-205	10
2-Hexanone	mg/kg (ppm)	12.5	<0.5	61	67	15-166	9
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	57	61	31-137	7
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	43	50	20-133	15
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	57	65	28-150	13
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	55	62	28-142	12
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	51	57	32-129	11
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	48	55	32-137	14
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	56	62	31-143	10
m,p-Xylene	mg/kg (ppm)	5	<0.1	49	57	34-136	15
o-Xylene	mg/kg (ppm)	2.5	<0.05	51	56	33-134	9
Styrene	mg/kg (ppm)	2.5	<0.05	56	62	35-137	10
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	49	59	31-142	19
Bromoform	mg/kg (ppm)	2.5	<0.05	61	69	21-156	12
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	45	52	23-146	14
Bromobenzene	mg/kg (ppm)	2.5	<0.05	50	56	34-130	11
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	44	51	18-149	15
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	58	63	28-140	8
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	55	59	25-144	7
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	47	53	31-134	12
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	48	54	31-136	12
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	46	52	30-137	12
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	45	52	10-182	14
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	44	51	23-145	15
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	43	51	21-149	17
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	45	53	30-131	16
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	46	53	29-129	14
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	46	54	31-132	16
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	48	57	11-161	17
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	36	41	22-142	13
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	35	42	10-142	18
Naphthalene	mg/kg (ppm)	2.5	<0.05	44	47	14-157	7
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	38	43	20-144	12

Date of Report: 02/01/19
Date Received: 01/29/19
Project: Morell's Walker Chevy 080190, F&BI 901382

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	45	10-146
Chloromethane	mg/kg (ppm)	2.5	71	27-133
Vinyl chloride	mg/kg (ppm)	2.5	84	22-139
Bromomethane	mg/kg (ppm)	2.5	91	38-114
Chloroethane	mg/kg (ppm)	2.5	93	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	102	10-196
Acetone	mg/kg (ppm)	12.5	107	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	101	47-128
Hexane	mg/kg (ppm)	2.5	83	43-142
Methylene chloride	mg/kg (ppm)	2.5	110	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	93	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	100	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	102	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	105	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	104	72-113
Chloroform	mg/kg (ppm)	2.5	102	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	96	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	95	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	102	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	100	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	102	60-139
Benzene	mg/kg (ppm)	2.5	97	68-114
Trichloroethene	mg/kg (ppm)	2.5	99	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	99	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	101	72-130
Dibromomethane	mg/kg (ppm)	2.5	99	70-120
4-Methyl-2-pentanone	mg/kg(ppm)	12.5	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	102	75-136
Toluene	mg/kg (ppm)	2.5	97	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	97	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	97	75-113
2-Hexanone	mg/kg (ppm)	12.5	85	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	95	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	105	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	106	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	97	74-132
Chlorobenzene	mg/kg (ppm)	2.5	99	76-111
Ethylbenzene	mg/kg (ppm)	2.5	99	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	109	69-135
m,p-Xylene	mg/kg (ppm)	5	102	78-122
o-Xylene	mg/kg (ppm)	2.5	98	77-124
Styrene	mg/kg (ppm)	2.5	104	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	111	76-127
Bromoform	mg/kg (ppm)	2.5	113	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	106	74-124
Bromobenzene	mg/kg (ppm)	2.5	103	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	108	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	106	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	97	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	107	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	105	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	103	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	100	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	102	71-130
p-Isopropyl toluene	mg/kg (ppm)	2.5	104	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	102	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	100	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	103	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	103	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	104	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	110	50-153
Naphthalene	mg/kg (ppm)	2.5	104	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	109	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

901382

SAMPLE CHAIN OF CUSTODY ME 01/29/19 VS2

Page # 1 of 2

Report To ~~Dave~~ Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 2068385831 Email dheffner@aspectconsulting.com
bgreer@aspectconsulting.com

SAMPLERS (*signature*) Brennan Greer

PROJECT NAME: Morell's / Walker Quarry

PO # 080190

REMARKS

INVOICE TO AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4-Day
- Rush charges authorized by: D. Heffner

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-25-5.5	01A-D	1/28	2110	S	4					X							
B-25-10.5	02	1/28	2130														Please HOLD
B-25-15.5	03	1/28	2155														
B-25-20.5	04	1/28	2210														
B-25-25.5	05	1/28	2230														
B-25-30.5	06	1/28	2250							X							
B-25-35.5	07	1/28	2310														Please HOLD
B-25-40.5	08	1/28	2350														
B-25-45.5	09	1/29	0100														
B-25-50.5	10	1/29	0150							X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect	1/29/19	9:50
Received by:	DAVID NIVAGED	FCD EK	1/29/19	10:52
Relinquished by:		Samples received at 2 °C		
Received by: Hoa	HOA NGUYEN	FMI	1/29/19	1200

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

901382

SAMPLE CHAIN OF CUSTODY

ME 01/29/19

NS2

Page # 2 of 2

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste. 550

City, State, ZIP Seattle WA 98104

Phone 2066385831 Email dheffner & bgreer

SAMPLERS (*signature*) Breeyn Green

PROJECT NAME: Morell's / Walker Quarry

PO # 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4-Day

Rush charges authorized by: D. Heffner

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-25-55.5	11 A-D	1/29	0220	S	4												Please HOLD
B-25-60.6	12 A-D	1/29	0250	S	4												↓

ANALYSES REQUESTED

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect	1/29/19	9:50
Received by:	DAVID NIOTCO	FED EX	1/29/19	10:52
Relinquished by:				
Received by:	HONG NGUYEN	FBI	1/29/19	1200

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 1, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on January 30, 2019 from the Walker Chevy Morell's 080190, F&BI 901399 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0201R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 30, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Walker Chevy Morell's 080190, F&BI 901399 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
901399 -01	B-26-5.5
901399 -02	B-26-10.5
901399 -03	B-26-15.5
901399 -04	B-26-20.5
901399 -05	B-26-25.5
901399 -06	B-26-30.5
901399 -07	B-26-35.5
901399 -08	B-26-40.5
901399 -09	B-26-45.5
901399 -10	B-26-50.5
901399 -11	B-26-55.5
901399 -12	B-26-60.0

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-26-5.5	Client:	Aspect Consulting, LLC
Date Received:	01/30/19	Project:	Walker Chevy Morell's 080190
Date Extracted:	01/30/19	Lab ID:	901399-01
Date Analyzed:	01/30/19	Data File:	013037.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-26-30.5	Client:	Aspect Consulting, LLC
Date Received:	01/30/19	Project:	Walker Chevy Morell's 080190
Date Extracted:	01/30/19	Lab ID:	901399-06
Date Analyzed:	01/30/19	Data File:	013038.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-26-50.5	Client:	Aspect Consulting, LLC
Date Received:	01/30/19	Project:	Walker Chevy Morell's 080190
Date Extracted:	01/30/19	Lab ID:	901399-10
Date Analyzed:	01/30/19	Data File:	013039.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Walker Chevy Morell's 080190
Date Extracted:	01/30/19	Lab ID:	09-0197 mb
Date Analyzed:	01/30/19	Data File:	013021.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	93	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/01/19
Date Received: 01/30/19
Project: Walker Chevy Morell's 080190, F&BI 901399

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

Laboratory Code: 901327-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	17	17	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	49	48	10-126	2
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	53	53	10-138	0
Bromomethane	mg/kg (ppm)	2.5	<0.5	72	70	10-163	3
Chloroethane	mg/kg (ppm)	2.5	<0.5	64	65	10-176	2
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	59	59	10-176	0
Acetone	mg/kg (ppm)	12.5	<0.5	82	88	10-163	7
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	71	70	10-160	1
Hexane	mg/kg (ppm)	2.5	<0.25	29	33	10-137	13
Methylene chloride	mg/kg (ppm)	2.5	<0.5	80	83	10-156	4
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	83	86	21-145	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	73	79	14-137	8
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	82	86	19-140	5
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	74	79	10-158	7
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	84	88	25-135	5
Chloroform	mg/kg (ppm)	2.5	<0.05	84	90	21-145	7
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	87	95	19-147	9
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	79	87	12-160	10
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	76	84	10-156	10
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	69	75	17-140	8
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	71	79	9-164	11
Benzene	mg/kg (ppm)	2.5	<0.03	75	79	29-129	5
Trichloroethene	mg/kg (ppm)	2.5	<0.02	72	79	21-139	9
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	81	83	30-135	2
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	83	88	23-155	6
Dibromomethane	mg/kg (ppm)	2.5	<0.05	82	87	23-145	6
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	90	94	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	82	87	28-144	6
Toluene	mg/kg (ppm)	2.5	0.15	68	75	35-130	10
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	80	84	26-149	5
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	88	93	10-205	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	83	88	15-166	6
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	79	85	31-137	7
Tetrachloroethene	mg/kg (ppm)	2.5	0.044	58	67	20-133	14
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	83	88	28-150	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	78	83	28-142	6
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	74	80	32-129	8
Ethylbenzene	mg/kg (ppm)	2.5	0.23	65	70	32-137	7
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	81	87	31-143	7
m,p-Xylene	mg/kg (ppm)	5	0.79	63	70	34-136	11
o-Xylene	mg/kg (ppm)	2.5	0.42	62	67	33-134	8
Styrene	mg/kg (ppm)	2.5	<0.05	76	83	35-137	9
Isopropylbenzene	mg/kg (ppm)	2.5	0.14	62	68	31-142	9
Bromoform	mg/kg (ppm)	2.5	<0.05	87	93	21-156	7
n-Propylbenzene	mg/kg (ppm)	2.5	0.54	57 b	62 b	23-146	8 b
Bromobenzene	mg/kg (ppm)	2.5	<0.05	73	78	34-130	7
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	0.72	53 b	59 b	18-149	11 b
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	100	101	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	80	80	25-144	0
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	75	79	31-134	5
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	68	72	31-136	6
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	55	60	30-137	9
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	2.1	51 b	59 b	10-182	15 b
sec-Butylbenzene	mg/kg (ppm)	2.5	0.28	52	58	23-145	11
p-Isopropyltoluene	mg/kg (ppm)	2.5	0.25	51	58	21-149	13
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	66	71	30-131	7
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	67	71	29-129	6
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	71	75	31-132	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	83	83	11-161	0
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	60	66	22-142	10
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	51	58	10-142	13
Naphthalene	mg/kg (ppm)	2.5	0.42	74	78	14-157	5
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	66	72	20-144	9

Date of Report: 02/01/19
Date Received: 01/30/19
Project: Walker Chevy Morell's 080190, F&BI 901399

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	42	10-146
Chloromethane	mg/kg (ppm)	2.5	70	27-133
Vinyl chloride	mg/kg (ppm)	2.5	84	22-139
Bromomethane	mg/kg (ppm)	2.5	91	38-114
Chloroethane	mg/kg (ppm)	2.5	89	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	97	10-196
Acetone	mg/kg (ppm)	12.5	94	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	96	47-128
Hexane	mg/kg (ppm)	2.5	79	43-142
Methylene chloride	mg/kg (ppm)	2.5	97	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	99	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	100	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	102	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	104	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	104	72-113
Chloroform	mg/kg (ppm)	2.5	106	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	104	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	106	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	111	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	102	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	111	60-139
Benzene	mg/kg (ppm)	2.5	100	68-114
Trichloroethene	mg/kg (ppm)	2.5	106	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	102	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	107	72-130
Dibromomethane	mg/kg (ppm)	2.5	106	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	106	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	106	75-136
Toluene	mg/kg (ppm)	2.5	97	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	100	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	101	75-113
2-Hexanone	mg/kg (ppm)	12.5	94	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	100	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	104	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	106	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	74-132
Chlorobenzene	mg/kg (ppm)	2.5	102	76-111
Ethylbenzene	mg/kg (ppm)	2.5	101	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	108	69-135
m,p-Xylene	mg/kg (ppm)	5	103	78-122
o-Xylene	mg/kg (ppm)	2.5	98	77-124
Styrene	mg/kg (ppm)	2.5	108	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	104	76-127
Bromoform	mg/kg (ppm)	2.5	109	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	107	74-124
Bromobenzene	mg/kg (ppm)	2.5	109	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	108	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	109	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	106	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	109	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	110	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	104	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	103	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	101	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	104	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	105	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	102	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	104	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	97	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	102	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	106	50-153
Naphthalene	mg/kg (ppm)	2.5	102	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	105	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

901399

SAMPLE CHAIN OF CUSTODY

ME 01/30/19

VSS

Page # 1 of 2

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 2068385831 Email dheffner@aspectconsulting.com
bgreer@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Walker Chevy / Morell's

PO #: 090190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4-day

Rush charges authorized by: Dave H

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-26-5.5	01 A-D	1/29/19	2145	S	4					X							
B-26-10.5	02		2200														Please Hold
B-26-15.5	03		2215														"
B-26-20.5	04		2230														"
B-26-25.5	05		2300														"
B-26-30.5	06		2315							X							
B-26-35.5	07		2330														Please Hold
B-26-40.5	08		2355														"
B-26-45.5	09	1/30	0100														"
B-26-50.5	10	1/30	0130							X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	1/30/19	0800
Received by:	VIA	FBI	1/30/19	10:00
Relinquished by:				
Received by:		Samples received at 3 °C		

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

901399

SAMPLE CHAIN OF CUSTODY ME 01/30/19 VSS

Page # 2 of 2

Report To Dave Heffner

Company Aspect

Address

City, State, ZIP

Phone 2068385831 Email dheffner@aspectconsulting.com

SAMPLERS (signature) Breeyn Green

PROJECT NAME: Walker Cleaners / Morells

PO #: 080190

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4 day
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-26-55.5	11 A-D	1/30	0200	S	4												Hold
B-26-60.0	12 V	1/30	0200 3 BE														11 ↓
				↓	↓												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Green	Breeyn Green	Aspect	1/30/19	0800
Received by:	VINH	FBI	1/30/19	10:00
Relinquished by:				
Received by:		Samples received at 3 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
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3012 16th Avenue West
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February 6, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on January 31, 2019 from the Morell's Walker Chevy 080190, F&BI 901423 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0206R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 31, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's Walker Chevy 080190, F&BI 901423 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
901423 -01	B-24-5.5
901423 -02	B-24-10.5
901423 -03	B-24-15.5
901423 -04	B-24-20.5
901423 -05	B-24-25.5
901423 -06	B-24-30.5
901423 -07	B-24-35.5
901423 -08	B-24-40.5
901423 -09	B-24-45.5
901423 -10	B-24-50.5
901423 -11	B-24-55.5
901423 -12	B-24-60.5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-24-5.5	Client:	Aspect Consulting, LLC
Date Received:	01/31/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	901423-01
Date Analyzed:	02/01/19	Data File:	020113.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-24-30.5	Client:	Aspect Consulting, LLC
Date Received:	01/31/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	901423-06
Date Analyzed:	02/01/19	Data File:	020114.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-24-50.5	Client:	Aspect Consulting, LLC
Date Received:	01/31/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	901423-10
Date Analyzed:	02/01/19	Data File:	020115.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	09-0199 mb
Date Analyzed:	02/01/19	Data File:	020110.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/06/19
Date Received: 01/31/19
Project: Morell's Walker Chevy 080190, F&BI 901423

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

Laboratory Code: 901411-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	16	16	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	46	44	10-126	4
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	48	46	10-138	4
Bromomethane	mg/kg (ppm)	2.5	<0.5	64	62	10-163	3
Chloroethane	mg/kg (ppm)	2.5	<0.5	60	57	10-176	5
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	52	49	10-176	6
Acetone	mg/kg (ppm)	12.5	0.64	76	78	10-163	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	64	62	10-160	3
Hexane	mg/kg (ppm)	2.5	<0.25	27	26	10-137	4
Methylene chloride	mg/kg (ppm)	2.5	<0.5	77	73	10-156	5
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	81	74	21-145	9
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	72	66	14-137	9
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	79	74	19-140	7
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	81	74	10-158	9
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	82	78	25-135	5
Chloroform	mg/kg (ppm)	2.5	<0.05	83	80	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	76	84	19-147	10
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	74	75	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	75	72	10-156	4
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	68	68	17-140	0
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	70	68	9-164	3
Benzene	mg/kg (ppm)	2.5	<0.03	72	72	29-129	0
Trichloroethene	mg/kg (ppm)	2.5	<0.02	72	68	21-139	6
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	72	73	30-135	1
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	77	80	23-155	4
Dibromomethane	mg/kg (ppm)	2.5	<0.05	77	76	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	76	81	24-155	6
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	70	78	28-144	11
Toluene	mg/kg (ppm)	2.5	<0.05	68	68	35-130	0
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	78	26-149	9
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	80	86	10-205	7
2-Hexanone	mg/kg (ppm)	12.5	<0.5	67	81	15-166	19
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	80	31-137	13
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	60	62	20-133	3
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	81	82	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	71	76	28-142	7
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	71	72	32-129	1
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	65	65	32-137	0
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	86	79	31-143	8
m,p-Xylene	mg/kg (ppm)	5	<0.1	65	65	34-136	0
o-Xylene	mg/kg (ppm)	2.5	<0.05	64	62	33-134	3
Styrene	mg/kg (ppm)	2.5	<0.05	73	75	35-137	3
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	64	63	31-142	2
Bromoform	mg/kg (ppm)	2.5	<0.05	86	89	21-156	3
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	57	58	23-146	2
Bromobenzene	mg/kg (ppm)	2.5	<0.05	69	73	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	55	52	18-149	6
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	102	103	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	75	79	25-144	5
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	66	64	31-134	3
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	64	64	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	57	53	30-137	7
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	57	54	10-182	5
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	54	50	23-145	8
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	52	49	21-149	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	67	66	30-131	2
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	67	67	29-129	0
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	73	69	31-132	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	90	80	11-161	12
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	66	60	22-142	10
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	46	44	10-142	4
Naphthalene	mg/kg (ppm)	2.5	<0.05	87	79	14-157	10
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	73	66	20-144	10

Date of Report: 02/06/19
Date Received: 01/31/19
Project: Morell's Walker Chevy 080190, F&BI 901423

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	47	10-146
Chloromethane	mg/kg (ppm)	2.5	67	27-133
Vinyl chloride	mg/kg (ppm)	2.5	80	22-139
Bromomethane	mg/kg (ppm)	2.5	89	38-114
Chloroethane	mg/kg (ppm)	2.5	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	101	10-196
Acetone	mg/kg (ppm)	12.5	100	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	102	47-128
Hexane	mg/kg (ppm)	2.5	82	43-142
Methylene chloride	mg/kg (ppm)	2.5	109	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	101	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	107	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	108	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	117	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	111	72-113
Chloroform	mg/kg (ppm)	2.5	110	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	93	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	101	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	112	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	104	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	112	60-139
Benzene	mg/kg (ppm)	2.5	98	68-114
Trichloroethene	mg/kg (ppm)	2.5	103	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	100	72-130
Dibromomethane	mg/kg (ppm)	2.5	99	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	90	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	93	75-136
Toluene	mg/kg (ppm)	2.5	100	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	90	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	93	75-113
2-Hexanone	mg/kg (ppm)	12.5	77	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	88	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	106	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	104	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	91	74-132
Chlorobenzene	mg/kg (ppm)	2.5	99	76-111
Ethylbenzene	mg/kg (ppm)	2.5	100	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	116	69-135
m,p-Xylene	mg/kg (ppm)	5	102	78-122
o-Xylene	mg/kg (ppm)	2.5	101	77-124
Styrene	mg/kg (ppm)	2.5	103	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	108	76-127
Bromoform	mg/kg (ppm)	2.5	108	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	101	74-124
Bromobenzene	mg/kg (ppm)	2.5	98	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	105	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	101	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	92	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	104	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	99	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	107	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	103	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	105	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	106	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	102	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	98	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	105	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	112	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	108	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	108	50-153
Naphthalene	mg/kg (ppm)	2.5	111	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	110	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

901423

SAMPLE CHAIN OF CUSTODY

ME 01/31/19

VS4

Page # 1 of 2

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 206 838 5831 Email dheffner@aspectconsulting.com
bgreer@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Monell's / Walker Cmny

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4 day
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-24-5.5	01 A-D	1/30/19	2035	S	4					X							
B-24-10.5	02		2050														Please HOLD
B-24-15.5	03		2105														
B-24-20.5	04		2130														
B-24-25.5	05		2145														
B-24-30.5	06		2200							X							
B-24-35.5	07		2230														Please HOLD
B-24-40.5	08		2240														
B-24-45.5	09		2300														
B-24-50.5	10	1/31	0200							X							Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect	1/31/19	8:50
Received by:	DAVID NICACIO	FED EX	1/31/19	10:37
Relinquished by:				
Received by: Nhan Phan	Nhan Phan	FBI	1/31/19	11:05

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

901423

SAMPLE CHAIN OF CUSTODY ME 01/31/19

VS4

Page # 2 of 2

Report To Dave Heffner

Company Aspect

Address

City, State, ZIP

Phone 2068385831 Email dheffner bgreer

SAMPLERS (*signature*) Brian Green

PROJECT NAME: Morell's / Walker Chevy

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4 Day
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-24-55.5	11 A.D	1/31	0045	S	4												Please HOLD
B-24-60.5	12 A.D	1/31	0110	S	4												↓
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect	1/31/19	8:50
Received by: DAVID NEGACID	DAVID NEGACID	FED EX	1/31/19	10:37
Relinquished by:				
Received by:	Nhan Dhan	FBI	1/31/19	11 05

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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February 6, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 1, 2019 from the Morell's Walker Chevy 080190, F&BI 902014 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0206R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 1, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's Walker Chevy 080190, F&BI 902014 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902014 -01	B-27-5.5
902014 -02	B-27-10.5
902014 -03	B-27-15.5
902014 -04	B-27-20.5
902014 -05	B-27-25.5
902014 -06	B-27-30.5
902014 -07	B-27-35.5
902014 -08	B-27-40.5
902014 -09	B-27-45.5
902014 -10	B-27-50.5
902014 -11	B-27-55.5
902014 -12	B-27-60.5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-27-5.5	Client:	Aspect Consulting, LLC
Date Received:	02/01/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	902014-01
Date Analyzed:	02/01/19	Data File:	020121.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-27-30.5	Client:	Aspect Consulting, LLC
Date Received:	02/01/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	902014-06
Date Analyzed:	02/01/19	Data File:	020122.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-27-50.5	Client:	Aspect Consulting, LLC
Date Received:	02/01/19	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	902014-10
Date Analyzed:	02/01/19	Data File:	020123.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's Walker Chevy 080190
Date Extracted:	02/01/19	Lab ID:	09-0199 mb
Date Analyzed:	02/01/19	Data File:	020110.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/06/19
Date Received: 02/01/19
Project: Morell's Walker Chevy 080190, F&BI 902014

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

Laboratory Code: 901411-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	16	16	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	46	44	10-126	4
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	48	46	10-138	4
Bromomethane	mg/kg (ppm)	2.5	<0.5	64	62	10-163	3
Chloroethane	mg/kg (ppm)	2.5	<0.5	60	57	10-176	5
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	52	49	10-176	6
Acetone	mg/kg (ppm)	12.5	0.64	76	78	10-163	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	64	62	10-160	3
Hexane	mg/kg (ppm)	2.5	<0.25	27	26	10-137	4
Methylene chloride	mg/kg (ppm)	2.5	<0.5	77	73	10-156	5
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	81	74	21-145	9
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	72	66	14-137	9
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	79	74	19-140	7
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	81	74	10-158	9
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	82	78	25-135	5
Chloroform	mg/kg (ppm)	2.5	<0.05	83	80	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	76	84	19-147	10
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	74	75	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	75	72	10-156	4
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	68	68	17-140	0
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	70	68	9-164	3
Benzene	mg/kg (ppm)	2.5	<0.03	72	72	29-129	0
Trichloroethene	mg/kg (ppm)	2.5	<0.02	72	68	21-139	6
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	72	73	30-135	1
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	77	80	23-155	4
Dibromomethane	mg/kg (ppm)	2.5	<0.05	77	76	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	76	81	24-155	6
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	70	78	28-144	11
Toluene	mg/kg (ppm)	2.5	<0.05	68	68	35-130	0
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	78	26-149	9
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	80	86	10-205	7
2-Hexanone	mg/kg (ppm)	12.5	<0.5	67	81	15-166	19
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	80	31-137	13
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	60	62	20-133	3
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	81	82	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	71	76	28-142	7
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	71	72	32-129	1
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	65	65	32-137	0
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	86	79	31-143	8
m,p-Xylene	mg/kg (ppm)	5	<0.1	65	65	34-136	0
o-Xylene	mg/kg (ppm)	2.5	<0.05	64	62	33-134	3
Styrene	mg/kg (ppm)	2.5	<0.05	73	75	35-137	3
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	64	63	31-142	2
Bromoform	mg/kg (ppm)	2.5	<0.05	86	89	21-156	3
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	57	58	23-146	2
Bromobenzene	mg/kg (ppm)	2.5	<0.05	69	73	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	55	52	18-149	6
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	102	103	28-140	1
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	75	79	25-144	5
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	66	64	31-134	3
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	64	64	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	57	53	30-137	7
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	57	54	10-182	5
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	54	50	23-145	8
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	52	49	21-149	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	67	66	30-131	2
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	67	67	29-129	0
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	73	69	31-132	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	90	80	11-161	12
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	66	60	22-142	10
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	46	44	10-142	4
Naphthalene	mg/kg (ppm)	2.5	<0.05	87	79	14-157	10
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	73	66	20-144	10

Date of Report: 02/06/19
Date Received: 02/01/19
Project: Morell's Walker Chevy 080190, F&BI 902014

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	47	10-146
Chloromethane	mg/kg (ppm)	2.5	67	27-133
Vinyl chloride	mg/kg (ppm)	2.5	80	22-139
Bromomethane	mg/kg (ppm)	2.5	89	38-114
Chloroethane	mg/kg (ppm)	2.5	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	101	10-196
Acetone	mg/kg (ppm)	12.5	100	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	102	47-128
Hexane	mg/kg (ppm)	2.5	82	43-142
Methylene chloride	mg/kg (ppm)	2.5	109	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	101	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	107	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	108	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	117	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	111	72-113
Chloroform	mg/kg (ppm)	2.5	110	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	93	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	101	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	112	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	104	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	112	60-139
Benzene	mg/kg (ppm)	2.5	98	68-114
Trichloroethene	mg/kg (ppm)	2.5	103	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	100	72-130
Dibromomethane	mg/kg (ppm)	2.5	99	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	90	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	93	75-136
Toluene	mg/kg (ppm)	2.5	100	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	90	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	93	75-113
2-Hexanone	mg/kg (ppm)	12.5	77	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	88	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	106	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	104	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	91	74-132
Chlorobenzene	mg/kg (ppm)	2.5	99	76-111
Ethylbenzene	mg/kg (ppm)	2.5	100	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	116	69-135
m,p-Xylene	mg/kg (ppm)	5	102	78-122
o-Xylene	mg/kg (ppm)	2.5	101	77-124
Styrene	mg/kg(ppm)	2.5	103	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	108	76-127
Bromoform	mg/kg (ppm)	2.5	108	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	101	74-124
Bromobenzene	mg/kg (ppm)	2.5	98	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	105	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	101	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	92	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	104	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	99	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	107	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	103	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	105	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	106	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	102	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	98	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	105	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	112	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	108	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	108	50-153
Naphthalene	mg/kg (ppm)	2.5	111	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	110	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

902014

SAMPLE CHAIN OF CUSTODY

ME 02/01/19

VS4

Page # 1 of 2

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone _____ Email dheffner@aspectconsulting.com
bgreer@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morell's / Walker Chevy

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4 day
- Rush charges authorized by:

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-27-5.5	01 A-D	1/31/19	2045	S	4					X							
B-27-10.5	02		2120														Please HOLD
B-27-15.5	03		2135														
B-27-20.5	04		2145														
B-27-25.5	05		2200														
B-27-30.5	06		2240							X							
B-27-35.5	07		2255														Please HOLD
B-27-40.5	08		2310														
B-27-45.5	09		2330														
B-27-50.5	10		2345							X							Samples received at 4 °C

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect	2/1/19	8:20
Received by:	Kyle Surovy	FedEx Office	2/1/19	10:23A
Relinquished by:				
Received by:	Nhan Phan	FCBI	2/1/19	1105

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

902014

SAMPLE CHAIN OF CUSTODY

ME 02/01/19

VS4

Page # 2 of 2

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone _____ Email dheffner, bgreer

SAMPLERS (*signature*) Brian Green

PROJECT NAME: Morell's / Walker Chevy

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH _____
- Rush charges authorized by: _____

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-27-55.5	11 A-D	2/1/19	0040	S	4												Please HOLD
B-27-60.5	12 V	2/1/19	0110	S	4												↓
													Samples received at 4 °C				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect	2/1/19	8:20
Received by:				
Relinquished by:				
Received by:	Nhan Phan	FCBI	2/1/19	1105

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

February 12, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 6, 2019 from the Morell's 080190, F&BI 902073 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0212R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 6, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 902073 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902073 -01	B-31-5.5
902073 -02	B-31-10.5
902073 -03	B-31-15.5
902073 -04	B-31-20.5
902073 -05	B-31-25.5
902073 -06	B-31-30.5
902073 -07	B-31-35.5
902073 -08	B-31-40.5
902073 -09	B-31-45.5
902073 -10	B-31-50.5
902073 -11	B-31-55.5
902073 -12	B-31-60.5

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-31-15.5	Client:	Aspect Consulting, LLC
Date Received:	02/06/19	Project:	Morell's 080190, F&BI 902073
Date Extracted:	02/07/19	Lab ID:	902073-03
Date Analyzed:	02/07/19	Data File:	020725.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-31-40.5	Client:	Aspect Consulting, LLC
Date Received:	02/06/19	Project:	Morell's 080190, F&BI 902073
Date Extracted:	02/07/19	Lab ID:	902073-08
Date Analyzed:	02/07/19	Data File:	020726.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-31-55.5	Client:	Aspect Consulting, LLC
Date Received:	02/06/19	Project:	Morell's 080190, F&BI 902073
Date Extracted:	02/07/19	Lab ID:	902073-11
Date Analyzed:	02/07/19	Data File:	020727.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.058
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-31-60.5	Client:	Aspect Consulting, LLC
Date Received:	02/06/19	Project:	Morell's 080190, F&BI 902073
Date Extracted:	02/07/19	Lab ID:	902073-12
Date Analyzed:	02/07/19	Data File:	020728.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.058
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902073
Date Extracted:	02/07/19	Lab ID:	09-0271 mb
Date Analyzed:	02/07/19	Data File:	020711.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/12/19
Date Received: 02/06/19
Project: Morell's 080190, F&BI 902073

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

Laboratory Code: 902082-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	35	33	10-56	6
Chloromethane	mg/kg (ppm)	2.5	<0.5	58	58	10-90	0
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	63	62	10-91	2
Bromomethane	mg/kg (ppm)	2.5	<0.5	74	73	10-110	1
Chloroethane	mg/kg (ppm)	2.5	<0.5	68	70	10-101	3
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	67	68	10-95	1
Acetone	mg/kg (ppm)	12.5	<0.5	98	99	11-141	1
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	76	76	22-107	0
Hexane	mg/kg (ppm)	2.5	<0.25	62	63	10-95	2
Methylene chloride	mg/kg (ppm)	2.5	<0.5	83	86	14-128	4
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	85	87	17-134	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	83	85	13-112	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	85	88	23-115	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	90	92	18-117	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	89	25-120	5
Chloroform	mg/kg (ppm)	2.5	<0.05	85	86	29-117	1
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	92	90	20-133	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	90	92	22-124	2
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	91	93	27-112	2
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	83	85	26-107	2
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	88	90	28-126	2
Benzene	mg/kg (ppm)	2.5	<0.03	86	87	26-114	1
Trichloroethene	mg/kg (ppm)	2.5	<0.02	87	87	30-112	0
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	92	92	31-119	0
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	94	95	31-131	1
Dibromomethane	mg/kg (ppm)	2.5	<0.05	89	89	27-124	0
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	99	98	16-147	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	95	96	28-137	1
Toluene	mg/kg (ppm)	2.5	<0.05	87	89	34-112	2
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	94	95	30-136	1
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	94	94	32-126	0
2-Hexanone	mg/kg (ppm)	12.5	<0.5	98	97	17-147	1
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	92	91	29-125	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	87	89	25-114	2
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	98	99	32-143	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	101	100	32-126	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	86	87	37-113	1
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	89	90	34-115	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	102	103	35-126	1
m,p-Xylene	mg/kg (ppm)	5	<0.1	88	90	25-125	2
o-Xylene	mg/kg (ppm)	2.5	<0.05	88	90	27-126	2
Styrene	mg/kg (ppm)	2.5	<0.05	91	94	39-121	3
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	90	92	34-123	2
Bromoform	mg/kg (ppm)	2.5	<0.05	97	100	18-155	3
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	90	90	31-120	0
Bromobenzene	mg/kg (ppm)	2.5	<0.05	90	92	40-115	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	91	94	24-130	3
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	94	96	27-148	2
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	93	92	33-123	1
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	91	92	39-110	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	91	91	39-111	0
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	91	93	36-116	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	90	93	35-116	3
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	91	93	33-118	2
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	90	92	32-119	2
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	89	90	38-111	1
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	86	87	39-109	1
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	90	91	40-111	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	97	95	47-127	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	84	87	31-121	4
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	86	90	24-128	5
Naphthalene	mg/kg (ppm)	2.5	<0.05	87	88	24-139	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	85	88	35-117	3

Date of Report: 02/12/19
Date Received: 02/06/19
Project: Morell's 080190, F&BI 902073

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	62	10-76
Chloromethane	mg/kg (ppm)	2.5	80	34-98
Vinyl chloride	mg/kg (ppm)	2.5	90	42-107
Bromomethane	mg/kg (ppm)	2.5	102	46-113
Chloroethane	mg/kg (ppm)	2.5	96	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	98	53-112
Acetone	mg/kg (ppm)	12.5	97	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	99	65-110
Hexane	mg/kg (ppm)	2.5	87	55-107
Methylene chloride	mg/kg (ppm)	2.5	115	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	96	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	101	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	99	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	118	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	99	73-110
Chloroform	mg/kg (ppm)	2.5	97	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	86	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	97	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	107	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	95	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	107	67-123
Benzene	mg/kg (ppm)	2.5	94	72-106
Trichloroethene	mg/kg (ppm)	2.5	94	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	102	75-126
Dibromomethane	mg/kg (ppm)	2.5	92	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	97	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	97	71-138
Toluene	mg/kg (ppm)	2.5	97	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	97	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	95	77-116
2-Hexanone	mg/kg (ppm)	12.5	87	70-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	90	75-115
Tetrachloroethene	mg/kg (ppm)	2.5	96	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	107	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	100	77-117
Chlorobenzene	mg/kg (ppm)	2.5	91	76-109
Ethylbenzene	mg/kg (ppm)	2.5	96	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	119	76-125
m,p-Xylene	mg/kg (ppm)	5	97	77-115
o-Xylene	mg/kg (ppm)	2.5	99	76-115
Styrene	mg/kg (ppm)	2.5	97	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	103	76-120
Bromoform	mg/kg (ppm)	2.5	106	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	99	77-115
Bromobenzene	mg/kg (ppm)	2.5	97	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	105	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	104	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	96	74-116
2-Chlorotoluene	mg/kg (ppm)	2.5	101	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	96	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	105	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	103	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	105	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	104	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	95	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	92	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	100	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	106	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	100	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	105	74-130
Naphthalene	mg/kg (ppm)	2.5	100	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	102	75-117

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

902073

SAMPLE CHAIN OF CUSTODY

ME 02-06-19 Page # 1 of 2 DW

Report To Dave Heffner | Breeyn Greer

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 2068385831 Email dheffner@aspectconsulting.com bgreer@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morell's

PO #: 090190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4 day
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-31-5.5	01 A-D	2/5/19	0900	S	4												
B-31-10.5	02		0930														
B-31-15.5	03		0940							X							
B-31-20.5	04		1000														
B-31-25.5	05		1015														
B-31-30.5	06		1030														
B-31-35.5	07		1045														
B-31-40.5	08		1100							X							
B-31-45.5	09		1115														
B-31-50.5	10	↓	1130	↓	↓												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Peabody	A. Consu	1.6.19	9:42
Received by:	DAVID NEWKED	FED EX	1/6/19	9:47
Relinquished by:	Liz Webber-Bruya	F?B	2/6/19	1100
Received by:		Samples received at 2 °C		

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

SAMPLE CHAIN OF CUSTODY

902073

02-06-19

Page # 2 of 2

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Report To Dave Heffner / Breeyn Greer

Company Aspect

Address

City, State, ZIP

Phone 2068385831 Email dheffner, bgreer

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME Morell's

PO # 080190

REMARKS

INVOICE TO AP

TURNAROUND TIME

☐ Standard Turnaround

☒ RUSH 4 day

Rush charges authorized by: DAH

SAMPLE DISPOSAL

☒ Dispose after 30 days

☐ Archive Samples

☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-31-55.5	11 A-D	2/5/19	1145	S	4					X							
B-31-60.5	12 I	2/5/19	1200	S	4					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Peabody	Aspect C	1.6.19	945
Received by:	DAVID NEGARD	FEDEX	1/6/19	9:47
Relinquished by:	Liz Webber Bruya	FTBI	2/6/19	1100
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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February 14, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 7, 2019 from the Morrells 080190, F&BI 902103 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0214R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 7, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morrells 080190, F&BI 902103 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902103 -01	B-23-5.5
902103 -02	B-23-10.5
902103 -03	B-23-20.5
902103 -04	B-23-25.5
902103 -05	B-23-30.5
902103 -06	B-23-35.5
902103 -07	B-23-55.5

Methylene chloride was detected in the 8260C analysis of samples B-23-10.5, B-23-20.5, and B-23-55.5. The data were flagged as due to laboratory contamination.

The 8260C matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The laboratory control sample passed the acceptance criteria, therefore the results were likely due to matrix effect.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-23-5.5	Client:	Aspect Consulting, LLC
Date Received:	02/07/19	Project:	Morrells 080190, F&BI 902103
Date Extracted:	02/08/19	Lab ID:	902103-01
Date Analyzed:	02/11/19	Data File:	021150.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.14
Benzene	<0.03	sec-Butylbenzene	0.059
Trichloroethene	<0.02	p-Isopropyltoluene	0.058
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-23-10.5	Client:	Aspect Consulting, LLC
Date Received:	02/07/19	Project:	Morrells 080190, F&BI 902103
Date Extracted:	02/08/19	Lab ID:	902103-02
Date Analyzed:	02/11/19	Data File:	021153.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.40
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	1.4 lc	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	0.19	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	0.18	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-23-20.5	Client:	Aspect Consulting, LLC
Date Received:	02/07/19	Project:	Morrells 080190, F&BI 902103
Date Extracted:	02/08/19	Lab ID:	902103-03
Date Analyzed:	02/11/19	Data File:	021148.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.045
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	0.50 lc	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-23-25.5	Client:	Aspect Consulting, LLC
Date Received:	02/07/19	Project:	Morrells 080190, F&BI 902103
Date Extracted:	02/08/19	Lab ID:	902103-04
Date Analyzed:	02/12/19	Data File:	021154.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	2.3
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.11
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	0.064
Trichloroethene	<0.02	p-Isopropyltoluene	0.094
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-23-55.5	Client:	Aspect Consulting, LLC
Date Received:	02/07/19	Project:	Morrells 080190, F&BI 902103
Date Extracted:	02/08/19	Lab ID:	902103-07
Date Analyzed:	02/11/19	Data File:	021149.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.095
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	0.83 lc	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrells 080190, F&BI 902103
Date Extracted:	02/08/19	Lab ID:	09-0272 mb
Date Analyzed:	02/08/19	Data File:	020810.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/14/19
Date Received: 02/07/19
Project: Morrells 080190, F&BI 902103

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

Laboratory Code: 902035-36 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	28	26	10-56	7
Chloromethane	mg/kg (ppm)	2.5	<0.5	39	48	10-90	21 vo
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	40	49	10-91	20
Bromomethane	mg/kg (ppm)	2.5	<0.5	50	65	10-110	26 vo
Chloroethane	mg/kg (ppm)	2.5	<0.5	48	60	10-101	22 vo
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	44	53	10-95	19
Acetone	mg/kg (ppm)	12.5	0.51	75	95	11-141	24 vo
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	51	63	22-107	21 vo
Hexane	mg/kg (ppm)	2.5	<0.25	36	42	10-95	15
Methylene chloride	mg/kg (ppm)	2.5	<0.5	70	84	14-128	18
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	71	88	17-134	21 vo
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	56	73	13-112	26 vo
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	64	82	23-115	25 vo
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	90	18-117	25 vo
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	64	82	25-120	25 vo
Chloroform	mg/kg (ppm)	2.5	<0.05	65	84	29-117	26 vo
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	72	92	20-133	24 vo
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	69	88	22-124	24 vo
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	68	86	27-112	23 vo
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	60	76	26-107	24 vo
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	65	82	28-126	23 vo
Benzene	mg/kg (ppm)	2.5	<0.03	63	80	26-114	24 vo
Trichloroethene	mg/kg (ppm)	2.5	<0.02	61	79	30-112	26 vo
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	89	31-119	24 vo
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	71	93	31-131	27 vo
Dibromomethane	mg/kg (ppm)	2.5	<0.05	65	84	27-124	26 vo
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	80	104	16-147	26 vo
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	92	28-137	26 vo
Toluene	mg/kg (ppm)	2.5	<0.05	65	83	34-112	24 vo
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	92	30-136	26 vo
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	71	94	32-126	28 vo
2-Hexanone	mg/kg (ppm)	12.5	<0.5	78	102	17-147	27 vo
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	91	29-125	26 vo
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	61	80	25-114	27 vo
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	75	98	32-143	27 vo
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	74	95	32-126	25 vo
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	64	81	37-113	23 vo
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	68	86	34-115	23 vo
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	80	102	35-126	24 vo
m,p-Xylene	mg/kg (ppm)	5	<0.1	66	85	25-125	25 vo
o-Xylene	mg/kg (ppm)	2.5	<0.05	67	86	27-126	25 vo
Styrene	mg/kg (ppm)	2.5	<0.05	67	88	39-121	27 vo
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	71	89	34-123	22 vo
Bromoform	mg/kg (ppm)	2.5	<0.05	74	97	18-155	27 vo
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	68	86	31-120	23 vo
Bromobenzene	mg/kg (ppm)	2.5	<0.05	66	85	40-115	25 vo
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	71	89	24-130	22 vo
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	80	100	27-148	22 vo
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	75	94	33-123	22 vo
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	69	87	39-110	23 vo
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	67	86	39-111	25 vo
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	72	90	36-116	22 vo
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	68	87	35-116	25 vo
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	72	90	33-118	22 vo
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	70	88	32-119	23 vo
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	64	81	38-111	23 vo
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	62	78	39-109	23 vo
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	66	84	40-111	24 vo
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	73	94	47-127	25 vo
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	57	73	31-121	25 vo
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	70	87	24-128	22 vo
Naphthalene	mg/kg (ppm)	2.5	<0.05	60	77	24-139	25 vo
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	59	75	35-117	24 vo

Date of Report: 02/14/19
Date Received: 02/07/19
Project: Morrells 080190, F&BI 902103

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	58	10-76
Chloromethane	mg/kg (ppm)	2.5	77	34-98
Vinyl chloride	mg/kg (ppm)	2.5	87	42-107
Bromomethane	mg/kg (ppm)	2.5	97	46-113
Chloroethane	mg/kg (ppm)	2.5	91	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	95	53-112
Acetone	mg/kg (ppm)	12.5	105	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	96	65-110
Hexane	mg/kg (ppm)	2.5	92	55-107
Methylene chloride	mg/kg (ppm)	2.5	108	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	97	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	101	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	102	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	114	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	101	73-110
Chloroform	mg/kg (ppm)	2.5	98	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	95	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	102	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	108	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	97	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	106	67-123
Benzene	mg/kg (ppm)	2.5	97	72-106
Trichloroethene	mg/kg (ppm)	2.5	96	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	100	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	103	75-126
Dibromomethane	mg/kg (ppm)	2.5	96	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	102	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	102	71-138
Toluene	mg/kg (ppm)	2.5	97	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	103	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	100	77-116
2-Hexanone	mg/kg (ppm)	12.5	98	70-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	96	75-115
Tetrachloroethene	mg/kg (ppm)	2.5	96	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	109	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	105	77-117
Chlorobenzene	mg/kg (ppm)	2.5	93	76-109
Ethylbenzene	mg/kg (ppm)	2.5	98	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	116	76-125
m,p-Xylene	mg/kg (ppm)	5	97	77-115
o-Xylene	mg/kg (ppm)	2.5	100	76-115
Styrene	mg/kg (ppm)	2.5	101	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	103	76-120
Bromoform	mg/kg (ppm)	2.5	107	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	99	77-115
Bromobenzene	mg/kg (ppm)	2.5	99	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	103	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	106	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	98	74-116
2-Chlorotoluene	mg/kg (ppm)	2.5	102	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	99	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	102	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	102	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	104	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	102	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	98	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	94	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	100	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	108	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	97	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	103	74-130
Naphthalene	mg/kg (ppm)	2.5	99	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	99	75-117

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

902103

SAMPLE CHAIN OF CUSTODY ME 02-07-19

Page # 1 of 1

Report To Dave Heffner

Company Aspect

Address dheffner@aspectconsulting.com bgreen@aspectconsulting.com

City, State, ZIP

Phone 6122327343 Email

SAMPLERS (*signature*) M/C Matthew VanderAhe

PROJECT NAME Morrells

PO # 080190

REMARKS

INVOICE TO AP

TURNAROUND TIME

☐ Standard Turnaround

☒ RUSH 4 day Turnaround

Rush charges authorized by: DAH

SAMPLE DISPOSAL

☒ Dispose after 30 days

☐ Archive Samples

☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-23-5.5	01A-D	2/6/19	0945	Soil	4					✓							
B-23-10.5	02	"	10:10							✓							
B-23-20.5	03	"	10:10							✓							
B-23-25.5	04	"	10:55							✓							
B-23-30.5	05	"	11:15														Hold
B-23-35.5	06	"	11:25														Hold
B-23-55.5	07	"	12:30							✓							

Samples received at ~1 °C

Samples received at ___ °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Green	Breeyn Green	Aspect	2/7/19	0800
Received by:	DAVID NICACIO	FED EX	2/7/19	10:40
Relinquished by:				
Received by:	DO VO	FEBI	2-7-19	11:30

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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www.friedmanandbruya.com

February 14, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 8, 2019 from the Morell's 080190, F&BI 902125 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0214R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 8, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 902125 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902125 -01	B-30-5.5
902125 -02	B-30-10.5
902125 -03	B-30-20.5
902125 -04	B-30-25.5
902125 -05	B-30-30.5
902125 -06	B-30-35.5
902125 -07	B-30-50.5
902125 -08	B-30-60.5

Methylene chloride was detected in the 8260C method blank. The data were flagged as due to laboratory contamination.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-30-10.5	Client:	Aspect Consulting, LLC
Date Received:	02/08/19	Project:	Morell's 080190, F&BI 902125
Date Extracted:	02/11/19	Lab ID:	902125-02
Date Analyzed:	02/11/19	Data File:	021141.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.084
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	0.021	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-30-35.5	Client:	Aspect Consulting, LLC
Date Received:	02/08/19	Project:	Morell's 080190, F&BI 902125
Date Extracted:	02/11/19	Lab ID:	902125-06
Date Analyzed:	02/11/19	Data File:	021142.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.10
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-30-60.5	Client:	Aspect Consulting, LLC
Date Received:	02/08/19	Project:	Morell's 080190, F&BI 902125
Date Extracted:	02/11/19	Lab ID:	902125-08
Date Analyzed:	02/11/19	Data File:	021143.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.026
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902125
Date Extracted:	02/11/19	Lab ID:	09-0274 mb
Date Analyzed:	02/11/19	Data File:	021128.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	0.90 lc	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 02/14/19
Date Received: 02/08/19
Project: Morell's 080190, F&BI 902125

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

Laboratory Code: 902114-21 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	31	26	10-56	18
Chloromethane	mg/kg (ppm)	2.5	<0.5	57	52	10-90	9
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	60	56	10-91	7
Bromomethane	mg/kg (ppm)	2.5	<0.5	70	65	10-110	7
Chloroethane	mg/kg (ppm)	2.5	<0.5	69	64	10-101	8
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	66	61	10-95	8
Acetone	mg/kg (ppm)	12.5	<0.5	97	98	11-141	1
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	78	74	22-107	5
Hexane	mg/kg (ppm)	2.5	<0.25	58	54	10-95	7
Methylene chloride	mg/kg (ppm)	2.5	<0.5	113	132 vo	14-128	16
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	88	84	17-134	5
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	84	80	13-112	5
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	88	84	23-115	5
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	84	81	18-117	4
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	88	85	25-120	3
Chloroform	mg/kg (ppm)	2.5	<0.05	88	84	29-117	5
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	91	89	20-133	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	90	87	22-124	3
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	92	89	27-112	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	85	80	26-107	6
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	90	86	28-126	5
Benzene	mg/kg (ppm)	2.5	<0.03	87	84	26-114	4
Trichloroethene	mg/kg (ppm)	2.5	<0.02	90	86	30-112	5
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	94	90	31-119	4
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	96	92	31-131	4
Dibromomethane	mg/kg (ppm)	2.5	<0.05	91	88	27-124	3
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	103	99	16-147	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	97	93	28-137	4
Toluene	mg/kg (ppm)	2.5	<0.05	90	86	34-112	5
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	95	92	30-136	3
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	96	93	32-126	3
2-Hexanone	mg/kg (ppm)	12.5	<0.5	100	95	17-147	5
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	93	89	29-125	4
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	91	85	25-114	7
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	102	97	32-143	5
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	103	99	32-126	4
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	89	86	37-113	3
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	92	88	34-115	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	105	102	35-126	3
m,p-Xylene	mg/kg (ppm)	5	<0.1	91	87	25-125	4
o-Xylene	mg/kg (ppm)	2.5	<0.05	92	88	27-126	4
Styrene	mg/kg (ppm)	2.5	<0.05	96	92	39-121	4
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	94	90	34-123	4
Bromoform	mg/kg (ppm)	2.5	<0.05	101	98	18-155	3
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	92	88	31-120	4
Bromobenzene	mg/kg (ppm)	2.5	<0.05	95	90	40-115	5
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	95	91	24-130	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	98	95	27-148	3
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	95	93	33-123	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	94	89	39-110	5
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	93	89	39-111	4
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	95	90	36-116	5
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	93	89	35-116	4
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	95	89	33-118	7
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	94	90	32-119	4
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	88	38-111	6
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	89	85	39-109	5
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	88	40-111	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	99	96	47-127	3
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	89	86	31-121	3
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	91	86	24-128	6
Naphthalene	mg/kg (ppm)	2.5	<0.05	92	88	24-139	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	90	86	35-117	5

Date of Report: 02/14/19
Date Received: 02/08/19
Project: Morell's 080190, F&BI 902125

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	57	10-76
Chloromethane	mg/kg (ppm)	2.5	74	34-98
Vinyl chloride	mg/kg (ppm)	2.5	84	42-107
Bromomethane	mg/kg (ppm)	2.5	90	46-113
Chloroethane	mg/kg (ppm)	2.5	86	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	90	53-112
Acetone	mg/kg (ppm)	12.5	102	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	95	65-110
Hexane	mg/kg (ppm)	2.5	84	55-107
Methylene chloride	mg/kg (ppm)	2.5	119	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	94	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	97	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	97	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	95	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	98	73-110
Chloroform	mg/kg (ppm)	2.5	95	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	96	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	100	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	104	72-116
1,1-Dichloropropene	mg/kg(ppm)	2.5	96	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	101	67-123
Benzene	mg/kg (ppm)	2.5	96	72-106
Trichloroethene	mg/kg (ppm)	2.5	95	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	101	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	104	75-126
Dibromomethane	mg/kg (ppm)	2.5	99	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	108	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	104	71-138
Toluene	mg/kg (ppm)	2.5	97	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	102	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	102	77-116
2-Hexanone	mg/kg (ppm)	12.5	105	70-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	99	75-115
Tetrachloroethene	mg/kg (ppm)	2.5	97	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	109	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	110	77-117
Chlorobenzene	mg/kg (ppm)	2.5	95	76-109
Ethylbenzene	mg/kg (ppm)	2.5	97	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	113	76-125
m,p-Xylene	mg/kg (ppm)	5	98	77-115
o-Xylene	mg/kg (ppm)	2.5	97	76-115
Styrene	mg/kg (ppm)	2.5	102	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	99	76-120
Bromoform	mg/kg (ppm)	2.5	108	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	98	77-115
Bromobenzene	mg/kg (ppm)	2.5	101	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	101	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	99	74-116
2-Chlorotoluene	mg/kg (ppm)	2.5	100	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	99	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	100	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	100	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	100	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	99	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	98	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	94	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	99	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	104	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	95	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	97	74-130
Naphthalene	mg/kg (ppm)	2.5	97	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	96	75-117

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

SAMPLE CHAIN OF CUSTODY

902125

ME 02-08-19

Page # 1 of 1 VS2

Report To Dave Heffner | Breeyn Greer

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 2068385831 Email heffner@aspectconsulting.com
bgreer@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME Morell's

PO # 090190

REMARKS

INVOICE TO AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 4 day
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-30-5.5	01A-D	2/7/19	1000	S	4												Hold
B-30-10.5	02		1010							X							
B-30-20.5	03		1030														Hold
B-30-25.5	04		1040														↓
B-30-30.5	05		1100														
B-30-35.5	06		1115	↓						X							
~~B-30-40.5~~			~~1125~~	~~BG~~													Hold
~~B-30-45.5~~			~~1135~~	~~BG~~													↓
B-30-50.5	07A-D		1150	S													↓
B-30-60.5	08	↓	1300	S	↓					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	2/8/19	0800
Received by:	WILSON TANGYAS	FEDEX	2-8-19	09:25am
Relinquished by: Liz D. Webber-Bruya	Liz Webber-Bruya	FEDEX	2/8/19	945
Received by:				

Samples received at 3 °C

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
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www.friedmanandbruya.com

February 21, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 14, 2019 from the Morrell's Walker Chevrolet 080190, F&BI 902192 project. There are 15 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0221R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 14, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morrell's Walker Chevrolet 080190, F&BI 902192 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902192 -01	MW-24-021319
902192 -02	MW-25-021319
902192 -03	MW-26-021319
902192 -04	MW-27-021319

The samples were sent to Fremont Analytical for nitrate, nitrite, sulfate, chloride, and TOC analysis. The report is enclosed.

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-24-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/19/19	Lab ID:	902192-01 x5
Date Analyzed:	02/19/19	Data File:	902192-01 x5.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	3,640

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-25-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/19/19	Lab ID:	902192-02 x5
Date Analyzed:	02/19/19	Data File:	902192-02 x5.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	1,670

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-26-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/19/19	Lab ID:	902192-03 x5
Date Analyzed:	02/19/19	Data File:	902192-03 x5.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	4,240

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-27-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/19/19	Lab ID:	902192-04 x5
Date Analyzed:	02/19/19	Data File:	902192-04 x5.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	3,220

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/19/19	Lab ID:	I9-108 mb
Date Analyzed:	02/19/19	Data File:	I9-108 mb.036
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-24-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/15/19	Lab ID:	902192-01
Date Analyzed:	02/15/19	Data File:	021513.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	66
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	5.4	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	12	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-25-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/15/19	Lab ID:	902192-02
Date Analyzed:	02/15/19	Data File:	021514.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	37
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	3.0	1,3,5-Trimethylbenzene	<1
Chloroform	1.2	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	3.6	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-26-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/15/19	Lab ID:	902192-03
Date Analyzed:	02/15/19	Data File:	021515.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	106	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	20
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.1	1,3,5-Trimethylbenzene	<1
Chloroform	1.1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.4	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-27-021319	Client:	Aspect Consulting, LLC
Date Received:	02/14/19	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/15/19	Lab ID:	902192-04
Date Analyzed:	02/15/19	Data File:	021516.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	9.4
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.6	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's Walker Chevrolet 080190
Date Extracted:	02/15/19	Lab ID:	09-0283 mb
Date Analyzed:	02/15/19	Data File:	021511.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 02/21/19
Date Received: 02/14/19
Project: Morrell's Walker Chevrolet 080190, F&BI 902192

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 902232-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	142	76	75	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	106	80-120

Date of Report: 02/21/19
Date Received: 02/14/19
Project: Morrell's Walker Chevrolet 080190, F&BI 902192

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

Laboratory Code: 902192-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	117	10-172
Chloromethane	ug/L (ppb)	50	<10	109	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	113	36-166
Bromomethane	ug/L (ppb)	50	<1	109	47-169
Chloroethane	ug/L (ppb)	50	<1	108	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	114	44-165
Acetone	ug/L (ppb)	250	<50	90	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	105	60-136
Hexane	ug/L (ppb)	50	<1	115	52-150
Methylene chloride	ug/L (ppb)	50	<5	116	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	114	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	114	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	116	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	115	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	5.4	110	71-127
Chloroform	ug/L (ppb)	50	<1	99	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	102	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	101	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	101	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	106	56-152
Benzene	ug/L (ppb)	50	<0.35	99	76-125
Trichloroethene	ug/L (ppb)	50	12	96 b	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	101	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	100	61-150
Dibromomethane	ug/L (ppb)	50	<1	98	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	100	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	101	72-132
Toluene	ug/L (ppb)	50	<1	97	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	95	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	102	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	98	71-128
Tetrachloroethene	ug/L (ppb)	50	66	109 b	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	105	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	101	69-134
Chlorobenzene	ug/L (ppb)	50	<1	97	77-122
Ethylbenzene	ug/L (ppb)	50	<1	99	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	73-137
m,p-Xylene	ug/L (ppb)	100	<2	100	69-135
o-Xylene	ug/L (ppb)	50	<1	106	60-140
Styrene	ug/L (ppb)	50	<1	109	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	109	65-142
Bromoform	ug/L (ppb)	50	<1	116	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	110	58-144
Bromobenzene	ug/L (ppb)	50	<1	110	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	106	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	114	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	112	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	107	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	105	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	99	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	98	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	98	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	98	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	100	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	98	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	97	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	106	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	102	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	108	60-143
Naphthalene	ug/L (ppb)	50	<1	103	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	104	69-148

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	99	110	25-158	11
Chloromethane	ug/L (ppb)	50	92	104	45-156	12
Vinyl chloride	ug/L (ppb)	50	94	107	50-154	13
Bromomethane	ug/L (ppb)	50	90	101	55-143	12
Chloroethane	ug/L (ppb)	50	93	103	58-146	10
Trichlorofluoromethane	ug/L (ppb)	250	97	107	50-150	10
Acetone	ug/L (ppb)	250	81	89	53-131	9
1,1-Dichloroethene	ug/L (ppb)	50	93	101	67-136	8
Hexane	ug/L (ppb)	50	100	101	57-137	1
Methylene chloride	ug/L (ppb)	50	103	104	39-148	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	96	97	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	98	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	101	100	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	105	103	55-143	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	99	98	80-123	1
Chloroform	ug/L (ppb)	50	98	95	80-121	3
2-Butanone (MEK)	ug/L (ppb)	250	98	94	57-149	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	103	100	73-132	3
1,1,1-Trichloroethane	ug/L (ppb)	50	97	97	83-130	0
1,1-Dichloropropene	ug/L (ppb)	50	98	97	77-129	1
Carbon tetrachloride	ug/L (ppb)	50	100	100	75-158	0
Benzene	ug/L (ppb)	50	94	94	69-134	0
Trichloroethene	ug/L (ppb)	50	92	91	80-120	1
1,2-Dichloropropane	ug/L (ppb)	50	96	98	77-123	2
Bromodichloromethane	ug/L (ppb)	50	101	103	81-133	2
Dibromomethane	ug/L (ppb)	50	98	104	82-125	6
4-Methyl-2-pentanone	ug/L (ppb)	250	97	97	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	100	97	82-132	3
Toluene	ug/L (ppb)	50	99	88	72-122	12
trans-1,3-Dichloropropene	ug/L (ppb)	50	94	90	80-136	4
1,1,2-Trichloroethane	ug/L (ppb)	50	95	89	75-124	7
2-Hexanone	ug/L (ppb)	250	91	87	60-136	4
1,3-Dichloropropane	ug/L (ppb)	50	94	89	76-126	5
Tetrachloroethene	ug/L (ppb)	50	100	92	76-121	8
Dibromochloromethane	ug/L (ppb)	50	103	102	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	98	92	82-125	6
Chlorobenzene	ug/L (ppb)	50	94	96	83-114	2
Ethylbenzene	ug/L (ppb)	50	95	98	77-124	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	100	101	84-127	1
m,p-Xylene	ug/L (ppb)	100	97	98	83-125	1
o-Xylene	ug/L (ppb)	50	94	98	81-121	4
Styrene	ug/L (ppb)	50	97	101	84-119	4
Isopropylbenzene	ug/L (ppb)	50	96	98	85-117	2
Bromoform	ug/L (ppb)	50	109	108	74-136	1
n-Propylbenzene	ug/L (ppb)	50	105	105	74-126	0
Bromobenzene	ug/L (ppb)	50	104	107	80-121	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	99	96	78-123	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	103	112	66-126	8
1,2,3-Trichloropropane	ug/L (ppb)	50	105	108	67-124	3
2-Chlorotoluene	ug/L (ppb)	50	99	98	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	97	96	78-128	1
tert-Butylbenzene	ug/L (ppb)	50	97	94	80-123	3
1,2,4-Trimethylbenzene	ug/L (ppb)	50	97	95	79-122	2
sec-Butylbenzene	ug/L (ppb)	50	97	94	80-125	3
p-Isopropyltoluene	ug/L (ppb)	50	97	96	81-123	1
1,3-Dichlorobenzene	ug/L (ppb)	50	97	97	85-116	0
1,4-Dichlorobenzene	ug/L (ppb)	50	94	95	84-121	1
1,2-Dichlorobenzene	ug/L (ppb)	50	97	94	85-116	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	104	107	57-141	3
1,2,4-Trichlorobenzene	ug/L (ppb)	50	97	96	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	102	103	53-141	1
Naphthalene	ug/L (ppb)	50	99	98	64-133	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	99	99	65-136	0

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 902192
Work Order Number: 1902155

February 19, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 2/14/2019 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

Date: *02/19/2019*

CLIENT: Friedman & Bruya
Project: 902192
Work Order: 1902155

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1902155-001	MW-24-021314	02/13/2019 10:10 AM	02/14/2019 4:15 PM
1902155-002	MW-25-021314	02/13/2019 11:15 AM	02/14/2019 4:15 PM
1902155-003	MW-26-021314	02/13/2019 12:30 PM	02/14/2019 4:15 PM
1902155-004	MW-27-021314	02/13/2019 1:55 PM	02/14/2019 4:15 PM

Case Narrative

WO#: **1902155**
Date: **2/19/2019**

CLIENT: Friedman & Bruya
Project: 902192

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1902155**
Date Reported: **2/19/2019**

Client: Friedman & Bruya
Collection Date: 2/13/2019 10:10:00 AM
Project: 902192
Lab ID: 1902155-001
Matrix: Water
Client Sample ID: **MW-24-021314**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 23557		Analyst: GM
Chloride	32.9	2.00	D	mg/L	20	2/15/2019 3:26:00 PM
Nitrogen, Nitrite	0.186	0.200	JDH	mg/L	2	2/15/2019 3:49:00 PM
Nitrogen, Nitrate	0.606	0.200	DH	mg/L	2	2/15/2019 3:49:00 PM
Sulfate	12.6	0.600	D	mg/L	2	2/15/2019 3:49:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R49498		Analyst: GM
Total Organic Carbon	0.751	0.500		mg/L	1	2/15/2019 3:46:24 PM

Analytical Report

Work Order: **1902155**
Date Reported: **2/19/2019**

Client: Friedman & Bruya
Collection Date: 2/13/2019 11:15:00 AM
Project: 902192
Lab ID: 1902155-002
Matrix: Water
Client Sample ID: **MW-25-021314**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 23557		Analyst: GM
Chloride	48.5	5.00	D	mg/L	50	2/15/2019 4:12:00 PM
Nitrogen, Nitrite	0.308	0.200	DH	mg/L	2	2/15/2019 4:35:00 PM
Nitrogen, Nitrate	0.624	0.200	DH	mg/L	2	2/15/2019 4:35:00 PM
Sulfate	16.1	0.600	D	mg/L	2	2/15/2019 4:35:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R49498		Analyst: GM
Total Organic Carbon	0.862	0.500		mg/L	1	2/15/2019 4:06:10 PM

Analytical Report

Work Order: **1902155**
Date Reported: **2/19/2019**

Client: Friedman & Bruya
Collection Date: 2/13/2019 12:30:00 PM
Project: 902192
Lab ID: 1902155-003
Matrix: Water
Client Sample ID: **MW-26-021314**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 23557		Analyst: GM
Chloride	46.9	5.00	D	mg/L	50	2/15/2019 4:58:00 PM
Nitrogen, Nitrite	0.154	0.200	JDH	mg/L	2	2/15/2019 5:21:00 PM
Nitrogen, Nitrate	1.78	0.200	DH	mg/L	2	2/15/2019 5:21:00 PM
Sulfate	14.4	0.600	D	mg/L	2	2/15/2019 5:21:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R49498		Analyst: GM
Total Organic Carbon	ND	0.500		mg/L	1	2/15/2019 4:25:52 PM

Analytical Report

Work Order: **1902155**
Date Reported: **2/19/2019**

Client: Friedman & Bruya
Collection Date: 2/13/2019 1:55:00 PM
Project: 902192
Lab ID: 1902155-004
Matrix: Water
Client Sample ID: **MW-27-021314**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 23557		Analyst: GM
Chloride	298	20.0	D	mg/L	200	2/15/2019 5:44:00 PM
Nitrogen, Nitrite	ND	1.00	DH	mg/L	10	2/15/2019 6:07:00 PM
Nitrogen, Nitrate	2.41	1.00	DH	mg/L	10	2/15/2019 6:07:00 PM
Sulfate	18.9	3.00	D	mg/L	10	2/15/2019 6:07:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R49498		Analyst: GM
Total Organic Carbon	0.719	0.500		mg/L	1	2/15/2019 4:45:39 PM

Work Order: 1902155
CLIENT: Friedman & Bruya
Project: 902192

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID	**MB-23557**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**2/15/2019**	RunNo:	**49499**
Client ID:	**MBLKW**	Batch ID:	**23557**			Analysis Date:	**2/15/2019**	SeqNo:	**970441**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									
Nitrogen, Nitrite	ND	0.100									
Nitrogen, Nitrate	ND	0.100									
Sulfate	ND	0.300									

Sample ID	**LCS-23557**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**2/15/2019**	RunNo:	**49499**
Client ID:	**LCSW**	Batch ID:	**23557**			Analysis Date:	**2/15/2019**	SeqNo:	**970442**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.779	0.100	0.7500	0	104	90	110				
Nitrogen, Nitrite	0.778	0.100	0.7500	0	104	90	110				
Nitrogen, Nitrate	0.783	0.100	0.7500	0	104	90	110				
Sulfate	3.80	0.300	3.750	0	101	90	110				

Sample ID	**1902152-001BDUP**	SampType:	**DUP**	Units:	**mg/L**	Prep Date:	**2/15/2019**	RunNo:	**49499**
Client ID:	**BATCH**	Batch ID:	**23557**			Analysis Date:	**2/15/2019**	SeqNo:	**970444**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	17.3	2.00						17.28	0.231	20	D
Nitrogen, Nitrite	3.76	2.00						3.800	1.06	20	DH
Nitrogen, Nitrate	ND	2.00						0		20	DH
Sulfate	25.9	6.00						25.96	0.231	20	D

Sample ID	**1902152-001BMS**	SampType:	**MS**	Units:	**mg/L**	Prep Date:	**2/15/2019**	RunNo:	**49499**
Client ID:	**BATCH**	Batch ID:	**23557**			Analysis Date:	**2/15/2019**	SeqNo:	**970445**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	33.1	2.00	15.00	17.28	105	80	120				D
Nitrogen, Nitrite	13.1	2.00	15.00	3.800	61.7	80	120				DSH

Work Order: 1902155
CLIENT: Friedman & Bruya
Project: 902192

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID **1902152-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/15/2019** RunNo: **49499**
Client ID: **BATCH** Batch ID: **23557** Analysis Date: **2/15/2019** SeqNo: **970445**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate	14.9	2.00	15.00	1.100	92.1	80	120				DH
Sulfate	100	6.00	75.00	25.96	99.2	80	120				D

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID **1902152-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/15/2019** RunNo: **49499**
Client ID: **BATCH** Batch ID: **23557** Analysis Date: **2/15/2019** SeqNo: **970446**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	33.2	2.00	15.00	17.28	106	80	120	33.08	0.302	20	D
Nitrogen, Nitrite	12.9	2.00	15.00	3.800	60.9	80	120	13.06	0.923	20	DSH
Nitrogen, Nitrate	15.0	2.00	15.00	1.100	92.4	80	120	14.92	0.268	20	DH
Sulfate	101	6.00	75.00	25.96	99.9	80	120	100.4	0.517	20	D

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 1902155
CLIENT: Friedman & Bruya
Project: 902192

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID	MB-49498	SampType:	MBLK			Units:	mg/L	Prep Date:	2/15/2019		RunNo:	49498	
Client ID:	MBLKW	Batch ID:	R49498					Analysis Date:	2/15/2019		SeqNo:	970414	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon		ND	0.500										

Sample ID	LCS-49498	SampType:	LCS			Units:	mg/L	Prep Date:	2/15/2019		RunNo:	49498	
Client ID:	LCSW	Batch ID:	R49498					Analysis Date:	2/15/2019		SeqNo:	970415	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon		4.84	0.500	5.000	0	96.8	80	120					

Sample ID	1902123-001EDUP	SampType:	DUP			Units:	mg/L	Prep Date:	2/15/2019		RunNo:	49498	
Client ID:	BATCH	Batch ID:	R49498					Analysis Date:	2/15/2019		SeqNo:	970418	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon		1.20	0.500						1.171	2.61	20		

Sample ID	1902123-001EMS	SampType:	MS			Units:	mg/L	Prep Date:	2/15/2019		RunNo:	49498	
Client ID:	BATCH	Batch ID:	R49498					Analysis Date:	2/15/2019		SeqNo:	970419	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon		6.14	0.500	5.000	1.171	99.4	70	130					

Sample ID	1902123-001EMSD	SampType:	MSD			Units:	mg/L	Prep Date:	2/15/2019		RunNo:	49498	
Client ID:	BATCH	Batch ID:	R49498					Analysis Date:	2/15/2019		SeqNo:	970420	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon		6.14	0.500	5.000	1.171	99.4	70	130	6.142	0.0163	30		

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1902155**
Logged by:	**Brianna Barnes**	Date Received:	**2/14/2019 4:15:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☐	Not Required	☑
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes	☑	No ☐	NA	☐
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☐	No ☑		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	2.7
Sample	4.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 1902455

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
902192	B-138

REMARKS

Please Email Results Asp et EDD

TURNAROUND TIME

☑ ~~Standard (2 Weeks)~~ 1 Week

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Nitrite	Sulfate	TOC	Chloride			Notes
MW-24-021314		2/13/14	1010	water					X	X	X	X	X			
MW-25-021814			1115						X	X	X	X	X			
MW-26-021314			1230						X	X	X	X	X			
MW-27-021314			1355						X	X	X	X	X			

ANALYSES REQUESTED

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/14/14	2:14
Received by:		Edvard Alcantar Soto	FAI	2/14/14	1615
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

902192

SAMPLE CHAIN OF CUSTODY

ME 02/14/19 VW3/AI3

Page # 1 of 1

Report To Dave Heffner
Company Aspect Consulting, LLC
Address 710 2nd Ave, Ste. 550
City, State, ZIP Seattle, WA, 98104
Phone (206) 838-5881 Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) David Unruh

PROJECT NAME: Morrell's / Walther Chevrolet
PO #: 080190

REMARKS:
INVOICE TO: AP

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH
Rush charges authorized by:

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Nitrate/Nitrite/Sulfate EPA 300.0	Total Fe 6010	TOL SW6010		Notes
MW-24-021319	01 A-F	2/13/19	1010	W	6					X			X	X	X		
MW-25-021319	02		1115														
MW-26-021319	03		1230														
MW-27-021319	04		1355														
																Samples received at 2 °C	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Unruh	David Unruh	Aspect Consulting	02/14	1245
Received by:	Eric Clan	FB	02/14	1245
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 7, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 26, 2019 from the Morell's 080190, F&BI 902383 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0307R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 26, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 902383 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902383 -01	MW-31-022519
902383 -02	MW-30-022519
902383 -03	A-5-7.0
902383 -04	A-5-15.0
902383 -05	A-5-22.5
902383 -06	A-5-32.0
902383 -07	A-5-43.0

Samples MW-31-022519 and MW-30-022519 were sent to Fremont Analytical for nitrate, nitrite, chloride, sulfate, and TOC analyses. The report is enclosed.

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-31-022519	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902383
Date Extracted:	03/01/19	Lab ID:	902383-01 x10
Date Analyzed:	03/04/19	Data File:	902383-01 x10.067
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	8,680

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-30-022519	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902383
Date Extracted:	03/01/19	Lab ID:	902383-02
Date Analyzed:	03/01/19	Data File:	902383-02.078
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	4,530

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902383
Date Extracted:	03/01/19	Lab ID:	I9-136 mb
Date Analyzed:	03/04/19	Data File:	I9-136 mb.061
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-5-22.5	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902383
Date Extracted:	02/28/19	Lab ID:	902383-05
Date Analyzed:	02/28/19	Data File:	022819.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.069
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-5-32.0	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902383
Date Extracted:	02/28/19	Lab ID:	902383-06
Date Analyzed:	02/28/19	Data File:	022818.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902383
Date Extracted:	02/28/19	Lab ID:	09-0308 mb
Date Analyzed:	02/28/19	Data File:	022808.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/07/19
Date Received: 02/26/19
Project: Morell's 080190, F&BI 902383

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 902435-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	49,200	0 b	0 b	75-125	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	101	80-120

Date of Report: 03/07/19
Date Received: 02/26/19
Project: Morell's 080190, F&BI 902383

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

Laboratory Code: 902419-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	13	14	10-56	7
Chloromethane	mg/kg (ppm)	2.5	<0.5	29	31	10-90	7
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	27	28	10-91	4
Bromomethane	mg/kg (ppm)	2.5	<0.5	34	37	10-110	8
Chloroethane	mg/kg (ppm)	2.5	<0.5	31	35	10-101	12
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	27	30	10-95	11
Acetone	mg/kg (ppm)	12.5	<0.5	62	69	11-141	11
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	36	39	22-107	8
Hexane	mg/kg (ppm)	2.5	<0.25	29	32	10-95	10
Methylene chloride	mg/kg (ppm)	2.5	<0.5	50	54	14-128	8
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	55	59	17-134	7
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	43	47	13-112	9
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	48	52	23-115	8
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	45	48	18-117	6
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	52	55	25-120	6
Chloroform	mg/kg (ppm)	2.5	<0.05	53	57	29-117	7
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	83	88	20-133	6
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	63	67	22-124	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	47	51	27-112	8
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	51	55	26-107	8
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	45	48	28-126	6
Benzene	mg/kg (ppm)	2.5	<0.03	54	57	26-114	5
Trichloroethene	mg/kg (ppm)	2.5	<0.02	56	62	30-112	10
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	64	68	31-119	6
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	62	67	31-131	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	60	64	27-124	6
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	79	85	16-147	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	72	77	28-137	7
Toluene	mg/kg (ppm)	2.5	1.1	61 b	62 b	34-112	2 b
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	76	30-136	7
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	69	73	32-126	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	84	91	17-147	8
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	69	72	29-125	4
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	54	60	25-114	11
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	64	68	32-143	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	71	74	32-126	4
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	61	66	37-113	8
Ethylbenzene	mg/kg (ppm)	2.5	3.3	70 b	53 b	34-115	28 b
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	60	65	35-126	8
m,p-Xylene	mg/kg (ppm)	5	17	87 b	32 b	25-125	92 b
o-Xylene	mg/kg (ppm)	2.5	4.3	57 b	36 b	27-126	45 b
Styrene	mg/kg (ppm)	2.5	<0.05	68	72	39-121	6
Isopropylbenzene	mg/kg (ppm)	2.5	0.11	59	62	34-123	5
Bromoform	mg/kg (ppm)	2.5	<0.05	70	74	18-155	6
n-Propylbenzene	mg/kg (ppm)	2.5	0.31	60	64	31-120	6
Bromobenzene	mg/kg (ppm)	2.5	<0.05	63	70	40-115	11
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	0.55	61 b	64 b	24-130	5 b
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	71	77	27-148	8
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	66	72	33-123	9
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	68	71	39-110	4
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	65	70	39-111	7
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	62	69	36-116	11
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	2.1	64 b	58 b	35-116	10 b
sec-Butylbenzene	mg/kg (ppm)	2.5	0.080	62	67	33-118	8
p-Isopropyltoluene	mg/kg (ppm)	2.5	0.092	61	65	32-119	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	0.036	61	66	38-111	8
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	0.29	62	64	39-109	3
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	1.7	66 b	54 b	40-111	20 b
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	61	66	47-127	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	54	59	31-121	9
Hexachlorobutadiene	mg/kg(ppm)	2.5	<0.25	55	60	24-128	9
Naphthalene	mg/kg (ppm)	2.5	0.14	57	61	24-139	7
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	54	58	35-117	7

Date of Report: 03/07/19
Date Received: 02/26/19
Project: Morell's 080190, F&BI 902383

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	37	10-76
Chloromethane	mg/kg (ppm)	2.5	58	34-98
Vinyl chloride	mg/kg (ppm)	2.5	62	42-107
Bromomethane	mg/kg (ppm)	2.5	67	46-113
Chloroethane	mg/kg (ppm)	2.5	65	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	71	53-112
Acetone	mg/kg (ppm)	12.5	90	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	77	65-110
Hexane	mg/kg (ppm)	2.5	86	55-107
Methylene chloride	mg/kg (ppm)	2.5	81	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	84	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	82	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	88	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	76	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	87	73-110
Chloroform	mg/kg (ppm)	2.5	88	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	119	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	103	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	86	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	98	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	87	67-123
Benzene	mg/kg (ppm)	2.5	94	72-106
Trichloroethene	mg/kg (ppm)	2.5	104	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	107	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	105	75-126
Dibromomethane	mg/kg (ppm)	2.5	99	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	113	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	118	71-138
Toluene	mg/kg (ppm)	2.5	100	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	118	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	114	77-116
2-Hexanone	mg/kg (ppm)	12.5	122	70-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	114	75-115
Tetrachloroethene	mg/kg (ppm)	2.5	102	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	109	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	117	77-117
Chlorobenzene	mg/kg (ppm)	2.5	103	76-109
Ethylbenzene	mg/kg (ppm)	2.5	100	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	99	76-125
m,p-Xylene	mg/kg (ppm)	5	101	77-115
o-Xylene	mg/kg (ppm)	2.5	95	76-115
Styrene	mg/kg (ppm)	2.5	107	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	97	76-120
Bromoform	mg/kg (ppm)	2.5	115	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	102	77-115
Bromobenzene	mg/kg (ppm)	2.5	110	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	100	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	110	74-116
2-Chlorotoluene	mg/kg (ppm)	2.5	103	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	107	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	107	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	102	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	105	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	102	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	104	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	101	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	99	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	96	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	90	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	89	74-130
Naphthalene	mg/kg (ppm)	2.5	93	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	88	75-117

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

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info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 902383
Work Order Number: 1902335

March 06, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 2/27/2019 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

Date: *03/06/2019*

CLIENT: Friedman & Bruya
Project: 902383
Work Order: 1902335

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1902335-001	MW-31-022519	02/25/2019 7:30 PM	02/27/2019 9:59 AM
1902335-002	MW-30-022519	02/25/2019 11:00 PM	02/27/2019 9:59 AM

Case Narrative

WO#: **1902335**
Date: **3/6/2019**

CLIENT: Friedman & Bruya
Project: 902383

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1902335**
Date Reported: **3/6/2019**

Client: Friedman & Bruya
Project: 902383
Lab ID: 1902335-001
Client Sample ID: **MW-31-022519**

Collection Date: 2/25/2019 7:30:00 PM
Matrix: Water

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 23656		Analyst: GM
Chloride	23.7	1.00	D	mg/L	10	3/4/2019 5:23:00 PM
Nitrite (as N)	0.166	0.200	JD	mg/L	2	2/27/2019 1:48:00 PM
Nitrate (as N)	1.09	0.200	D	mg/L	2	2/27/2019 1:48:00 PM
Sulfate	13.3	0.600	D	mg/L	2	2/27/2019 1:48:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R49834		Analyst: GM
Total Organic Carbon	0.723	0.500		mg/L	1	3/5/2019 6:47:00 PM

Analytical Report

Work Order: **1902335**
Date Reported: **3/6/2019**

Client: Friedman & Bruya
Collection Date: 2/25/2019 11:00:00 PM
Project: 902383
Lab ID: 1902335-002
Matrix: Water
Client Sample ID: **MW-30-022519**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 23656		Analyst: GM
Chloride	10.1	1.00	D	mg/L	10	3/4/2019 5:46:00 PM
Nitrite (as N)	ND	0.200	D	mg/L	2	2/27/2019 2:11:00 PM
Nitrate (as N)	1.17	0.200	D	mg/L	2	2/27/2019 2:11:00 PM
Sulfate	24.2	0.600	D	mg/L	2	2/27/2019 2:11:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R49834		Analyst: GM
Total Organic Carbon	1.24	0.500		mg/L	1	3/5/2019 8:06:00 PM

Work Order: 1902335
CLIENT: Friedman & Bruya
Project: 902383

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID	**MB-23656**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**2/27/2019**	RunNo:	**49735**
Client ID:	**MBLKW**	Batch ID:	**23656**			Analysis Date:	**2/27/2019**	SeqNo:	**974986**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID	**LCS-23656**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**2/27/2019**	RunNo:	**49735**
Client ID:	**LCSW**	Batch ID:	**23656**			Analysis Date:	**2/27/2019**	SeqNo:	**974987**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.742	0.100	0.7500	0	98.9	90	110				
Nitrite (as N)	0.732	0.100	0.7500	0	97.6	90	110				
Nitrate (as N)	0.747	0.100	0.7500	0	99.6	90	110				
Sulfate	3.66	0.300	3.750	0	97.5	90	110				

Sample ID	**1902336-001ADUP**	SampType:	**DUP**	Units:	**mg/L**	Prep Date:	**2/27/2019**	RunNo:	**49735**
Client ID:	**BATCH**	Batch ID:	**23656**			Analysis Date:	**2/27/2019**	SeqNo:	**974994**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3.15	0.100						3.112	1.09	20	E
Nitrite (as N)	ND	0.100						0		20	H
Nitrate (as N)	ND	0.100						0		20	H
Sulfate	9.41	0.300						9.360	0.533	20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID	**1902336-001AMS**	SampType:	**MS**	Units:	**mg/L**	Prep Date:	**2/27/2019**	RunNo:	**49735**
Client ID:	**BATCH**	Batch ID:	**23656**			Analysis Date:	**2/27/2019**	SeqNo:	**974995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.03	0.100	0.7500	3.112	122	80	120				ES

Work Order: 1902335
CLIENT: Friedman & Bruya
Project: 902383

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID **1902336-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **2/27/2019** RunNo: **49735**
Client ID: **BATCH** Batch ID: **23656** Analysis Date: **2/27/2019** SeqNo: **974995**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.682	0.100	0.7500	0	90.9	80	120				H
Nitrate (as N)	0.762	0.100	0.7500	0.05200	94.7	80	120				H
Sulfate	13.4	0.300	3.750	9.360	108	80	120				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range (Chloride).
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID **1902336-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/27/2019** RunNo: **49735**
Client ID: **BATCH** Batch ID: **23656** Analysis Date: **2/27/2019** SeqNo: **974998**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.01	0.100	0.7500	3.112	120	80	120	4.029	0.498	20	E
Nitrite (as N)	0.534	0.100	0.7500	0	71.2	80	120	0.6820	24.3	20	RSH
Nitrate (as N)	0.753	0.100	0.7500	0.05200	93.5	80	120	0.7620	1.19	20	H
Sulfate	13.4	0.300	3.750	9.360	108	80	120	13.42	0.0298	20	

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range (Nitrite).
R - High RPD observed. The method is in control as indicated by the LCS.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 1902335
CLIENT: Friedman & Bruya
Project: 902383

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID	**MB-49834**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**3/5/2019**	RunNo:	**49834**
Client ID:	**MBLKW**	Batch ID:	**R49834**			Analysis Date:	**3/5/2019**	SeqNo:	**977061**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									

Sample ID	**LCS-49834**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**3/5/2019**	RunNo:	**49834**
Client ID:	**LCSW**	Batch ID:	**R49834**			Analysis Date:	**3/5/2019**	SeqNo:	**977062**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.08	0.500	5.000	0	102	80	120				

Sample ID	**1902335-001BDUP**	SampType:	**DUP**	Units:	**mg/L**	Prep Date:	**3/5/2019**	RunNo:	**49834**
Client ID:	**MW-31-022519**	Batch ID:	**R49834**			Analysis Date:	**3/5/2019**	SeqNo:	**977064**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.733	0.500						0.7230	1.37	20	

Sample ID	**1902335-001BMS**	SampType:	**MS**	Units:	**mg/L**	Prep Date:	**3/5/2019**	RunNo:	**49834**
Client ID:	**MW-31-022519**	Batch ID:	**R49834**			Analysis Date:	**3/5/2019**	SeqNo:	**977065**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.96	0.500	5.000	0.7230	105	70	130				

Sample ID	**1902335-001BMSD**	SampType:	**MSD**	Units:	**mg/L**	Prep Date:	**3/5/2019**	RunNo:	**49834**
Client ID:	**MW-31-022519**	Batch ID:	**R49834**			Analysis Date:	**3/5/2019**	SeqNo:	**977066**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.77	0.500	5.000	0.7230	101	70	130	5.957	3.24	30	

Work Order: 1902335
CLIENT: Friedman & Bruya
Project: 902383

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID **1903018-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/5/2019**		RunNo: **49834**		
Client ID: **BATCH**	Batch ID: **R49834**					Analysis Date: **3/5/2019**		SeqNo: **977076**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.79	0.500						5.022	4.77	20	

Sample ID **1903018-001AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/5/2019**		RunNo: **49834**		
Client ID: **BATCH**	Batch ID: **R49834**					Analysis Date: **3/5/2019**		SeqNo: **977077**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	9.63	0.500	5.000	5.022	92.1	70	130				

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1902335**
Logged by:	**Brianna Barnes**	Date Received:	**2/27/2019 9:59:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☐	No ☑	NA	☐
	Sample received at appropriate temperature.					
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☑	Not Required	☐
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes	☑	No ☐	NA	☐
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified:		Date	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	3.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1902335

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
902383	B-152

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Nitrate	Nitrite	Chloride	Sulfate	TOC			Notes
MW-31-022519		2/25/19	1930	H_2O	2				x	x	x	x	x			
MW-30-022519		↓	2300	↓	2				x	x	x	x	x			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/26/19	1504
Received by:		Casey O'Keefe	FAI	2/27/19	959
Relinquished by:					
Received by:					

902383

SAMPLE CHAIN OF CUSTODY ME 02-26-19

Page # 1 of 1

Report To Dave Heffner / Breyn Greer
Company Aspect Consulting
Address 710 2nd Ave Ste 550
City, State, ZIP Seattle WA 98104
Phone 2068385831 Email dheffner@aspectconsulting.com

SAMPLERS (signature) BreynGreer
PROJECT NAME: Morell's
PO #: 080190
REMARKS
INVOICE TO: AP

TURNAROUND TIME
☒ Standard Turnaround
RUSH
Rush charges authorized by: DATE

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Nitrate/Nitrite Cl/Sulfate EPA 300.0	Total Fe EPA 6020	TOC SM 5310		Notes
MW-31-022519	01AC	2/25/19	1930	W	3								X	X	X		
MW-30-022519	02	2/25/19	2300	W	3								X	X	X		
A-5-7.0	03A-D	2/26/19	0115	S	4												Hold
A-5-15.0	04	2/26/19	0140	S	4												Hold
A-5-22.5	05	2/26/19	0215	S	4					X							
A-5-32.0	06	2/26/19	0245	S	4					X							
A-5-43.0	07	2/26/19	0315	S	4												Hold

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect Consulting	2/26/19	9:45
Received by: Andre Abenoja	Andre Abenoja	Fedex SDC	2/26/19	1226
Relinquished by: Liz D. Webber-Bruya	Liz Webber-Bruya	F? B1	2/26/19	1355
Received by:		Samples received at 1 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 8, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 26, 2019 from the Morell's 080190, F&BI 902384 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0308R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 26, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 902384 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902384 -01	MW-31-022519
902384 -02	MW-30-022519

The 8260C calibration standard for 2-butanone and 2-hexanone did not pass the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-31-022519	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902384
Date Extracted:	02/28/19	Lab ID:	902384-01
Date Analyzed:	02/28/19	Data File:	022814.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	160 ve
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	28	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	45	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10 ca		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-31-022519	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902384
Date Extracted:	03/05/19	Lab ID:	902384-01 1/10
Date Analyzed:	03/05/19	Data File:	030532.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	150
Vinyl chloride	<2	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<10	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	<10
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	28	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	45	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-30-022519	Client:	Aspect Consulting, LLC
Date Received:	02/26/19	Project:	Morell's 080190, F&BI 902384
Date Extracted:	02/28/19	Lab ID:	902384-02
Date Analyzed:	02/28/19	Data File:	022815.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	27
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	6.3	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10 ca	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	6.2	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10 ca		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902384
Date Extracted:	02/28/19	Lab ID:	09-0307 mb
Date Analyzed:	02/28/19	Data File:	022807.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/08/19
Date Received: 02/26/19
Project: Morell's 080190, F&BI 902384

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

Laboratory Code: 902387-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	90	55-137
Chloromethane	ug/L (ppb)	50	<10	79	61-120
Vinyl chloride	ug/L (ppb)	50	<0.2	80	61-139
Bromomethane	ug/L (ppb)	50	<1	77	20-265
Chloroethane	ug/L (ppb)	50	<1	75	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	83	71-128
Acetone	ug/L (ppb)	250	<50	96	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	82	71-123
Hexane	ug/L (ppb)	50	<1	107	44-139
Methylene chloride	ug/L (ppb)	50	<5	84	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	86	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	83	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	85	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	85	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	86	63-126
Chloroform	ug/L (ppb)	50	<1	86	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	123	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	87	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	96	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	89	70-132
Benzene	ug/L (ppb)	50	<0.35	91	75-114
Trichloroethene	ug/L (ppb)	50	<1	95	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	103	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	101	78-117
Dibromomethane	ug/L (ppb)	50	<1	93	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	122	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	111	76-120
Toluene	ug/L (ppb)	50	<1	92	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	110	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	103	81-116
2-Hexanone	ug/L (ppb)	250	<10	127	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	104	80-113
Tetrachloroethene	ug/L (ppb)	50	<1	93	72-113
Dibromochloromethane	ug/L (ppb)	50	<1	105	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	107	79-120
Chlorobenzene	ug/L (ppb)	50	<1	95	75-115
Ethylbenzene	ug/L (ppb)	50	<1	92	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	96	76-130
m,p-Xylene	ug/L (ppb)	100	<2	94	63-128
o-Xylene	ug/L (ppb)	50	<1	88	64-129
Styrene	ug/L (ppb)	50	<1	99	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	91	74-122
Bromoform	ug/L (ppb)	50	<1	105	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	94	65-129
Bromobenzene	ug/L (ppb)	50	<1	99	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	94	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	100	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	94	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	99	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	99	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	95	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	97	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	96	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	96	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	93	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	92	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	94	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	85	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	86	53-136
Naphthalene	ug/L (ppb)	50	<1	91	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	85	59-130

Date of Report: 03/08/19
Date Received: 02/26/19
Project: Morell's 080190, F&BI 902384

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	79	80	50-157	1
Chloromethane	ug/L (ppb)	50	77	79	62-130	3
Vinyl chloride	ug/L (ppb)	50	78	82	70-128	5
Bromomethane	ug/L (ppb)	50	76	78	62-188	3
Chloroethane	ug/L (ppb)	50	75	77	66-149	3
Trichlorofluoromethane	ug/L (ppb)	50	81	84	70-132	4
Acetone	ug/L (ppb)	250	91	91	44-145	0
1,1-Dichloroethene	ug/L (ppb)	50	82	85	75-119	4
Hexane	ug/L (ppb)	50	92	95	51-153	3
Methylene chloride	ug/L (ppb)	50	84	87	63-132	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	86	88	70-122	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	83	86	76-118	4
1,1-Dichloroethane	ug/L (ppb)	50	87	89	77-119	2
2,2-Dichloropropane	ug/L (ppb)	50	77	81	62-141	5
cis-1,2-Dichloroethene	ug/L (ppb)	50	87	89	76-119	2
Chloroform	ug/L (ppb)	50	88	91	78-117	3
2-Butanone (MEK)	ug/L (ppb)	250	120	119	49-147	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	101	104	78-114	3
1,1,1-Trichloroethane	ug/L (ppb)	50	89	91	80-116	2
1,1-Dichloropropene	ug/L (ppb)	50	99	100	78-119	1
Carbon tetrachloride	ug/L (ppb)	50	88	92	72-128	4
Benzene	ug/L (ppb)	50	93	95	75-116	2
Trichloroethene	ug/L (ppb)	50	98	100	72-119	2
1,2-Dichloropropane	ug/L (ppb)	50	108	109	79-121	1
Bromodichloromethane	ug/L (ppb)	50	106	108	76-120	2
Dibromomethane	ug/L (ppb)	50	99	100	79-121	1
4-Methyl-2-pentanone	ug/L (ppb)	250	117	117	54-153	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	116	118	76-128	2
Toluene	ug/L (ppb)	50	96	98	79-115	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	116	119	76-128	3
1,1,2-Trichloroethane	ug/L (ppb)	50	113	113	78-120	0
2-Hexanone	ug/L (ppb)	250	123	124	49-147	1
1,3-Dichloropropane	ug/L (ppb)	50	112	112	81-115	0
Tetrachloroethene	ug/L (ppb)	50	99	100	78-109	1
Dibromochloromethane	ug/L (ppb)	50	113	114	63-140	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	116	118	82-118	2
Chlorobenzene	ug/L (ppb)	50	101	102	80-113	1
Ethylbenzene	ug/L (ppb)	50	97	99	83-111	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	98	101	76-125	3
m,p-Xylene	ug/L (ppb)	100	98	100	84-112	2
o-Xylene	ug/L (ppb)	50	93	94	81-117	1
Styrene	ug/L (ppb)	50	104	107	83-121	3
Isopropylbenzene	ug/L (ppb)	50	95	97	81-122	2
Bromoform	ug/L (ppb)	50	113	116	40-161	3
n-Propylbenzene	ug/L (ppb)	50	99	102	81-115	3
Bromobenzene	ug/L (ppb)	50	105	111	80-113	6
1,3,5-Trimethylbenzene	ug/L (ppb)	50	98	102	83-117	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	112	115	79-118	3
1,2,3-Trichloropropane	ug/L (ppb)	50	107	111	74-116	4
2-Chlorotoluene	ug/L (ppb)	50	99	103	79-112	4
4-Chlorotoluene	ug/L (ppb)	50	104	107	80-116	3
tert-Butylbenzene	ug/L (ppb)	50	104	107	81-119	3
1,2,4-Trimethylbenzene	ug/L (ppb)	50	99	103	81-121	4
sec-Butylbenzene	ug/L (ppb)	50	101	105	83-123	4
p-Isopropyltoluene	ug/L (ppb)	50	100	104	81-122	4
1,3-Dichlorobenzene	ug/L (ppb)	50	101	104	80-115	3
1,4-Dichlorobenzene	ug/L (ppb)	50	98	102	77-112	4
1,2-Dichlorobenzene	ug/L (ppb)	50	97	100	79-115	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	99	103	62-133	4
1,2,4-Trichlorobenzene	ug/L (ppb)	50	87	91	75-119	4
Hexachlorobutadiene	ug/L (ppb)	50	85	89	70-116	5
Naphthalene	ug/L (ppb)	50	95	98	72-131	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	87	91	74-122	4

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

902384

SAMPLE CHAIN OF CUSTODY

ME 02-26-19 WI

Page # 1 of 1

Report To Dave Heffner / Breeyn Greer

Company Aspect Consulting

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 2066385831 Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
Standard Turnaround
☒ RUSH 4-day
Rush charges authorized by: D. Heffner

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
MW-31-022519	01 A C	2/25/19	1930	W	3					X							
MW-30-022519	02	2/25/19	2300	W	3					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: David Heffner	David Heffner	Aspect Consulting	2/26/19	9:45
Received by: Andre Abcouya	Andre Abcouya	FedEx SDC	2/26/19	1727
Relinquished by: D. Webber-Bruya	Liz Webber-Bruya	FBI	2/26/19	1355
Received by:				

Samples received at 1 °C

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
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www.friedmanandbruya.com

March 6, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 27, 2019 from the Morell's 080190, F&BI 902407 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0306R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 27, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 902407 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902407 -01	A-8-8.0
902407 -02	A-8-14.0
902407 -03	A-8-34.0
902407 -04	A-8-47.0
902407 -05	A-8-56.0

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-8-14.0	Client:	Aspect Consulting, LLC
Date Received:	02/27/19	Project:	Morell's 080190, F&BI 902407
Date Extracted:	02/28/19	Lab ID:	902407-02
Date Analyzed:	02/28/19	Data File:	022831.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.089
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.084
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.27
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	0.34	1,3,5-Trimethylbenzene	1.0
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.91
Benzene	<0.03	sec-Butylbenzene	0.35
Trichloroethene	<0.02	p-Isopropyltoluene	0.57
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.10
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-8-34.0	Client:	Aspect Consulting, LLC
Date Received:	02/27/19	Project:	Morell's 080190, F&BI 902407
Date Extracted:	02/28/19	Lab ID:	902407-03
Date Analyzed:	02/28/19	Data File:	022832.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	112	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	7.3
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.12
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.40
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.76
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.88
Benzene	<0.03	sec-Butylbenzene	1.2
Trichloroethene	0.15	p-Isopropyltoluene	0.55
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-8-47.0	Client:	Aspect Consulting, LLC
Date Received:	02/27/19	Project:	Morell's 080190, F&BI 902407
Date Extracted:	02/28/19	Lab ID:	902407-04
Date Analyzed:	02/28/19	Data File:	022817.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.047
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902407
Date Extracted:	02/28/19	Lab ID:	09-0308 mb
Date Analyzed:	02/28/19	Data File:	022808.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/06/19
Date Received: 02/27/19
Project: Morell's 080190, F&BI 902407

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

Laboratory Code: 902419-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	13	14	10-56	7
Chloromethane	mg/kg (ppm)	2.5	<0.5	29	31	10-90	7
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	27	28	10-91	4
Bromomethane	mg/kg (ppm)	2.5	<0.5	34	37	10-110	8
Chloroethane	mg/kg (ppm)	2.5	<0.5	31	35	10-101	12
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	27	30	10-95	11
Acetone	mg/kg (ppm)	12.5	<0.5	62	69	11-141	11
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	36	39	22-107	8
Hexane	mg/kg (ppm)	2.5	<0.25	29	32	10-95	10
Methylene chloride	mg/kg (ppm)	2.5	<0.5	50	54	14-128	8
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	55	59	17-134	7
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	43	47	13-112	9
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	48	52	23-115	8
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	45	48	18-117	6
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	52	55	25-120	6
Chloroform	mg/kg (ppm)	2.5	<0.05	53	57	29-117	7
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	83	88	20-133	6
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	63	67	22-124	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	47	51	27-112	8
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	51	55	26-107	8
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	45	48	28-126	6
Benzene	mg/kg (ppm)	2.5	<0.03	54	57	26-114	5
Trichloroethene	mg/kg (ppm)	2.5	<0.02	56	62	30-112	10
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	64	68	31-119	6
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	62	67	31-131	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	60	64	27-124	6
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	79	85	16-147	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	72	77	28-137	7
Toluene	mg/kg (ppm)	2.5	1.1	61 b	62 b	34-112	2 b
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	71	76	30-136	7
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	69	73	32-126	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	84	91	17-147	8
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	69	72	29-125	4
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	54	60	25-114	11
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	64	68	32-143	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	71	74	32-126	4
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	61	66	37-113	8
Ethylbenzene	mg/kg (ppm)	2.5	3.3	70 b	53 b	34-115	28 b
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	60	65	35-126	8
m,p-Xylene	mg/kg (ppm)	5	17	87 b	32 b	25-125	92 b
o-Xylene	mg/kg (ppm)	2.5	4.3	57 b	36 b	27-126	45 b
Styrene	mg/kg (ppm)	2.5	<0.05	68	72	39-121	6
Isopropylbenzene	mg/kg (ppm)	2.5	0.11	59	62	34-123	5
Bromoform	mg/kg (ppm)	2.5	<0.05	70	74	18-155	6
n-Propylbenzene	mg/kg (ppm)	2.5	0.31	60	64	31-120	6
Bromobenzene	mg/kg (ppm)	2.5	<0.05	63	70	40-115	11
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	0.55	61 b	64 b	24-130	5 b
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	71	77	27-148	8
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	66	72	33-123	9
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	68	71	39-110	4
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	65	70	39-111	7
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	62	69	36-116	11
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	2.1	64 b	58 b	35-116	10 b
sec-Butylbenzene	mg/kg (ppm)	2.5	0.080	62	67	33-118	8
p-Isopropyltoluene	mg/kg (ppm)	2.5	0.092	61	65	32-119	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	0.036	61	66	38-111	8
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	0.29	62	64	39-109	3
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	1.7	66 b	54 b	40-111	20 b
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	61	66	47-127	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	54	59	31-121	9
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	55	60	24-128	9
Naphthalene	mg/kg (ppm)	2.5	0.14	57	61	24-139	7
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	54	58	35-117	7

Date of Report: 03/06/19
Date Received: 02/27/19
Project: Morell's 080190, F&BI 902407

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	37	10-76
Chloromethane	mg/kg (ppm)	2.5	58	34-98
Vinyl chloride	mg/kg (ppm)	2.5	62	42-107
Bromomethane	mg/kg (ppm)	2.5	67	46-113
Chloroethane	mg/kg (ppm)	2.5	65	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	71	53-112
Acetone	mg/kg (ppm)	12.5	90	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	77	65-110
Hexane	mg/kg (ppm)	2.5	86	55-107
Methylene chloride	mg/kg (ppm)	2.5	81	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	84	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	82	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	88	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	76	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	87	73-110
Chloroform	mg/kg (ppm)	2.5	88	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	119	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	103	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	86	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	98	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	87	67-123
Benzene	mg/kg (ppm)	2.5	94	72-106
Trichloroethene	mg/kg (ppm)	2.5	104	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	107	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	105	75-126
Dibromomethane	mg/kg (ppm)	2.5	99	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	113	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	118	71-138
Toluene	mg/kg (ppm)	2.5	100	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	118	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	114	77-116
2-Hexanone	mg/kg (ppm)	12.5	122	70-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	114	75-115
Tetrachloroethene	mg/kg (ppm)	2.5	102	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	109	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	117	77-117
Chlorobenzene	mg/kg (ppm)	2.5	103	76-109
Ethylbenzene	mg/kg (ppm)	2.5	100	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	99	76-125
m,p-Xylene	mg/kg (ppm)	5	101	77-115
o-Xylene	mg/kg (ppm)	2.5	95	76-115
Styrene	mg/kg (ppm)	2.5	107	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	97	76-120
Bromoform	mg/kg (ppm)	2.5	115	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	102	77-115
Bromobenzene	mg/kg (ppm)	2.5	110	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	100	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	110	74-116
2-Chlorotoluene	mg/kg (ppm)	2.5	103	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	107	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	107	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	102	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	105	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	102	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	104	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	101	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	99	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	96	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	90	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	89	74-130
Naphthalene	mg/kg (ppm)	2.5	93	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	88	75-117

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

902407

SAMPLE CHAIN OF CUSTODY

ME 02-27-19

VS1

Report To Dave Heffner

Company Aspect Consulting

Address 710 2nd Ave Ste. 550

City, State, ZIP Seattle WA 98104

Phone 2068385031 Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Green

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
A-8-8.0	01A-D	2/26/19	2200	S	4												HOLD
A-8-14.0	02	2/26/19	2240	S	4					X							
A-8-34.0	03	2/27/19	0000	S	4					X							
A-8-47.0	04	2/27/19	0120	S	4					X							
A-8-56.0	05	2/27/19	0220	S	4												HOLD

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Green	Breeyn Greer	Aspect	2/27/19	0600
Received by:	DAVID NEGRETE	FED EX	2/27/19	9:32
Relinquished by: D. M. Bya	Liz Webber - Bruya	F?B1	2/27/19	1052
Received by:		Samples received at 2 °C		

Friedman & Bruya, Inc.
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Seattle, WA 98119-2029
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FRIEDMAN & BRUYA, INC.

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March 11, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on February 28, 2019 from the Morell's 080190, F&BI 902435 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0311R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 28, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 902435 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
902435 -01	MW-2-022719
902435 -02	MW-20-022819
902435 -03	A-6-13.0
902435 -04	A-6-21.0
902435 -05	A-6-36.0
902435 -06	A-6-57.5
902435 -07	A-6-65.0

Samples MW-31-022519 and MW-30-022519 were sent to Fremont Analytical for nitrate, nitrite, chloride, sulfate, and TOC analyses. The report is enclosed.

Several compounds in the 8260C matrix spike and laboratory control sample exceeded the acceptance criteria. The analyte was not detected in the samples, therefore the data were acceptable.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-022719	Client:	Aspect Consulting, LLC
Date Received:	02/28/19	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	902435-01 x10
Date Analyzed:	03/04/19	Data File:	902435-01 x10.095
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	49,200

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20-022819	Client:	Aspect Consulting, LLC
Date Received:	02/28/19	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	902435-02 x10
Date Analyzed:	03/04/19	Data File:	902435-02 x10.098
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	71,000

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	I9-136 mb
Date Analyzed:	03/04/19	Data File:	I9-136 mb.061
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-6-13.0	Client:	Aspect Consulting, LLC
Date Received:	02/28/19	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	902435-03
Date Analyzed:	03/01/19	Data File:	030119.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.47
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-6-36.0	Client:	Aspect Consulting, LLC
Date Received:	02/28/19	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	902435-05
Date Analyzed:	03/01/19	Data File:	030120.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	106	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-6-57.5	Client:	Aspect Consulting, LLC
Date Received:	02/28/19	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	902435-06
Date Analyzed:	03/01/19	Data File:	030121.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 902435
Date Extracted:	03/01/19	Lab ID:	09-0434 mb
Date Analyzed:	03/01/19	Data File:	030114.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/11/19
Date Received: 02/28/19
Project: Morell's 080190, F&BI 902435

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 902435-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	49,200	0 b	0 b	75-125	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	101	80-120

Date of Report: 03/11/19
Date Received: 02/28/19
Project: Morell's 080190, F&BI 902435

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

Laboratory Code: 902261-29 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	27	24	10-56	12
Chloromethane	mg/kg (ppm)	2.5	<0.5	58	50	10-90	15
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	59	51	10-91	15
Bromomethane	mg/kg (ppm)	2.5	<0.5	72	62	10-110	15
Chloroethane	mg/kg (ppm)	2.5	<0.5	71	59	10-101	18
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	69	60	10-95	14
Acetone	mg/kg (ppm)	12.5	<0.5	106	101	11-141	5
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	82	71	22-107	14
Hexane	mg/kg (ppm)	2.5	<0.25	81	78	10-95	4
Methylene chloride	mg/kg (ppm)	2.5	<0.5	97	81	14-128	18
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	101	88	17-134	14
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	92	80	13-112	14
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	97	85	23-115	13
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	98	81	18-117	19
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	101	88	25-120	14
Chloroform	mg/kg (ppm)	2.5	<0.05	102	89	29-117	14
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	122	132	20-133	8
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	108	102	22-124	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	99	87	27-112	13
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	104	96	26-107	8
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	99	87	28-126	13
Benzene	mg/kg (ppm)	2.5	<0.03	100	93	26-114	7
Trichloroethene	mg/kg (ppm)	2.5	<0.02	106	101	30-112	5
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	112	107	31-119	5
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	111	103	31-131	7
Dibromomethane	mg/kg (ppm)	2.5	<0.05	103	98	27-124	5
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	126	128	16-147	2
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	120	119	28-137	1
Toluene	mg/kg (ppm)	2.5	<0.05	105	97	34-112	8
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	120	121	30-136	1
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	116	113	32-126	3
2-Hexanone	mg/kg (ppm)	12.5	<0.5	123	137	17-147	11
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	111	112	29-125	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	108	100	25-114	8
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	115	109	32-143	5
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	113	115	32-126	2
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	109	103	37-113	6
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	107	99	34-115	8
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	118	103	35-126	14
m,p-Xylene	mg/kg (ppm)	5	<0.1	109	101	25-125	8
o-Xylene	mg/kg (ppm)	2.5	<0.05	108	97	27-126	11
Styrene	mg/kg (ppm)	2.5	<0.05	111	106	39-121	5
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	112	99	34-123	12
Bromoform	mg/kg (ppm)	2.5	<0.05	122	114	18-155	7
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	112	101	31-120	10
Bromobenzene	mg/kg (ppm)	2.5	<0.05	112	106	40-115	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	116	100	24-130	15
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	115	107	27-148	7
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	112	107	33-123	5
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	114 vo	101	39-110	12
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	114 vo	105	39-111	8
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	122 vo	107	36-116	13
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	115	101	35-116	13
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	122 vo	106	33-118	14
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	117	103	32-119	13
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	111	103	38-111	7
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	108	100	39-109	8
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	110	99	40-111	11
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	105	97	47-127	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	109	91	31-121	18
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	109	94	24-128	15
Naphthalene	mg/kg (ppm)	2.5	<0.05	111	95	24-139	16
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	108	90	35-117	18

Date of Report: 03/11/19
Date Received: 02/28/19
Project: Morell's 080190, F&BI 902435

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	63	10-76
Chloromethane	mg/kg (ppm)	2.5	82	34-98
Vinyl chloride	mg/kg (ppm)	2.5	87	42-107
Bromomethane	mg/kg (ppm)	2.5	94	46-113
Chloroethane	mg/kg (ppm)	2.5	90	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	96	53-112
Acetone	mg/kg (ppm)	12.5	120	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	99	65-110
Hexane	mg/kg (ppm)	2.5	113 vo	55-107
Methylene chloride	mg/kg (ppm)	2.5	104	50-127
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	103	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	103	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	102	74-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	115	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	73-110
Chloroform	mg/kg (ppm)	2.5	103	76-110
2-Butanone (MEK)	mg/kg (ppm)	12.5	118	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	103	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	106	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	106	72-112
Carbon tetrachloride	mg/kg (ppm)	2.5	105	67-123
Benzene	mg/kg (ppm)	2.5	99	72-106
Trichloroethene	mg/kg (ppm)	2.5	100	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	105	74-115
Bromodichloromethane	mg/kg (ppm)	2.5	103	75-126
Dibromomethane	mg/kg (ppm)	2.5	96	76-116
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	121	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	107	71-138
Toluene	mg/kg (ppm)	2.5	103	74-111
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	105	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	105	77-116
2-Hexanone	mg/kg (ppm)	12.5	116	70-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	101	75-115
Tetrachloroethene	mg/kg (ppm)	2.5	108	73-111
Dibromochloromethane	mg/kg (ppm)	2.5	107	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	101	77-117
Chlorobenzene	mg/kg (ppm)	2.5	103	76-109
Ethylbenzene	mg/kg (ppm)	2.5	106	75-112
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	119	76-125
m,p-Xylene	mg/kg (ppm)	5	108	77-115
o-Xylene	mg/kg (ppm)	2.5	110	76-115
Styrene	mg/kg (ppm)	2.5	107	76-119
Isopropylbenzene	mg/kg (ppm)	2.5	113	76-120
Bromoform	mg/kg (ppm)	2.5	113	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	108	77-115
Bromobenzene	mg/kg (ppm)	2.5	106	76-112
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	113	77-121
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	112	74-121
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	104	74-116
2-Chlorotoluene	mg/kg (ppm)	2.5	111	75-113
4-Chlorotoluene	mg/kg (ppm)	2.5	107	77-115
tert-Butylbenzene	mg/kg (ppm)	2.5	118	77-123
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	113	77-119
sec-Butylbenzene	mg/kg (ppm)	2.5	118	78-120
p-Isopropyltoluene	mg/kg (ppm)	2.5	116	77-120
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	106	76-112
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	102	74-109
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	107	75-114
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	109	68-122
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	108	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	110	74-130
Naphthalene	mg/kg (ppm)	2.5	114	73-122
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	109	75-117

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 902435
Work Order Number: 1902363

March 07, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 2/28/2019 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

Date: *03/07/2019*

CLIENT: Friedman & Bruya
Project: 902435
Work Order: 1902363

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1902363-001	MW-2-022719	02/27/2019 8:45 PM	02/28/2019 3:26 PM
1902363-002	MW-20-022818	02/28/2019 2:45 AM	02/28/2019 3:26 PM

Case Narrative

WO#: **1902363**

Date: **3/7/2019**

CLIENT: Friedman & Bruya
Project: 902435

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1902363**
Date Reported: **3/7/2019**

Client: Friedman & Bruya
Project: 902435
Lab ID: 1902363-001
Client Sample ID: **MW-2-022719**

Collection Date: 2/27/2019 8:45:00 PM
Matrix: Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 1		Analyst: GM
Chloride	50.6	5.00	D	mg/L	50	3/4/2019 4:37:00 PM
Nitrite (as N)	0.675	0.100		mg/L	1	2/28/2019 6:23:00 PM
Nitrate (as N)	ND	0.100		mg/L	1	2/28/2019 6:23:00 PM
Sulfate	1.22	1.20	D	mg/L	4	3/4/2019 6:56:00 PM
Total Organic Carbon by SM 5310C				Batch ID: 1		Analyst: GM
Total Organic Carbon	209	10.0	D	mg/L	20	3/6/2019 10:49:00 AM

Analytical Report

Work Order: **1902363**
Date Reported: **3/7/2019**

Client: Friedman & Bruya
Collection Date: 2/28/2019 2:45:00 AM
Project: 902435
Lab ID: 1902363-002
Matrix: Water
Client Sample ID: **MW-20-022818**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 1		Analyst: GM
Chloride	31.4	2.00	D	mg/L	20	3/4/2019 5:00:00 PM
Nitrite (as N)	0.128	0.100		mg/L	1	2/28/2019 9:29:00 PM
Nitrate (as N)	ND	0.100		mg/L	1	2/28/2019 9:29:00 PM
Sulfate	ND	0.300		mg/L	1	2/28/2019 9:29:00 PM
Total Organic Carbon by SM 5310C				Batch ID: 1		Analyst: GM
Total Organic Carbon	179	10.0	D	mg/L	20	3/6/2019 12:37:00 PM

Work Order: 1902363
CLIENT: Friedman & Bruya
Project: 902435

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID	**MB-23680**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**2/28/2019**	RunNo:	**49776**
Client ID:	**MBLKW**	Batch ID:	**23680**			Analysis Date:	**2/28/2019**	SeqNo:	**975827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.100									
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID	**LCS-23680**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**2/28/2019**	RunNo:	**49776**
Client ID:	**LCSW**	Batch ID:	**23680**			Analysis Date:	**2/28/2019**	SeqNo:	**975828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.760	0.100	0.7500	0	101	90	110				
Nitrite (as N)	0.735	0.100	0.7500	0	98.0	90	110				
Nitrate (as N)	0.754	0.100	0.7500	0	101	90	110				
Sulfate	3.60	0.300	3.750	0	95.9	90	110				

Sample ID	**1902354-001BDUP**	SampType:	**DUP**	Units:	**mg/L**	Prep Date:	**2/28/2019**	RunNo:	**49776**
Client ID:	**BATCH**	Batch ID:	**23680**			Analysis Date:	**2/28/2019**	SeqNo:	**975832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	32.3	0.100						32.31	0.111	20	QE
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	ND	0.100						0		20	
Sulfate	6.21	0.300						6.252	0.706	20	

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 1902363
CLIENT: Friedman & Bruya
Project: 902435

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID **1902354-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **2/28/2019** RunNo: **49776**
Client ID: **BATCH** Batch ID: **23680** Analysis Date: **2/28/2019** SeqNo: **975833**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	33.1	0.100	0.7500	32.31	111	80	120				E
Nitrite (as N)	0.571	0.100	0.7500	0	76.1	80	120				S
Nitrate (as N)	0.739	0.100	0.7500	0.05300	91.5	80	120				
Sulfate	9.98	0.300	3.750	6.252	99.5	80	120				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID **1902354-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/28/2019** RunNo: **49776**
Client ID: **BATCH** Batch ID: **23680** Analysis Date: **2/28/2019** SeqNo: **975834**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	33.2	0.100	0.7500	32.31	122	80	120	33.15	0.238	20	ES
Nitrite (as N)	0.605	0.100	0.7500	0	80.7	80	120	0.5710	5.78	20	
Nitrate (as N)	0.749	0.100	0.7500	0.05300	92.8	80	120	0.7390	1.34	20	
Sulfate	10.0	0.300	3.750	6.252	101	80	120	9.982	0.520	20	

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range (Chloride).
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID **CCV-23680F** SampType: **CCV** Units: **mg/L** Prep Date: **3/4/2019** RunNo: **49776**
Client ID: **CCV** Batch ID: **23680** Analysis Date: **3/4/2019** SeqNo: **976381**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.746	0.100	0.7500	0	99.5	90	110				
Sulfate	3.79	0.300	3.750	0	101	90	110				

Work Order: 1902363
CLIENT: Friedman & Bruya
Project: 902435

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID	MB-49834	SampType:	MBLK		Units:	mg/L	Prep Date:	3/5/2019		RunNo:	49834	
Client ID:	MBLKW	Batch ID:	R49834				Analysis Date:	3/5/2019		SeqNo:	977061	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon	ND	0.500										

Sample ID	LCS-49834	SampType:	LCS		Units:	mg/L	Prep Date:	3/5/2019		RunNo:	49834	
Client ID:	LCSW	Batch ID:	R49834				Analysis Date:	3/5/2019		SeqNo:	977062	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon	5.08	0.500	5.000	0	102	80	120					

Sample ID	1902335-001BDUP	SampType:	DUP		Units:	mg/L	Prep Date:	3/5/2019		RunNo:	49834	
Client ID:	BATCH	Batch ID:	R49834				Analysis Date:	3/5/2019		SeqNo:	977064	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon	0.733	0.500						0.7230	1.37	20		

Sample ID	1902335-001BMS	SampType:	MS		Units:	mg/L	Prep Date:	3/5/2019		RunNo:	49834	
Client ID:	BATCH	Batch ID:	R49834				Analysis Date:	3/5/2019		SeqNo:	977065	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon	5.96	0.500	5.000	0.7230	105	70	130					

Sample ID	1902335-001BMSD	SampType:	MSD		Units:	mg/L	Prep Date:	3/5/2019		RunNo:	49834	
Client ID:	BATCH	Batch ID:	R49834				Analysis Date:	3/5/2019		SeqNo:	977066	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Total Organic Carbon	5.77	0.500	5.000	0.7230	101	70	130	5.957	3.24	30		

Work Order: 1902363
CLIENT: Friedman & Bruya
Project: 902435

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID **1903018-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/5/2019**		RunNo: **49834**		
Client ID: **BATCH**	Batch ID: **R49834**					Analysis Date: **3/5/2019**		SeqNo: **977076**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	4.79	0.500						5.022	4.77	20	

Sample ID **1903018-001AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/5/2019**		RunNo: **49834**		
Client ID: **BATCH**	Batch ID: **R49834**					Analysis Date: **3/5/2019**		SeqNo: **977077**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	9.63	0.500	5.000	5.022	92.1	70	130				

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1902363**
Logged by:	**Brianna Barnes**	Date Received:	**2/28/2019 3:26:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☐	No ☑	NA	☐
	Sample received at appropriate temperature.					
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☑	Not Required	☐
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes	☑	No ☐	NA	☐
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified:		Date	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	3.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1902363

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
902435	B-159

REMARKS

Please Email Results

Aspect EDD

TURNAROUND TIME

☑ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC	Nitrate	Nitrite	Chloride	Sulfate			Notes
MW-2 -022719		2/27	2045	water					X	X	X	X	X			
MW-20 -022818		2/28	0245	↓					X	X	X	X	X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	2/28/19	1430
Received by:		Carter Johnson	FAI	2/28/19	1526
Relinquished by:					
Received by:					

902435

SAMPLE CHAIN OF CUSTODY

ME 2/28/19

Page # 1 of 1 AIZ IVS3

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98108

Phone 2068385831 Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Nitrate/Nitrite Cl⁻/Sulfate EPA 300	Total Fe EPA 6020	TOC Sm 5310		Notes
MW-2-022719	01AC	2/27	2045	W	3								X	X	X		
MW-20-022819	02AC	2/28	0245	W	3								X	X	X		
A-6-13.0 ME 2/28/19	03AD	2/27	2220	S	4					X							
A-6-21.0	04AD	2/27	2300	S	4												Hold
A-6-36.0	05AD	2/27	2330	S	4					X							
A-6-57.5	06AD	2/28	0040	S	4					X							
A-6-65.0	07AD	2/28	0110	S	4												Hold

Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	2/28/19	0500
Received by: Liz D. W-B	Liz Webber-Bruya	~~Aspect~~ FTBI	2/28/19	1320
Relinquished by:				
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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March 18, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 1, 2019 from the Morell's 080190, F&BI 903011 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0318R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 1, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 903011 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
903011 -01	A-7-9.5
903011 -02	A-7-16.0
903011 -03	A-7-22.0
903011 -04	A-7-37.0
903011 -05	A-7-41.0

The 8260C calibration standard failed the acceptance criteria for 2-hexanone in the dilution of sample A-7-22.0. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-7-9.5	Client:	Aspect Consulting, LLC
Date Received:	03/01/19	Project:	Morell's 080190, F&BI 903011
Date Extracted:	03/01/19	Lab ID:	903011-01
Date Analyzed:	03/01/19	Data File:	030138a.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	98	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	1.4
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	0.16	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	0.16	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-7-22.0	Client:	Aspect Consulting, LLC
Date Received:	03/01/19	Project:	Morell's 080190, F&BI 903011
Date Extracted:	03/01/19	Lab ID:	903011-03
Date Analyzed:	03/01/19	Data File:	030139.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	113	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	110 ve
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.43
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	1.6
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	3.0
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	0.094
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	5.4
Benzene	<0.03	sec-Butylbenzene	1.6
Trichloroethene	1.5	p-Isopropyltoluene	0.12
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.44
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-7-22.0	Client:	Aspect Consulting, LLC
Date Received:	03/01/19	Project:	Morell's 080190, F&BI 903011
Date Extracted:	03/08/19	Lab ID:	903011-03 1/10
Date Analyzed:	03/08/19	Data File:	030823.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	120
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	<0.5
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	<1
Hexane	<2.5	o-Xylene	<0.5
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	<0.5
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	1.5
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	2.8
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	5.3
Benzene	<0.3	sec-Butylbenzene	1.6
Trichloroethene	1.4	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	<0.5	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	<0.5
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5 ca		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	A-7-37.0	Client:	Aspect Consulting, LLC
Date Received:	03/01/19	Project:	Morell's 080190, F&BI 903011
Date Extracted:	03/01/19	Lab ID:	903011-04
Date Analyzed:	03/01/19	Data File:	030137.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903011
Date Extracted:	03/01/19	Lab ID:	09-0438 mb
Date Analyzed:	03/01/19	Data File:	030132.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/18/19
Date Received: 03/01/19
Project: Morell's 080190, F&BI 903011

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

Laboratory Code: 902238-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	29	10-142
Chloromethane	mg/kg (ppm)	2.5	<0.5	52	10-126
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	57	10-138
Bromomethane	mg/kg (ppm)	2.5	<0.5	61	10-163
Chloroethane	mg/kg (ppm)	2.5	<0.5	65	10-176
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	68	10-176
Acetone	mg/kg (ppm)	12.5	<0.5	84	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	10-160
Hexane	mg/kg (ppm)	2.5	<0.25	78	10-137
Methylene chloride	mg/kg (ppm)	2.5	<0.5	88	10-156
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	90	21-145
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	85	14-137
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	88	19-140
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	93	10-158
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	91	25-135
Chloroform	mg/kg (ppm)	2.5	<0.05	90	21-145
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	91	19-147
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	96	12-160
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	90	10-156
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	86	17-140
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	91	9-164
Benzene	mg/kg (ppm)	2.5	<0.03	86	29-129
Trichloroethene	mg/kg (ppm)	2.5	<0.02	85	21-139
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	88	30-135
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	91	23-155
Dibromomethane	mg/kg (ppm)	2.5	<0.05	91	23-145
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	100	24-155
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	91	28-144
Toluene	mg/kg (ppm)	2.5	<0.05	95	35-130
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	92	26-149
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	95	10-205
2-Hexanone	mg/kg (ppm)	12.5	<0.5	95	15-166
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	95	31-137
Tetrachloroethene	mg/kg (ppm)	2.5	0.049	96	20-133
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	95	28-150
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	92	28-142
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	91	32-129
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	92	32-137
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	97	31-143
m,p-Xylene	mg/kg (ppm)	5	<0.1	95	34-136
o-Xylene	mg/kg (ppm)	2.5	<0.05	94	33-134
Styrene	mg/kg (ppm)	2.5	<0.05	95	35-137
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	95	31-142
Bromoform	mg/kg (ppm)	2.5	<0.05	98	21-156
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	94	23-146
Bromobenzene	mg/kg (ppm)	2.5	<0.05	94	34-130
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	92	18-149
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	92	28-140
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	91	25-144
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	92	31-134
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	90	31-136
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	92	30-137
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	91	10-182
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	91	23-145
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	93	21-149
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	30-131
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	92	29-129
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	93	31-132
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	88	11-161
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	92	22-142
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	101	10-142
Naphthalene	mg/kg (ppm)	2.5	<0.05	87	14-157
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	91	20-144

Date of Report: 03/18/19
Date Received: 03/01/19
Project: Morell's 080190, F&BI 903011

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	50	56	10-146	11
Chloromethane	mg/kg (ppm)	2.5	66	73	27-133	10
Vinyl chloride	mg/kg (ppm)	2.5	77	84	22-139	9
Bromomethane	mg/kg (ppm)	2.5	71	78	38-114	9
Chloroethane	mg/kg (ppm)	2.5	80	90	10-163	12
Trichlorofluoromethane	mg/kg (ppm)	2.5	86	95	10-196	10
Acetone	mg/kg (ppm)	12.5	84	102	52-141	19
1,1-Dichloroethene	mg/kg (ppm)	2.5	83	91	47-128	9
Hexane	mg/kg (ppm)	2.5	104	114	43-142	9
Methylene chloride	mg/kg (ppm)	2.5	95	107	42-132	12
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	98	108	60-123	10
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	96	105	67-127	9
1,1-Dichloroethane	mg/kg (ppm)	2.5	97	108	68-115	11
2,2-Dichloropropane	mg/kg (ppm)	2.5	92	103	52-170	11
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	92	101	72-113	9
Chloroform	mg/kg (ppm)	2.5	89	102	66-120	14
2-Butanone (MEK)	mg/kg (ppm)	12.5	93	104	57-123	11
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	92	101	56-135	9
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	89	98	62-131	10
1,1-Dichloropropene	mg/kg (ppm)	2.5	88	98	69-128	11
Carbon tetrachloride	mg/kg (ppm)	2.5	90	100	60-139	11
Benzene	mg/kg (ppm)	2.5	89	98	68-114	10
Trichloroethene	mg/kg (ppm)	2.5	85	95	64-117	11
1,2-Dichloropropane	mg/kg (ppm)	2.5	90	101	72-127	12
Bromodichloromethane	mg/kg (ppm)	2.5	90	98	72-130	9
Dibromomethane	mg/kg (ppm)	2.5	89	98	70-120	10
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	102	117	45-145	14
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	96	103	75-136	7
Toluene	mg/kg (ppm)	2.5	88	98	66-126	11
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	84	93	72-132	10
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	90	102	75-113	12
2-Hexanone	mg/kg (ppm)	12.5	92	102	33-152	10
1,3-Dichloropropane	mg/kg (ppm)	2.5	90	99	72-130	10
Tetrachloroethene	mg/kg (ppm)	2.5	94	101	72-114	7
Dibromochloromethane	mg/kg (ppm)	2.5	92	101	74-125	9
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	93	101	74-132	8
Chlorobenzene	mg/kg (ppm)	2.5	95	100	76-111	5
Ethylbenzene	mg/kg (ppm)	2.5	96	101	64-123	5
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	98	108	69-135	10
m,p-Xylene	mg/kg (ppm)	5	100	103	78-122	3
o-Xylene	mg/kg (ppm)	2.5	97	107	77-124	10
Styrene	mg/kg (ppm)	2.5	99	109	74-126	10
Isopropylbenzene	mg/kg (ppm)	2.5	100	108	76-127	8
Bromoform	mg/kg (ppm)	2.5	101	110	56-132	9
n-Propylbenzene	mg/kg (ppm)	2.5	96	103	74-124	7
Bromobenzene	mg/kg (ppm)	2.5	97	108	72-122	11
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	94	103	76-126	9
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	94	104	56-143	10
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	91	104	61-137	13
2-Chlorotoluene	mg/kg (ppm)	2.5	95	102	74-121	7
4-Chlorotoluene	mg/kg (ppm)	2.5	92	100	75-122	8
tert-Butylbenzene	mg/kg (ppm)	2.5	97	100	73-130	3
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	94	100	76-125	6
sec-Butylbenzene	mg/kg (ppm)	2.5	94	100	71-130	6
p-Isopropyltoluene	mg/kg (ppm)	2.5	98	101	70-132	3
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	96	101	75-121	5
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	96	100	74-117	4
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	97	101	76-121	4
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	98	105	58-138	7
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	92	106	64-135	14
Hexachlorobutadiene	mg/kg (ppm)	2.5	96	109	50-153	13
Naphthalene	mg/kg (ppm)	2.5	85	102	63-140	18
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	88	105	63-138	18

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

903011

SAMPLE CHAIN OF CUSTODY

ME 03/01/19

VS-D2

Page # 1 of 1

Report To Dave Heffner

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 2068385831 Email dheffner@aspectconsulting.com

SAMPLERS (signature) Breeyn Greer

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ~~Standard Turnaround~~
- ~~RUSH~~ 3-day per DH 3/1/19
- Rush charges authorized by: MO

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
A-7-9.5	01 AED	2/28/19	2300	S	4					X							~~Hold~~ DAH 3/1/19
A-7-16.0	02	2/28/19	2330	S	4												Hold
A-7-22.0	03	3/1/19	0030	S	4					X							
A-7-37.0	04	3/1/19	0100	S	4					X							
A-7-41.0	05	3/1/19	0130	S	4												Hold
	AEN																

Samples ~~received~~ at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	3/1/19	0630
Received by:	DAVID VSKALD	FED EX	3/1/19	10:38
Relinquished by:				
Received by:	NWAN PHAM	FEBI	3/1/19	1208

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
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March 18, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 12, 2019 from the Morell's 080190, F&BI 903193 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0318R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 12, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 903193 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
903193 -01	B-29-15.0
903193 -02	B-29-40.0
903193 -03	B-29-50.0
903193 -04	B-29-55.0

The 8260C calibration standard failed the acceptance criteria for acetone and 2-hexanone. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-29-15.0	Client:	Aspect Consulting, LLC
Date Received:	03/12/19	Project:	Morell's 080190, F&BI 903193
Date Extracted:	03/13/19	Lab ID:	903193-01
Date Analyzed:	03/14/19	Data File:	031351.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.043
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5 ca		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-29-50.0	Client:	Aspect Consulting, LLC
Date Received:	03/12/19	Project:	Morell's 080190, F&BI 903193
Date Extracted:	03/13/19	Lab ID:	903193-03
Date Analyzed:	03/14/19	Data File:	031352.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.043
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5 ca	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5 ca		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903193
Date Extracted:	03/13/19	Lab ID:	09-564 mb
Date Analyzed:	03/13/19	Data File:	031311.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/18/19
Date Received: 03/12/19
Project: Morell's 080190, F&BI 903193

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

Laboratory Code: 903196-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	21	17	10-142	21 vo
Chloromethane	mg/kg (ppm)	2.5	<0.5	49	45	10-126	9
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	52	49	10-138	6
Bromomethane	mg/kg (ppm)	2.5	<0.5	66	64	10-163	3
Chloroethane	mg/kg (ppm)	2.5	<0.5	65	62	10-176	5
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	59	57	10-176	3
Acetone	mg/kg (ppm)	12.5	<0.5	78	79	10-163	1
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	67	10-160	4
Hexane	mg/kg (ppm)	2.5	<0.25	53	51	10-137	4
Methylene chloride	mg/kg (ppm)	2.5	<0.5	80	77	10-156	4
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	83	81	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	80	77	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	80	76	19-140	5
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	79	77	10-158	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	77	74	25-135	4
Chloroform	mg/kg (ppm)	2.5	<0.05	83	80	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	83	84	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	83	81	12-160	2
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	80	78	10-156	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	81	77	17-140	5
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	81	80	9-164	1
Benzene	mg/kg (ppm)	2.5	<0.03	80	78	29-129	3
Trichloroethene	mg/kg (ppm)	2.5	<0.02	82	81	21-139	1
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	86	82	30-135	5
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	88	86	23-155	2
Dibromomethane	mg/kg (ppm)	2.5	<0.05	87	85	23-145	2
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	90	90	24-155	0
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	88	86	28-144	2
Toluene	mg/kg (ppm)	2.5	<0.05	76	75	35-130	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	91	88	26-149	3
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	90	87	10-205	3
2-Hexanone	mg/kg (ppm)	12.5	<0.5	87	85	15-166	2
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	89	86	31-137	3
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	86	84	20-133	2
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	88	87	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	89	87	28-142	2
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	86	83	32-129	4
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	85	83	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	94	92	31-143	2
m,p-Xylene	mg/kg (ppm)	5	<0.1	85	83	34-136	2
o-Xylene	mg/kg (ppm)	2.5	<0.05	85	83	33-134	2
Styrene	mg/kg (ppm)	2.5	<0.05	92	89	35-137	3
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	89	87	31-142	2
Bromoform	mg/kg (ppm)	2.5	<0.05	83	82	21-156	1
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	88	86	23-146	2
Bromobenzene	mg/kg (ppm)	2.5	<0.05	88	85	34-130	3
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	89	87	18-149	2
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	89	87	28-140	2
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	90	88	25-144	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	87	84	31-134	4
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	87	85	31-136	2
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	90	88	30-137	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	89	87	10-182	2
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	91	88	23-145	3
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	90	89	21-149	1
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	89	88	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	87	84	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	88	87	31-132	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	92	90	11-161	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	92	90	22-142	2
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	95	93	10-142	2
Naphthalene	mg/kg (ppm)	2.5	<0.05	92	90	14-157	2
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	93	91	20-144	2

Date of Report: 03/18/19
Date Received: 03/12/19
Project: Morell's 080190, F&BI 903193

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	57	10-146
Chloromethane	mg/kg (ppm)	2.5	76	27-133
Vinyl chloride	mg/kg (ppm)	2.5	82	22-139
Bromomethane	mg/kg (ppm)	2.5	93	38-114
Chloroethane	mg/kg (ppm)	2.5	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	93	10-196
Acetone	mg/kg (ppm)	12.5	95	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	94	47-128
Hexane	mg/kg (ppm)	2.5	97	43-142
Methylene chloride	mg/kg (ppm)	2.5	100	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	99	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	102	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	99	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	100	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	93	72-113
Chloroform	mg/kg (ppm)	2.5	100	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	105	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	103	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	101	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	101	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	103	60-139
Benzene	mg/kg (ppm)	2.5	97	68-114
Trichloroethene	mg/kg (ppm)	2.5	99	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	102	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	106	72-130
Dibromomethane	mg/kg (ppm)	2.5	103	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	108	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	107	75-136
Toluene	mg/kg (ppm)	2.5	91	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	110	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	105	75-113
2-Hexanone	mg/kg (ppm)	12.5	107	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	107	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	103	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	110	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	106	74-132
Chlorobenzene	mg/kg (ppm)	2.5	100	76-111
Ethylbenzene	mg/kg (ppm)	2.5	100	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	110	69-135
m,p-Xylene	mg/kg (ppm)	5	100	78-122
o-Xylene	mg/kg (ppm)	2.5	100	77-124
Styrene	mg/kg (ppm)	2.5	108	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	105	76-127
Bromoform	mg/kg (ppm)	2.5	103	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	105	74-124
Bromobenzene	mg/kg (ppm)	2.5	102	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	106	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	108	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	103	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	104	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	105	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	105	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	107	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	106	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	104	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	101	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	103	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	114	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	107	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	111	50-153
Naphthalene	mg/kg (ppm)	2.5	108	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	108	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

903193

SAMPLE CHAIN OF CUSTODY

ME 03/12/19

Report To Dave Heffner / Breeyn Greer

Company Aspect Consulting

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone _____ Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME

☐ Standard Turnaround

☒ RUSH 3 day

Rush charges authorized by: DAH

SAMPLE DISPOSAL

☒ Dispose after 30 days

☐ Archive Samples

☐ Other _____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-29-15.0	01 A-D	3/11/19	2240	S	4					X							
B-29-40.0	02	3/11/19	2350	S	4												Hold
B-29-50.0	03	3/12/19	0015	S	4					X							B-29-505 TB
B-29-55.0	04	3/12/19	0130	S	4												Hold 3/12
													Samples received at 4 °C				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Green	Breeyn Greer	Aspect	3/12/19	0720
Received by:	DAVID NEGRETO	FED EX	3/12/19	9:07
Relinquished by: D. Mc-Bryg	Liz Webber-Bryg	FBI	3/12/19	1235
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 19, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 13, 2019 from the Morell's 080190, F&BI 903200 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0319R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 13, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 903200 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
903200 -01	B-33-5.5
903200 -02	B-33-10.0
903200 -03	B-33-35.5
903200 -04	B-33-55.5

The 8260C dichlorodifluoromethane failed below the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-33-10.0	Client:	Aspect Consulting, LLC
Date Received:	03/13/19	Project:	Morell's 080190, F&BI 903200
Date Extracted:	03/14/19	Lab ID:	903200-02
Date Analyzed:	03/14/19	Data File:	031434.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-33-55.5	Client:	Aspect Consulting, LLC
Date Received:	03/13/19	Project:	Morell's 080190, F&BI 903200
Date Extracted:	03/14/19	Lab ID:	903200-04
Date Analyzed:	03/14/19	Data File:	031435.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/IJL

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

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903200
Date Extracted:	03/14/19	Lab ID:	09-0567 mb
Date Analyzed:	03/14/19	Data File:	031433.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/19/19
Date Received: 03/13/19
Project: Morell's 080190, F&BI 903200

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

Laboratory Code: 903157-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	9 vo	9 vo	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	35	34	10-126	3
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	35	34	10-138	3
Bromomethane	mg/kg (ppm)	2.5	<0.5	49	48	10-163	2
Chloroethane	mg/kg (ppm)	2.5	<0.5	45	42	10-176	7
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	37	34	10-176	8
Acetone	mg/kg (ppm)	12.5	<0.5	59	58	10-163	2
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	48	45	10-160	6
Hexane	mg/kg (ppm)	2.5	<0.25	22	21	10-137	5
Methylene chloride	mg/kg (ppm)	2.5	<0.5	62	56	10-156	10
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	75	68	21-145	10
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	60	56	14-137	7
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	66	62	19-140	6
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	80	72	10-158	11
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	66	25-135	6
Chloroform	mg/kg (ppm)	2.5	<0.05	72	66	21-145	9
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	64	63	19-147	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	72	68	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	70	64	10-156	9
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	62	59	17-140	5
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	67	61	9-164	9
Benzene	mg/kg (ppm)	2.5	<0.03	66	61	29-129	8
Trichloroethene	mg/kg (ppm)	2.5	<0.02	63	60	21-139	5
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	67	30-135	4
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	78	72	23-155	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	71	68	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	68	66	24-155	3
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	77	73	28-144	5
Toluene	mg/kg (ppm)	2.5	<0.05	68	64	35-130	6
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	76	71	26-149	7
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	71	67	10-205	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	59	61	15-166	3
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	68	67	31-137	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	70	65	20-133	7
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	79	74	28-150	7
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	69	66	28-142	4
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	70	65	32-129	7
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	70	66	32-137	6
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	81	72	31-143	12
m,p-Xylene	mg/kg (ppm)	5	<0.1	69	65	34-136	6
o-Xylene	mg/kg (ppm)	2.5	<0.05	70	66	33-134	6
Styrene	mg/kg (ppm)	2.5	<0.05	71	68	35-137	4
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	75	70	31-142	7
Bromoform	mg/kg (ppm)	2.5	<0.05	85	81	21-156	5
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	71	65	23-146	9
Bromobenzene	mg/kg (ppm)	2.5	<0.05	70	66	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	73	67	18-149	9
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	77	73	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	66	64	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	71	66	31-134	7
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	71	67	31-136	6
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	75	69	30-137	8
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	73	67	10-182	9
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	74	67	23-145	10
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	75	69	21-149	8
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	71	67	30-131	6
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	69	64	29-129	8
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	72	66	31-132	9
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	79	73	11-161	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	72	66	22-142	9
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	76	72	10-142	5
Naphthalene	mg/kg (ppm)	2.5	<0.05	71	67	14-157	6
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	73	66	20-144	10

Date of Report: 03/19/19
Date Received: 03/13/19
Project: Morell's 080190, F&BI 903200

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	51	10-146
Chloromethane	mg/kg (ppm)	2.5	73	27-133
Vinyl chloride	mg/kg (ppm)	2.5	86	22-139
Bromomethane	mg/kg (ppm)	2.5	101	38-114
Chloroethane	mg/kg (ppm)	2.5	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	99	10-196
Acetone	mg/kg (ppm)	12.5	79	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	98	47-128
Hexane	mg/kg (ppm)	2.5	81	43-142
Methylene chloride	mg/kg (ppm)	2.5	100	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	109	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	107	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	136	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	107	72-113
Chloroform	mg/kg (ppm)	2.5	106	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	77	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	99	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	112	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	99	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	114	60-139
Benzene	mg/kg (ppm)	2.5	97	68-114
Trichloroethene	mg/kg (ppm)	2.5	93	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	103	72-130
Dibromomethane	mg/kg (ppm)	2.5	94	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	83	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	98	75-136
Toluene	mg/kg (ppm)	2.5	96	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	96	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	92	75-113
2-Hexanone	mg/kg (ppm)	12.5	71	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	88	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	101	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	101	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	87	74-132
Chlorobenzene	mg/kg (ppm)	2.5	95	76-111
Ethylbenzene	mg/kg (ppm)	2.5	98	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	116	69-135
m,p-Xylene	mg/kg (ppm)	5	96	78-122
o-Xylene	mg/kg (ppm)	2.5	100	77-124
Styrene	mg/kg (ppm)	2.5	97	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	109	76-127
Bromoform	mg/kg (ppm)	2.5	107	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	101	74-124
Bromobenzene	mg/kg (ppm)	2.5	95	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	106	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	105	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	89	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	102	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	98	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	107	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	106	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	108	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	109	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	97	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	94	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	102	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	106	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	109	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	117	50-153
Naphthalene	mg/kg (ppm)	2.5	106	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	110	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

~~902~~ 903200

SAMPLE CHAIN OF CUSTODY

ME 3/13/19 VSI

Page # 1 of 1

Report To Dave Heffner/Breeyn Greer

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98100

Phone _____ Email dheffner@aspectconsulting.com

SAMPLERS (signature) Breeyn Greer

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH DAH 3 day
- Rush charges authorized by:

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-33-5.5	01A-D	3/12	2200														
B-33-10.0	02	3/12	2210							X							Hold
B-33-35.5	03	3/12	2320														Hold
B-33-55.5	04	3/13	0030							X							

Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	3/13/19	0600
Received by:	DAVID NELSON	FedEx	3/13/19	8:44
Relinquished by:				
Received by:	Nhan Phan	FCBI	3/13/19	0945

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

March 19, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 14, 2019 from the Morell's 080190, F&BI 903259 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0319R.DOC

FRIEDMAN & BRUYA, INC.

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March 21, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 15, 2019 from the Morell's 080190, F&BI 903291 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0321R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 15, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 903291 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
903291 -01	B-28-10.5
903291 -02	B-28-15.5
903291 -03	B-28-30.5
903291 -04	B-28-55.5
903291 -05	MW-23-031419

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-28-30.5	Client:	Aspect Consulting, LLC
Date Received:	03/15/19	Project:	Morell's 080190, F&BI 903291
Date Extracted:	03/15/19	Lab ID:	903291-03
Date Analyzed:	03/19/19	Data File:	031920.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.038
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-28-55.5	Client:	Aspect Consulting, LLC
Date Received:	03/15/19	Project:	Morell's 080190, F&BI 903291
Date Extracted:	03/15/19	Lab ID:	903291-04
Date Analyzed:	03/19/19	Data File:	031921.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903291
Date Extracted:	03/15/19	Lab ID:	09-0568 mb
Date Analyzed:	03/15/19	Data File:	031529.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-23-031419	Client:	Aspect Consulting, LLC
Date Received:	03/15/19	Project:	Morell's 080190, F&BI 903291
Date Extracted:	03/15/19	Lab ID:	903291-05
Date Analyzed:	03/15/19	Data File:	031543.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	100
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	18	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	25	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903291
Date Extracted:	03/18/19	Lab ID:	09-0569 mb
Date Analyzed:	03/18/19	Data File:	031817.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/21/19
Date Received: 03/15/19
Project: Morell's 080190, F&BI 903291

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

Laboratory Code: 903262-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	24	20	10-142	18
Chloromethane	mg/kg (ppm)	2.5	<0.5	52	49	10-126	6
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	55	51	10-138	8
Bromomethane	mg/kg (ppm)	2.5	<0.5	69	70	10-163	1
Chloroethane	mg/kg (ppm)	2.5	<0.5	70	63	10-176	11
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	67	60	10-176	11
Acetone	mg/kg (ppm)	12.5	<0.5	86	79	10-163	8
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	71	64	10-160	10
Hexane	mg/kg (ppm)	2.5	<0.25	53	48	10-137	10
Methylene chloride	mg/kg (ppm)	2.5	<0.5	83	77	10-156	7
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	81	79	21-145	2
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	76	70	14-137	8
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	76	73	19-140	4
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	95	89	10-158	7
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	81	77	25-135	5
Chloroform	mg/kg (ppm)	2.5	<0.05	81	78	21-145	4
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	79	80	19-147	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	85	84	12-160	1
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	80	77	10-156	4
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	75	73	17-140	3
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	80	74	9-164	8
Benzene	mg/kg (ppm)	2.5	<0.03	77	76	29-129	1
Trichloroethene	mg/kg (ppm)	2.5	<0.02	75	73	21-139	3
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	77	77	30-135	0
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	78	77	23-155	1
Dibromomethane	mg/kg (ppm)	2.5	<0.05	78	77	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	86	87	24-155	1
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	79	80	28-144	1
Toluene	mg/kg (ppm)	2.5	<0.05	77	75	35-130	3
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	77	77	26-149	0
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	85	84	10-205	1
2-Hexanone	mg/kg (ppm)	12.5	<0.5	75	78	15-166	4
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	79	80	31-137	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	81	77	20-133	5
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	78	75	28-150	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	80	79	28-142	1
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	83	81	32-129	2
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	82	80	32-137	2
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	81	77	31-143	5
m,p-Xylene	mg/kg (ppm)	5	<0.1	83	81	34-136	2
o-Xylene	mg/kg (ppm)	2.5	<0.05	82	78	33-134	5

Date of Report: 03/21/19
Date Received: 03/15/19
Project: Morell's 080190, F&BI 903291

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

Laboratory Code: 903262-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Styrene	mg/kg (ppm)	2.5	<0.05	81	81	35-137	0
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	85	82	31-142	4
Bromoform	mg/kg (ppm)	2.5	<0.05	71	70	21-156	1
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	84	79	23-146	6
Bromobenzene	mg/kg (ppm)	2.5	<0.05	81	78	34-130	4
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	84	78	18-149	7
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	89	85	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	82	80	25-144	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	84	78	31-134	7
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	81	77	31-136	5
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	86	81	30-137	6
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	85	79	10-182	7
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	85	79	23-145	7
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	88	82	21-149	7
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	82	79	30-131	4
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	83	80	29-129	4
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	81	77	31-132	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	82	75	11-161	9
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	88	81	22-142	8
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	91	83	10-142	9
Naphthalene	mg/kg (ppm)	2.5	<0.05	88	81	14-157	8
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	89	81	20-144	9

Date of Report: 03/21/19
Date Received: 03/15/19
Project: Morell's 080190, F&BI 903291

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	47	10-146
Chloromethane	mg/kg (ppm)	2.5	67	27-133
Vinyl chloride	mg/kg (ppm)	2.5	78	22-139
Bromomethane	mg/kg (ppm)	2.5	90	38-114
Chloroethane	mg/kg (ppm)	2.5	83	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	93	10-196
Acetone	mg/kg (ppm)	12.5	79	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	90	47-128
Hexane	mg/kg (ppm)	2.5	81	43-142
Methylene chloride	mg/kg (ppm)	2.5	93	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	102	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	97	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	100	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	125	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	100	72-113
Chloroform	mg/kg (ppm)	2.5	103	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	92	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	105	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	106	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	100	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	108	60-139
Benzene	mg/kg (ppm)	2.5	97	68-114
Trichloroethene	mg/kg (ppm)	2.5	96	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	102	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	110	72-130
Dibromomethane	mg/kg (ppm)	2.5	101	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	95	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	111	75-136
Toluene	mg/kg (ppm)	2.5	98	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	111	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	100	75-113
2-Hexanone	mg/kg (ppm)	12.5	88	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	99	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	105	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	109	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	98	74-132
Chlorobenzene	mg/kg (ppm)	2.5	100	76-111
Ethylbenzene	mg/kg (ppm)	2.5	99	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	108	69-135
m,p-Xylene	mg/kg (ppm)	5	98	78-122
o-Xylene	mg/kg (ppm)	2.5	98	77-124

Date of Report: 03/21/19
Date Received: 03/15/19
Project: Morell's 080190, F&BI 903291

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Styrene	mg/kg (ppm)	2.5	102	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	105	76-127
Bromoform	mg/kg (ppm)	2.5	118	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	100	74-124
Bromobenzene	mg/kg (ppm)	2.5	98	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	102	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	94	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	99	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	100	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	103	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	102	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	102	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	105	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	99	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	97	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	99	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	104	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	98	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	107	50-153
Naphthalene	mg/kg (ppm)	2.5	98	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	99	63-138

Date of Report: 03/21/19
Date Received: 03/15/19
Project: Morell's 080190, F&BI 903291

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

Laboratory Code: 903261-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	108	10-172
Chloromethane	ug/L (ppb)	50	<10	100	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	104	36-166
Bromomethane	ug/L (ppb)	50	<1	113	47-169
Chloroethane	ug/L (ppb)	50	<1	101	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	110	44-165
Acetone	ug/L (ppb)	250	<50	90	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	94	60-136
Hexane	ug/L (ppb)	50	<1	93	52-150
Methylene chloride	ug/L (ppb)	50	<5	97	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	92	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	91	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	90	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	109	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	92	71-127
Chloroform	ug/L (ppb)	50	<1	91	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	94	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	99	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	92	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	95	56-152
Benzene	ug/L (ppb)	50	<0.35	91	76-125
Trichloroethene	ug/L (ppb)	50	<1	87	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	90	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	89	61-150
Dibromomethane	ug/L (ppb)	50	<1	89	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	102	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	93	72-132
Toluene	ug/L (ppb)	50	<1	86	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	88	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	89	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	92	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	91	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	89	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	91	69-134
Chlorobenzene	ug/L (ppb)	50	<1	92	77-122
Ethylbenzene	ug/L (ppb)	50	<1	90	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	88	73-137
m,p-Xylene	ug/L (ppb)	100	<2	92	69-135
o-Xylene	ug/L (ppb)	50	<1	88	60-140
Styrene	ug/L (ppb)	50	<1	91	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	90	65-142
Bromoform	ug/L (ppb)	50	<1 ca	83	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	88	58-144
Bromobenzene	ug/L (ppb)	50	<1	89	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	89	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	98	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	92	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	88	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	88	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	89	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	89	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	86	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	89	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	89	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	89	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	87	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	89	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	89	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	77	60-143
Naphthalene	ug/L (ppb)	50	<1	92	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	90	69-148

Date of Report: 03/21/19
Date Received: 03/15/19
Project: Morell's 080190, F&BI 903291

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	105	105	25-158	0
Chloromethane	ug/L (ppb)	50	93	95	45-156	2
Vinyl chloride	ug/L (ppb)	50	104	105	50-154	1
Bromomethane	ug/L (ppb)	50	105	106	55-143	1
Chloroethane	ug/L (ppb)	50	98	99	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	109	112	50-150	3
Acetone	ug/L (ppb)	250	84	84	53-131	0
1,1-Dichloroethene	ug/L (ppb)	50	98	101	67-136	3
Hexane	ug/L (ppb)	50	90	91	57-137	1
Methylene chloride	ug/L (ppb)	50	98	100	39-148	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	105	108	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	105	68-128	3
1,1-Dichloroethane	ug/L (ppb)	50	104	106	79-121	2
2,2-Dichloropropane	ug/L (ppb)	50	127	132	55-143	4
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	105	80-123	3
Chloroform	ug/L (ppb)	50	103	107	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	96	96	57-149	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	106	108	73-132	2
1,1,1-Trichloroethane	ug/L (ppb)	50	110	113	83-130	3
1,1-Dichloropropene	ug/L (ppb)	50	103	105	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	112	115	75-158	3
Benzene	ug/L (ppb)	50	100	102	69-134	2
Trichloroethene	ug/L (ppb)	50	97	97	80-120	0
1,2-Dichloropropane	ug/L (ppb)	50	103	106	77-123	3
Bromodichloromethane	ug/L (ppb)	50	115	117	81-133	2
Dibromomethane	ug/L (ppb)	50	104	106	82-125	2
4-Methyl-2-pentanone	ug/L (ppb)	250	100	101	65-138	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	111	113	82-132	2
Toluene	ug/L (ppb)	50	98	100	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	116	117	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	50	102	102	75-124	0
2-Hexanone	ug/L (ppb)	250	90	90	60-136	0
1,3-Dichloropropane	ug/L (ppb)	50	100	101	76-126	1
Tetrachloroethene	ug/L (ppb)	50	104	105	76-121	1
Dibromochloromethane	ug/L (ppb)	50	110	111	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	101	101	82-125	0
Chlorobenzene	ug/L (ppb)	50	100	100	83-114	0
Ethylbenzene	ug/L (ppb)	50	100	101	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	112	115	84-127	3
m,p-Xylene	ug/L (ppb)	100	99	100	83-125	1
o-Xylene	ug/L (ppb)	50	98	100	81-121	2
Styrene	ug/L (ppb)	50	103	104	84-119	1
Isopropylbenzene	ug/L (ppb)	50	106	107	85-117	1
Bromoform	ug/L (ppb)	50	118	119	74-136	1
n-Propylbenzene	ug/L (ppb)	50	98	101	74-126	3
Bromobenzene	ug/L (ppb)	50	99	101	80-121	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	103	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	111	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	50	94	96	67-124	2
2-Chlorotoluene	ug/L (ppb)	50	98	100	77-127	2
4-Chlorotoluene	ug/L (ppb)	50	99	101	78-128	2
tert-Butylbenzene	ug/L (ppb)	50	101	105	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	102	79-122	2
sec-Butylbenzene	ug/L (ppb)	50	101	104	80-125	3
p-Isopropyltoluene	ug/L (ppb)	50	104	107	81-123	3
1,3-Dichlorobenzene	ug/L (ppb)	50	99	102	85-116	3
1,4-Dichlorobenzene	ug/L (ppb)	50	95	98	84-121	3
1,2-Dichlorobenzene	ug/L (ppb)	50	98	102	85-116	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	111	115	57-141	4
1,2,4-Trichlorobenzene	ug/L (ppb)	50	97	101	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	103	105	53-141	2
Naphthalene	ug/L (ppb)	50	99	102	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	98	100	65-136	2

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

903291

SAMPLE CHAIN OF CUSTODY

ME 03-15-19

Page # 1 of 1 VSI VWI

Report To Dave Heffner / Breeyn Greer

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone _____ Email dheffner@aspectconsulting.com

SAMPLERS (signature) Breeyn Greer

PROJECT NAME: Morell's

PO # 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 3day AIB
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
B-28-10.5	01 A-D	3/14/19	2230	S	4												Hold
B-28-15.5	02	3/14/19	2220	S	4												Hold
B-28-30.5	03	3/14/19	2300	S	4					X							
B-28-55.5	04	3/14/19	0100	S	4					X							Date on Sample 3/15 EMB
MW-23-031419	05 A-F	3/14/19	2255	W	6					X							Don't Rush
													Samples received at 2 °C				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	3/15/19	0630
Received by:	DAVID NICACIO	FED EX	3/15/19	9:49
Relinquished by: D. M-B	Liz Webber-Bruya	FSBI	3/15/19	1100
Received by:				

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 14, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 903259 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
903259 -01	B-32-15.5
903259 -02	B-32-25.5
903259 -03	B-32-55.5

The 8260C dichlorodifluoromethane failed below the acceptance criteria in the matrix spike samples. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-32-15.5	Client:	Aspect Consulting, LLC
Date Received:	03/14/19	Project:	Morell's 080190, F&BI 903259
Date Extracted:	03/14/19	Lab ID:	903259-01
Date Analyzed:	03/14/19	Data File:	031436.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B-32-55.5	Client:	Aspect Consulting, LLC
Date Received:	03/14/19	Project:	Morell's 080190, F&BI 903259
Date Extracted:	03/14/19	Lab ID:	903259-03
Date Analyzed:	03/14/19	Data File:	031437.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903259
Date Extracted:	03/14/19	Lab ID:	09-0567 mb
Date Analyzed:	03/14/19	Data File:	031433.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	MS/IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 03/19/19
Date Received: 03/14/19
Project: Morell's 080190, F&BI 903259

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

Laboratory Code: 903157-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	9 vo	9 vo	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	35	34	10-126	3
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	35	34	10-138	3
Bromomethane	mg/kg (ppm)	2.5	<0.5	49	48	10-163	2
Chloroethane	mg/kg (ppm)	2.5	<0.5	45	42	10-176	7
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	37	34	10-176	8
Acetone	mg/kg (ppm)	12.5	<0.5	59	58	10-163	2
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	48	45	10-160	6
Hexane	mg/kg (ppm)	2.5	<0.25	22	21	10-137	5
Methylene chloride	mg/kg (ppm)	2.5	<0.5	62	56	10-156	10
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	75	68	21-145	10
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	60	56	14-137	7
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	66	62	19-140	6
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	80	72	10-158	11
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	66	25-135	6
Chloroform	mg/kg (ppm)	2.5	<0.05	72	66	21-145	9
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	64	63	19-147	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	72	68	12-160	6
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	70	64	10-156	9
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	62	59	17-140	5
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	67	61	9-164	9
Benzene	mg/kg (ppm)	2.5	<0.03	66	61	29-129	8
Trichloroethene	mg/kg (ppm)	2.5	<0.02	63	60	21-139	5
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	70	67	30-135	4
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	78	72	23-155	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	71	68	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	68	66	24-155	3
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	77	73	28-144	5
Toluene	mg/kg (ppm)	2.5	<0.05	68	64	35-130	6
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	76	71	26-149	7
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	71	67	10-205	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	59	61	15-166	3
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	68	67	31-137	1
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	70	65	20-133	7
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	79	74	28-150	7
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	69	66	28-142	4
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	70	65	32-129	7
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	70	66	32-137	6
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	81	72	31-143	12
m,p-Xylene	mg/kg (ppm)	5	<0.1	69	65	34-136	6
o-Xylene	mg/kg (ppm)	2.5	<0.05	70	66	33-134	6
Styrene	mg/kg (ppm)	2.5	<0.05	71	68	35-137	4
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	75	70	31-142	7
Bromoform	mg/kg (ppm)	2.5	<0.05	85	81	21-156	5
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	71	65	23-146	9
Bromobenzene	mg/kg (ppm)	2.5	<0.05	70	66	34-130	6
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	73	67	18-149	9
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	77	73	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	66	64	25-144	3
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	71	66	31-134	7
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	71	67	31-136	6
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	75	69	30-137	8
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	73	67	10-182	9
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	74	67	23-145	10
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	75	69	21-149	8
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	71	67	30-131	6
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	69	64	29-129	8
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	72	66	31-132	9
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	79	73	11-161	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	72	66	22-142	9
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	76	72	10-142	5
Naphthalene	mg/kg (ppm)	2.5	<0.05	71	67	14-157	6
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	73	66	20-144	10

Date of Report: 03/19/19
Date Received: 03/14/19
Project: Morell's 080190, F&BI 903259

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	51	10-146
Chloromethane	mg/kg (ppm)	2.5	73	27-133
Vinyl chloride	mg/kg (ppm)	2.5	86	22-139
Bromomethane	mg/kg (ppm)	2.5	101	38-114
Chloroethane	mg/kg (ppm)	2.5	94	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	99	10-196
Acetone	mg/kg (ppm)	12.5	79	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	98	47-128
Hexane	mg/kg (ppm)	2.5	81	43-142
Methylene chloride	mg/kg (ppm)	2.5	100	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	109	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	107	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	136	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	107	72-113
Chloroform	mg/kg (ppm)	2.5	106	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	77	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	99	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	112	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	99	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	114	60-139
Benzene	mg/kg (ppm)	2.5	97	68-114
Trichloroethene	mg/kg (ppm)	2.5	93	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	96	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	103	72-130
Dibromomethane	mg/kg (ppm)	2.5	94	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	83	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	98	75-136
Toluene	mg/kg (ppm)	2.5	96	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	96	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	92	75-113
2-Hexanone	mg/kg (ppm)	12.5	71	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	88	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	101	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	101	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	87	74-132
Chlorobenzene	mg/kg (ppm)	2.5	95	76-111
Ethylbenzene	mg/kg (ppm)	2.5	98	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	116	69-135
m,p-Xylene	mg/kg (ppm)	5	96	78-122
o-Xylene	mg/kg (ppm)	2.5	100	77-124
Styrene	mg/kg (ppm)	2.5	97	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	109	76-127
Bromoform	mg/kg (ppm)	2.5	107	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	101	74-124
Bromobenzene	mg/kg (ppm)	2.5	95	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	106	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	105	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	89	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	102	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	98	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	107	73-130
1,2,4-Trimethylbenzene	mg/kg(ppm)	2.5	106	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	108	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	109	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	97	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	94	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	102	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	106	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	109	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	117	50-153
Naphthalene	mg/kg (ppm)	2.5	106	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	110	63-138

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

903259

SAMPLE CHAIN OF CUSTODY ME 3/14/19 VSJ

Page # 1 of 1

Report To Dave Heffner / B Greer
Company Aspect
Address 710 2nd Ave Ste 550
City, State, ZIP Seattle WA 98104
Phone _____ Email dheffner@aspectconsulting.com

SAMPLERS (signature) Breeyn Greer
PROJECT NAME Morell's
PO # 080190
REMARKS
INVOICE TO AP

TURNAROUND TIME
☐ Standard Turnaround
☒ RUSH 3 day
Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B-32-15.5	01 AD	3/13/19	2200	S	4			X	X	X							
B-32-25.5	02	3/13/19	2235	S	4												Hold
B-32-55.5	03	3/13/19	2330	S	4					X							

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	3/14/19	0500
Received by: [signature]	[illegible]	FED EX	3/14/19	10:37
Relinquished by:				
Received by: [signature]	[illegible]	FMT	3/14/19	11:10

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
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fbi@isomedia.com
www.friedmanandbruya.com

April 2, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 27, 2019 from the Morell's 080190, F&BI 903505 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0402R.doc

CASE NARRATIVE

This case narrative encompasses samples received on March 27, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 903505 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
903505 -01	MW-28-032619
903505 -02	MW-29-032619
903505 -03	MW-32-032619
903505 -04	MW-33-032619

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-28-032619	Client:	Aspect Consulting, LLC
Date Received:	03/27/19	Project:	Morell's 080190, F&BI 903505
Date Extracted:	03/28/19	Lab ID:	903505-01
Date Analyzed:	03/28/19	Data File:	032842.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	20
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	5.1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-29-032619	Client:	Aspect Consulting, LLC
Date Received:	03/27/19	Project:	Morell's 080190, F&BI 903505
Date Extracted:	03/28/19	Lab ID:	903505-02
Date Analyzed:	03/28/19	Data File:	032843.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	12
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-32-032619	Client:	Aspect Consulting, LLC
Date Received:	03/27/19	Project:	Morell's 080190, F&BI 903505
Date Extracted:	03/28/19	Lab ID:	903505-03
Date Analyzed:	03/28/19	Data File:	032844.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	36
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.8	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	8.7	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-33-032619	Client:	Aspect Consulting, LLC
Date Received:	03/27/19	Project:	Morell's 080190, F&BI 903505
Date Extracted:	03/28/19	Lab ID:	903505-04
Date Analyzed:	03/28/19	Data File:	032845.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	28
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	1.6	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	3.9	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 903505
Date Extracted:	03/28/19	Lab ID:	09-670 mb
Date Analyzed:	03/28/19	Data File:	032811.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 04/02/19
Date Received: 03/27/19
Project: Morell's 080190, F&BI 903505

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

Laboratory Code: 903514-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	85	55-137
Chloromethane	ug/L (ppb)	50	<10	87	61-120
Vinyl chloride	ug/L (ppb)	50	<0.2	99	61-139
Bromomethane	ug/L (ppb)	50	<1	89	20-265
Chloroethane	ug/L (ppb)	50	<1	108	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	106	71-128
Acetone	ug/L (ppb)	250	<50	99	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	101	71-123
Hexane	ug/L (ppb)	50	<1	80	44-139
Methylene chloride	ug/L (ppb)	50	<5	97	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	94	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	96	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	101	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	89	63-126
Chloroform	ug/L (ppb)	50	<1	97	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	94	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	100	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	103	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	98	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	107	70-132
Benzene	ug/L (ppb)	50	<0.35	91	75-114
Trichloroethene	ug/L (ppb)	50	<1	95	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	94	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	106	78-117
Dibromomethane	ug/L (ppb)	50	<1	97	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	107	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	102	76-120
Toluene	ug/L (ppb)	50	<1	94	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	101	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	100	81-116
2-Hexanone	ug/L (ppb)	250	<10	98	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	95	80-113
Tetrachloroethene	ug/L (ppb)	50	<1	96	72-113
Dibromochloromethane	ug/L (ppb)	50	<1	109	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	100	79-120
Chlorobenzene	ug/L (ppb)	50	<1	93	75-115
Ethylbenzene	ug/L (ppb)	50	<1	97	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	76-130
m,p-Xylene	ug/L (ppb)	100	<2	97	63-128
o-Xylene	ug/L (ppb)	50	<1	94	64-129
Styrene	ug/L (ppb)	50	<1	101	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	101	74-122
Bromoform	ug/L (ppb)	50	<1	107	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	96	65-129
Bromobenzene	ug/L (ppb)	50	<1	97	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	102	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	101	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	93	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	96	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	97	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	105	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	100	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	101	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	101	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	96	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	93	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	96	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	106	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	95	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	91	53-136
Naphthalene	ug/L (ppb)	50	<1	101	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	97	59-130

Date of Report: 04/02/19
Date Received: 03/27/19
Project: Morell's 080190, F&BI 903505

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	93	88	50-157	6
Chloromethane	ug/L (ppb)	50	87	85	62-130	2
Vinyl chloride	ug/L (ppb)	50	98	97	70-128	1
Bromomethane	ug/L (ppb)	50	95	95	62-188	0
Chloroethane	ug/L (ppb)	50	115	112	66-149	3
Trichlorofluoromethane	ug/L (ppb)	50	108	105	70-132	3
Acetone	ug/L (ppb)	250	103	95	44-145	8
1,1-Dichloroethene	ug/L (ppb)	50	106	103	75-119	3
Hexane	ug/L (ppb)	50	87	87	51-153	0
Methylene chloride	ug/L (ppb)	50	100	100	63-132	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	97	96	70-122	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	98	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	99	97	77-119	2
2,2-Dichloropropane	ug/L (ppb)	50	114	111	62-141	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	92	91	76-119	1
Chloroform	ug/L (ppb)	50	98	98	78-117	0
2-Butanone (MEK)	ug/L (ppb)	250	97	96	49-147	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	101	101	78-114	0
1,1,1-Trichloroethane	ug/L (ppb)	50	106	106	80-116	0
1,1-Dichloropropene	ug/L (ppb)	50	100	99	78-119	1
Carbon tetrachloride	ug/L (ppb)	50	110	109	72-128	1
Benzene	ug/L (ppb)	50	92	92	75-116	0
Trichloroethene	ug/L (ppb)	50	95	95	72-119	0
1,2-Dichloropropane	ug/L (ppb)	50	96	95	79-121	1
Bromodichloromethane	ug/L (ppb)	50	107	107	76-120	0
Dibromomethane	ug/L (ppb)	50	98	98	79-121	0
4-Methyl-2-pentanone	ug/L (ppb)	250	108	107	54-153	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	103	103	76-128	0
Toluene	ug/L (ppb)	50	95	95	79-115	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	101	103	76-128	2
1,1,2-Trichloroethane	ug/L (ppb)	50	101	102	78-120	1
2-Hexanone	ug/L (ppb)	250	97	97	49-147	0
1,3-Dichloropropane	ug/L (ppb)	50	95	96	81-115	1
Tetrachloroethene	ug/L (ppb)	50	97	98	78-109	1
Dibromochloromethane	ug/L (ppb)	50	111	110	63-140	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	100	100	82-118	0
Chlorobenzene	ug/L (ppb)	50	93	94	80-113	1
Ethylbenzene	ug/L (ppb)	50	98	98	83-111	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	106	107	76-125	1
m,p-Xylene	ug/L (ppb)	100	99	99	84-112	0
o-Xylene	ug/L (ppb)	50	96	96	81-117	0
Styrene	ug/L (ppb)	50	102	103	83-121	1
Isopropylbenzene	ug/L (ppb)	50	104	104	81-122	0
Bromoform	ug/L (ppb)	50	110	109	40-161	1
n-Propylbenzene	ug/L (ppb)	50	98	98	81-115	0
Bromobenzene	ug/L (ppb)	50	98	99	80-113	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	103	102	83-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	103	103	79-118	0
1,2,3-Trichloropropane	ug/L (ppb)	50	95	94	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	97	96	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	98	98	80-116	0
tert-Butylbenzene	ug/L (ppb)	50	107	105	81-119	2
1,2,4-Trimethylbenzene	ug/L (ppb)	50	102	102	81-121	0
sec-Butylbenzene	ug/L (ppb)	50	103	102	83-123	1
p-Isopropyltoluene	ug/L (ppb)	50	103	103	81-122	0
1,3-Dichlorobenzene	ug/L (ppb)	50	97	96	80-115	1
1,4-Dichlorobenzene	ug/L (ppb)	50	93	93	77-112	0
1,2-Dichlorobenzene	ug/L (ppb)	50	98	97	79-115	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	110	109	62-133	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	98	96	75-119	2
Hexachlorobutadiene	ug/L (ppb)	50	97	95	70-116	2
Naphthalene	ug/L (ppb)	50	101	101	72-131	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	97	97	74-122	0

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

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

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

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

903505

SAMPLE CHAIN OF CUSTODY

ME 03/27/19

VW3

Page # 1 of 1

Report To Dave Heffner / Breeyn Greer

Company Aspect Consulting

Address 710 2nd Ave S Ste. 550

City, State, ZIP Seattle WA 98108

Phone 8122327343 Email dheffner@aspectconsulting.com

SAMPLERS (signature) Breeyn Green

PROJECT NAME: Morell's

PO # 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- ☐ Standard Turnaround
- ☒ RUSH 3 day
- Rush charges authorized by: DAH

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-28-032619	01 A-D	3/26/19	1250	W	4					X							
MW-29-032619	02 A-C	↓	1010	↓	3					X							
MW-32-032619	03 A-C		0850		3					X							
MW-33-032619	04 A-C	↓	1130	↓	3					X							

Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Green	Breeyn Green	Aspect	3/26/19	1600
Received by:	DAVID NARCISO	FED EX	3/27/19	8:47
Relinquished by:				
Received by: Nhan Phan	Nhan Phan	FEBI	3/27/19	0945

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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April 17, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on April 10, 2019 from the Morell's 080190, F&BI 904199 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0417R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 10, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 904199 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
904199 -01	MW-8D-040919
904199 -02	MW-13D-040919
904199 -03	MW-14D-040919

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8D-040919	Client:	Aspect Consulting, LLC
Date Received:	04/10/19	Project:	Morell's 080190, F&BI 904199
Date Extracted:	04/11/19	Lab ID:	904199-01
Date Analyzed:	04/11/19	Data File:	041141.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	97
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13D-040919	Client:	Aspect Consulting, LLC
Date Received:	04/10/19	Project:	Morell's 080190, F&BI 904199
Date Extracted:	04/11/19	Lab ID:	904199-02
Date Analyzed:	04/11/19	Data File:	041142.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	12
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.9
Tetrachloroethene	3.1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14D-040919	Client:	Aspect Consulting, LLC
Date Received:	04/10/19	Project:	Morell's 080190, F&BI 904199
Date Extracted:	04/11/19	Lab ID:	904199-03
Date Analyzed:	04/11/19	Data File:	041143.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 904199
Date Extracted:	04/11/19	Lab ID:	09-742 mb
Date Analyzed:	04/11/19	Data File:	041115.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 04/17/19
Date Received: 04/10/19
Project: Morell's 080190, F&BI 904199

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

Laboratory Code: 904199-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	81	61-139
Chloroethane	ug/L (ppb)	50	<1	84	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	97	71-123
Methylene chloride	ug/L (ppb)	50	<5	91	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	97	104 b	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	100	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	102	75-121
Trichloroethene	ug/L (ppb)	50	<1	100	73-122
Tetrachloroethene	ug/L (ppb)	50	<1	103	72-113

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	88	86	70-128	2
Chloroethane	ug/L (ppb)	50	89	88	66-149	1
1,1-Dichloroethene	ug/L (ppb)	50	101	100	75-119	1
Methylene chloride	ug/L (ppb)	50	98	97	63-132	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	106	102	76-118	4
1,1-Dichloroethane	ug/L (ppb)	50	105	103	77-119	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	99	76-119	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	101	99	78-114	2
1,1,1-Trichloroethane	ug/L (ppb)	50	104	102	80-116	2
Trichloroethene	ug/L (ppb)	50	102	100	72-119	2
Tetrachloroethene	ug/L (ppb)	50	106	104	78-109	2

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

ip - Recovery fell outside of control limits due to sample matrix effects.

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

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

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

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

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

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

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

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

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

904199

SAMPLE CHAIN OF CUSTODY

Mt 04-10-19

Page # 1 of 1

Report To Dave Heffner
Company Aspect
Address 710 2nd Ave & Ste 550
City, State, ZIP Seattle, WA 98104
Phone 206 838 5831 Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morelli's

PO #: 090190

REMARKS

INVOICE TO: AP

TURNAROUND TIME
- [X] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C *	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-8D-040919	01 A-C	4/9/19	1045	W	3					X							* C VOCs Only (for all)
MW-13D-040919	02 A-D	4/9/19	0900	W	4					X							
MW-14D-040919	03 A-D	4/9/19	1320	W	4					X							
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	4/10/19	0900
Received by: WES Herring	WES Herring	Fed EX	4/10/19	1100
Relinquished by				
Received by: Nhan Phan	Nhan Phan	FEBT	4/10/19	1200

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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July 24, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

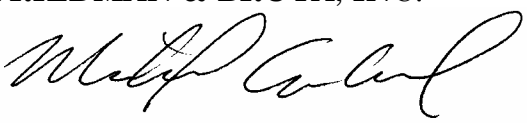
Dear Mr Heffner:

Included are the results from the testing of material submitted on July 16, 2019 from the Morell's 080190, F&BI 907266 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0724R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 16, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 907266 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
907266 -01	MW-20-071519
907266 -02	MW-34-071519

The samples were sent to Fremont Analytical for RSK 175 analysis. In addition, sample MW-34-071519 was sent to Fremont for nitrate, nitrite, sulfate, and TOC analyses. The report is enclosed.

All quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-34-071519	Client:	Aspect Consulting, LLC
Date Received:	07/16/19	Project:	Morell's 080190, F&BI 907266
Date Extracted:	07/18/19	Lab ID:	907266-02
Date Analyzed:	07/18/19	Data File:	907266-02.117
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	3,650

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 907266
Date Extracted:	07/18/19	Lab ID:	I9-435 mb
Date Analyzed:	07/19/19	Data File:	I9-435 mb.050
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-34-071519	Client:	Aspect Consulting, LLC
Date Received:	07/16/19	Project:	Morell's 080190, F&BI 907266
Date Extracted:	07/18/19	Lab ID:	907266-02
Date Analyzed:	07/18/19	Data File:	071815.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	15	Tetrachloroethene	18
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	1.3	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.4	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 907266
Date Extracted:	07/18/19	Lab ID:	09-1685 mb
Date Analyzed:	07/18/19	Data File:	071813.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 07/24/19
Date Received: 07/16/19
Project: Morell's 080190, F&BI 907266

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 907256-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	254	95 b	120 b	75-125	23 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	82	80-120

Date of Report: 07/24/19
Date Received: 07/16/19
Project: Morell's 080190, F&BI 907266

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 907241-36 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	110	10-172
Chloromethane	ug/L (ppb)	50	<10	99	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	108	36-166
Bromomethane	ug/L (ppb)	50	<1	103	47-169
Chloroethane	ug/L (ppb)	50	<1	100	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	109	44-165
Acetone	ug/L (ppb)	250	<50	56	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	101	60-136
Hexane	ug/L (ppb)	50	<1	78	52-150
Methylene chloride	ug/L (ppb)	50	<5	102	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	105	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	103	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	101	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	84	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	105	71-127
Chloroform	ug/L (ppb)	50	<1	102	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	76	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	100	48-149
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	104	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	101	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	102	56-152
Benzene	ug/L (ppb)	50	<0.35	100	76-125
Trichloroethene	ug/L (ppb)	50	<1	98	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	101	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	103	61-150
Dibromomethane	ug/L (ppb)	50	<1	106	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	108	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	102	72-132
Toluene	ug/L (ppb)	50	<1	94	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	99	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	104	68-131
2-Hexanone	ug/L (ppb)	250	<10	98	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	103	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	99	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	106	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	104	69-134
Chlorobenzene	ug/L (ppb)	50	<1	102	77-122
Ethylbenzene	ug/L (ppb)	50	<1	97	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	108	73-137
m,p-Xylene	ug/L (ppb)	100	<2	99	69-135
o-Xylene	ug/L (ppb)	50	<1	100	60-140
Styrene	ug/L (ppb)	50	<1	101	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	98	65-142
Bromoform	ug/L (ppb)	50	<1	108	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	94	58-144
Bromobenzene	ug/L (ppb)	50	<1	100	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	95	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	107	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	103	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	97	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	96	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	94	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	96	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	90	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	91	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	93	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	98	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	106	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	92	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	72	60-143
Naphthalene	ug/L (ppb)	50	<1	100	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	90	69-148

Date of Report: 07/24/19
Date Received: 07/16/19
Project: Morell's 080190, F&BI 907266

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	111	111	25-158	0
Chloromethane	ug/L (ppb)	50	102	105	45-156	3
Vinyl chloride	ug/L (ppb)	50	110	111	50-154	1
Bromomethane	ug/L (ppb)	50	103	105	55-143	2
Chloroethane	ug/L (ppb)	50	102	103	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	109	111	50-150	2
Acetone	ug/L (ppb)	250	56	57	53-131	2
1,1-Dichloroethene	ug/L (ppb)	50	100	101	67-136	1
Hexane	ug/L (ppb)	50	98	97	57-137	1
Methylene chloride	ug/L (ppb)	50	100	100	39-148	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	105	105	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	103	68-128	0
1,1-Dichloroethane	ug/L (ppb)	50	102	101	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	113	113	55-143	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	106	105	80-123	1
Chloroform	ug/L (ppb)	50	102	102	80-121	0
2-Butanone (MEK)	ug/L (ppb)	250	78	78	57-149	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	99	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	105	106	81-125	1
1,1-Dichloropropene	ug/L (ppb)	50	102	102	77-129	0
Carbon tetrachloride	ug/L (ppb)	50	104	105	75-158	1
Benzene	ug/L (ppb)	50	100	100	69-134	0
Trichloroethene	ug/L (ppb)	50	98	98	79-113	0
1,2-Dichloropropane	ug/L (ppb)	50	102	100	77-123	2
Bromodichloromethane	ug/L (ppb)	50	103	103	81-133	0
Dibromomethane	ug/L (ppb)	50	106	105	82-125	1
4-Methyl-2-pentanone	ug/L (ppb)	250	108	108	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	107	105	82-132	2
Toluene	ug/L (ppb)	50	94	94	72-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	105	103	80-136	2
1,1,2-Trichloroethane	ug/L (ppb)	50	103	102	75-124	1
2-Hexanone	ug/L (ppb)	250	99	99	60-136	0
1,3-Dichloropropane	ug/L (ppb)	50	102	101	76-126	1
Tetrachloroethene	ug/L (ppb)	50	102	100	76-121	2
Dibromochloromethane	ug/L (ppb)	50	108	107	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	103	102	82-115	1
Chlorobenzene	ug/L (ppb)	50	102	102	83-114	0
Ethylbenzene	ug/L (ppb)	50	99	99	77-124	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	110	109	84-127	1
m,p-Xylene	ug/L (ppb)	100	101	100	81-112	1
o-Xylene	ug/L (ppb)	50	101	101	81-121	0
Styrene	ug/L (ppb)	50	103	103	84-119	0
Isopropylbenzene	ug/L (ppb)	50	104	103	80-117	1
Bromoform	ug/L (ppb)	50	111	111	74-136	0
n-Propylbenzene	ug/L (ppb)	50	103	102	74-126	1
Bromobenzene	ug/L (ppb)	50	103	103	80-121	0
1,3,5-Trimethylbenzene	ug/L (ppb)	50	104	103	78-123	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	110	66-126	1
1,2,3-Trichloropropane	ug/L (ppb)	50	104	104	67-124	0
2-Chlorotoluene	ug/L (ppb)	50	103	102	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	103	102	78-128	1
tert-Butylbenzene	ug/L (ppb)	50	103	102	80-123	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	104	103	79-122	1
sec-Butylbenzene	ug/L (ppb)	50	104	103	80-116	1
p-Isopropyltoluene	ug/L (ppb)	50	104	104	81-123	0
1,3-Dichlorobenzene	ug/L (ppb)	50	103	103	83-113	0
1,4-Dichlorobenzene	ug/L (ppb)	50	99	98	83-107	1
1,2-Dichlorobenzene	ug/L (ppb)	50	103	103	84-112	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	111	111	57-141	0
1,2,4-Trichlorobenzene	ug/L (ppb)	50	105	105	72-130	0
Hexachlorobutadiene	ug/L (ppb)	50	100	100	53-141	0
Naphthalene	ug/L (ppb)	50	105	107	64-133	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	102	103	65-136	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 907266
Work Order Number: 1907228

July 22, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 7/17/2019 for the analyses presented in the following report.

Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *07/22/2019*

CLIENT: Friedman & Bruya
Project: 907266
Work Order: 1907228

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1907228-001	MW-20-071519	07/15/2019 3:50 PM	07/17/2019 9:49 AM
1907228-002	MW-34-071519	07/15/2019 5:25 PM	07/17/2019 9:49 AM

Case Narrative

WO#: **1907228**
Date: **7/22/2019**

CLIENT: Friedman & Bruya
Project: 907266

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1907228**
Date Reported: **7/22/2019**

CLIENT: Friedman & Bruya
Project: 907266

Lab ID: 1907228-001 **Collection Date:** 7/15/2019 3:50:00 PM
Client Sample ID: **MW-20-071519** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R52740		Analyst: WC
Methane	10.2	0.863	D	mg/L	100	7/18/2019 4:13:00 PM
Ethene	ND	0.0151		mg/L	1	7/18/2019 3:55:00 PM
Ethane	ND	0.0162		mg/L	1	7/18/2019 3:55:00 PM

Lab ID: 1907228-002 **Collection Date:** 7/15/2019 5:25:00 PM
Client Sample ID: **MW-34-071519** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R52740		Analyst: WC
Methane	0.0309	0.00863		mg/L	1	7/18/2019 4:07:00 PM
Ethene	ND	0.0151		mg/L	1	7/18/2019 4:07:00 PM
Ethane	ND	0.0162		mg/L	1	7/18/2019 4:07:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 25231		Analyst: SS
Nitrite (as N)	0.125	0.100		mg/L	1	7/17/2019 3:46:00 PM
Nitrate (as N)	0.484	0.100		mg/L	1	7/17/2019 3:46:00 PM
Sulfate	15.1	0.600	D	mg/L	2	7/17/2019 4:09:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R52731		Analyst: SS
Total Organic Carbon	3.90	0.500		mg/L	1	7/17/2019 3:52:00 PM

Work Order: 1907228
CLIENT: Friedman & Bruya
Project: 907266

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID	**MB-25231**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52733**
Client ID:	**MBLKW**	Batch ID:	**25231**			Analysis Date:	**7/17/2019**	SeqNo:	**1041582**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID	**LCS-25231**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52733**
Client ID:	**LCSW**	Batch ID:	**25231**			Analysis Date:	**7/17/2019**	SeqNo:	**1041583**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.727	0.100	0.7500	0	96.9	90	110				
Nitrate (as N)	0.723	0.100	0.7500	0	96.4	90	110				
Sulfate	3.57	0.300	3.750	0	95.2	90	110				

Sample ID	**1907228-002CDUP**	SampType:	**DUP**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52733**
Client ID:	**MW-34-071519**	Batch ID:	**25231**			Analysis Date:	**7/17/2019**	SeqNo:	**1041586**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.234	0.200						0.2340	0	20	D
Nitrate (as N)	0.530	0.200						0.5360	1.13	20	D
Sulfate	15.1	0.600						15.08	0.159	20	D

Sample ID	**1907228-002CMS**	SampType:	**MS**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52733**
Client ID:	**MW-34-071519**	Batch ID:	**25231**			Analysis Date:	**7/17/2019**	SeqNo:	**1041587**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.44	0.200	1.500	0.2340	80.5	80	120				D
Nitrate (as N)	1.93	0.200	1.500	0.5360	92.8	80	120				D
Sulfate	23.0	0.600	7.500	15.08	106	80	120				D

Work Order: 1907228
CLIENT: Friedman & Bruya
Project: 907266

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID **1907228-002CMSD** SampType: **MSD** Units: **mg/L** Prep Date: **7/17/2019** RunNo: **52733**
Client ID: **MW-34-071519** Batch ID: **25231** Analysis Date: **7/17/2019** SeqNo: **1041588**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.41	0.200	1.500	0.2340	78.4	80	120	1.442	2.24	20	DS
Nitrate (as N)	1.93	0.200	1.500	0.5360	92.9	80	120	1.928	0.104	20	D
Sulfate	23.0	0.600	7.500	15.08	105	80	120	23.02	0.191	20	D

Work Order: 1907228
CLIENT: Friedman & Bruya
Project: 907266

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID	**MB-R52731**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52731**
Client ID:	**MBLKW**	Batch ID:	**R52731**			Analysis Date:	**7/17/2019**	SeqNo:	**1041529**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									

Sample ID	**LCS-R52731**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52731**
Client ID:	**LCSW**	Batch ID:	**R52731**			Analysis Date:	**7/17/2019**	SeqNo:	**1041530**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.07	0.500	5.000	0	101	80	120				

Sample ID	**1907228-002BDUP**	SampType:	**DUP**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52731**
Client ID:	**MW-34-071519**	Batch ID:	**R52731**			Analysis Date:	**7/17/2019**	SeqNo:	**1041534**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	2.37	0.500						3.900	48.8	20	R

NOTES:
R - High RPD indicates matrix interference. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID	**1907228-002BMS**	SampType:	**MS**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52731**
Client ID:	**MW-34-071519**	Batch ID:	**R52731**			Analysis Date:	**7/17/2019**	SeqNo:	**1041535**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.36	0.500	5.000	3.900	49.3	70	130				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID	**1907228-002BMSD**	SampType:	**MSD**	Units:	**mg/L**	Prep Date:	**7/17/2019**	RunNo:	**52731**
Client ID:	**MW-34-071519**	Batch ID:	**R52731**			Analysis Date:	**7/17/2019**	SeqNo:	**1041536**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.13	0.500	5.000	3.900	44.7	70	130	6.364	3.70	30	S

Work Order: 1907228
CLIENT: Friedman & Bruya
Project: 907266

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID	**1907228-002BMSD**	SampType: **MSD**		Units: **mg/L**	Prep Date: **7/17/2019**		RunNo: **52731**		
Client ID:	**MW-34-071519**	Batch ID: **R52731**			Analysis Date: **7/17/2019**		SeqNo: **1041536**		

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 1907228
CLIENT: Friedman & Bruya
Project: 907266

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID	**MB-R52740**	SampType:	**MBLK**	Units:	**mg/L**	Prep Date:	**7/18/2019**	RunNo:	**52740**
Client ID:	**MBLKW**	Batch ID:	**R52740**			Analysis Date:	**7/18/2019**	SeqNo:	**1041768**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863									
Ethene	ND	0.0151									
Ethane	ND	0.0162									

Sample ID	**LCS-R52740**	SampType:	**LCS**	Units:	**mg/L**	Prep Date:	**7/18/2019**	RunNo:	**52740**
Client ID:	**LCSW**	Batch ID:	**R52740**			Analysis Date:	**7/18/2019**	SeqNo:	**1041767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,180	0.00863	1,000	0	118	70	130				
Ethene	1,200	0.0151	1,000	0	120	70	130				
Ethane	1,220	0.0162	1,000	0	122	70	130				

Sample ID	**1907169-002CREP**	SampType:	**REP**	Units:	**mg/L**	Prep Date:	**7/18/2019**	RunNo:	**52740**
Client ID:	**BATCH**	Batch ID:	**R52740**			Analysis Date:	**7/18/2019**	SeqNo:	**1041755**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863						0		30	
Ethene	ND	0.0151						0		30	
Ethane	ND	0.0162						0		30	

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1907228**
Logged by:	**Carissa True**	Date Received:	**7/17/2019 9:49:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C*	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☑	No ☐	NA ☐

Person Notified:	Michael	Date	7/17/2019
By Whom:	Carissa True	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Clarifying dissolved gases		
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler 1	1.4
Sample 1	1.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1907228

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
907266	A-324

REMARKS

Please Email Results

TURNAROUND TIME

☐ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Dissolved Methane, Ethane, Ethene	Nitrate	Nitrite	Sulfide	TOC			Notes
MW-20-071519		7/15/19	1550	water					X							
MW-34-071519		↓	1725	↓					x	X	x	X	X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	7/17/19	0820 AM
Received by:	Kayla Pete	Kayla Peterson	FAI	7/17/19	0949
Relinquished by:					
Received by:					

907266

SAMPLE CHAIN OF CUSTODY

ME 07-16-19 VWI/AI3

Page # 1 of 1

Report To Dave Heffner

Company Aspect Consulting

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 6122327343 Email bgreer@aspectconsulting.com dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Greer

PROJECT NAME: Morell's

PO #: 080190

REMARKS: Pls call BMG w/ any bottle questions.

INVOICE TO: AP

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Dissolved Methane/Ethane/Ethene	Nitrate/Nitrite Sulfate	TOC	Total Iron	Notes
MW-20-071519	01A-C	7/15/19	1550	W	3								X				
MW-34-071519	02A-I	7/15/19	1725	W	9					X			X	X	X	X	
													Samples received at 1.5 °C				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Greer	Breeyn Greer	Aspect	7/16	1450
Received by:	Melissa Matlock	Fedex SD	7/16	1450
Relinquished by:				
Received by:	BISRAT TADESSE	FB1	7/16	17:05

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Breeyn Greer, Aspect Consulting
Project: Not provided
Customer Reference: 080190

SiREM Reference: S-5416
Report Date: 25-Jul-19
Data Files: iQ5A-DHCT-TM-QPCR-1678
iQ5A-DB-DHC-TM-QPCR-1001

Table 1: Test Results

Sample ID	*Dehalococcoides* (Dhc)	
	Percent Dhc[(1)]	Enumeration/Liter[(2)]
MW-34	NA	1×10^4 U
MW-20	NA	1×10^5 U

See final page for notes.

Analyst: J. Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Coordinator

Table 2: Detailed Test Parameters, Gene-Trac Test Reference S-5416

Customer Sample ID	MW-34	MW-20
SiREM Dhc Test ID	DHC-17775	DHC-17776
Date Sampled [3]	15-Jul-19	15-Jul-19
Matrix	Groundwater	Groundwater
Date Received [3]	17-Jul-19	17-Jul-19
Sample Temperature	0.3 °C	0.3 °C
Filtration Date [3]	17-Jul-19	17-Jul-19
Volume Used for DNA Extraction	100 mL	10 mL
DNA Extraction Date	22-Jul-19	22-Jul-19
DNA Concentration in Sample (extractable)	2790 ng/L (J)	137475 ng/L
PCR Amplifiable DNA	Detected	Detected
Dhc qPCR Date Analyzed	24-Jul-19	24-Jul-19
Laboratory Controls (see Table 3)	Passed	Passed
Comments	- -	- -

See final page for notes.

Table 3: Gene-Trac Dhc Control Results, Test Reference S-5416

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	24-Jul-19	Genomic DNA (CSLD-1316)	1.5×10^{7}	4.8×10^{6} (4)	See Note 4
Positive Control High Concentration	24-Jul-19	Genomic DNA (CSHD-1316)	2.4×10^{9}	2.1×10^{9}	Passed
Extraction Control	24-Jul-19	Extraction Control (KB-0679)	1.6×10^{11}	1.3×10^{11}	Passed
DNA Extraction Blank	24-Jul-19	Sterile Water (EB-3334)	0	2.6×10^{3} U	Passed
Negative Control	24-Jul-19	Reagent Blank (TBD-1275)	0	2.6×10^{3} U	Passed

See final page for notes.

Notes:
Dhc = *Dehalococcoides*
J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
E Extracted genomic DNA was not detected in the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
ng/L = nanograms per liter
mL = milliliter
NA = not applicable
ND = not detected
DNA = deoxyribonucleic acid
16S rRNA = 16S ribosomal ribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
°C = degrees Celsius

[1]Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

[2]Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

[3]Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 7 days of date received or filtration date.

[4]Control was outside recovery limit guidelines (+/- 50%), however, test results are deemed acceptable if one of two positive controls falls within the recovery limit guidelines.

[5]Acceptable as relevant test result is greater than 1 order of magnitude above DNA Extraction Blank result.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 6, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on August 28, 2019 from the Morell's 080190, F&BI 908566 project. There are 15 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0906R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 28, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 908566 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
908566 -01	MW-24-082719
908566 -02	MW-26-082719
908566 -03	MW-34-082719
908566 -04	MW-35-082719

The samples were sent to Fremont Analytical for nitrate, sulfate, nitrite, TOC, and dissolved gasses analyses. The report is enclosed.

Methylene chloride was detected in the samples. The data were flagged accordingly.

Several 8260C compounds failed below the acceptance criteria in the matrix spike sample. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-24-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-01 x10
Date Analyzed:	08/30/19	Data File:	908566-01 x10.105
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	41,400

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-26-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-02 x10
Date Analyzed:	08/30/19	Data File:	908566-02 x10.106
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	49,400

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-34-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-03 x10
Date Analyzed:	08/30/19	Data File:	908566-03 x10.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	6,090

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-35-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-04 x10
Date Analyzed:	08/30/19	Data File:	908566-04 x10.108
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	6,170

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	I9-534 mb
Date Analyzed:	08/30/19	Data File:	I9-534 mb.100
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-24-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-01
Date Analyzed:	08/30/19	Data File:	083040.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	42
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	5.6 lc	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	5.1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	10	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-26-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-02
Date Analyzed:	08/30/19	Data File:	083041.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	20
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	6.2 lc	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.2	1,3,5-Trimethylbenzene	<1
Chloroform	1.2	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.7	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-34-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-03
Date Analyzed:	08/30/19	Data File:	083042.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	25
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	5.6 lc	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	1.3	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.2	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-35-082719	Client:	Aspect Consulting, LLC
Date Received:	08/28/19	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	908566-04
Date Analyzed:	08/30/19	Data File:	083043.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	39
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	5.4 lc	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	2.8	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	4.9	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	15 ca		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 908566
Date Extracted:	08/30/19	Lab ID:	09-2096 mb
Date Analyzed:	08/30/19	Data File:	083026.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 09/06/19
Date Received: 08/28/19
Project: Morell's 080190, F&BI 908566

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 908555-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	286	105	104	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	95	80-120

Date of Report: 09/06/19
Date Received: 08/28/19
Project: Morell's 080190, F&BI 908566

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 908566-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	97	55-137
Chloromethane	ug/L (ppb)	50	<10	92	57-129
Vinyl chloride	ug/L (ppb)	50	<0.2	95	61-139
Bromomethane	ug/L (ppb)	50	<1	94	20-265
Chloroethane	ug/L (ppb)	50	<1	97	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	97	65-137
Acetone	ug/L (ppb)	250	<50	45 vo	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	97	71-123
Hexane	ug/L (ppb)	50	<1	97	44-139
Methylene chloride	ug/L (ppb)	50	5.6	94	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	98	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	100	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	96	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	96	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	1.3	99	63-126
Chloroform	ug/L (ppb)	50	<1	97	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	65 vo	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	94	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	100	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	99	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	99	70-132
Benzene	ug/L (ppb)	50	<0.35	94	75-114
Trichloroethene	ug/L (ppb)	50	2.2	96	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	98	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	100	78-117
Dibromomethane	ug/L (ppb)	50	<1	96	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	101	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	96	76-120
Toluene	ug/L (ppb)	50	<1	97	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	99	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	102	81-116
2-Hexanone	ug/L (ppb)	250	<10	85	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	95	80-113
Tetrachloroethene	ug/L (ppb)	50	25	104 b	40-155
Dibromochloromethane	ug/L (ppb)	50	<1	103	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	98	79-120
Chlorobenzene	ug/L (ppb)	50	<1	97	75-115
Ethylbenzene	ug/L (ppb)	50	<1	95	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	106	76-130
m,p-Xylene	ug/L (ppb)	100	<2	97	63-128
o-Xylene	ug/L (ppb)	50	<1	99	64-129
Styrene	ug/L (ppb)	50	<1	100	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	101	74-122
Bromoform	ug/L (ppb)	50	<1	100	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	101	65-129
Bromobenzene	ug/L (ppb)	50	<1	96	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	104	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	103	77-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	96	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	99	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	99	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	107	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	104	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	104	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	101	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	97	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	94	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	98	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	100	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	98	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	96	53-136
Naphthalene	ug/L (ppb)	50	<1	94	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	97	59-130

Date of Report: 09/06/19
Date Received: 08/28/19
Project: Morell's 080190, F&BI 908566

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	105	97	50-157	8
Chloromethane	ug/L (ppb)	50	97	92	62-130	5
Vinyl chloride	ug/L (ppb)	50	98	93	70-128	5
Bromomethane	ug/L (ppb)	50	100	94	60-143	6
Chloroethane	ug/L (ppb)	50	100	92	66-149	8
Trichlorofluoromethane	ug/L (ppb)	50	103	96	65-138	7
Acetone	ug/L (ppb)	250	56	56	44-145	0
1,1-Dichloroethene	ug/L (ppb)	50	100	94	72-121	6
Hexane	ug/L (ppb)	50	108	105	51-153	3
Methylene chloride	ug/L (ppb)	50	108	92	63-132	16
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	104	97	70-122	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	104	97	76-118	7
1,1-Dichloroethane	ug/L (ppb)	50	100	95	77-119	5
2,2-Dichloropropane	ug/L (ppb)	50	123	112	62-141	9
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	97	76-119	5
Chloroform	ug/L (ppb)	50	101	95	78-117	6
2-Butanone (MEK)	ug/L (ppb)	250	70	73	48-150	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	96	75-116	3
1,1,1-Trichloroethane	ug/L (ppb)	50	105	99	80-116	6
1,1-Dichloropropene	ug/L (ppb)	50	105	100	78-119	5
Carbon tetrachloride	ug/L (ppb)	50	106	101	72-128	5
Benzene	ug/L (ppb)	50	98	95	75-116	3
Trichloroethene	ug/L (ppb)	50	101	98	72-119	3
1,2-Dichloropropane	ug/L (ppb)	50	102	102	79-121	0
Bromodichloromethane	ug/L (ppb)	50	107	106	76-120	1
Dibromomethane	ug/L (ppb)	50	101	101	79-121	0
4-Methyl-2-pentanone	ug/L (ppb)	250	107	108	54-153	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	110	114	76-128	4
Toluene	ug/L (ppb)	50	101	96	79-115	5
trans-1,3-Dichloropropene	ug/L (ppb)	50	113	112	76-128	1
1,1,2-Trichloroethane	ug/L (ppb)	50	107	104	78-120	3
2-Hexanone	ug/L (ppb)	250	89	94	49-147	5
1,3-Dichloropropane	ug/L (ppb)	50	102	102	81-111	0
Tetrachloroethene	ug/L (ppb)	50	106	101	78-109	5
Dibromochloromethane	ug/L (ppb)	50	113	109	63-140	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	105	106	82-118	1
Chlorobenzene	ug/L (ppb)	50	101	98	80-113	3
Ethylbenzene	ug/L (ppb)	50	100	96	83-111	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	111	102	76-125	8
m,p-Xylene	ug/L (ppb)	100	101	98	81-112	3
o-Xylene	ug/L (ppb)	50	103	96	81-117	7
Styrene	ug/L (ppb)	50	106	104	83-121	2
Isopropylbenzene	ug/L (ppb)	50	106	98	78-118	8
Bromoform	ug/L (ppb)	50	115	111	40-161	4
n-Propylbenzene	ug/L (ppb)	50	108	102	81-115	6
Bromobenzene	ug/L (ppb)	50	102	101	80-113	1
1,3,5-Trimethylbenzene	ug/L (ppb)	50	111	103	83-117	7
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	110	106	79-118	4
1,2,3-Trichloropropane	ug/L (ppb)	50	103	101	74-116	2
2-Chlorotoluene	ug/L (ppb)	50	105	98	79-112	7
4-Chlorotoluene	ug/L (ppb)	50	105	103	80-116	2
tert-Butylbenzene	ug/L (ppb)	50	115	105	81-119	9
1,2,4-Trimethylbenzene	ug/L (ppb)	50	110	104	81-121	6
sec-Butylbenzene	ug/L (ppb)	50	111	104	83-123	7
p-Isopropyltoluene	ug/L (ppb)	50	107	101	81-117	6
1,3-Dichlorobenzene	ug/L (ppb)	50	103	99	80-115	4
1,4-Dichlorobenzene	ug/L (ppb)	50	100	97	77-112	3
1,2-Dichlorobenzene	ug/L (ppb)	50	103	97	79-115	6
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	110	100	62-133	10
1,2,4-Trichlorobenzene	ug/L (ppb)	50	107	98	75-119	9
Hexachlorobutadiene	ug/L (ppb)	50	106	98	70-116	8
Naphthalene	ug/L (ppb)	50	104	94	72-131	10
1,2,3-Trichlorobenzene	ug/L (ppb)	50	106	98	74-122	8

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 908566
Work Order Number: 1908384

September 05, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 4 sample(s) on 8/28/2019 for the analyses presented in the following report.

Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *09/05/2019*

CLIENT: Friedman & Bruya
Project: 908566
Work Order: 1908384

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1908384-001	MW-24-082719	08/27/2019 9:20 PM	08/28/2019 3:21 PM
1908384-002	MW-26-082819	08/28/2019 2:10 AM	08/28/2019 3:21 PM
1908384-003	MW-34-082719	08/27/2019 11:30 PM	08/28/2019 3:21 PM
1908384-004	MW-35-082719	08/28/2019 1:00 AM	08/28/2019 3:21 PM

Case Narrative

WO#: **1908384**
Date: **9/5/2019**

CLIENT: Friedman & Bruya
Project: 908566

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1908384**
Date Reported: **9/5/2019**

Client: Friedman & Bruya
Collection Date: 8/27/2019 9:20:00 PM
Project: 908566
Lab ID: 1908384-001
Matrix: Water
Client Sample ID: **MW-24-082719**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R53687		Analyst: AD
Methane	0.0278	0.00863		mg/L	1	9/5/2019 3:00:00 PM
Ethene	ND	0.0151		mg/L	1	9/5/2019 3:00:00 PM
Ethane	ND	0.0162		mg/L	1	9/5/2019 3:00:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 25665		Analyst: TN
Nitrite (as N)	ND	0.200	D	mg/L	2	8/29/2019 2:02:00 PM
Nitrate (as N)	0.566	0.200	D	mg/L	2	8/29/2019 2:02:00 PM
Sulfate	11.6	0.600	D	mg/L	2	8/29/2019 2:02:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R53644		Analyst: SS
Total Organic Carbon	3.36	0.500		mg/L	1	8/30/2019 1:20:00 PM

Analytical Report

Work Order: **1908384**
Date Reported: **9/5/2019**

Client: Friedman & Bruya
Collection Date: 8/28/2019 2:10:00 AM
Project: 908566
Lab ID: 1908384-002
Matrix: Water
Client Sample ID: **MW-26-082819**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 25665		Analyst: TN
Nitrite (as N)	ND	0.200	D	mg/L	2	8/29/2019 2:25:00 PM
Nitrate (as N)	1.92	0.200	D	mg/L	2	8/29/2019 2:25:00 PM
Sulfate	13.7	0.600	D	mg/L	2	8/29/2019 2:25:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R53644		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	8/30/2019 2:39:00 PM

Analytical Report

Work Order: **1908384**
Date Reported: **9/5/2019**

Client: Friedman & Bruya
Collection Date: 8/27/2019 11:30:00 PM
Project: 908566
Lab ID: 1908384-003
Matrix: Water
Client Sample ID: **MW-34-082719**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R53687		Analyst: AD
Methane	ND	0.00863		mg/L	1	9/5/2019 3:02:00 PM
Ethene	ND	0.0151		mg/L	1	9/5/2019 3:02:00 PM
Ethane	ND	0.0162		mg/L	1	9/5/2019 3:02:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 25665		Analyst: TN
Nitrite (as N)	ND	0.400	D	mg/L	4	8/29/2019 2:48:00 PM
Nitrate (as N)	0.284	0.400	JD	mg/L	4	8/29/2019 2:48:00 PM
Sulfate	7.48	1.20	D	mg/L	4	8/29/2019 2:48:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R53644		Analyst: SS
Total Organic Carbon	20.5	0.500		mg/L	1	8/30/2019 3:00:00 PM

Analytical Report

Work Order: **1908384**
Date Reported: **9/5/2019**

Client: Friedman & Bruya
Collection Date: 8/28/2019 1:00:00 AM
Project: 908566
Lab ID: 1908384-004
Matrix: Water
Client Sample ID: **MW-35-082719**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 25665		Analyst: TN
Nitrite (as N)	1.17	0.400	D	mg/L	4	8/29/2019 3:11:00 PM
Nitrate (as N)	0.268	0.400	JD	mg/L	4	8/29/2019 3:11:00 PM
Sulfate	7.27	1.20	D	mg/L	4	8/29/2019 3:11:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R53644		Analyst: SS
Total Organic Carbon	132	2.00	D	mg/L	4	8/30/2019 6:07:00 PM

Work Order: 1908384
CLIENT: Friedman & Bruya
Project: 908566

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-25665** SampType: **MBLK** Units: **mg/L** Prep Date: **8/29/2019** RunNo: **53576**
Client ID: **MBLKW** Batch ID: **25665** Analysis Date: **8/29/2019** SeqNo: **1060638**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID: **LCS-25665** SampType: **LCS** Units: **mg/L** Prep Date: **8/29/2019** RunNo: **53576**
Client ID: **LCSW** Batch ID: **25665** Analysis Date: **8/29/2019** SeqNo: **1060639**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.675	0.100	0.7500	0	90.0	90	110				
Nitrate (as N)	0.682	0.100	0.7500	0	90.9	90	110				
Sulfate	3.41	0.300	3.750	0	90.9	90	110				

Sample ID: **1908384-004ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/29/2019** RunNo: **53576**
Client ID: **MW-35-082719** Batch ID: **25665** Analysis Date: **8/29/2019** SeqNo: **1060645**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.18	0.400						1.168	0.683	20	D
Nitrate (as N)	ND	0.400						0		20	D
Sulfate	7.55	1.20						7.272	3.78	20	D

NOTES:
Diluted due to matrix.

Sample ID: **1908384-004AMS** SampType: **MS** Units: **mg/L** Prep Date: **8/29/2019** RunNo: **53576**
Client ID: **MW-35-082719** Batch ID: **25665** Analysis Date: **8/29/2019** SeqNo: **1060646**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	3.31	0.400	3.000	1.168	71.5	80	120				DS
Nitrate (as N)	2.70	0.400	3.000	0.2680	81.1	80	120				D
Sulfate	20.3	1.20	15.00	7.272	87.1	80	120				D

Work Order: 1908384
CLIENT: Friedman & Bruya
Project: 908566

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **1908384-004AMS** SampType: **MS** Units: **mg/L** Prep Date: **8/29/2019** RunNo: **53576**
Client ID: **MW-35-082719** Batch ID: **25665** Analysis Date: **8/29/2019** SeqNo: **1060646**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **1908384-004AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/29/2019** RunNo: **53576**
Client ID: **MW-35-082719** Batch ID: **25665** Analysis Date: **8/29/2019** SeqNo: **1060647**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	2.84	0.400	3.000	1.168	55.9	80	120	3.312	15.2	20	DS
Nitrate (as N)	2.82	0.400	3.000	0.2680	85.2	80	120	2.700	4.49	20	D
Sulfate	21.1	1.20	15.00	7.272	92.3	80	120	20.34	3.74	20	D

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 1908384
CLIENT: Friedman & Bruya
Project: 908566

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R53644**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/30/2019**	RunNo: **53644**
Client ID: **MBLKW**	Batch ID: **R53644**		Analysis Date: **8/30/2019**	SeqNo: **1061965**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									

Sample ID: **LCS-R53644**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/30/2019**	RunNo: **53644**
Client ID: **LCSW**	Batch ID: **R53644**		Analysis Date: **8/30/2019**	SeqNo: **1061966**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.04	0.500	5.000	0	101	80	120				

Sample ID: **1908384-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/30/2019**	RunNo: **53644**
Client ID: **MW-24-082719**	Batch ID: **R53644**		Analysis Date: **8/30/2019**	SeqNo: **1061968**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	3.32	0.500						3.363	1.20	20	

Sample ID: **1908384-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **8/30/2019**	RunNo: **53644**
Client ID: **MW-24-082719**	Batch ID: **R53644**		Analysis Date: **8/30/2019**	SeqNo: **1061969**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	8.41	0.500	5.000	3.363	101	70	130				

Sample ID: **1908384-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **8/30/2019**	RunNo: **53644**
Client ID: **MW-24-082719**	Batch ID: **R53644**		Analysis Date: **8/30/2019**	SeqNo: **1061970**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	8.49	0.500	5.000	3.363	102	70	130	8.405	0.971	30	

Work Order: 1908384
CLIENT: Friedman & Bruya
Project: 908566

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **MB-R53687**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **9/5/2019**	RunNo: **53687**
Client ID: **MBLKW**	Batch ID: **R53687**		Analysis Date: **9/5/2019**	SeqNo: **1062743**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863									
Ethene	ND	0.0151									
Ethane	ND	0.0162									

Sample ID: **LCS-R53687**	SampType: **LCS**	Units: **mg/L**	Prep Date: **9/5/2019**	RunNo: **53687**
Client ID: **LCSW**	Batch ID: **R53687**		Analysis Date: **9/5/2019**	SeqNo: **1062742**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,260	0.00863	1,000	0	126	70	130				
Ethene	1,270	0.0151	1,000	0	127	70	130				
Ethane	1,270	0.0162	1,000	0	127	70	130				

Sample ID: **1908384-003CREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **9/5/2019**	RunNo: **53687**
Client ID: **MW-34-082719**	Batch ID: **R53687**		Analysis Date: **9/5/2019**	SeqNo: **1062748**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863						0		30	
Ethene	ND	0.0151						0		30	
Ethane	ND	0.0162						0		30	

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1908384**
Logged by:	**Carissa True**	Date Received:	**8/28/2019 3:21:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	5.9
Sample 1	4.4
Temp Blank 1	5.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1908384

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 908566

PO # A-372

REMARKS

Please Email Results

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH	Nitrate	Nitrite	Sulfide	TOC	Methane, Ethane, Ethene			Notes
MW-24-082719		8/27/19	2120	H_2O	5				X	X	X	X	X			
MW-26-082819		8/28/19	0210		2				X	X	X	X				
MW-34-082719		8/27/19	2330		5				X	X	X	X	X			
MW-35-082719		8/28/19	0100		2				X	X	X	X				

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/28/19	1430
Received by:				8/28/19	1521
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

908566

SAMPLE CHAIN OF CUSTODY

ME 08-28-19

Page # 1 of 1 UW2

Report To Dave Hefner

Company Aspect Consulting

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone 206 838 5831 Email dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Green

PROJECT NAME: Morell's

PO #: 080190

REMARKS

INVOICE TO: AP

TURNAROUND TIME: AI3

☒ Standard Turnaround

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☒ Dispose after 30 days

☐ Archive Samples

☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Nitrate, Nitrite, Sulfate	Total Fe	TOC	Methane/Ethane/Ethene	Notes
MW-24-082719	01 A-I	8/27	2120	W	9					X			X	X	X	X	
MW-26-082819	02 A-F	8/28	0210	W	6					X			X	X	X		
MW-34-082719	03 A-I	8/27	2330	W	9					X			X	X	X	X	
MW-35-082719	04 A-F	8/28	0100	W	6					X			X	X	X		

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Matthew Wacker Ahe	Aspect	8/28/19	
Received by:	Roke	Feler SDC	28 Aug 19	1323
Relinquished by:				
Received by:	DO VO	FEBT	8-28-19	14:25

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Dave Heffner, Aspect Consulting
Project: Morell's
Customer Reference: 080190

SiREM Reference: S-5473
Report Date: 10-Sep-19
Data Files: iQ5A-DHCT-TM-QPCR-1693
iQ5A-DB-DHC-TM-QPCR-1015

Table 1: Test Results

Sample ID	*Dehalococcoides* (Dhc)	
	Percent Dhc[(1)]	Enumeration/Liter[(2)]
MW-34-082719	NA	4×10^3 U

See final page for notes.

Analyst: J. Wilkinson
Jen Wilkinson
Senior Laboratory Technician

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Supervisor

Table 2: Detailed Test Parameters, Gene-Trac Test Reference S-5473

Customer Sample ID	MW-34-082719
SiREM Dhc Test ID	DHC-17965
Date Sampled [3]	27-Aug-19
Matrix	Field Filter
Date Received [3]	29-Aug-19
Sample Temperature	18.3 ºC
Filtration Date [3]	27-Aug-19
Volume Used for DNA Extraction	300 mL
DNA Extraction Date	9-Sep-19
DNA Concentration in Sample (extractable)	1145 ng/L
PCR Amplifiable DNA	Detected
Dhc qPCR Date Analyzed	9-Sep-19
Laboratory Controls (see Table 3)	Passed
Comments	- -

See final page for notes.

Table 3: Gene-Trac Dhc Control Results, Test Reference S-5473

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	9-Sep-19	Genomic DNA (CSLD-1331)	1.5×10^{7}	6.3×10^{6} (4)	See Note 4
Positive Control High Concentration	9-Sep-19	Genomic DNA (CSHD-1331)	2.4×10^{9}	1.7×10^{9}	Passed
Extraction Control	9-Sep-19	Extraction Control (KB-0687)	1.6×10^{11}	1.6×10^{11}	Passed
DNA Extraction Blank	9-Sep-19	Sterile Water (FB-3366)	0	2.6×10^{3} U	Passed
Negative Control	9-Sep-19	Reagent Blank (TBD-1290)	0	2.6×10^{3} U	Passed

See final page for notes.

Notes:
Dhc = *Dehalococcoides*
J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
E Extracted genomic DNA was not detected in the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
ng/L = nanograms per liter
mL = milliliter
NA = not applicable
ND = not detected
DNA = deoxyribonucleic acid
16S rRNA = 16S ribosomal ribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
°C = degrees Celsius

[1]Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

[2]Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

[3]Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 7 days of date received or filtration date.

[4]Control was outside recovery limit guidelines (+/- 50%), however, test results are deemed acceptable if one of two positive controls falls within the recovery limit guidelines.

Chain-of-Custody Form

siremlab.com

SiREM Knoxville
180A Market Place Blvd
Knoxville, TN 37922
Phone: 865.330.0037

Lab # S-5473

*Project Name: Morell's	*Project #: 090190
*Project Manager: Dave Heffner	*Company: Aspect
*Email Address: dheffner@aspectconsulting.com	
Address (Street): 710 2nd Ave Ste 550	
City: Seattle	State/Province: WA
Country: USA	
*Phone #: 2068385831	
*Sampler's Signature: Breeyn Greer	*Sampler's Printed Name: Breeyn Greer

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac FGA (vcrA, bvcA, tceA)	Gene-Trac DHB	Gene-Trac DHG	Gene-Trac SRB	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study	Other Information
MW-34-082719	8/27	2330	W	1	X								Filter (0) 300ml

B6

Preservative Key: 0. None; 1. HCL; 2. Other; 3. Other; 4. Other; 5. Other; 6. Other

Billing Information

P.O. # 090190

*Bill To: Aspect Consulting

Turnaround Time Requested

Normal [X]
Rush [ ]

For Lab Use Only

Cooler Condition: Good - cond - Blue Ice
Cooler Temperature: 18.3°C
Custody Seals: Yes [ ] No [✓]

Knoxville field filter sticker w/ number assigned missing.

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Breeyn Greer	Signature: Susan Thomas	Signature: Susan Thomas	Signature: J. Wilkinson	Signature:	Signature:
Printed Name: Breeyn Greer	Printed Name: Susan Thomas	Printed Name: Susan Thomas	Printed Name: J. Wilkinson	Printed Name:	Printed Name:
Firm: Aspect	Firm: SiREM	Firm: SiREM	Firm: SiREM	Firm:	Firm:
Date/Time: 8/28/19 1245	Date/Time: 8-29-18 12:12	Date/Time: 9-3-19 1500	Date/Time: 9/6/19 1320	Date/Time:	Date/Time:

Distribution: White - return to Originator; Yellow - Lab Copy; Pink - Retained by Client

* Mandatory Fields

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

December 30, 2019

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

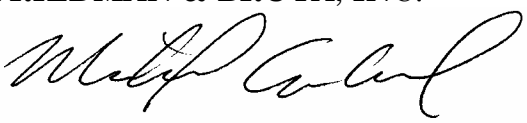
Dear Mr Heffner:

Included are the results from the testing of material submitted on December 13, 2019 from the Morell's 080190, F&BI 912230 project. There are 17 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP1230R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on December 13, 2019 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's 080190, F&BI 912230 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
912230 -01	MW-24-121219
912230 -02	MW-20-121219
912230 -03	MW-34-121319
912230 -04	MW-35-121319
912230 -05	MW-26-121319

The samples were sent to Fremont Analytical for nitrate, sulfate, nitrite, TOC, and dissolved gasses analyses. The report is enclosed.

The 8260C calibration standard failed the acceptance criteria for acetone and 2,2-dichloropropane. The laboratory control sample and laboratory control sample duplicate failed the relative percent difference for acetone. The data were flagged accordingly. In addition, several compounds exceeded the acceptance criteria in the matrix spike sample. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

Methylene chloride was detected in the 8260C method blank. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-24-121219	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-01 x10
Date Analyzed:	12/16/19	Data File:	912230-01 x10.118
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	4,070

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-20-121219	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/17/19	Lab ID:	912230-02 x100
Date Analyzed:	12/17/19	Data File:	912230-02 x100.176
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	114,000

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-34-121319	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-03 x10
Date Analyzed:	12/16/19	Data File:	912230-03 x10.128
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	7,320

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-35-121319	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-04 x10
Date Analyzed:	12/16/19	Data File:	912230-04 x10.129
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	4,660

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW-26-121319	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-05 x100
Date Analyzed:	12/16/19	Data File:	912230-05 x100.130
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	51,700

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	I9-797 mb
Date Analyzed:	12/16/19	Data File:	I9-797 mb.079
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-24-121219	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-01
Date Analyzed:	12/16/19	Data File:	121640.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	50
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 ca	Bromobenzene	<1
cis-1,2-Dichloroethene	4.2	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	11	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20-121219	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-02
Date Analyzed:	12/16/19	Data File:	121641.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	1.5	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	320 ca jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 ca	Bromobenzene	<1
cis-1,2-Dichloroethene	14	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	500	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	15	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	58		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-34-121319	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-03
Date Analyzed:	12/16/19	Data File:	121642.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	11
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 ca	Bromobenzene	<1
cis-1,2-Dichloroethene	20	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	1.4	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-35-121319	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-04
Date Analyzed:	12/16/19	Data File:	121643.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	23
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 ca	Bromobenzene	<1
cis-1,2-Dichloroethene	7.2	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	3.2	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-26-121319	Client:	Aspect Consulting, LLC
Date Received:	12/13/19	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	912230-05
Date Analyzed:	12/16/19	Data File:	121644.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	19
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 ca	Bromobenzene	<1
cis-1,2-Dichloroethene	2.0	1,3,5-Trimethylbenzene	<1
Chloroform	1.5	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	2.3	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's 080190, F&BI 912230
Date Extracted:	12/16/19	Lab ID:	09-3016 mb
Date Analyzed:	12/16/19	Data File:	121609.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	8.1 lc	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1 ca	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 12/30/19
Date Received: 12/13/19
Project: Morell's 080190, F&BI 912230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 912238-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	1,390	60 b	0 b	70-130	200 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	99	85-115

Date of Report: 12/30/19
Date Received: 12/13/19
Project: Morell's 080190, F&BI 912230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 912210-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	122	55-137
Chloromethane	ug/L (ppb)	50	<10	119	57-129
Vinyl chloride	ug/L (ppb)	50	<0.2	110	61-139
Bromomethane	ug/L (ppb)	50	<1	107	20-265
Chloroethane	ug/L (ppb)	50	<1	103	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	98	65-137
Acetone	ug/L (ppb)	250	<50	139	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	96	71-123
Hexane	ug/L (ppb)	50	<1	115	44-139
Methylene chloride	ug/L (ppb)	50	<5	100	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	113	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	103	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	114 vo	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	96	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	104	63-126
Chloroform	ug/L (ppb)	50	<1	111	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	145 vo	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	124 vo	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	107	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	115	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	107	70-132
Benzene	ug/L (ppb)	50	<0.35	109	75-114
Trichloroethene	ug/L (ppb)	50	7.4	110	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	118 vo	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	121 vo	78-117
Dibromomethane	ug/L (ppb)	50	<1	108	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	137	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	118	76-120
Toluene	ug/L (ppb)	50	<1	111	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	121	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	119 vo	81-116
2-Hexanone	ug/L (ppb)	250	<10	142 vo	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	117 vo	80-113
Tetrachloroethene	ug/L (ppb)	50	<1	103	40-155
Dibromochloromethane	ug/L (ppb)	50	<1	110	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	119	79-120
Chlorobenzene	ug/L (ppb)	50	<1	109	75-115
Ethylbenzene	ug/L (ppb)	50	<1	113	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	118	76-130
m,p-Xylene	ug/L (ppb)	100	<2	112	63-128
o-Xylene	ug/L (ppb)	50	<1	113	64-129
Styrene	ug/L (ppb)	50	<1	86	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	115	74-122
Bromoform	ug/L (ppb)	50	<1	118	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	114	65-129
Bromobenzene	ug/L (ppb)	50	<1	106	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	113	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	136 vo	77-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	130 vo	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	113	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	113	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	116	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	110	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	118	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	114	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	109	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	108	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	111	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	151 vo	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	117	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	110	53-136
Naphthalene	ug/L (ppb)	50	<1	125	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	123	59-130

Date of Report: 12/30/19
Date Received: 12/13/19
Project: Morell's 080190, F&BI 912230

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	123	125	50-157	2
Chloromethane	ug/L (ppb)	50	121	125	62-130	3
Vinyl chloride	ug/L (ppb)	50	111	111	70-128	0
Bromomethane	ug/L (ppb)	50	100	104	60-143	4
Chloroethane	ug/L (ppb)	50	99	101	66-149	2
Trichlorofluoromethane	ug/L (ppb)	50	98	97	65-138	1
Acetone	ug/L (ppb)	250	112	88	44-145	24 vo
1,1-Dichloroethene	ug/L (ppb)	50	97	94	72-121	3
Hexane	ug/L (ppb)	50	110	112	51-153	2
Methylene chloride	ug/L (ppb)	50	113	102	63-132	10
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	104	98	70-122	6
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	100	76-118	2
1,1-Dichloroethane	ug/L (ppb)	50	110	110	77-119	0
2,2-Dichloropropane	ug/L (ppb)	50	99	96	62-141	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	100	76-119	2
Chloroform	ug/L (ppb)	50	105	105	78-117	0
2-Butanone (MEK)	ug/L (ppb)	250	109	105	48-150	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	111	114	75-116	3
1,1,1-Trichloroethane	ug/L (ppb)	50	104	102	80-116	2
1,1-Dichloropropene	ug/L (ppb)	50	108	111	78-119	3
Carbon tetrachloride	ug/L (ppb)	50	105	103	72-128	2
Benzene	ug/L (ppb)	50	102	104	75-116	2
Trichloroethene	ug/L (ppb)	50	100	105	72-119	5
1,2-Dichloropropane	ug/L (ppb)	50	109	111	79-121	2
Bromodichloromethane	ug/L (ppb)	50	115	117	76-120	2
Dibromomethane	ug/L (ppb)	50	97	99	79-121	2
4-Methyl-2-pentanone	ug/L (ppb)	250	111	112	54-153	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	112	119	76-128	6
Toluene	ug/L (ppb)	50	103	107	79-115	4
trans-1,3-Dichloropropene	ug/L (ppb)	50	112	120	76-128	7
1,1,2-Trichloroethane	ug/L (ppb)	50	105	111	78-120	6
2-Hexanone	ug/L (ppb)	250	108	114	49-147	5
1,3-Dichloropropane	ug/L (ppb)	50	102	109	81-111	7
Tetrachloroethene	ug/L (ppb)	50	99	102	78-109	3
Dibromochloromethane	ug/L (ppb)	50	105	109	63-140	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	102	109	82-118	7
Chlorobenzene	ug/L (ppb)	50	102	105	80-113	3
Ethylbenzene	ug/L (ppb)	50	107	109	83-111	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	111	112	76-125	1
m,p-Xylene	ug/L (ppb)	100	106	108	81-112	2
o-Xylene	ug/L (ppb)	50	106	108	81-117	2
Styrene	ug/L (ppb)	50	107	111	83-121	4
Isopropylbenzene	ug/L (ppb)	50	108	111	78-118	3
Bromoform	ug/L (ppb)	50	114	114	40-161	0
n-Propylbenzene	ug/L (ppb)	50	106	111	81-115	5
Bromobenzene	ug/L (ppb)	50	98	103	80-113	5
1,3,5-Trimethylbenzene	ug/L (ppb)	50	107	112	83-117	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	114	119 vo	79-118	4
1,2,3-Trichloropropane	ug/L (ppb)	50	107	112	74-116	5
2-Chlorotoluene	ug/L (ppb)	50	105	108	79-112	3
4-Chlorotoluene	ug/L (ppb)	50	104	110	80-116	6
tert-Butylbenzene	ug/L (ppb)	50	108	112	81-119	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	109	81-121	4
sec-Butylbenzene	ug/L (ppb)	50	110	114	83-123	4
p-Isopropyltoluene	ug/L (ppb)	50	107	111	81-117	4
1,3-Dichlorobenzene	ug/L (ppb)	50	101	105	80-115	4
1,4-Dichlorobenzene	ug/L (ppb)	50	100	104	77-112	4
1,2-Dichlorobenzene	ug/L (ppb)	50	103	105	79-115	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	125	129	62-133	3
1,2,4-Trichlorobenzene	ug/L (ppb)	50	110	109	75-119	1
Hexachlorobutadiene	ug/L (ppb)	50	107	106	70-116	1
Naphthalene	ug/L (ppb)	50	113	114	72-131	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	114	116	74-122	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 912230
Work Order Number: 1912228

December 20, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 12/13/2019 for the analyses presented in the following report.

Dissolved Gases by RSK-175
Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *12/20/2019*

CLIENT: Friedman & Bruya
Project: 912230
Work Order: 1912228

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1912228-001	MW-24-121219	12/12/2019 9:50 PM	12/13/2019 1:09 PM
1912228-002	MW-20-121219	12/12/2019 11:00 PM	12/13/2019 1:09 PM
1912228-003	MW-34-121319	12/13/2019 12:30 AM	12/13/2019 1:09 PM
1912228-004	MW-35-121319	12/13/2019 2:00 AM	12/13/2019 1:09 PM
1912228-005	MW-26-121319	12/13/2019 3:25 AM	12/13/2019 1:09 PM

Case Narrative

WO#: **1912228**
Date: **12/20/2019**

CLIENT: Friedman & Bruya
Project: 912230

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1912228**
Date Reported: **12/20/2019**

Client: Friedman & Bruya
Collection Date: 12/12/2019 9:50:00 PM
Project: 912230
Lab ID: 1912228-001
Matrix: Water
Client Sample ID: **MW-24-121219**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R56128		Analyst: AD
Methane	2.30	0.173	D	mg/L	20	12/9/2020 5:03:00 PM
Ethene	ND	0.0151		mg/L	1	12/9/2020 4:32:00 PM
Ethane	ND	0.0162		mg/L	1	12/9/2020 4:32:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 26875		Analyst: SS
Nitrite (as N)	ND	0.100	H	mg/L	1	12/18/2019 6:15:00 PM
Nitrite (as N)	ND	0.100	Q	mg/L	1	12/13/2019 7:11:00 PM
Nitrate (as N)	0.307	0.100	H	mg/L	1	12/18/2019 6:15:00 PM
Nitrate (as N)	0.325	0.100	Q	mg/L	1	12/13/2019 7:11:00 PM
Sulfate	9.69	0.300		mg/L	1	12/13/2019 7:11:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R56127		Analyst: SS
Total Organic Carbon	2.43	0.500		mg/L	1	12/18/2019 10:11:00 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Analytical Report

Work Order: **1912228**
Date Reported: **12/20/2019**

Client: Friedman & Bruya
Collection Date: 12/12/2019 11:00:00 PM
Project: 912230
Lab ID: 1912228-002
Matrix: Water
Client Sample ID: **MW-20-121219**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R56128		Analyst: AD
Methane	3.73	0.863	D	mg/L	100	12/9/2020 5:55:00 PM
Ethene	ND	0.0151		mg/L	1	12/9/2020 4:38:00 PM
Ethane	ND	0.0162		mg/L	1	12/9/2020 4:38:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 26875		Analyst: SS
Nitrite (as N)	2.74	0.200	DH	mg/L	2	12/18/2019 6:38:00 PM
Nitrite (as N)	0.749	0.100	Q	mg/L	1	12/13/2019 8:43:00 PM
Nitrate (as N)	0.252	0.200	DH	mg/L	2	12/18/2019 6:38:00 PM
Nitrate (as N)	0.299	0.100	Q	mg/L	1	12/13/2019 8:43:00 PM
Sulfate	ND	0.300		mg/L	1	12/13/2019 8:43:00 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
Diluted due to matrix.

Total Organic Carbon by SM 5310C				Batch ID: R56127		Analyst: SS
Total Organic Carbon	809	10.0	DB	mg/L	20	12/19/2019 11:25:00 AM

NOTES:
B - Detection in sample is 10x greater than detection in CCB. No further action required.

Analytical Report

Work Order: **1912228**
Date Reported: **12/20/2019**

Client: Friedman & Bruya
Collection Date: 12/13/2019 12:30:00 AM
Project: 912230
Lab ID: 1912228-003
Matrix: Water
Client Sample ID: **MW-34-121319**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R56128		Analyst: AD
Methane	0.0646	0.00863		mg/L	1	12/9/2020 4:43:00 PM
Ethene	ND	0.0151		mg/L	1	12/9/2020 4:43:00 PM
Ethane	ND	0.0162		mg/L	1	12/9/2020 4:43:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 26875		Analyst: SS
Nitrite (as N)	ND	0.100	H	mg/L	1	12/18/2019 7:01:00 PM
Nitrite (as N)	ND	0.100	Q	mg/L	1	12/13/2019 9:06:00 PM
Nitrate (as N)	ND	0.100	H	mg/L	1	12/18/2019 7:01:00 PM
Nitrate (as N)	0.208	0.100	Q	mg/L	1	12/13/2019 9:06:00 PM
Sulfate	4.26	0.300		mg/L	1	12/13/2019 9:06:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R56127		Analyst: SS
Total Organic Carbon	6.76	0.500		mg/L	1	12/19/2019 12:57:00 AM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Analytical Report

Work Order: **1912228**
Date Reported: **12/20/2019**

Client: Friedman & Bruya
Collection Date: 12/13/2019 2:00:00 AM
Project: 912230
Lab ID: 1912228-004
Matrix: Water
Client Sample ID: **MW-35-121319**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R56128		Analyst: AD
Methane	ND	0.00863		mg/L	1	12/9/2020 4:45:00 PM
Ethene	ND	0.0151		mg/L	1	12/9/2020 4:45:00 PM
Ethane	ND	0.0162		mg/L	1	12/9/2020 4:45:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 26875		Analyst: SS
Nitrite (as N)	ND	0.100	H	mg/L	1	12/18/2019 7:24:00 PM
Nitrite (as N)	ND	0.100	Q	mg/L	1	12/13/2019 9:29:00 PM
Nitrate (as N)	0.388	0.100	H	mg/L	1	12/18/2019 7:24:00 PM
Nitrate (as N)	0.370	0.100	Q	mg/L	1	12/13/2019 9:29:00 PM
Sulfate	13.2	0.300		mg/L	1	12/13/2019 9:29:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R56127		Analyst: SS
Total Organic Carbon	3.66	0.500		mg/L	1	12/19/2019 1:26:00 AM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Analytical Report

Work Order: **1912228**
Date Reported: **12/20/2019**

Client: Friedman & Bruya
Collection Date: 12/13/2019 3:25:00 AM
Project: 912230
Lab ID: 1912228-005
Matrix: Water
Client Sample ID: **MW-26-121319**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 26875		Analyst: SS
Nitrite (as N)	ND	0.100	H	mg/L	1	12/18/2019 7:47:00 PM
Nitrite (as N)	ND	0.100	Q	mg/L	1	12/13/2019 9:53:00 PM
Nitrate (as N)	1.85	0.100	H	mg/L	1	12/18/2019 7:47:00 PM
Nitrate (as N)	1.78	0.100	Q	mg/L	1	12/13/2019 9:53:00 PM
Sulfate	12.9	0.300		mg/L	1	12/13/2019 9:53:00 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Organic Carbon by SM 5310C				Batch ID: R56127		Analyst: SS
Total Organic Carbon	ND	1.00	D	mg/L	2	12/19/2019 2:09:00 AM

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-26818** SampType: **MBLK** Units: **mg/L** Prep Date: **12/13/2019** RunNo: **56070**
Client ID: **MBLKW** Batch ID: **26818** Analysis Date: **12/13/2019** SeqNo: **1116534**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									Q
Nitrate (as N)	ND	0.100									Q
Sulfate	ND	0.300									

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample ID: **LCS-26818** SampType: **LCS** Units: **mg/L** Prep Date: **12/13/2019** RunNo: **56070**
Client ID: **LCSW** Batch ID: **26818** Analysis Date: **12/13/2019** SeqNo: **1116535**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.686	0.100	0.7500	0	91.5	90	110				
Nitrate (as N)	0.698	0.100	0.7500	0	93.1	90	110				
Sulfate	3.50	0.300	3.750	0	93.4	90	110				

Sample ID: **1912228-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **12/13/2019** RunNo: **56070**
Client ID: **MW-24-121219** Batch ID: **26818** Analysis Date: **12/13/2019** SeqNo: **1116537**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	Q
Nitrate (as N)	0.334	0.100						0.3250	2.73	20	Q
Sulfate	10.1	0.300						9.690	3.86	20	

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample ID: **1912228-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **12/13/2019** RunNo: **56070**
Client ID: **MW-24-121219** Batch ID: **26818** Analysis Date: **12/13/2019** SeqNo: **1116538**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.636	0.100	0.7500	0.07500	74.8	80	120				S
Nitrate (as N)	1.02	0.100	0.7500	0.3250	93.2	80	120				
Sulfate	13.7	0.300	3.750	9.690	108	80	120				

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **1912228-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **12/13/2019** RunNo: **56070**
Client ID: **MW-24-121219** Batch ID: **26818** Analysis Date: **12/13/2019** SeqNo: **1116538**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range (Nitrite).

Sample ID: **1912228-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **12/13/2019** RunNo: **56070**
Client ID: **MW-24-121219** Batch ID: **26818** Analysis Date: **12/13/2019** SeqNo: **1116539**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.684	0.100	0.7500	0.07500	81.2	80	120	0.6360	7.27	20	
Nitrate (as N)	1.08	0.100	0.7500	0.3250	100	80	120	1.024	5.14	20	
Sulfate	14.3	0.300	3.750	9.690	123	80	120	13.75	4.01	20	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range (Sulfate).

Sample ID: **MB-26875** SampType: **MBLK** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **MBLKW** Batch ID: **26875** Analysis Date: **12/18/2019** SeqNo: **1117820**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									

Sample ID: **LCS-26875** SampType: **LCS** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **LCSW** Batch ID: **26875** Analysis Date: **12/18/2019** SeqNo: **1117821**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.683	0.100	0.7500	0	91.1	90	110				
Nitrate (as N)	0.700	0.100	0.7500	0	93.3	90	110				

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **1912263-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **BATCH** Batch ID: **26875** Analysis Date: **12/18/2019** SeqNo: **1117831**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200						0		20	DH
Nitrate (as N)	0.248	0.200						0.2500	0.803	20	DH

Sample ID: **1912263-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **BATCH** Batch ID: **26875** Analysis Date: **12/18/2019** SeqNo: **1117832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.39	0.200	1.500	0	92.4	80	120				DH
Nitrate (as N)	1.63	0.200	1.500	0.2500	92.1	80	120				DH

Sample ID: **1912263-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **BATCH** Batch ID: **26875** Analysis Date: **12/18/2019** SeqNo: **1117833**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.41	0.200	1.500	0	94.0	80	120	1.386	1.72	20	DH
Nitrate (as N)	1.64	0.200	1.500	0.2500	92.8	80	120	1.632	0.611	20	DH

Sample ID: **1912307-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **BATCH** Batch ID: **26875** Analysis Date: **12/19/2019** SeqNo: **1117846**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	ND	0.100						0		20	

Sample ID: **1912307-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **BATCH** Batch ID: **26875** Analysis Date: **12/19/2019** SeqNo: **1117847**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.712	0.100	0.7500	0	94.9	80	120				

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **1912307-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **12/18/2019** RunNo: **56118**
Client ID: **BATCH** Batch ID: **26875** Analysis Date: **12/19/2019** SeqNo: **1117847**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.720	0.100	0.7500	0	96.0	80	120				

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R56127**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **12/18/2019**		RunNo: **56127**		
Client ID: **MBLKW**	Batch ID: **R56127**					Analysis Date: **12/18/2019**		SeqNo: **1117988**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									

Sample ID: **LCS-R56127**	SampType: **LCS**			Units: **mg/L**		Prep Date: **12/18/2019**		RunNo: **56127**		
Client ID: **LCSW**	Batch ID: **R56127**					Analysis Date: **12/18/2019**		SeqNo: **1117989**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.43	0.500	5.000	0	109	88.3	117				

Sample ID: **1912228-001ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **12/18/2019**		RunNo: **56127**		
Client ID: **MW-24-121219**	Batch ID: **R56127**					Analysis Date: **12/18/2019**		SeqNo: **1117991**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	2.42	0.500						2.426	0.372	20	

Sample ID: **1912228-001AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **12/18/2019**		RunNo: **56127**		
Client ID: **MW-24-121219**	Batch ID: **R56127**					Analysis Date: **12/18/2019**		SeqNo: **1117992**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.55	0.500	5.000	2.426	102	66	142				

Sample ID: **1912228-001AMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **12/18/2019**		RunNo: **56127**		
Client ID: **MW-24-121219**	Batch ID: **R56127**					Analysis Date: **12/18/2019**		SeqNo: **1117993**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	7.47	0.500	5.000	2.426	101	66	142	7.546	1.01	30	

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **1912307-002CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **12/19/2019** RunNo: **56127**
Client ID: **BATCH** Batch ID: **R56127** Analysis Date: **12/19/2019** SeqNo: **1118013**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500						0		20	

Sample ID: **1912307-002CMS** SampType: **MS** Units: **mg/L** Prep Date: **12/19/2019** RunNo: **56127**
Client ID: **BATCH** Batch ID: **R56127** Analysis Date: **12/19/2019** SeqNo: **1118014**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.38	0.500	5.000	0.2660	102	66	142				

Work Order: 1912228
CLIENT: Friedman & Bruya
Project: 912230

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **MB-R56128** SampType: **MBLK** Units: **mg/L** Prep Date: **12/9/2020** RunNo: **56128**
Client ID: **MBLKW** Batch ID: **R56128** Analysis Date: **12/9/2020** SeqNo: **1118030**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863									
Ethene	ND	0.0151									
Ethane	ND	0.0162									

Sample ID: **LCS-R56128** SampType: **LCS** Units: **mg/L** Prep Date: **12/9/2020** RunNo: **56128**
Client ID: **LCSW** Batch ID: **R56128** Analysis Date: **12/9/2020** SeqNo: **1118029**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,140	0.00863	1,000	0	114	70	130				
Ethene	1,150	0.0151	1,000	0	115	70	130				
Ethane	1,160	0.0162	1,000	0	116	70	130				

Sample ID: **1912228-001CREP** SampType: **REP** Units: **mg/L** Prep Date: **12/9/2020** RunNo: **56128**
Client ID: **MW-24-121219** Batch ID: **R56128** Analysis Date: **12/9/2020** SeqNo: **1118017**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1.59	0.00863						2.303	36.6	30	RE
Ethene	ND	0.0151						0		30	
Ethane	ND	0.0162						0		30	

NOTES:
R - High RPD due to high analyte concentration. In this range, high RPD's may be expected.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1912228**
Logged by:	**Clare Griggs**	Date Received:	**12/13/2019 1:09:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	6.3
Sample	2.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 912230

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont
PROJECT NAME/NO. 912230
PO # A-509
REMARKS Please Email Results

Page # 1 of 1

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC	Nitrate, Sulfate, Nitrate	RSK methane, ethane, ethene				Notes
MW-24-121219		12/12/19	2150	H_2O					x	x	x				
MW-20-121219		12/12/19	2300						x	x	x				
MW-34-121319		12/13/19	0030						x	x	x				
MW-35-121319			0200						x	x	x				
MW-26-121319			0325						x	x	~~x~~				No RSK on MW-26 on 12/13/19

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	12/13/19	1100
Received by:		FAT	12/13/19	1309
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

912230

SAMPLE CHAIN OF CUSTODY ME 12/13/19 UW3/ AES

Page # 1 of 1

Report To Dave Heffner / Breeyn Greer
Company Aspect
Address 710 2nd Ave Ste 550
City, State, ZIP Seattle WA 98104
Phone 0122327343 Email bgreer; dheffner@aspectconsulting.com

SAMPLERS (*signature*) Breeyn Breer
PROJECT NAME: Morell's
PO #: 080190
REMARKS
Project specific RLs? - Yes / (No)
INVOICE TO: AP

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Nitrate/Nitrite/Sulfate	Total Fe	TDC	Methane/Ethane/Ethene	Notes
MW-24-121219	01A-I	12/12	2150	W	9					X			X	X	X	X	
MW-20-121219	02	12/12	2300	W	9					X			X	X	X	X	
MW-34-121319	03	12/13	0030	W	9					X			X	X	X	X	
MW-35-121319	04	12/13	0200	W	9					X			X	X	X	X	
MW-26-121319	05AF	12/13	0325	W	6					X			X	X	X		
																	Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Breeyn Breer	Breeyn Greer	Aspect	12/13/19	1000
Received by:	Corey Smith	FEDEX	12/13	10:30
Relinquished by:				
Received by:	Nhan Phan	FEBI	12/13/19	11:08

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Dave Heffner, Aspect Consulting
Project: Morell's
Customer Reference: 080190

SiREM Reference: S-5660
Report Date: 8-Jan-20
Data Files: iQ5A-DHCT-TM-QPCR-1735
iQ5A-DB-DHC-TM-QPCR-1056

Table 1: Test Results

Sample ID	*Dehalococcoides* (Dhc)	
	Percent Dhc[(1)]	Enumeration/Liter[(2)]
MW-20-121219	NA	1×10^4 U
MW-34-121319	NA	3×10^3 U
MW-35-121319	NA	6×10^3 U

See final page for notes.

Analyst: J. Wilkinson
Jen Wilkinson
Senior Laboratory Technician II

Approved: Ximena Druar
Ximena Druar, B.Sc.
Genetic Testing Supervisor

Table 2: Detailed Test Parameters, Gene-Trac Test Reference S-5660

Customer Sample ID	MW-20-121219	MW-34-121319	MW-35-121319
SiREM Dhc Test ID	DHC-18685	DHC-18686	DHC-18687
Date Sampled [3]	12-Dec-19	13-Dec-19	13-Jan-20
Matrix	Field Filter	Field Filter	Field Filter
Date Received [3]	20-Dec-19	20-Dec-19	20-Dec-19
Sample Temperature	11.2 ºC	11.2 ºC	11.2 ºC
Filtration Date [3]	12-Dec-19	13-Dec-19	13-Dec-19
Volume Used for DNA Extraction	100 mL	500 mL	200 mL
DNA Extraction Date	2-Jan-20	2-Jan-20	2-Jan-20
DNA Concentration in Sample (extractable)	8752 ng/L	513 ng/L	2538 ng/L
PCR Amplifiable DNA	Detected	Detected	Detected
Dhc qPCR Date Analyzed	3-Jan-20	3-Jan-20	3-Jan-20
Laboratory Controls (see Table 3)	Passed	Passed	Passed
Comments	- -	- -	- -

See final page for notes.

Table 3: Gene-Trac Dhc Control Results, Test Reference S-5660

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	3-Jan-20	Genomic DNA (CSLD-1373)	1.5×10^{7}	7.3×10^{6} (4)	See Note 4
Positive Control High Concentration	3-Jan-20	Genomic DNA (CSHD-1373)	2.4×10^{9}	2.2×10^{9}	Passed
Extraction Control	2-Jan-20	Extraction Control (KB-0704)	4.9×10^{10}	5.1×10^{10}	Passed
DNA Extraction Blank	3-Jan-20	Sterile Water (FB-3460)	0	2.6×10^{3} U	Passed
Negative Control	3-Jan-20	Reagent Blank (TBD-1332)	0	2.6×10^{3} U	Passed

See final page for notes.

Notes:
Dhc = *Dehalococcoides*
J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
E Extracted genomic DNA was not detected in the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
ng/L = nanograms per liter
mL = milliliter
NA = not applicable
ND = not detected
DNA = deoxyribonucleic acid
16S rRNA = 16S ribosomal ribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
°C = degrees Celsius

[1]Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

[2]Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

[3]Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 7 days of date received or filtration date.

[4]Control was outside recovery limit guidelines (+/- 50%), however, test results are deemed acceptable if one of two positive controls falls within the recovery limit guidelines.

SiREM

Chain-of-Custody Form

siremlab.com

180A Market Place Blvd
Knoxville, TN 37922
1-866-251-1747

Lab # S-56660

*Project Name: Morell's | *Project #: 030190

*Project Manager: Dale Heffner | *Company: Aspect

*Email Address: dheffner@aspectconsulting.com

Address (Street): 710 2nd Ave Ste 550

City: Seattle | State/Province: WA | Country: USA

*Phone #: 206-838-5831

*Sampler's Signature: Breeyn Greer | *Sampler's Printed Name: Breeyn Greer

Analysis

Preservative Key
0. None
1. HCL
2. Other
3. Other
4. Other
5. Other
6. Other

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac FGA	Gene-Trac DHB	Gene-Trac DHGM	Gene-Trac SRB	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study	Volume (L)	Other Information
MW-20-121219	12/12	2300	W	1	X				FIC-052	55			<0.1	clogged immediately filter
MW-34-121319	12/13	0030	W	1	X				FIC	052	56		0.5	filter
MW-35-121319	12/13	0200	W	1	X				FIC	052	54		0.2	filter

Billing Information
P.O. #: 030190
*Bill To: Aspect Consulting Accounts Payable

Turnaround Time Requested
Normal: X
Rush:

For Lab Use Only
Cooler Condition: Blue Good-wet ice
Cooler Temperature: 11.2°C
Custody Seals: Yes ☐ No ☑

For Lab Use Only
Proposal #:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Breeyn Greer	Signature: Susan Thomas	Signature: J. Smith	Signature: J. Wilkinson	Signature:	Signature:
Printed Name: Breeyn Greer	Printed Name: Susan Thomas	Printed Name: J. Smith	Printed Name: J. Wilkinson	Printed Name:	Printed Name:
Firm: Aspect	Firm: SiREM	Firm: SiREM	Firm: SiREM	Firm:	Firm:
Date/Time: 12/17/19 1530	Date/Time: 12-20-19 1300	Date/Time: 12-31-19 0900	Date/Time: 1/2/20 11:30	Date/Time:	Date/Time:

Distribution: White return to Originator Yellow Lab Copy: Pink Retained by Client

* Mandatory Fields

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 3, 2020

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 25, 2020 from the Morrell's 080190, F&BI 003396 project. There are 42 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect, Breeyn Greer
ASP0403R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 25, 2020 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morrell's 080190, F&BI 003396 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
003396 -01	MW-13D-032420
003396 -02	MW-12D-032420
003396 -03	MW-8D-032320
003396 -04	MW-15-032320
003396 -05	MW-19-032420
003396 -06	MW-20-032420
003396 -07	MW-27-032420
003396 -08	MW-17-032420
003396 -09	MW-34-032520
003396 -10	MW-14D-032520
003396 -11	MW-5-032520
003396 -12	MW-8-032520
003396 -13	MW-16-032520
003396 -14	MW-21-032520
003396 -15	MW-26-032520
003396 -16	MW-28-032520
003396 -17	MW-29-032520

The samples were sent to Fremont Analytical for nitrate, nitrite, sulfate, and TOC analyses. The report is enclosed.

Several analytes in the 8260D matrix spike failed the acceptance criteria. The laboratory control samples passed the acceptance criteria, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-13D-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-01 x10
Date Analyzed:	03/26/20	Data File:	003396-01 x10.117
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	26,900

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-12D-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-02 x10
Date Analyzed:	03/26/20	Data File:	003396-02 x10.118
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	6,420

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8D-032320	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-03 x10
Date Analyzed:	03/26/20	Data File:	003396-03 x10.119
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	502

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-15-032320	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-04 x10
Date Analyzed:	03/26/20	Data File:	003396-04 x10.120
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	3,630

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-19-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-05 x100
Date Analyzed:	03/27/20	Data File:	003396-05 x100.110
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	89,000

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-20-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-06 x100
Date Analyzed:	03/27/20	Data File:	003396-06 x100.111
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	73,000

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-27-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-07 x10
Date Analyzed:	03/26/20	Data File:	003396-07 x10.126
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	6,940

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-17-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-08 x10
Date Analyzed:	03/26/20	Data File:	003396-08 x10.127
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	36,400

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-34-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-09 x10
Date Analyzed:	03/26/20	Data File:	003396-09 x10.128
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	2,370

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-14D-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-10 x10
Date Analyzed:	03/26/20	Data File:	003396-10 x10.129
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	8,650

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-5-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-11 x10
Date Analyzed:	03/26/20	Data File:	003396-11 x10.130
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	4,030

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-8-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-12 x10
Date Analyzed:	03/26/20	Data File:	003396-12 x10.131
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	20,300

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-16-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-13 x10
Date Analyzed:	03/26/20	Data File:	003396-13 x10.132
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	21,500

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-21-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-14 x10
Date Analyzed:	03/26/20	Data File:	003396-14 x10.136
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	34,300

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-26-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-15 x10
Date Analyzed:	03/26/20	Data File:	003396-15 x10.137
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	45,300

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-28-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-16 x10
Date Analyzed:	03/26/20	Data File:	003396-16 x10.138
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	3,060

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-29-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	003396-17 x10
Date Analyzed:	03/26/20	Data File:	003396-17 x10.139
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	17,200

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/26/20	Lab ID:	I0-184 mb
Date Analyzed:	03/26/20	Data File:	I0-184 mb.102
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-13D-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-01
Date Analyzed:	03/25/20	Data File:	032540.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	13
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.7
Tetrachloroethene	3.7

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-12D-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-02
Date Analyzed:	03/25/20	Data File:	032541.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	8.9
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-8D-032320	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-03
Date Analyzed:	03/25/20	Data File:	032542.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	110
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-15-032320	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-04
Date Analyzed:	03/25/20	Data File:	032543.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	7.9
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	67
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	1.2

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-19-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-05
Date Analyzed:	03/25/20	Data File:	032544.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.51
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	46
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-20-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-06
Date Analyzed:	03/25/20	Data File:	032545.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.65
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	9.8
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	1.5

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-27-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-07
Date Analyzed:	03/25/20	Data File:	032546.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.5
Tetrachloroethene	9.3

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-17-032420	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-08
Date Analyzed:	03/25/20	Data File:	032547.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.86
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	77
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	5.4

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-34-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-09
Date Analyzed:	03/25/20	Data File:	032548.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	10
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.5
Tetrachloroethene	17

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-14D-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-10
Date Analyzed:	03/25/20	Data File:	032549.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1.8
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	1.8

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-5-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-11
Date Analyzed:	03/25/20	Data File:	032550.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	9.6

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-8-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-12
Date Analyzed:	03/25/20	Data File:	032551.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.4
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	190 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.9
Tetrachloroethene	8.4

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-8-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-12 1/10
Date Analyzed:	03/31/20	Data File:	033110.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	93	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	2.9
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	210
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	<10
Tetrachloroethene	<10

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-16-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-13
Date Analyzed:	03/25/20	Data File:	032552.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.83
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	74
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	3.7

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-21-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-14
Date Analyzed:	03/25/20	Data File:	032553.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	1.5
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	160 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	9.6
Tetrachloroethene	19

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-21-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-14 1/10
Date Analyzed:	03/27/20	Data File:	032741.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	93	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	3.3
Chloroethane	<10
1,1-Dichloroethene	<10
Methylene chloride	<50
trans-1,2-Dichloroethene	<10
1,1-Dichloroethane	<10
cis-1,2-Dichloroethene	230
1,2-Dichloroethane (EDC)	<10
1,1,1-Trichloroethane	<10
Trichloroethene	<10
Tetrachloroethene	<10

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-26-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-15
Date Analyzed:	03/27/20	Data File:	032736.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.4
Tetrachloroethene	15

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-28-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-16
Date Analyzed:	03/27/20	Data File:	032737.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1.8
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	2.7
Tetrachloroethene	20

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-29-032520	Client:	Aspect Consulting, LLC
Date Received:	03/25/20	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	003396-17
Date Analyzed:	03/26/20	Data File:	032556.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.4
Tetrachloroethene	14

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morrell's 080190, F&BI 003396
Date Extracted:	03/25/20	Lab ID:	00-720 mb
Date Analyzed:	03/25/20	Data File:	032539.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 04/03/20
Date Received: 03/25/20
Project: Morrell's 080190, F&BI 003396

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 003411-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	9,630	251 b	264 b	75-125	5 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	97	80-120

Date of Report: 04/03/20
Date Received: 03/25/20
Project: Morrell's 080190, F&BI 003396

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003396-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	67	61-139
Chloroethane	ug/L (ppb)	50	<1	63	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	69 vo	71-123
Methylene chloride	ug/L (ppb)	50	<5	63	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	68 vo	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	70 vo	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	13	71 b	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	65 vo	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	68 vo	75-121
Trichloroethene	ug/L (ppb)	50	1.7	69 vo	73-122
Tetrachloroethene	ug/L (ppb)	50	3.7	72	40-155

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	103	103	70-128	0
Chloroethane	ug/L (ppb)	50	101	101	66-149	0
1,1-Dichloroethene	ug/L (ppb)	50	103	103	72-121	0
Methylene chloride	ug/L (ppb)	50	93	96	63-132	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	99	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	102	102	77-119	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	103	104	76-119	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	93	95	75-116	2
1,1,1-Trichloroethane	ug/L (ppb)	50	103	103	80-116	0
Trichloroethene	ug/L (ppb)	50	97	99	72-119	2
Tetrachloroethene	ug/L (ppb)	50	100	103	78-109	3

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 003396
Work Order Number: 2003395

April 01, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 17 sample(s) on 3/25/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *04/01/2020*

CLIENT: Friedman & Bruya
Project: 003396
Work Order: 2003395

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2003395-001	MW-13D-032420	03/24/2020 12:20 AM	03/25/2020 12:06 PM
2003395-002	MW-12D-032420	03/24/2020 2:25 AM	03/25/2020 12:06 PM
2003395-003	MW-8D-032320	03/23/2020 10:45 PM	03/25/2020 12:06 PM
2003395-004	MW-15-032320	03/23/2020 10:50 PM	03/25/2020 12:06 PM
2003395-005	MW-19-032420	03/24/2020 12:35 AM	03/25/2020 12:06 PM
2003395-006	MW-20-032420	03/24/2020 2:30 AM	03/25/2020 12:06 PM
2003395-007	MW-27-032420	03/24/2020 4:20 AM	03/25/2020 12:06 PM
2003395-008	MW-17-032420	03/24/2020 4:30 AM	03/25/2020 12:06 PM
2003395-009	MW-34-032520	03/25/2020 12:30 AM	03/25/2020 12:06 PM
2003395-010	MW-14D-032520	03/25/2020 12:40 AM	03/25/2020 12:06 PM
2003395-011	MW-5-032520	03/25/2020 3:15 AM	03/25/2020 12:06 PM
2003395-012	MW-8-032520	03/25/2020 6:20 AM	03/25/2020 12:06 PM
2003395-013	MW-16-032520	03/25/2020 2:40 AM	03/25/2020 12:06 PM
2003395-014	MW-21-032520	03/25/2020 6:10 AM	03/25/2020 12:06 PM
2003395-015	MW-26-032520	03/25/2020 1:30 AM	03/25/2020 12:06 PM
2003395-016	MW-28-032520	03/25/2020 5:00 AM	03/25/2020 12:06 PM
2003395-017	MW-29-032520	03/25/2020 4:45 AM	03/25/2020 12:06 PM

Case Narrative

WO#: **2003395**
Date: **4/1/2020**

CLIENT: Friedman & Bruya
Project: 003396

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2003395**
Date Reported: **4/1/2020**

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-001 **Collection Date:** 3/24/2020 12:20:00 AM
Client Sample ID: **MW-13D-032420** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/25/2020 8:02:00 PM
Nitrate (as N)	3.31	0.200	DH	mg/L	2	3/30/2020 6:35:00 PM
Nitrate (as N)	3.45	0.100	E	mg/L	1	3/25/2020 8:02:00 PM
Sulfate	19.8	0.600	D	mg/L	2	3/30/2020 6:35:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	0.538	0.500		mg/L	1	3/31/2020 4:16:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Lab ID: 2003395-002 **Collection Date:** 3/24/2020 2:25:00 AM
Client Sample ID: **MW-12D-032420** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/25/2020 9:34:00 PM
Nitrate (as N)	3.93	0.200	DH	mg/L	2	3/30/2020 8:07:00 PM
Nitrate (as N)	4.06	0.100	E	mg/L	1	3/25/2020 9:34:00 PM
Sulfate	19.1	0.600	D	mg/L	2	3/30/2020 8:07:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/30/2020 9:40:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-003 **Collection Date:** 3/23/2020 10:45:00 PM
Client Sample ID: **MW-8D-032320** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/25/2020 9:57:00 PM
Nitrate (as N)	2.13	0.100		mg/L	1	3/25/2020 9:57:00 PM
Sulfate	21.2	0.600	D	mg/L	2	3/30/2020 9:17:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/30/2020 10:11:00 PM

Lab ID: 2003395-004 **Collection Date:** 3/23/2020 10:50:00 PM
Client Sample ID: **MW-15-032320** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/25/2020 10:20:00 PM
Nitrate (as N)	ND	0.100		mg/L	1	3/25/2020 10:20:00 PM
Sulfate	16.0	0.600	D	mg/L	2	3/30/2020 9:40:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	6.59	2.50	D	mg/L	5	3/31/2020 12:38:00 AM

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-005 **Collection Date:** 3/24/2020 12:35:00 AM
Client Sample ID: **MW-19-032420** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27940		Analyst: SS
Nitrite (as N)	ND	0.200	DH	mg/L	2	3/30/2020 10:03:00 PM
Nitrite (as N)	ND	0.500	D	mg/L	5	3/25/2020 11:29:00 PM
Nitrate (as N)	ND	0.200	DH	mg/L	2	3/30/2020 10:03:00 PM
Nitrate (as N)	ND	0.500	D	mg/L	5	3/25/2020 11:29:00 PM
Sulfate	ND	0.600	D	mg/L	2	3/30/2020 10:03:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	142	2.50	D	mg/L	5	3/31/2020 12:59:00 AM

Lab ID: 2003395-006 **Collection Date:** 3/24/2020 2:30:00 AM
Client Sample ID: **MW-20-032420** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	1.30	0.200	D	mg/L	2	3/25/2020 11:52:00 PM
Nitrate (as N)	0.105	0.100	H	mg/L	1	3/30/2020 10:26:00 PM
Nitrate (as N)	ND	0.200	D	mg/L	2	3/25/2020 11:52:00 PM
Sulfate	ND	0.300		mg/L	1	3/30/2020 10:26:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	304	10.0	D	mg/L	20	3/31/2020 4:39:00 PM

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-007 **Collection Date:** 3/24/2020 4:20:00 AM
Client Sample ID: **MW-27-032420** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/26/2020 12:15:00 AM
Nitrate (as N)	2.01	0.200	D	mg/L	2	3/26/2020 12:15:00 AM
Sulfate	23.1	0.600	D	mg/L	2	3/26/2020 12:15:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	0.506	0.500		mg/L	1	3/31/2020 1:55:00 AM

Lab ID: 2003395-008 **Collection Date:** 3/24/2020 4:30:00 AM
Client Sample ID: **MW-17-032420** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	0.402	0.200	D	mg/L	2	3/26/2020 12:38:00 AM
Nitrate (as N)	0.222	0.200	D	mg/L	2	3/26/2020 12:38:00 AM
Sulfate	1.93	0.600	D	mg/L	2	3/26/2020 12:38:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	258	5.00	D	mg/L	10	3/31/2020 5:02:00 PM

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-009 **Collection Date:** 3/25/2020 12:30:00 AM
Client Sample ID: **MW-34-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 1:01:00 AM
Nitrate (as N)	0.445	0.100		mg/L	1	3/26/2020 1:01:00 AM
Sulfate	8.65	0.300		mg/L	1	3/26/2020 1:01:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	1.23	0.500		mg/L	1	3/31/2020 2:48:00 AM

Lab ID: 2003395-010 **Collection Date:** 3/25/2020 12:40:00 AM
Client Sample ID: **MW-14D-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 1:24:00 AM
Nitrate (as N)	3.38	0.200	DH	mg/L	2	3/30/2020 10:49:00 PM
Nitrate (as N)	3.50	0.100	E	mg/L	1	3/26/2020 1:24:00 AM
Sulfate	20.2	0.600	D	mg/L	2	3/30/2020 10:49:00 PM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/31/2020 3:17:00 AM

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-011 **Collection Date:** 3/25/2020 3:15:00 AM
Client Sample ID: **MW-5-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27907		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 1:48:00 AM
Nitrate (as N)	0.492	0.100		mg/L	1	3/26/2020 1:48:00 AM
Sulfate	6.84	0.300		mg/L	1	3/26/2020 1:48:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	2.66	0.500		mg/L	1	3/31/2020 3:48:00 AM

Lab ID: 2003395-012 **Collection Date:** 3/25/2020 6:20:00 AM
Client Sample ID: **MW-8-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 7:12:00 PM
Nitrate (as N)	ND	0.100		mg/L	1	3/26/2020 7:12:00 PM
Sulfate	0.557	0.300		mg/L	1	3/26/2020 7:12:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	157	2.50	D	mg/L	5	3/31/2020 4:54:00 AM

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-013 **Collection Date:** 3/25/2020 2:40:00 AM
Client Sample ID: **MW-16-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 8:44:00 PM
Nitrate (as N)	0.122	0.100		mg/L	1	3/26/2020 8:44:00 PM
Sulfate	2.09	0.300		mg/L	1	3/26/2020 8:44:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	63.4	2.50	D	mg/L	5	3/31/2020 5:17:00 AM

Lab ID: 2003395-014 **Collection Date:** 3/25/2020 6:10:00 AM
Client Sample ID: **MW-21-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	1.10	0.200	D	mg/L	2	3/26/2020 9:07:00 PM
Nitrate (as N)	0.566	0.200	D	mg/L	2	3/26/2020 9:07:00 PM
Sulfate	8.42	0.600	D	mg/L	2	3/26/2020 9:07:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	241	2.50	D	mg/L	5	3/31/2020 5:41:00 AM

Analytical Report

Work Order: **2003395**
Date Reported: **4/1/2020**

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-015 **Collection Date:** 3/25/2020 1:30:00 AM
Client Sample ID: **MW-26-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 9:30:00 PM
Nitrate (as N)	1.69	0.100		mg/L	1	3/26/2020 9:30:00 PM
Sulfate	13.4	0.300		mg/L	1	3/26/2020 9:30:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/31/2020 6:14:00 AM

Lab ID: 2003395-016 **Collection Date:** 3/25/2020 5:00:00 AM
Client Sample ID: **MW-28-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/26/2020 9:53:00 PM
Nitrate (as N)	1.76	0.200	D	mg/L	2	3/26/2020 9:53:00 PM
Sulfate	18.5	0.600	D	mg/L	2	3/26/2020 9:53:00 PM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/31/2020 5:34:00 PM

Analytical Report

Work Order: **2003395**
Date Reported: **4/1/2020**

CLIENT: Friedman & Bruya
Project: 003396

Lab ID: 2003395-017 **Collection Date:** 3/25/2020 4:45:00 AM
Client Sample ID: **MW-29-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 10:16:00 PM
Nitrate (as N)	1.29	0.100		mg/L	1	3/26/2020 10:16:00 PM
Sulfate	14.6	0.300		mg/L	1	3/26/2020 10:16:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58386		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/31/2020 5:52:00 PM

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27907** SampType: **MBLK** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MBLKW** Batch ID: **27907** Analysis Date: **3/25/2020** SeqNo: **1165507**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID: **LCS-27907** SampType: **LCS** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **LCSW** Batch ID: **27907** Analysis Date: **3/25/2020** SeqNo: **1165508**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.712	0.100	0.7500	0	94.9	90	110				
Nitrate (as N)	0.720	0.100	0.7500	0	96.0	90	110				
Sulfate	3.54	0.300	3.750	0	94.3	90	110				

Sample ID: **2003395-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MW-13D-032420** Batch ID: **27907** Analysis Date: **3/25/2020** SeqNo: **1165510**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	3.45	0.100						3.447	0.0290	20	E
Sulfate	20.7	0.300						20.74	0.0820	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2003395-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MW-13D-032420** Batch ID: **27907** Analysis Date: **3/25/2020** SeqNo: **1165511**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.668	0.100	0.7500	0	89.1	80	120				
Nitrate (as N)	4.27	0.100	0.7500	3.447	110	80	120				E
Sulfate	24.5	0.300	3.750	20.74	101	80	120				E

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2003395-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MW-13D-032420** Batch ID: **27907** Analysis Date: **3/25/2020** SeqNo: **1165511**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2003395-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MW-13D-032420** Batch ID: **27907** Analysis Date: **3/25/2020** SeqNo: **1165512**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.701	0.100	0.7500	0	93.5	80	120	0.6680	4.82	20	
Nitrate (as N)	4.29	0.100	0.7500	3.447	113	80	120	4.274	0.397	20	E
Sulfate	24.6	0.300	3.750	20.74	104	80	120	24.54	0.334	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2003395-011ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MW-5-032520** Batch ID: **27907** Analysis Date: **3/26/2020** SeqNo: **1165525**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	0.489	0.100						0.4920	0.612	20	
Sulfate	6.83	0.300						6.842	0.132	20	

Sample ID: **2003395-011AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/25/2020** RunNo: **58340**
Client ID: **MW-5-032520** Batch ID: **27907** Analysis Date: **3/26/2020** SeqNo: **1165526**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.717	0.100	0.7500	0	95.6	80	120				
Nitrate (as N)	1.26	0.100	0.7500	0.4920	103	80	120				
Sulfate	10.8	0.300	3.750	6.842	105	80	120				

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27913** SampType: **MBLK** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MBLKW** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165607**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID: **LCS-27913** SampType: **LCS** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **LCSW** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165608**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.701	0.100	0.7500	0	93.5	90	110				
Nitrate (as N)	0.729	0.100	0.7500	0	97.2	90	110				
Sulfate	3.65	0.300	3.750	0	97.3	90	110				

Sample ID: **2003395-012ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MW-8-032520** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165610**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	ND	0.100						0		20	
Sulfate	0.537	0.300						0.5570	3.66	20	

Sample ID: **2003395-012AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MW-8-032520** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165611**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.309	0.100	0.7500	0	41.2	80	120				S
Nitrate (as N)	0.742	0.100	0.7500	0.06400	90.4	80	120				
Sulfate	4.52	0.300	3.750	0.5570	106	80	120				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2003395-012AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MW-8-032520** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.331	0.100	0.7500	0	44.1	80	120	0.3090	6.88	20	S
Nitrate (as N)	0.752	0.100	0.7500	0.06400	91.7	80	120	0.7420	1.34	20	
Sulfate	4.57	0.300	3.750	0.5570	107	80	120	4.515	1.21	20	

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2003411-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **BATCH** Batch ID: **27913** Analysis Date: **3/27/2020** SeqNo: **1165622**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	0.611	0.100						0.6110	0	20	
Sulfate	13.2	0.300						13.06	0.968	20	

Sample ID: **2003411-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **BATCH** Batch ID: **27913** Analysis Date: **3/27/2020** SeqNo: **1165623**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.677	0.100	0.7500	0	90.3	80	120				
Nitrate (as N)	1.39	0.100	0.7500	0.6110	104	80	120				
Sulfate	17.1	0.300	3.750	13.06	108	80	120				E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **MB-27940** SampType: **MBLK** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MBLKW** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165939**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27940** SampType: **MBLK** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MBLKW** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165939**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **LCS-27940** SampType: **LCS** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **LCSW** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165940**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.717	0.100	0.7500	0	95.6	90	110				
Nitrate (as N)	0.731	0.100	0.7500	0	97.5	90	110				
Sulfate	3.71	0.300	3.750	0	98.9	90	110				

Sample ID: **2003395-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MW-13D-032420** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165942**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200						0		20	DH
Nitrate (as N)	3.27	0.200						3.306	1.22	20	DH
Sulfate	19.5	0.600						19.76	1.14	20	D

Sample ID: **2003395-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MW-13D-032420** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165943**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.39	0.200	1.500	0	92.8	80	120				DH
Nitrate (as N)	4.88	0.200	1.500	3.306	105	80	120				DH
Sulfate	27.3	0.600	7.500	19.76	101	80	120				D

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2003395-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MW-13D-032420** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165944**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.42	0.200	1.500	0	94.8	80	120	1.392	2.13	20	DH
Nitrate (as N)	4.87	0.200	1.500	3.306	104	80	120	4.876	0.205	20	DH
Sulfate	27.3	0.600	7.500	19.76	100	80	120	27.33	0.198	20	D

Sample ID: **2003411-009ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **BATCH** Batch ID: **27940** Analysis Date: **3/31/2020** SeqNo: **1165959**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.500						0		20	DH
Nitrate (as N)	11.0	0.500						11.12	1.13	20	DH
Sulfate	25.9	1.50						26.28	1.32	20	D

Sample ID: **2003411-009AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **BATCH** Batch ID: **27940** Analysis Date: **3/31/2020** SeqNo: **1165960**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	3.48	0.500	3.750	0	92.7	80	120				DH
Nitrate (as N)	15.1	0.500	3.750	11.12	106	80	120				DEH
Sulfate	45.1	1.50	18.75	26.28	101	80	120				D

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R58386**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/30/2020**			RunNo: **58386**	
Client ID: **MBLKW**	Batch ID: **R58386**					Analysis Date: **3/30/2020**			SeqNo: **1166812**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									

Sample ID: **LCS-R58386**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/30/2020**			RunNo: **58386**	
Client ID: **LCSW**	Batch ID: **R58386**					Analysis Date: **3/30/2020**			SeqNo: **1166813**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.30	0.500	5.000	0	106	88.3	117				

Sample ID: **2003395-003BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/30/2020**			RunNo: **58386**	
Client ID: **MW-8D-032320**	Batch ID: **R58386**					Analysis Date: **3/30/2020**			SeqNo: **1166819**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500						0		20	

Sample ID: **2003395-003BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/30/2020**			RunNo: **58386**	
Client ID: **MW-8D-032320**	Batch ID: **R58386**					Analysis Date: **3/30/2020**			SeqNo: **1166820**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.66	0.500	5.000	0.1150	111	66	142				

Sample ID: **2003395-003BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **3/30/2020**			RunNo: **58386**	
Client ID: **MW-8D-032320**	Batch ID: **R58386**					Analysis Date: **3/30/2020**			SeqNo: **1166821**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.62	0.500	5.000	0.1150	110	66	142	5.662	0.834	30	

Work Order: 2003395
CLIENT: Friedman & Bruya
Project: 003396

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **2003395-016BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **3/31/2020**	RunNo: **58386**
Client ID: **MW-28-032520**	Batch ID: **R58386**		Analysis Date: **3/31/2020**	SeqNo: **1166851**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	1.00						0		20	D

Sample ID: **2003395-016BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **3/31/2020**	RunNo: **58386**
Client ID: **MW-28-032520**	Batch ID: **R58386**		Analysis Date: **3/31/2020**	SeqNo: **1166852**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	11.3	1.00	10.00	0	113	66	142				D

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2003395**
Logged by:	**Carissa True**	Date Received:	**3/25/2020 12:06:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐
			H2SO4 added to B fractions	
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	0.0
Sample 1	2.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2003395

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont

PROJECT NAME/NO.: 003396

PO #: B-156

REMARKS: Aspect EDD

TURNAROUND TIME
- [x] Standard TAT
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC	Sulfate	Nitrate	Nitrite				Notes
MW-13D-032420		03/24/20	0020	W	2				X	X	X	X				
MW-12D-032420		03/24/20	0225	W	2				X	X	X	X				
MW-8D-032320		03/23/20	2245	W	2				X	X	X	X				
MW-15-032320		03/23/20	2250	W	2				X	X	X	X				
MW-19-032420		03/24/20	0035	W	2				X	X	X	X				
MW-20-032420		03/24/20	0230	W	2				X	X	X	X				
MW-27-032420		03/24/20	0420	W	2				X	X	X	X				
MW-17-032420		03/24/20	0430	W	2				X	X	X	X				
MW-34-032520		03/25/20	0030	W	2				X	X	X	X				
MW-14D-032520		03/25/20	0040	W	2				X	X	X	X				
MW-5-032520		03/25/20	0315	W	2				X	X	X	X				
MW-8-032520		03/25/20	0620	W	2				X	X	X	X				
MW-16-032520		03/25/20	0240	W	2				X	X	X	X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	3/25/20	11:02
Received by:		M. Hart Langston	FAI	3/25/20	1206
Relinquished by:					
Received by:					

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2003395

Page # 2 of 2

Send Report To: Michael Erdahl
Company: Friedman and Bruya, Inc.
Address: 3012 16th Ave W
City, State, ZIP: Seattle, WA 98119
Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: Fremont
PROJECT NAME/NO.: 003396
PO #: B-156
REMARKS:

TURNAROUND TIME
X Standard TAT
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC	Sulfide	Nitrate	Nitrite				Notes
MW-21-032520		03/25/20	0610	W	2				X	X	X	X				
MW-26-032520		03/25/20	0130	W	2				X	X	X	X				
MW-20-032520		03/25/20	0500	W	2				X	X	X	X				
MW-29-032520		03/25/20	0445	W	2				X	X	X	X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	3/25/20	11:02
Received by:		Matt Langston	FAI		
Relinquished by:					
Received by:					

0033396

SAMPLE CHAIN OF CUSTODY ME 03/25/20 VW4/BTY2

Page # 1 of 2

Report To Breeyn Greer; Dave Heffner

Company Aspect Consulting

Address 710 2nd AVE Suite 550

City, State, ZIP Seattle WA 98104

Phone _____ Email bgreer@aspectconsulting.com dheffner@aspectconsulting.com

SAMPLERS (*signature*) Amelia Oates

PROJECT NAME: Morrell's

PO#: 080190

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: AP

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other _____
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	cVOCs	Nitrate/Nitrite/Sulfate	Total Iron	TOC	Notes
MW-13D-032420	01 A-F	03/24/20	0020	water	6								X	X	X	X	
MW-12D-032420	02	3/24/20	0225														
MW-8D-032320	03	03/23/20	2245														
MW-15-032320	04	03/23/20	2250														
MW-19-032420	05	03/24/20	0035														
MW-20-032420	06	03/24/20	0230														Samples received at 4
MW-27-032420	07	03/24/20	0420														
MW-17-032420	08	03/24/20	0430														
MW-34-032520	09	03/25/20	0030														
MW-14D-032520	10	03/25/20	0040														

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Amelia Oates	Amelia Oates	Aspect	03/25/20	1010
Received by: Nhan Phan	Nhan Phan	FEDEX	3/25/20	1010
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

003396

SAMPLE CHAIN OF CUSTODY ME 03/25/20

VW4/BIY

Page # 2 of 2

Report To Breyn Greer; Dave Heffner
Company Aspect Consulting
Address 710 2nd AVE Suite 550
City, State, ZIP Seattle WA 98104
Phone _____ Email bgreer@aspectconsulting.com dheffner

SAMPLERS (*signature*)

PROJECT NAME: Monell's
PO #: 080190
REMARKS: Project specific RLs? - Yes / No
INVOICE TO: AP

TURNAROUND TIME
☑ Standard turnaround
☐ RUSH _____
Rush charges authorized by: _____

SAMPLE DISPOSAL
☐ Archive samples
☐ Other _____
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	cVOCs	Nitrate/Nitrite/Sulfate	Total Iron	TOC	Notes
MW-5-032520	11 AF	03/25/20	0315	water	6								↓	↓	↓	↓	
MW-8-032520	12	03/25/20	0620		6												
MW-16-032520	13	03/25/20	0240		6												
MW-21-032520	14	03/25/20	0610		6												
MW-26-032520	15	03/25/20	0130		6												
MW-28-032520	16	03/25/20	0500		6												
MW-29-032520	17	03/25/20	0445	↓	6								↓	↓	↓	↓	
																	Samples received at 4 °C

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Amelia Dates	Aspect	03/25/20	1010
Received by:	Nhan Phan	FEBI	3/25/20	1010
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 3, 2020

Dave Heffner, Project Manager
Aspect Consulting, LLC
710 2nd Ave S, Suite 550
Seattle, WA 98104

Dear Mr Heffner:

Included are the results from the testing of material submitted on March 26, 2020 from the Morell's Walker Chevrolet 080190, F&BI 003412 project. There are 29 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Data Aspect
ASP0403R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 26, 2020 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Morell's Walker Chevrolet 080190, F&BI 003412 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
003412 -01	MW-35-032520
003412 -02	MW-25-032620
003412 -03	MW-24-032620
003412 -04	MW-23-032620
003412 -05	MW-31-032620
003412 -06	MW-2-032620
003412 -07	MW-30-032620
003412 -08	MW-32-032620
003412 -09	MW-33-032620
003412 -10	MW-7-032620

The samples were sent to Fremont Analytical for nitrate, nitrite, sulfate, and TOC analyses. The report is enclosed.

Methylene chloride was detected in MW-35-032520. The data were flagged as due to laboratory contamination.

1,1-Dichloroethane failed below the acceptance criteria in the matrix spike sample. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-35-032520	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-01 x10
Date Analyzed:	03/26/20	Data File:	003412-01 x10.094
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	2,220

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-25-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-02 x10
Date Analyzed:	03/26/20	Data File:	003412-02 x10.095
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	829

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-24-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-03 x10
Date Analyzed:	03/26/20	Data File:	003412-03 x10.096
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	3,470

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-23-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-04 x10
Date Analyzed:	03/26/20	Data File:	003412-04 x10.097
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	4,950

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-31-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-05 x10
Date Analyzed:	03/26/20	Data File:	003412-05 x10.098
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	8,820

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-2-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-06 x10
Date Analyzed:	03/26/20	Data File:	003412-06 x10.104
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	38,000

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-30-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-07 x10
Date Analyzed:	03/26/20	Data File:	003412-07 x10.105
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	6,920

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-32-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-08 x10
Date Analyzed:	03/26/20	Data File:	003412-08 x10.106
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	2,760

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-33-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-09 x10
Date Analyzed:	03/26/20	Data File:	003412-09 x10.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	5,280

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-10 x10
Date Analyzed:	03/26/20	Data File:	003412-10 x10.108
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	21,100

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	I0-179 mb2
Date Analyzed:	03/26/20	Data File:	I0-179 mb2.093
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Iron	<50

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-35-032520	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-01
Date Analyzed:	03/26/20	Data File:	032617.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	5.3 lc
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	4.9
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.6
Tetrachloroethene	22

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-25-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-02
Date Analyzed:	03/26/20	Data File:	032618.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	3.0
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	3.2
Tetrachloroethene	36

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-24-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-03
Date Analyzed:	03/26/20	Data File:	032619.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	4.1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	11
Tetrachloroethene	58

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-04
Date Analyzed:	03/26/20	Data File:	032620.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	20
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	23
Tetrachloroethene	170 ve

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-04 1/10
Date Analyzed:	03/31/20	Data File:	033112.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)
Tetrachloroethene	140

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-31-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-05
Date Analyzed:	03/26/20	Data File:	032621.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	34
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	40
Tetrachloroethene	160 ve

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-31-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-05 1/10
Date Analyzed:	03/27/20	Data File:	032743.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	92	50	150

Compounds:	Concentration ug/L (ppb)
Tetrachloroethene	160

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-06
Date Analyzed:	03/26/20	Data File:	032622.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	5.6
Chloroethane	<1
1,1-Dichloroethene	3.8
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	560 ve
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	7.1
Tetrachloroethene	24

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-06 1/10
Date Analyzed:	03/31/20	Data File:	033113.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
cis-1,2-Dichloroethene	540

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-30-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-07
Date Analyzed:	03/27/20	Data File:	032732.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	92	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-32-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-08
Date Analyzed:	03/27/20	Data File:	032733.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	4.9
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	9.1
Tetrachloroethene	45

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-33-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-09
Date Analyzed:	03/27/20	Data File:	032734.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	2.4
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	5.4
Tetrachloroethene	34

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-7-032620	Client:	Aspect Consulting, LLC
Date Received:	03/26/20	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	003412-10
Date Analyzed:	03/26/20	Data File:	032626.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Morell's Walker Chevrolet 080190
Date Extracted:	03/26/20	Lab ID:	00-723 mb
Date Analyzed:	03/26/20	Data File:	032614.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 04/03/20
Date Received: 03/26/20
Project: Morell's Walker Chevrolet 080190, F&BI 003412

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 003372-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Iron	ug/L (ppb)	100	8,560	53 b	0 b	75-125	200 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Iron	ug/L (ppb)	100	93	80-120

Date of Report: 04/03/20
Date Received: 03/26/20
Project: Morell's Walker Chevrolet 080190, F&BI 003412

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003404-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	117	61-139
Chloroethane	ug/L (ppb)	50	<1	118	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	118	71-123
Methylene chloride	ug/L (ppb)	50	<5	116	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	108	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	112	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	118 vo	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	115	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	113	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	115	75-121
Trichloroethene	ug/L (ppb)	50	<1	116	73-122
Tetrachloroethene	ug/L (ppb)	50	<1	94	40-155

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	107	102	70-128	5
Chloroethane	ug/L (ppb)	50	103	99	66-149	4
1,1-Dichloroethene	ug/L (ppb)	50	110	107	72-121	3
Methylene chloride	ug/L (ppb)	50	103	99	63-132	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	114	108	70-122	5
trans-1,2-Dichloroethene	ug/L (ppb)	50	106	102	76-118	4
1,1-Dichloroethane	ug/L (ppb)	50	107	104	77-119	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	109	106	76-119	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	95	96	75-116	1
1,1,1-Trichloroethane	ug/L (ppb)	50	107	105	80-116	2
Trichloroethene	ug/L (ppb)	50	100	101	72-119	1
Tetrachloroethene	ug/L (ppb)	50	109	106	78-109	3

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 003412
Work Order Number: 2003411

April 02, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 10 sample(s) on 3/26/2020 for the analyses presented in the following report.

Ion Chromatography by EPA Method 300.0
Total Organic Carbon by SM 5310C

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *04/02/2020*

CLIENT: Friedman & Bruya
Project: 003412
Work Order: 2003411

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2003411-001	MW-35-032520	03/25/2020 11:55 AM	03/26/2020 11:05 AM
2003411-002	MW-25-032620	03/26/2020 1:00 AM	03/26/2020 11:05 AM
2003411-003	MW-24-032620	03/26/2020 2:15 AM	03/26/2020 11:05 AM
2003411-004	MW-23-032620	03/26/2020 3:50 AM	03/26/2020 11:05 AM
2003411-005	MW-31-032620	03/26/2020 5:05 AM	03/26/2020 11:05 AM
2003411-006	MW-2-032620	03/26/2020 12:05 AM	03/26/2020 11:05 AM
2003411-007	MW-30-032620	03/26/2020 1:25 AM	03/26/2020 11:05 AM
2003411-008	MW-32-032620	03/26/2020 2:40 AM	03/26/2020 11:05 AM
2003411-009	MW-33-032620	03/26/2020 4:20 AM	03/26/2020 11:05 AM
2003411-010	MW-7-032620	03/26/2020 5:40 AM	03/26/2020 11:05 AM

Case Narrative

WO#: **2003411**
Date: **4/2/2020**

CLIENT: Friedman & Bruya
Project: 003412

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2003411**
Date Reported: **4/2/2020**

CLIENT: Friedman & Bruya
Project: 003412

Lab ID: 2003411-001 **Collection Date:** 3/25/2020 11:55:00 AM
Client Sample ID: **MW-35-032520** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.100		mg/L	1	3/26/2020 11:48:00 PM
Nitrate (as N)	0.611	0.100		mg/L	1	3/26/2020 11:48:00 PM
Sulfate	13.1	0.300		mg/L	1	3/26/2020 11:48:00 PM
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	0.699	0.500		mg/L	1	3/31/2020 7:21:00 PM

Lab ID: 2003411-002 **Collection Date:** 3/26/2020 1:00:00 AM
Client Sample ID: **MW-25-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 12:58:00 AM
Nitrate (as N)	0.556	0.200	D	mg/L	2	3/27/2020 12:58:00 AM
Sulfate	13.3	0.600	D	mg/L	2	3/27/2020 12:58:00 AM

NOTES:
Diluted due to matrix.

Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/31/2020 8:56:00 PM

CLIENT: Friedman & Bruya
Project: 003412

Lab ID: 2003411-003 **Collection Date:** 3/26/2020 2:15:00 AM
Client Sample ID: **MW-24-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 1:21:00 AM
Nitrate (as N)	ND	0.200	D	mg/L	2	3/27/2020 1:21:00 AM
Sulfate	8.86	0.600	D	mg/L	2	3/27/2020 1:21:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	3.25	0.500		mg/L	1	3/31/2020 9:18:00 PM

Lab ID: 2003411-004 **Collection Date:** 3/26/2020 3:50:00 AM
Client Sample ID: **MW-23-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27940		Analyst: SS
Nitrite (as N)	ND	0.100	H	mg/L	1	3/30/2020 11:58:00 PM
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 2:30:00 AM
Nitrate (as N)	0.912	0.200	D	mg/L	2	3/27/2020 2:30:00 AM
Sulfate	24.9	0.600	D	mg/L	2	3/27/2020 2:30:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	3/31/2020 10:41:00 PM

CLIENT: Friedman & Bruya
Project: 003412

Lab ID: 2003411-005 **Collection Date:** 3/26/2020 5:05:00 AM
Client Sample ID: **MW-31-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27940		Analyst: SS
Nitrite (as N)	ND	0.100	H	mg/L	1	3/31/2020 12:21:00 AM
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 2:53:00 AM
Nitrate (as N)	0.462	0.200	D	mg/L	2	3/27/2020 2:53:00 AM
Sulfate	13.3	0.600	D	mg/L	2	3/27/2020 2:53:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	0.541	0.500		mg/L	1	3/31/2020 11:00:00 PM

Lab ID: 2003411-006 **Collection Date:** 3/26/2020 12:05:00 AM
Client Sample ID: **MW-2-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	0.726	0.200	D	mg/L	2	3/27/2020 3:16:00 AM
Nitrate (as N)	0.452	0.200	D	mg/L	2	3/27/2020 3:16:00 AM
Sulfate	ND	0.600	D	mg/L	2	3/27/2020 3:16:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	209	5.00	D	mg/L	10	3/31/2020 11:33:00 PM

CLIENT: Friedman & Bruya
Project: 003412

Lab ID: 2003411-007 **Collection Date:** 3/26/2020 1:25:00 AM
Client Sample ID: **MW-30-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 3:39:00 AM
Nitrate (as N)	1.71	0.200	D	mg/L	2	3/27/2020 3:39:00 AM
Sulfate	35.3	1.50	D	mg/L	5	3/31/2020 12:44:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	1.17	0.500		mg/L	1	3/31/2020 11:52:00 PM

Lab ID: 2003411-008 **Collection Date:** 3/26/2020 2:40:00 AM
Client Sample ID: **MW-32-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 4:02:00 AM
Nitrate (as N)	2.95	0.200	D	mg/L	2	3/27/2020 4:02:00 AM
Sulfate	17.0	0.600	D	mg/L	2	3/27/2020 4:02:00 AM
NOTES: Diluted due to matrix.						
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	4/1/2020 12:14:00 AM

CLIENT: Friedman & Bruya
Project: 003412

Lab ID: 2003411-009 **Collection Date:** 3/26/2020 4:20:00 AM
Client Sample ID: **MW-33-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 4:26:00 AM
Nitrate (as N)	11.1	0.500	DH	mg/L	5	3/31/2020 1:07:00 AM
Nitrate (as N)	11.4	0.200	DE	mg/L	2	3/27/2020 4:26:00 AM
Sulfate	27.3	0.600	D	mg/L	2	3/27/2020 4:26:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	4/1/2020 12:35:00 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.
Diluted due to high levels of non-target analytes.

Lab ID: 2003411-010 **Collection Date:** 3/26/2020 5:40:00 AM
Client Sample ID: **MW-7-032620** **Matrix:** Water

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ion Chromatography by EPA Method 300.0				Batch ID: 27913		Analyst: SS
Nitrite (as N)	ND	0.200	D	mg/L	2	3/27/2020 4:49:00 AM
Nitrate (as N)	1.75	0.200	D	mg/L	2	3/27/2020 4:49:00 AM
Sulfate	29.6	0.600	D	mg/L	2	3/27/2020 4:49:00 AM
Total Organic Carbon by SM 5310C				Batch ID: R58395		Analyst: SS
Total Organic Carbon	ND	0.500		mg/L	1	4/1/2020 1:25:00 PM

NOTES:
Diluted due to matrix.

Work Order: 2003411
CLIENT: Friedman & Bruya
Project: 003412

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27913** SampType: **MBLK** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MBLKW** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165607**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID: **LCS-27913** SampType: **LCS** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **LCSW** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165608**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.701	0.100	0.7500	0	93.5	90	110				
Nitrate (as N)	0.729	0.100	0.7500	0	97.2	90	110				
Sulfate	3.65	0.300	3.750	0	97.3	90	110				

Sample ID: **2003395-012ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **BATCH** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165610**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	ND	0.100						0		20	
Sulfate	0.537	0.300						0.5570	3.66	20	

Sample ID: **2003395-012AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **BATCH** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165611**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.309	0.100	0.7500	0	41.2	80	120				S
Nitrate (as N)	0.742	0.100	0.7500	0.06400	90.4	80	120				
Sulfate	4.52	0.300	3.750	0.5570	106	80	120				

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2003411
CLIENT: Friedman & Bruya
Project: 003412

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2003395-012AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **BATCH** Batch ID: **27913** Analysis Date: **3/26/2020** SeqNo: **1165612**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.331	0.100	0.7500	0	44.1	80	120	0.3090	6.88	20	S
Nitrate (as N)	0.752	0.100	0.7500	0.06400	91.7	80	120	0.7420	1.34	20	
Sulfate	4.57	0.300	3.750	0.5570	107	80	120	4.515	1.21	20	

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2003411-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MW-35-032520** Batch ID: **27913** Analysis Date: **3/27/2020** SeqNo: **1165622**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100						0		20	
Nitrate (as N)	0.611	0.100						0.6110	0	20	
Sulfate	13.2	0.300						13.06	0.968	20	

Sample ID: **2003411-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/26/2020** RunNo: **58343**
Client ID: **MW-35-032520** Batch ID: **27913** Analysis Date: **3/27/2020** SeqNo: **1165623**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.677	0.100	0.7500	0	90.3	80	120				
Nitrate (as N)	1.39	0.100	0.7500	0.6110	104	80	120				
Sulfate	17.1	0.300	3.750	13.06	108	80	120				E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **MB-27940** SampType: **MBLK** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MBLKW** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165939**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.100									
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Work Order: 2003411
CLIENT: Friedman & Bruya
Project: 003412

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-27940** SampType: **MBLK** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MBLKW** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165939**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **LCS-27940** SampType: **LCS** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **LCSW** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165940**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	0.717	0.100	0.7500	0	95.6	90	110				
Nitrate (as N)	0.731	0.100	0.7500	0	97.5	90	110				
Sulfate	3.71	0.300	3.750	0	98.9	90	110				

Sample ID: **2003395-001ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **BATCH** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165942**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.200						0		20	DH
Nitrate (as N)	3.27	0.200						3.306	1.22	20	DH
Sulfate	19.5	0.600						19.76	1.14	20	D

Sample ID: **2003395-001AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **BATCH** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165943**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.39	0.200	1.500	0	92.8	80	120				DH
Nitrate (as N)	4.88	0.200	1.500	3.306	105	80	120				DH
Sulfate	27.3	0.600	7.500	19.76	101	80	120				D

Work Order: 2003411
CLIENT: Friedman & Bruya
Project: 003412

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2003395-001AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **BATCH** Batch ID: **27940** Analysis Date: **3/30/2020** SeqNo: **1165944**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	1.42	0.200	1.500	0	94.8	80	120	1.392	2.13	20	DH
Nitrate (as N)	4.87	0.200	1.500	3.306	104	80	120	4.876	0.205	20	DH
Sulfate	27.3	0.600	7.500	19.76	100	80	120	27.33	0.198	20	D

Sample ID: **2003411-009ADUP** SampType: **DUP** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MW-33-032620** Batch ID: **27940** Analysis Date: **3/31/2020** SeqNo: **1165959**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	ND	0.500						0		20	DH
Nitrate (as N)	11.0	0.500						11.12	1.13	20	DH
Sulfate	25.9	1.50						26.28	1.32	20	D

Sample ID: **2003411-009AMS** SampType: **MS** Units: **mg/L** Prep Date: **3/30/2020** RunNo: **58360**
Client ID: **MW-33-032620** Batch ID: **27940** Analysis Date: **3/31/2020** SeqNo: **1165960**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite (as N)	3.48	0.500	3.750	0	92.7	80	120				DH
Nitrate (as N)	15.1	0.500	3.750	11.12	106	80	120				DEH
Sulfate	45.1	1.50	18.75	26.28	101	80	120				D

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2003411
CLIENT: Friedman & Bruya
Project: 003412

QC SUMMARY REPORT

Total Organic Carbon by SM 5310C

Sample ID: **MB-R58395**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/31/2020**		RunNo: **58395**		
Client ID: **MBLKW**	Batch ID: **R58395**					Analysis Date: **3/31/2020**		SeqNo: **1166938**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									

Sample ID: **LCS-R58395**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/31/2020**		RunNo: **58395**		
Client ID: **LCSW**	Batch ID: **R58395**					Analysis Date: **3/31/2020**		SeqNo: **1166939**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	5.44	0.500	5.000	0	109	88.3	117				

Sample ID: **2003411-001BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **3/31/2020**		RunNo: **58395**		
Client ID: **MW-35-032520**	Batch ID: **R58395**					Analysis Date: **3/31/2020**		SeqNo: **1166941**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.740	0.500						0.6990	5.70	20	

Sample ID: **2003411-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/31/2020**		RunNo: **58395**		
Client ID: **MW-35-032520**	Batch ID: **R58395**					Analysis Date: **3/31/2020**		SeqNo: **1166942**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.24	0.500	5.000	0.6990	111	66	142				

Sample ID: **2003411-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **3/31/2020**		RunNo: **58395**		
Client ID: **MW-35-032520**	Batch ID: **R58395**					Analysis Date: **3/31/2020**		SeqNo: **1166943**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	6.16	0.500	5.000	0.6990	109	66	142	6.242	1.40	30	

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2003411**
Logged by:	**Carissa True**	Date Received:	**3/26/2020 11:05:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐
		No cooler present		
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	3.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 2003411

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont

PROJECT NAME/NO. 003412

PO # B-162

REMARKS Asphalt EDD

TURNAROUND TIME
- ☒ Standard TAT
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	Nitrate	Nitrate	Sulfate	TOC				Notes
MW-35-032520		3/25/20	1155	water	2				X	X	X	X				
MW-25-032620		3/26/20	0100		2				X	X	X	X				
MW-24-032620			0215		2				X	X	X	X				
MW-23-032620			0350		2				X	X	X	X				
MW-31-032620			0505		2				X	X	X	X				
MW-2-032620			0005		2				X	X	X	X				
MW-30-032620			0125		2				X	X	X	X				
MW-32-032620			0240		2				X	X	X	X				
MW-33-032620			0420		2				X	X	X	X				
MW-7-032620			0540		2				X	X	X	X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	3/26/20	09:06
Received by:		Wendy Chang	FAI	3/26/20	11:05 AM
Relinquished by:					
Received by:					

003412

SAMPLE CHAIN OF CUSTODY

ME 03-26-20

Page # 1 of 1 JWH

Report To Dave Heffner / Breeyn Coreer

Company Aspect

Address 710 2nd Ave Ste 550

City, State, ZIP Seattle WA 98104

Phone (0122327343 Email dheffner; bcoreer@aspectconsulting.com

SAMPLERS (signature) Breeyn Coreer

PROJECT NAME Morell's / Walker Chevrolet

PO # 080190

REMARKS

Project specific RLs? - Yes / (No)

INVOICE TO AP

TURNAROUND TIME

[X] Standard turnaround AIG

[ ] RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

[ ] Archive samples

[ ] Other

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	chlorinated VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	nitrate/nitrite/sulfate EPA 300	Total Fe EPA 6020	TOC SW 9060		Notes
						ANALYSES REQUESTED											
MW-35-032520	01 A-F	3/25/20	1155	W	6					X			X	X	X		cVOCs per BG 3/26/20 MG
MW-25-032620	02	3/26/20	0100	W	6					↓			↓	↓	↓		
MW-24-032620	03	3/26/20	0215	W	6												
MW-23-032620	04	3/26/20	0350	W	6												~100 ug/L
MW-31-032620	05	3/26/20	0505	W	6												~100 ug/L
MW-2-032620	06	3/26/20	0005	W	6												
MW-30-032620	07	3/26/20	0125	W	6												
MW-32-032620	08	3/26/20	0240	W	6												
MW-33-032620	09	3/26/20	0420	W	6												
MW-7-032620	10	3/26/20	0540	W	6					↓			↓	↓	↓		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Daniel Babcock	Aspect	3/26/20	0846
Received by:	Liz Webber-B	FSI	3/26/20	0846
Relinquished by:				
Received by:			Samples received at 3 °C	

GMB

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

APPENDIX D

Stemen Environmental Inc. Inspection Letter

STEMEN ENVIRONMENTAL, INC.

P.O. Box 3644
LACEY, WASHINGTON 98509-3644
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

May 17, 2009

Mr. Aaron Morrell
608 N. 1st Street
Tacoma, Washington 98403

Dear Mr. Morrell:

RE: SITE INSPECTIONS OF COMMERCIAL PROPERTY LOCATED AT 608 N. 1ST STREET, TACOMA, WASHINGTON.

Our company performed various environmental investigations on the subject property and neighboring properties. The following facts and information was obtained during these investigations:

1. Subsurface soils, at depths greater than 3 feet b.g.s. (below ground surface), beneath substantial portions of the subject properties consist of densely compacted gravelly sands.

2. Groundwater is present at depths of 50+ feet b.g.s. Groundwater elevations were measured via the on-site groundwater monitoring wells.
Soil samples obtained from locations directly surrounding the on-site Dry Cleaners/Office Building produced dry soil samples to an approximate depth of 50 feet b.g.s.

3. On May 7, 2007, I was on-site to obtain soil gas vapors from the shallow subsurface soils at selected locations within the boundaries of the commercial building located at 608 N. 1st Street and currently occupied by Morrell's Dry Cleaners. Our company contracted with Environmental Services Network Northwest, Inc., Olympia, Washington to provide Licensed Well Drillers to perform the required drilling activities.

To provide reasonable access to the subsurface soils, holes were drilled through the concrete floor at two (2) selected locations on the northern portion of the site. Steel probes were then mechanically advanced into the soils using a roto-hammer. The initial probe was easily advanced into the subsurface soils to a depth of 3 ft. PVC tubing was advanced into the probe, and a peristaltic pump was used to pump vapors into a Tedler bag. It was immediately noticed that we were pumping liquids not vapors. A sample was obtained from the liquids and was placed in an appropriate container.

An additional probe was advanced to a depth of 1 ft. It was immediately determined that water was present in this shallow probe also. You (Mr. Aaron Morrell) were on-site for these drilling activities.

The presence of very shallow water was discovered beneath the concrete floor of the Thriftway Office portion of the building also.

I have included a Boring Log for this event.

All interested parties and the Tacoma-Pierce County Health Department were informed of the presence of water at very shallow depths beneath the building. You (Mr. Aaron Morrell) were on-site for these drilling activities.

4. On June 29, 2007, Licensed Drillers and Geologists from Environmental Services Network, Inc. were on-site to install dewatering/monitoring wells at selected location inside the Dry Cleaners portion of the on-site building. Large holes were cored in the concrete floor to provide reasonable access for well installation activities. Water and water laden sand was observed just below the concrete.

Due to the liquidity/instability of the sands beneath the slab, the on-site Drillers and Geologist were unable to install a well.

I have included a Geologists Boring Log for this event.

5. On July 5th, 2007, I attempted to pump down the water level beneath the on-site building. The pumped water contained a significant amount of particulates.

I pumped approximately 200 gallons of water from beneath the building and the measured water level stayed stable. Ms. Sharon Bell of the Tacoma-Pierce County Health Department was on-site during these water pumping activities.

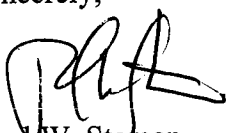
6. I was on-site with Ms Sharon Bell and representatives of the City of Tacoma to observe the excavation activities associated with the installation of new underground utilities on N. 1st Street. The northern extension of the excavation trenches was located approximately 25 feet southwest of the southwest corner of the on-site Dry Cleaners/Thriftway Office Building. The trenches were advanced to approximate depths of 13 feet b.g.s. No water was observed in these trenches.

7. It was discovered that the Tully's Coffee Shop had a water leak that, according to available records, had been leaking a substantial amount of water for an extended period of time. When the water leak was repaired, all of the waters beneath the Dry Cleaners/Thriftway Office Building drained in a few hours.

When the waters had drained, I observed an open space between the surface of the subsurface sands/soils and the bottom of the concrete slab.

If you have any questions or require further information please feel free to contact us at the above phone number.

Sincerely,



Paul W. Stemen
Ecology-Registered Site Assessor
IFCI #0874201-U2
ASTM Certified

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A127970

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission 2e7526l

ORIGINAL INSTALLATION Notice of Intent Number:

E006830

Consulting Firm Stemen Environmental

Unique Ecology Well IDTag No. GV-8

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Haun, Marty

Driller/Engineer /Trainee Signature

Driller or Trainee License No. T2827

If trainee, licensed driller's Signature and License Number: Aaron Harnden 2508

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Titus-Will

Site Address 633 Division Street

City Tacoma County Pierce

Location NW1/4-1/4 SE1/4 Sec 32 Twn 21N R 3E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____

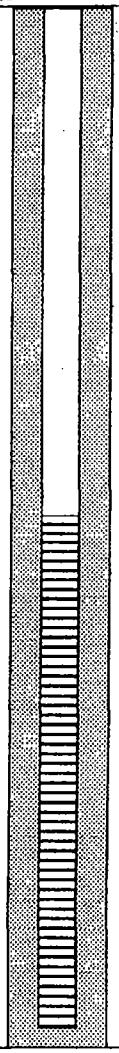
Long Deg ____ Min ____ Sec ____

Tax Parcel No.

Cased or Uncased Diameter 1" Static Level 1.5'

Work/Decommission Start Date 5/7/07

Work/Decommission Completed Date 5/7/07

Construction Design	Well Data	Formation Description
	Drove a retractable ***stainless steel / PVC*** screen down to depth and collected a water sample. Boring Depth: 3' Screen: N/A Slot Size: N/A Type: N/A WHILE ATTEMPTING A SOIL GAS SAMPLE ENCOUNTERED WATER INSTEAD Removed all rods and casing from boring and backfilled with bentonite.	NO SOILS OBSERVED

RECEIVED

JUN 11 2007

DEPARTMENT OF ECOLOGY

SCALE: 1"= ____ PAGE 2 OF 2

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employe

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A129880

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

265968

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

ORIGINAL INSTALLATION Notice of Intent Number:

E007233

Consulting Firm Stemen Environmental

Unique Ecology Well IDTag No. B1

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. T2815

If trainee, licensed driller's Signature and License Number:

Anna Farnden 2508

Property Owner Bruce-Titus

Site Address 633 Division

City Tacoma County Pierce

Location NW1/4-1/4 SE1/4 Sec 32 Twn 21N R 3E

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

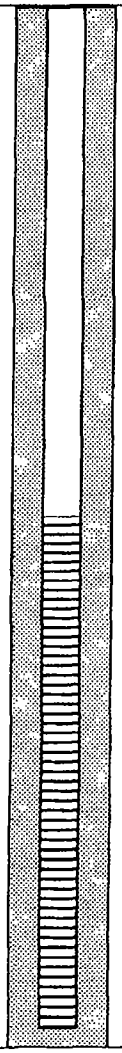
Long Deg _____ Min _____ Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 1" Static Level 2'

Work/Decommission Start Date 6/29/07

Work/Decommission Completed Date 6/29/07

Construction Design	Well Data	Formation Description
	Drove a retractable ***stainless steel / PVC*** screen down to depth and collected a water sample. Boring Depth: 3' Screen: 2-3' Slot Size: .010 Type: Stainless steel Removed all rods and casing from boring and backfilled with bentonite.	0-3' gravelly sand

'07 JUL 12 A8:36

DEPT OF ECOLOGY BUDGET FAS

RECEIVED

JUL 13 2007

DEPARTMENT OF ECOLOGY
WELL DRILLING UNIT

SCALE: 1"= NA PAGE 1 OF 1

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employe

Cover Letter.

To: Kevin Chang

From: Aaron Morrell

Morrells Dry Cleaners
608 No 1st ST
TACOMA, WA 98403

R.E.

Tullys WATER LEAK

5 pg. To follow.

Tully's Coffee Corportion/ BP 400030657
Service Address 24 North Tacoma Avenue, Tacoma WA
Contract Account 100231059

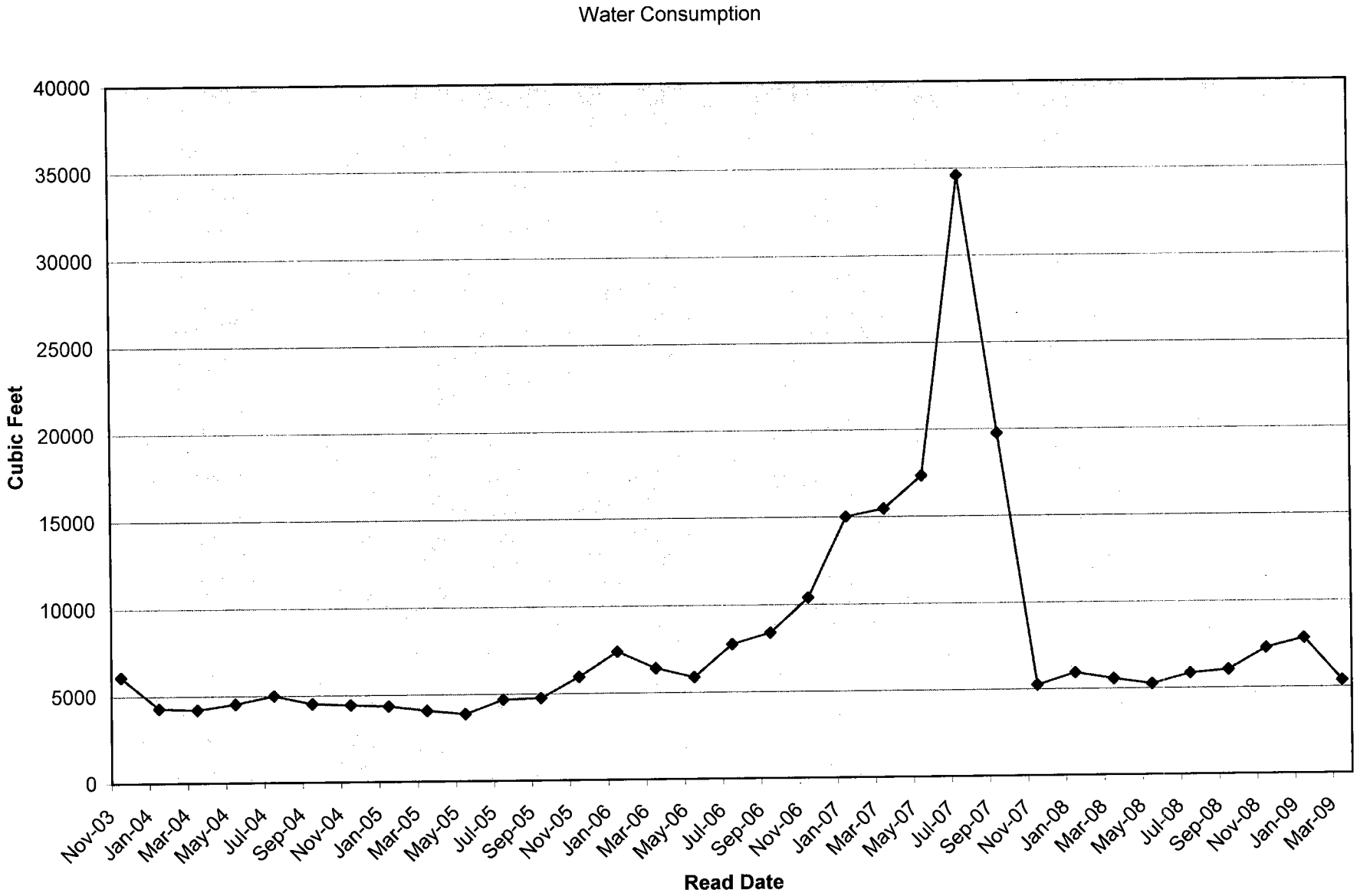
Consumption History Report

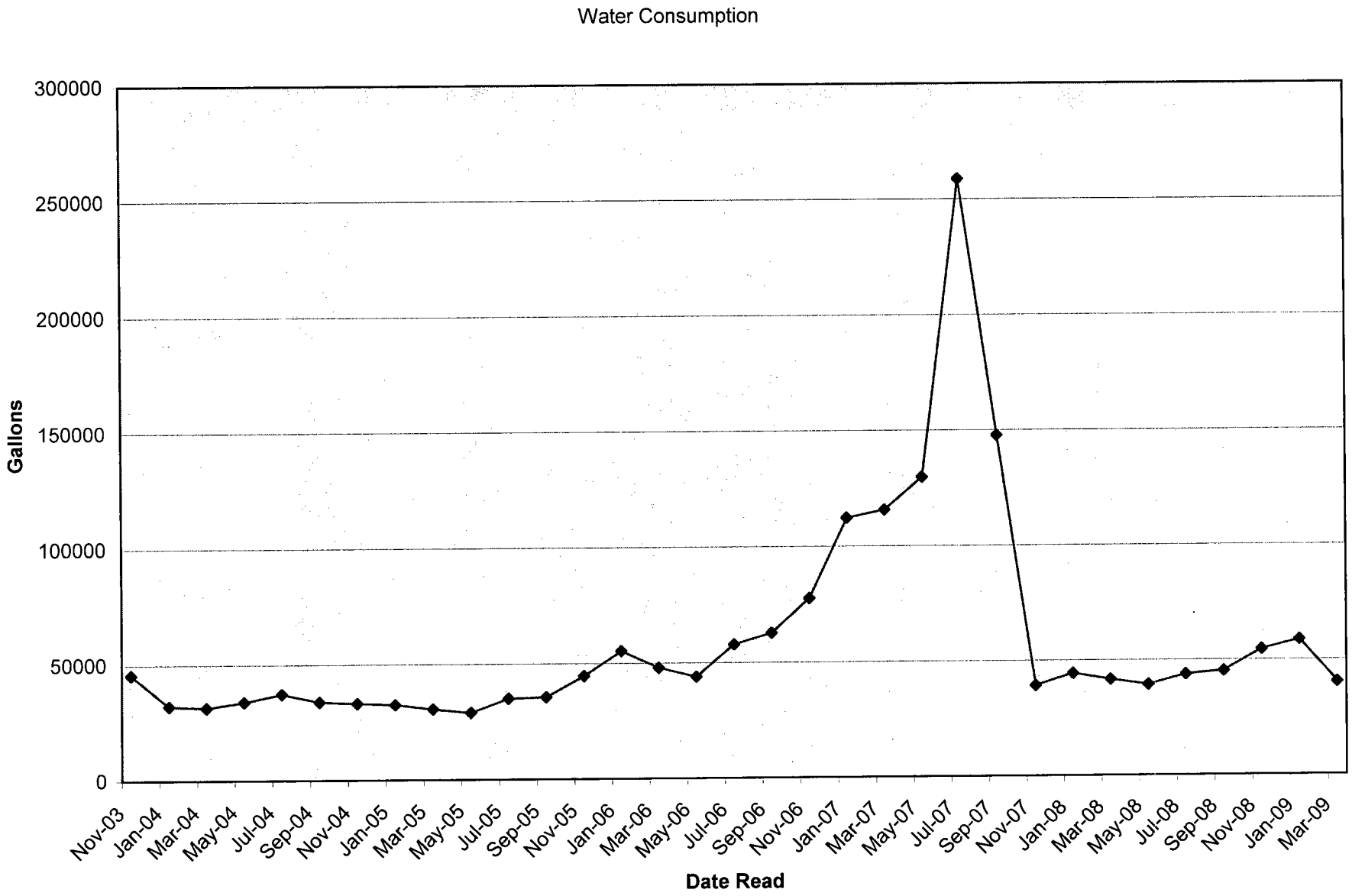
Read Dates:		Water		Wastewater	
From	To	Consumption (in CCFs)	Amount billed	Consumption (in CCFs)	Amount billed
9/6/2003	11/5/2003	61.03	$77.78	61.03	$204.22
11/6/2003	1/9/2004	43.09	$64.58	43.09	$149.86
1/10/2004	3/11/2004	42.17	$68.28	42.17	$155.56
3/12/2004	5/10/2004	45.42	$71.01	45.42	$166.45
5/11/2004	7/9/2004	49.94	$74.81	49.94	$181.61
7/10/2004	9/8/2004	45.31	$70.92	45.31	$166.08
9/9/2004	11/5/2004	44.48	$70.22	44.48	$163.30
11/6/2004	1/10/2005	43.61	$70.43	43.61	$160.64
1/11/2005	3/11/2005	40.89	$73.18	40.89	$152.91
3/12/2005	5/10/2005	38.82	$71.27	38.82	$145.92
5/11/2005	7/11/2005	46.82	$78.63	46.82	$172.96
7/12/2005	9/8/2005	47.52	$79.28	47.52	$175.32
9/9/2005	11/5/2005	59.59	$90.38	59.59	$216.11
11/6/2005	1/10/2006	73.84	$104.91	73.84	$265.14
1/11/2006	3/10/2006	64.04	$102.97	64.04	$236.09
3/11/2006	5/9/2006	58.76	$97.65	58.76	$217.86
5/10/2006	7/10/2006	77.46	$116.48	77.46	$282.42
7/11/2006	9/7/2006	83.86	$122.93	83.86	$304.52
9/8/2006	11/4/2006	103.83	$143.04	103.83	$373.47
11/5/2006	1/9/2007	150.22	$191.72	150.22	$540.64
1/10/2007	3/12/2007	154.62	$208.98	154.62	$601.68
3/13/2007	5/9/2007	173.49	$229.46	173.49	$673.40
5/10/2007	7/10/2007	345.94	$415.56	345.94	$1,328.84
7/11/2007	9/7/2007	197.39	$255.39	197.39	$764.24
9/8/2007	11/6/2007	52.42	$98.10	52.42	$213.25
11/7/2007	1/9/2008	59.23	$106.61	59.23	$241.35
1/10/2008	3/11/2008	55.57	$109.20	55.57	$239.95
3/12/2008	5/8/2008	52.53	$105.64	52.53	$227.61
5/9/2008	7/9/2008	58.49	$112.61	58.49	$251.81
7/10/2008	9/8/2008	60.37	$114.81	60.37	$259.44
9/9/2008	11/5/2008	72.87	$129.44	72.87	$310.21
11/6/2008	1/9/2009	78.38	$135.88	78.38	$336.09
1/10/2009	3/11/2009	53.75	$112.77	53.75	$249.90

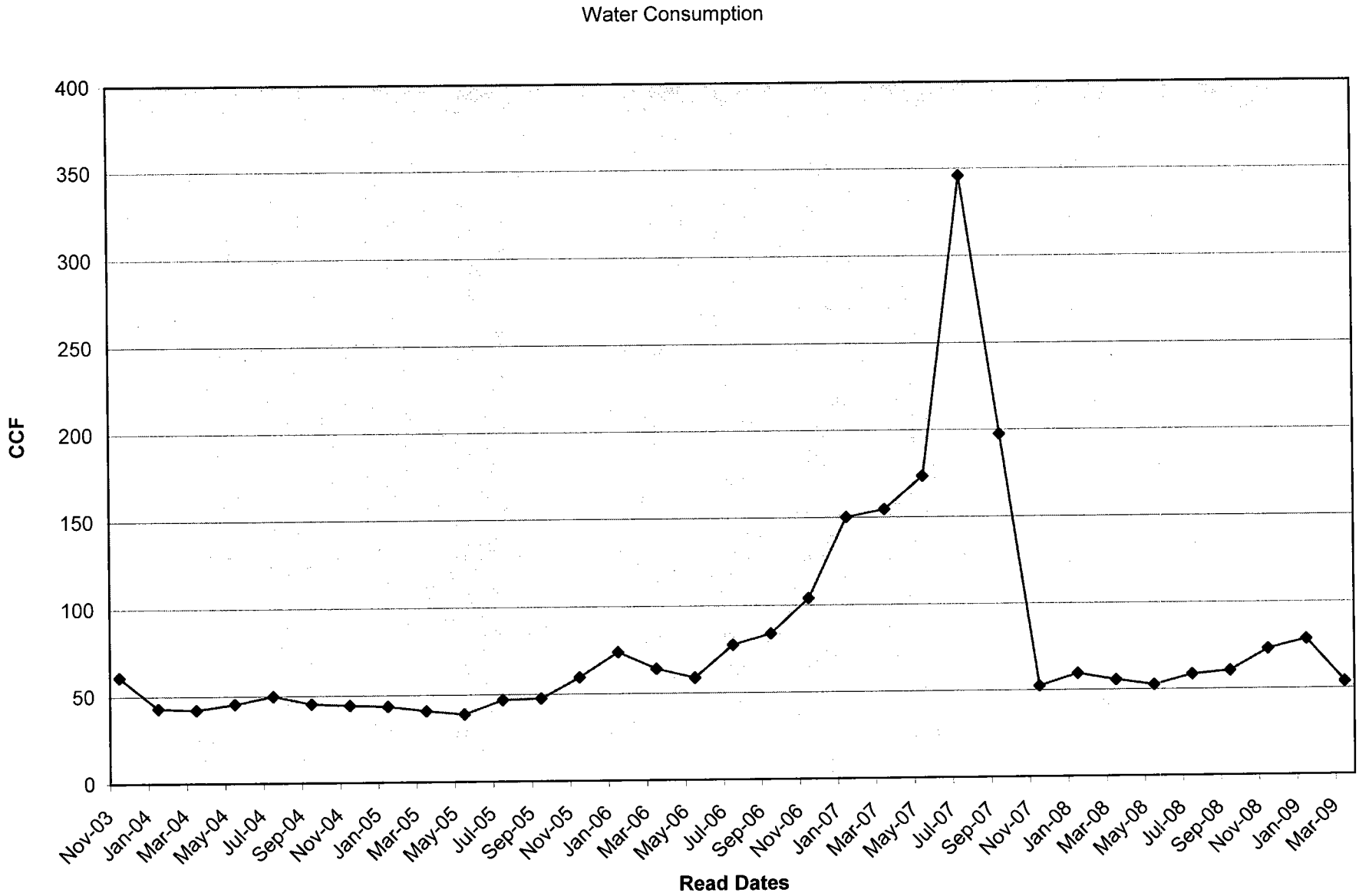
1 CCF=100 cubic feet

Amounts listed are amounts billed on original invoice-a leak adjustment was performed for the May 10,2007 thru July 10th 2007 water and wastewater charges

COMPLETED LEAK ADJUSTMENT FOR BILLING PERIOD 5/9/07-7/10/07 - LEAK ONGOING FOR OVER A YEAR - DID ADJUSTMENT BASED ON 2005 CONSUMPTION FOR JULY BILLING PERIOD - WROTE OFF 345.94 CCF AT 416.56 WATER AND 1328.84 SEWER - BILLED 46.82 CCF AT 92.02 WATER AND 191.97 SEWER - EDJ*


Water Consumption
40000
35000
30000
25000
20000
15000
10000
5000
0
Cubic Feet
Nov-03
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Jan-09
Mar-09
Read Date


Water Consumption
300000
250000
200000
150000
100000
50000
0
Gallons
Nov-03
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Jan-09
Mar-09
Date Read


Water Consumption
CCF
400
350
300
250
200
150
100
50
0
Nov-03
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Jan-09
Mar-09
Read Dates

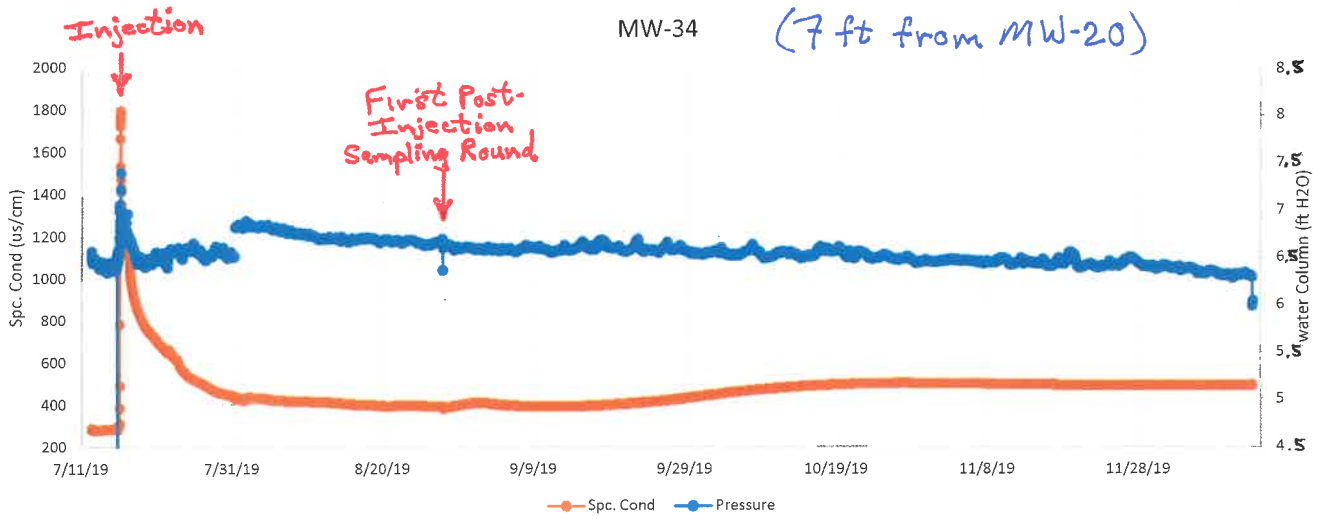
APPENDIX E

Data Logger Output, 2019 Remediation Product Injection Test

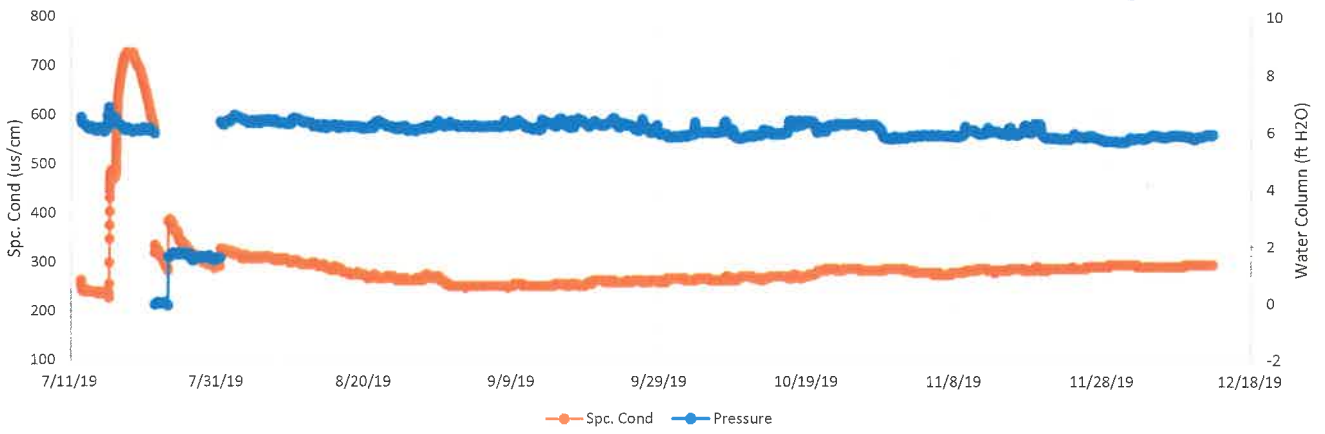
Data Logger Output

Injection Test, Morrell's Dry Cleaners

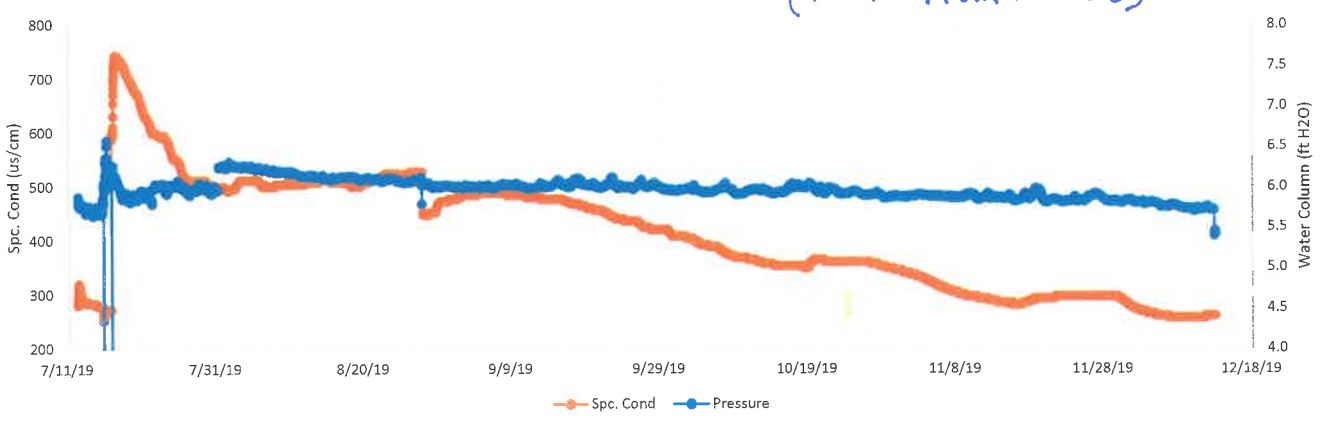
MW-34 (7 ft from MW-20)



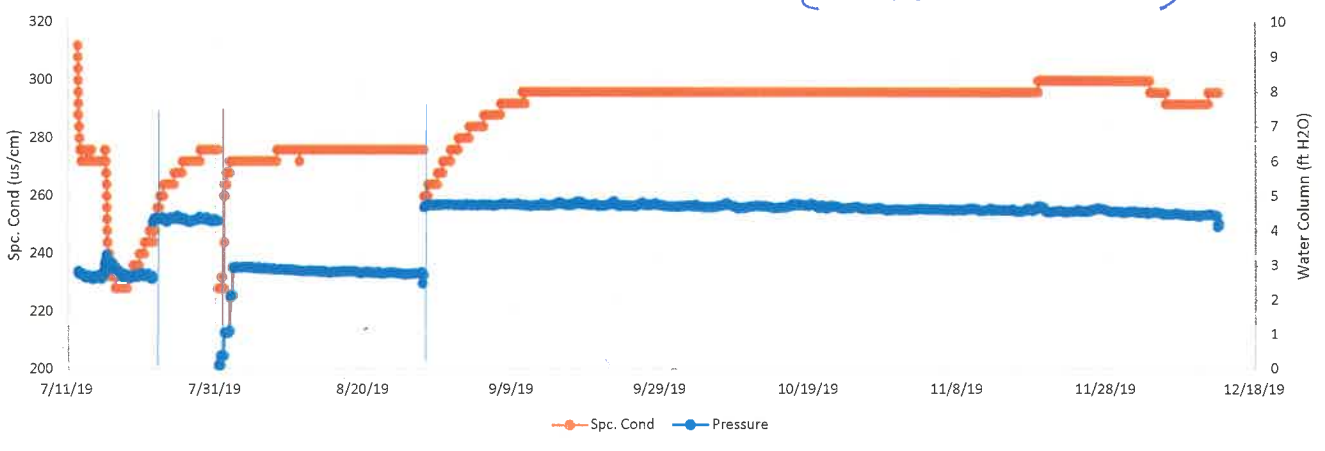
MW-24 (10 ft from MW-20)



MW-35 (15 ft from MW-20)



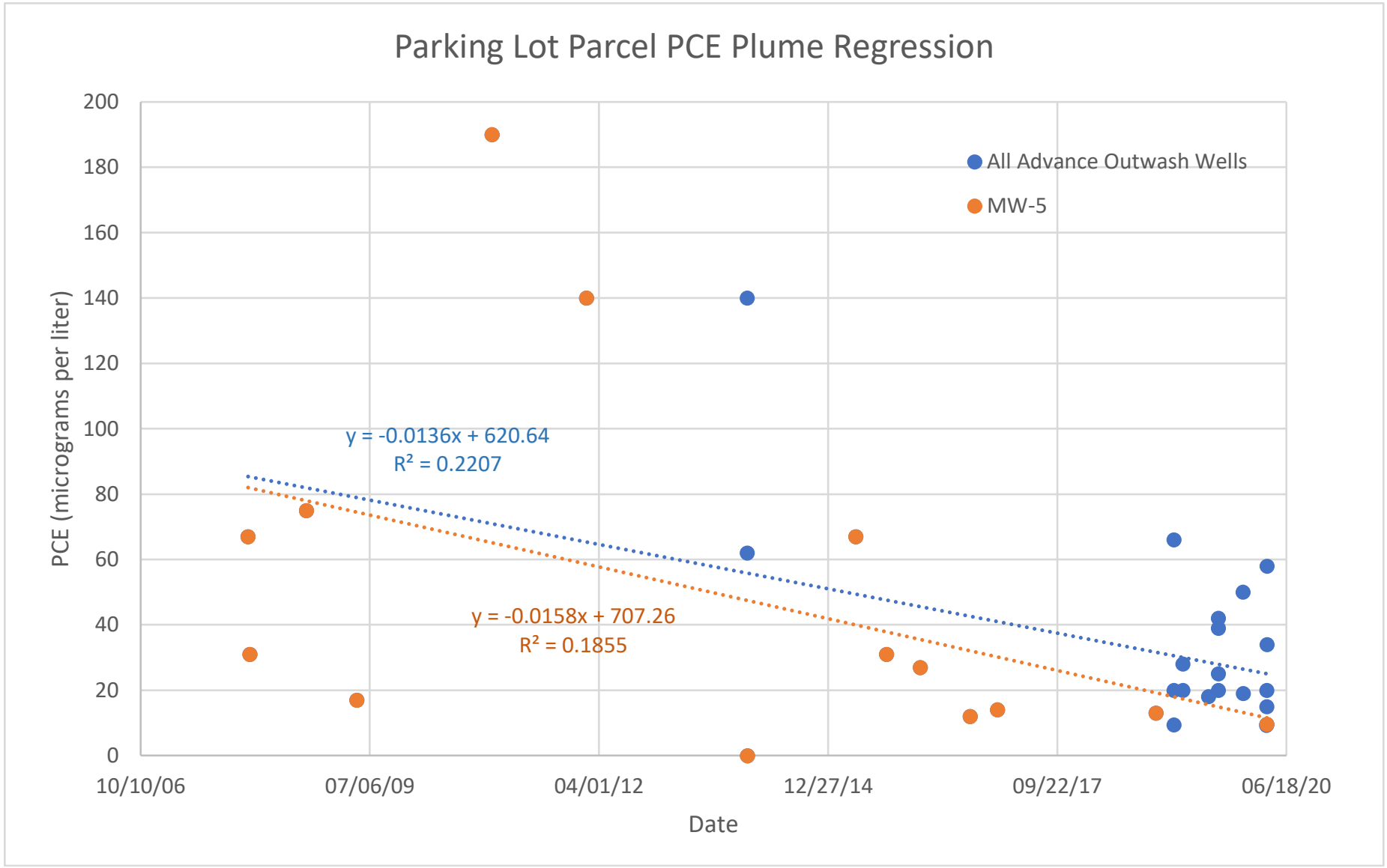
MW-26 (20 ft from MW-20)



D. Heffner
Aspect Consulting
1/27/20

APPENDIX F

Parking Lot Parcel PCE Plume Regression


Parking Lot Parcel PCE Plume Regression
PCE (micrograms per liter)
200
180
160
140
120
100
80
60
40
20
0
10/10/06
07/06/09
04/01/12
12/27/14
09/22/17
06/18/20
Date
All Advance Outwash Wells
MW-5
y = -0.0136x + 620.64
R² = 0.2207
y = -0.0158x + 707.26
R² = 0.1855

APPENDIX G

Report Limitations and Guidelines for Use

REPORT LIMITATIONS AND USE GUIDELINES

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the Client. No other party may rely on this report or the product of our services without the express written consent of Aspect Consulting, LLC (Aspect). This limitation is to provide our firm with reasonable protection against liability claims by third parties with whom there would otherwise be no contractual conditions or limitations and guidelines governing their use of the report. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and recognized standards of professionals in the same locality and involving similar conditions.

Services for Specific Purposes, Persons and Projects

Aspect has performed the services in general accordance with the scope and limitations of our Agreement. This report has been prepared for the exclusive use of the Client and their authorized third parties, approved in writing by Aspect. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

This report is not, and should not, be construed as a warranty or guarantee regarding the presence or absence of hazardous substances or petroleum products that may affect the subject property. The report is not intended to make any representation concerning title or ownership to the subject property. If real property records were reviewed, they were reviewed for the sole purpose of determining the subject property's historical uses. All findings, conclusions, and recommendations stated in this report are based on the data and information provided to Aspect, current use of the subject property, and observations and conditions that existed on the date and time of the report.

Aspect structures its services to meet the specific needs of our clients. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and subject property. This report should not be applied for any purpose or project except the purpose described in the Agreement.

This Report Is Project-Specific

Aspect considered a number of unique, project-specific factors when establishing the Scope of Work for this project and report. You should not rely on this report if it was:

- Not prepared for you
- Not prepared for the specific purpose identified in the Agreement
- Not prepared for the specific real property assessed
- Completed before important changes occurred concerning the subject property, project or governmental regulatory actions

If changes are made to the project or subject property after the date of this report, Aspect should be retained to assess the impact of the changes with respect to the conclusions contained in the report.

Geoscience Interpretations

The geoscience practices (geotechnical engineering, geology, and environmental science) require interpretation of spatial information that can make them less exact than other engineering and natural science disciplines. It is important to recognize this limitation in evaluating the content of the report. If you are unclear how these "Report Limitations and Use Guidelines" apply to your project or site, you should contact Aspect.

Discipline-Specific Reports Are Not Interchangeable

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually address any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding the subject property.

Environmental Regulations Are Not Static

Some hazardous substances or petroleum products may be present near the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or petroleum products or do not otherwise present potential liability. Changes may occur in the standards for appropriate inquiry or regulatory definitions of hazardous substance and petroleum products; therefore, this report has a limited useful life.

Property Conditions Change Over Time

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time (for example, Phase I ESA reports are applicable for 180 days), by events such as a change in property use or occupancy, or by natural events, such as floods, earthquakes, slope failure or groundwater fluctuations. If more than six months have passed since issuance of our report, or if any of the described events may have occurred following the issuance of the report, you should contact Aspect so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Phase I ESAs – Uncertainty Remains After Completion

Aspect has performed the services in general accordance with the scope and limitations of our Agreement and the current version of the “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”, ASTM E1527, and U.S. Environmental Protection Agency (EPA)'s Federal Standard 40 CFR Part 312 "Innocent Landowners, Standards for Conducting All Appropriate Inquiries".

No ESA can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with subject property. Performance of an ESA study is intended to reduce, but not eliminate, uncertainty regarding the potential for environmental conditions affecting the subject property. There is always a potential that areas with contamination that were not identified during this ESA exist at the subject property or in the study area. Further evaluation of such potential would require additional research, subsurface exploration, sampling and/or testing.

Historical Information Provided by Others

Aspect has relied upon information provided by others in our description of historical conditions and in our review of regulatory databases and files. The available data does not provide definitive information with regard to all past uses, operations or incidents affecting the subject property or adjacent properties. Aspect makes no warranties or guarantees regarding the accuracy or completeness of information provided or compiled by others.

Exclusion of Mold, Fungus, Radon, Lead, and HBM

Aspect’s services do not include the investigation, detection, prevention or assessment of the presence of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detection, assessment, prevention or abatement of molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts. Aspect’s services also do not include the investigation or assessment of hazardous building materials (HBM) such as asbestos, polychlorinated biphenyls (PCBs) in light ballasts, lead based paint, asbestos-containing building materials, urea-formaldehyde insulation in on-site structures or debris or any other HBMs. Aspect’s services do not include an evaluation of radon or lead in drinking water, unless specifically requested.