

Staton



July 21, 2008
Project 001.0173.00007

Mr. Tom Middleton
Washington Department of Ecology
PO Box 47775
Olympia, Washington 98504-7775

Re: Remedial Action Report, Former Arco Service Station #0855
4603 Ocean Beach Highway, Longview, Washington

Dear Mr. Middleton:

On behalf of the Wakefield Family LLC (property owner), SLR International Corp (SLR) is submitting the attached Remedial Action Report for the above-referenced property (the site). The report describes the field activities and presents the results of the remedial action that was completed in September, November, and December 2007, as well as the groundwater sampling events that were conducted in December 2007 and March 2008. The purposes of the remedial action were to: 1) remediate the soil that contained petroleum hydrocarbon concentrations greater than MTCA Method A cleanup levels, 2) remove the source of the impacted shallow groundwater beneath the site, 3) remove the primary sources of the impacted deep groundwater beneath the site, and 4) extract the accessible impacted shallow groundwater. The remedial action was consistent with the selected remedial alternative in SLR's *Revised Feasibility Study Report*, dated January 9, 2008.

If you have any questions or comments, please call me at (425) 402-8800.

Sincerely,

SLR International Corp

A handwritten signature in black ink, appearing to read "Michael D. Staton".

Michael D. Staton, L.G.
Principal Geologist

Attachment: Remedial Action Report

cc: Kurt Peterson, Cascadia Law Group PLLC

REMEDIAL ACTION REPORT
FORMER ARCO SERVICE STATION #0855
LONGVIEW, WASHINGTON

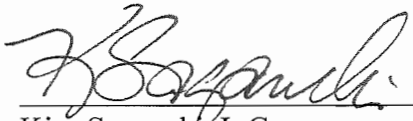
Prepared for
Wakefield Family LLC
July 21, 2008

Prepared by
SLR International Corp
22122 20th Avenue SE
Bothell, Washington 98021

Project #001.0173.00007

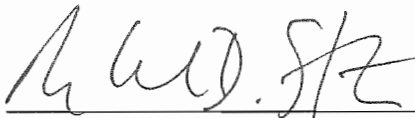
**Remedial Action Report
Former Arco Service Station #0855
Longview, Washington**

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



Kim Saganski, L.G.
Project Geologist

7/21/08
Date



Michael D. Staton, L.G.
Principal Geologist



7/21/08
Date

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
DIVISION OF GEOSCIENCES

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EXECUTIVE SUMMARY

During September, November, and December 2007, and March 2008, the primary phase of a remedial action was completed at the former Arco Service Station #0855 in Longview, Washington. The objectives of this phase of the remedial action were: 1) to remediate the soil that contained petroleum hydrocarbon concentrations greater than Model Toxics Control Act (MTCA) Method A cleanup levels, 2) to remove the source of the impacted shallow groundwater beneath the site, 3) to remove the primary sources of the impacted deep groundwater beneath the site, and 4) to extract the accessible impacted shallow groundwater.

To remediate the hydrocarbon-impacted soil beneath the site, the soil that contained petroleum hydrocarbon concentrations greater than the MTCA Method A cleanup levels was excavated to a maximum depth of approximately 15 feet below ground surface (bgs). To access the petroleum-impacted soil that occurred beneath the former service station building and the former dispenser island, the building, canopy, and dispenser island were demolished prior to conducting the excavation activities.

A total of 3,403.46 tons of soil were excavated and hauled to the Hillsboro Landfill for disposal. Based on the analytical results from the final excavation floor and sidewall confirmation samples, the excavation activities effectively removed all of the soil that contained petroleum concentrations greater than the MTCA Method A cleanup levels, except at three locations. The final floor samples from sample grid cells A3, B3, and C2, at 15 feet bgs, contained benzene, ethylbenzene, total xylenes, and/or gasoline-range organics concentrations that exceeded the Method A cleanup levels. The excavation was not extended below 15 feet bgs at those three locations to ensure that the semi-confining unit (clayey silt) was not breached. If the excavation had extended through the clayey silt unit, deeper groundwater would have filled the excavation area, and the excavation and backfilling activities would have been difficult to complete.

While excavating to the east of the former dispenser island, three 550-gallon USTs were encountered. The steel tanks were in poor condition, and each tank contained approximately 300 gallons of product that smelled like gasoline. The product from each tank was removed and the tanks were excavated. A total of approximately 1,080 gallons of product, rinse water, and sludge were hauled to the Marine Vacuum Service facility in Seattle, Washington, for disposal. The tanks were transported to the Metro Metals facility for recycling. After removal of the tanks, SLR collected a soil sample from

EXECUTIVE SUMMARY (Continued)

concentrations below the MTCA Method A cleanup levels; however, the sample beneath Tank #1 contained a benzene concentration [0.10 milligrams per kilogram (mg/kg)] that exceeded the Method A cleanup level. Based on the elevated benzene concentration, the excavation beneath Tank #1 was deepened and sampled three times until a final 15-foot-deep sample contained petroleum concentrations that were below the Method A cleanup levels.

During the excavation activities, a total of 20,785 gallons of shallow groundwater was extracted from the excavation near the former dispenser island (the area of greatest petroleum hydrocarbon concentrations in the shallow groundwater). The extracted water was pumped through a treatment system prior to discharge to the City of Longview stormwater system. System effluent sample analytical results confirmed that the treatment system reduced the contaminant concentrations in the water to below the levels required by the Department of Ecology.

To allow for effective monitoring of the shallow and deep groundwater beneath the site property, Cascade Drilling, Inc., of Woodinville, Washington, installed three shallow groundwater monitoring wells (designated MW-12, MW-13, and MW-14) and two deep groundwater monitoring wells (designated DMW-9 and DMW-10) within the backfilled area of soil excavation. These wells replaced monitoring wells that were abandoned prior to the excavation.

In December 2007 and March 2008, SLR conducted groundwater sampling events at the site to evaluate the short-term effects of the primary phase of the remedial action, and to begin monitoring the natural attenuation of the remaining petroleum hydrocarbon-impacted groundwater (the second phase of the remedial action). During both sampling events, SLR collected groundwater samples from all of the on-site and off-site shallow and deep groundwater monitoring wells. The analytical results from the December 2007 and March 2008 sampling events indicated that the samples from shallow well MW-10 contained benzene and GRO concentrations [up to 16 and 3,100 micrograms per liter ($\mu\text{g/L}$), respectively] that exceeded the MTCA Method A cleanup levels. MW-10 is located approximately 10 feet northeast of the soil excavation area. The samples from all of the other shallow monitoring wells contained petroleum hydrocarbon concentrations that were below the method reporting limits (MRLs) or the Method A cleanup levels. The sampling results from the shallow wells indicated that the groundwater extraction

EXECUTIVE SUMMARY (Continued)

activities removed the impacted groundwater within the excavation area and the soil excavation effectively eliminated the source of the shallow groundwater contamination.

The analytical results from the December 2007 and March 2008 sampling events indicated that the samples from deep well DMW-9 contained benzene, toluene, ethylbenzene, total xylenes, and/or GRO concentrations (up to 6,100, 1,900, 970, 3,100, and 27,000 µg/L, respectively) that exceeded the MTCA Method A cleanup levels. The samples from deep wells DMW-4, DMW-5, and DMW-10 contained benzene concentrations (from 6 to 75 µg/L) that exceeded the Method A cleanup level. Wells DMW-4, DMW-5, DMW-9, and DMW-10 are located within or near the soil excavation area. The samples from deep wells DMW-3, DMW-6, DMW-7, and DMW-8 did not contain petroleum hydrocarbon concentrations above the MRLs. Based on the two groundwater sampling events, it appears that the excavation and shallow groundwater extraction activities had limited short-term effects on the deep groundwater concentrations.

1 INTRODUCTION

In June 26, 2007, the Wakefield Family LLC (Wakefield) entered into the Washington Department of Ecology's (Ecology's) Voluntary Cleanup Program (VCP) to obtain Ecology's opinions regarding the results of the previous investigation activities and the selected remedial alternative for the former Arco Service Station #0855 site (the "site") in Longview, Washington. The selected remedial alternative was described in a Feasibility Study Report [SLR International Corp (SLR), 2007a)], and consisted of soil excavation, shallow groundwater and free product extraction, and natural attenuation of the remaining contamination with a contingency to potentially implement deeper groundwater extraction. On October 11, 2007, Ecology notified Wakefield that they agreed that the selected alternative was the most feasible option for addressing the contamination at the site (Ecology, 2007).

On September 13, 2007, SLR prepared a work plan for demolition of the site structures that were located over the area of planned soil excavation (SLR, 2007c). After receiving Ecology's approval to conduct the selected remedial alternative, SLR prepared a work plan for soil and groundwater remediation activities (SLR, 2007d) that were consistent with the selected remedial alternative. The remedial action was completed in accordance with the work plans.

During September, November, and December 2007, and March 2008, the primary phase of the remedial action was completed. The work consisted of demolishing the site structures, excavating the petroleum hydrocarbon-impacted soil that occurred at depths to 15 feet below ground surface (bgs), extracting hydrocarbon-impacted shallow groundwater from the open excavation, installing replacement shallow and deep groundwater monitoring wells within the areas of excavation, and conducting two groundwater sampling events. The objectives of this phase of the remedial action were: 1) to remediate the soil that contained petroleum hydrocarbon concentrations greater than Model Toxics Control Act (MTCA) Method A cleanup levels¹, 2) to remove the source of the impacted shallow groundwater beneath the site, 3) to remove the primary sources of the impacted deep groundwater beneath the site, and 4) to extract the accessible impacted shallow groundwater.

¹ Chapter 173-340 WAC, Model Toxics Control Act Cleanup Regulation, Method A Cleanup Levels. Amended February 12, 2001.

The secondary phase of the remedial action will consist of long-term groundwater monitoring and possibly active remediation of the deep groundwater zone if the deep groundwater concentrations do not naturally attenuate to below the MTCA Method A cleanup levels within a reasonable period of time. The objective of the remedial action is to reduce the petroleum hydrocarbon concentrations in the soil and groundwater to below the Method A cleanup levels.

This report presents the results of the primary phase of the remedial action. Subsequent groundwater monitoring reports will be prepared to document the natural attenuation of the impacted groundwater.

2 BACKGROUND

2.1 General Site Information

The site is located near the western end of Longview, Washington, at the western corner of the intersection of Ocean Beach Highway and 46th Avenue. The location of the site is shown on Figure 1. The site address is 4603 Ocean Beach Highway. The site is a 0.3-acre parcel located within the northeastern corner of a 1.07-acre property that is owned by Wakefield Family LLC. The 1.07-acre property includes the site parcel and undeveloped land to the west, northwest, and southwest of the site.

From 1957 to 1977, Atlantic Richfield Corporation used the site as a retail gasoline service station and automobile repair garage. The station operations were discontinued in 1977. The fuel underground storage tanks (USTs) and dispensers were inactive after 1977; however, they were not removed until 1999. From 1977 through 2005, the site was leased to several commercial businesses. The site has been vacant since December 2005. Immediately prior to this remedial action, the structures at the site consisted of the former service station building, and the former station canopy and dispenser island. The pre-remediation site structures are shown on Figure 2.

The site is bounded to the north and northeast by Ocean Beach Highway, the Boon Dox Tavern, and the Boon Dox Market; to the east by Ocean Beach Highway and a Texaco service station; to the southeast by 46th Avenue and Henri's restaurant; to the south by 46th Avenue and an apartment building; and to the southwest, west, and northwest by undeveloped land and private residences (Figure 2). The site slopes gently downward to the western and southwestern parts of the site. Prior to this remedial action, the site surface consisted of asphalt or concrete, except for gravel surfaces above the two former UST basins and a dirt/grass surface within the planter at the eastern corner of the site.

The nearest surface water body is the Cutoff Slough, which is located approximately 750 feet to the east of the site. The Columbia River is located approximately 1.4 miles to the southwest of the site. Marshy undeveloped land is located adjacent to the western and northwestern boundaries of the site.

2.2 Previous Environmental Investigation Results

From July 1999 through August 2006, several environmental investigations and groundwater monitoring events were conducted at the site. In July 1999, 3 Kings Environmental, Inc. (3 Kings) removed all of the USTs and collected soil samples from the extents of the excavations. The fuel dispensers were also removed; however, the underground dispenser lines were capped at both ends and left in place. The USTs consisted of four gasoline tanks located in the western part of the site, and a heating oil tank and a waste oil tank in the southwestern part of the site. The locations of the former tanks are shown on Figure 2. After removal of the tanks, a total of six soil samples were collected from the sidewalls and floor of the gasoline tank excavation. The soil sample analytical results showed that the analyte concentrations in all of the samples were below the method reporting limits (MRLs). Since contamination was not observed in the excavated soil, the soil was used as backfill material in the excavation. A total of five soil samples were collected from the sidewalls and floor of the heating oil tank and waste oil tank excavation. The soil sample analytical results indicated that the composite sample from the northeastern and eastern sidewalls contained a diesel-range organics (DRO) concentration [2,100 milligrams per kilogram (mg/kg)] that exceeded the current MTCA Method A cleanup level (2,000 mg/kg). The sample collected from the western sidewall of the excavation contained a heavy oil-range organics (HO) concentration (6,200 mg/kg) that exceeded the current Method A cleanup level (2,000 mg/kg). All of the other soil samples contained analyte concentrations below the MRLs. The excavated soil from the heating oil and waste oil tank excavation was hauled off site for disposal. The results of the tank removal activities were presented in 3 King's letter report dated August 3, 1999.

In March 2000, IT Corporation (IT) conducted an environmental assessment that consisted of drilling and sampling three soil borings, installing shallow groundwater monitoring wells (designated MW-1, MW-2, and MW-3) in the borings, and collecting groundwater samples from the wells. MW-1 was installed near the former heating oil/waste oil tank basin, MW-2 was installed within the former gasoline tank basin, and MW-3 was installed adjacent to the dispenser island (Figure 2). Soil sample analytical results showed that the four samples collected from borings MW-2 and MW-3, at depths ranging from approximately 2 to 20 feet bgs, contained benzene, ethylbenzene, total xylenes, and/or gasoline-range organics (GRO) concentrations that exceeded the current MTCA Method A cleanup levels. The groundwater sample analytical results revealed that the samples from wells MW-2 and MW-3 contained benzene, toluene, ethylbenzene, total xylenes, and/or GRO concentrations that exceeded the current Method A cleanup levels. The soil and groundwater samples from MW-1 did not contain analyte concentrations above the Method A cleanup levels. The results of the assessment activities were detailed in IT's letter report dated May 12, 2000.

In October 2000, SECOR International, Inc. (SECOR) conducted a subsurface investigation to delineate the lateral extent of the hydrocarbon-impacted groundwater. The investigation consisted of: 1) drilling and sampling four on-site soil borings and installing shallow groundwater monitoring wells (designated MW-4, MW-5, MW-6, and MW-7) in the borings; 2) drilling and sampling six soil borings (designated GP-1, GP-2, GP-3, GP-5, GP-6, and GP-7) to the north and east of the site and installing temporary shallow groundwater wellpoints in the borings; and 3) collecting groundwater samples from the new and existing monitoring wells and from the temporary wellpoints. The locations of the monitoring wells and the off-site borings are shown on Figure 2. The soil sample analytical results showed that the samples collected from on-site borings MW-4 and MW-7, at 5 feet bgs, contained GRO, total xylenes, and/or naphthalene concentrations that exceeded the current MTCA Method A cleanup levels. The soil samples from the other on-site borings contained analyte concentrations below the current Method A cleanup levels or the MRLs. The soil samples from all of the off-site borings did not contain analyte concentrations above the MRLs. The groundwater sample analytical results showed that the samples from wells MW-3 and MW-4 contained benzene, toluene, ethylbenzene, total xylenes, 1,2-dichloroethane (EDC), naphthalene, and/or GRO concentrations that exceeded the current Method A cleanup levels. The samples from the other monitoring wells did not contain analyte concentrations above the Method A cleanup levels. The groundwater samples from the off-site wellpoints did not contain analyte concentrations above the MRLs. The results of the investigation were detailed in SECOR's report, *Groundwater Monitoring Well Installation and Geoprobe Boring Report*, dated June 20, 2001.

In March 2000, July 2000, January 2001, April 2001, July 2001, October 2001, January 2002, and July 2003, SECOR or Delta Environmental Consultants, Inc. (Delta) conducted groundwater monitoring events at site. Each monitoring event consisted of measuring the depths to groundwater and free product, if present, in the monitoring wells, and collecting groundwater samples from the wells. In July 2003, 0.02 feet of free product was present in well MW-3 (near the former dispenser island). Free product was not detected in any of the other wells during the monitoring events. The groundwater sample analytical results indicated that the shallow groundwater in the northeastern and eastern parts of the site (near the dispenser island) consistently contained volatile petroleum hydrocarbon (benzene, ethylbenzene, and GRO) concentrations that exceeded the MTCA Method A cleanup levels. The results of the previous groundwater monitoring events were detailed in several reports by SECOR and Delta that are listed in the References section of this report.

From May 2005 through August 2006, SLR conducted a remedial investigation to delineate the lateral and vertical extents of the hydrocarbon-impacted soil and groundwater, and to assess the potential presence of hazardous substances (e.g., asbestos, lead-based paint) in the site building and canopy materials. The investigation consisted of: 1) drilling and sampling 18 soil borings at the site (designated SSB-1 through

SSB-18); 2) installing a temporary deep groundwater wellpoint in boring SSB-15 and collecting a groundwater sample from the wellpoint; 3) drilling and sampling 4 on-site and off-site soil borings and installing shallow groundwater monitoring wells (designated MW-8 through MW-11) in the borings; 4) drilling and sampling 8 on-site and off-site soil borings and installing deep groundwater monitoring wells (designated DMW-1 through DMW-8) in the borings; 5) excavating and sampling two test pits (designated TP-1 and TP-2) to the west of the site; 6) conducting a hazardous materials survey of the site building and canopy; 7) collecting groundwater samples from the shallow monitoring wells in May 2005; 8) collecting groundwater samples from the shallow and deep groundwater monitoring wells in November/December 2005; and 9) collecting groundwater samples from the deep groundwater monitoring wells in August 2006. The locations of the soil borings, monitoring wells, and test pits are shown on Figure 2.

The soil sample analytical results showed that petroleum hydrocarbon concentrations greater than the MTCA Method A cleanup levels occurred in the northeastern, northern, and western parts of the site [near the dispenser island and the former gasoline underground storage tank (UST) basin]. Localized areas of soil containing petroleum hydrocarbon concentrations greater than the Method A cleanup levels also occurred in the west-central part of the site, near the former used oil and heating oil USTs. The lateral extents of all of the areas of hydrocarbon-impacted soil have been defined. The estimated areas of soil that contained petroleum hydrocarbon concentrations greater than Method A cleanup levels, prior to the remedial action, are shown on Figure 3. The impacted soil typically extends to depths of less than 15 feet bgs; however, at localized areas near the dispenser island and the former gasoline UST basin, the impacted soil extends through a clayey silt unit into an underlying semi-confined aquifer. The impacted soil at the former gasoline UST basin extends to a depth of approximately 22 feet, and the impacted soil near the dispenser island extends to a depth of greater than 25 feet. Soil samples could not be collected at depths below 25 feet in borings near the dispenser island due to heaving sand conditions.

From May 2005 through August 2006, gasoline free product was present on the groundwater in shallow monitoring well MW-3 at thicknesses ranging from a film to 0.24 feet. Free product was not present in any of the other monitoring wells. Based on the groundwater sample analytical results, the shallow groundwater beneath the dispenser island area contains petroleum hydrocarbon concentrations greater than the MTCA Method A cleanup levels. The impacted shallow groundwater extended up to approximately 40 feet away from the dispenser island in all directions, and the lateral extents of the impacted groundwater were delineated. The deep semi-confined groundwater beneath the dispenser island area contains volatile petroleum hydrocarbon concentrations greater than the Method A cleanup levels. The impacted deep groundwater extended up to approximately 85 feet away from the dispenser island in all directions, and the lateral extents of the impacted groundwater were delineated. The groundwater within the saturated deep sand unit (at depths below 21 feet bgs) was under

pressure, and heaving sands prevented the installation of a monitoring well or a temporary wellpoint at depths below 26 feet bgs. The estimated areas of shallow and deep groundwater that contained petroleum hydrocarbon concentrations greater than the Method A cleanup levels in 2006 are shown on Figure 4.

The results of the hazardous materials survey showed that approximately 200 square feet of vinyl floor sheeting in the former station building contained asbestos. The results of the investigation were detailed in SLR's *Final Remedial Investigation Report, Former Arco Service Station #0855, 4603 Ocean Beach Highway, Longview, Washington*, dated October 2006.

2.3 Site Geology

The uppermost geology beneath the site area, except for beneath the undeveloped land, consists of approximately 3 to 10 feet of sand or gravel fill. The uppermost geology beneath the undeveloped land, where fill is not present, consists of up to approximately 2 feet of silty topsoil. The fill or topsoil is underlain by a clayey silt unit that ranges from approximately 4.5 to 15.5 feet thick. Laterally discontinuous silty sand lenses up to 2 feet thick are interbedded within the clayey silt unit. The clayey silt unit is typically underlain by a sandy silt unit, where present, that is up to 7 feet thick. A silty sand unit that is up to 2.5 feet thick occurs locally beneath the clayey silt unit or the sandy silt unit, where present. A sand unit that is at least 25.5 feet thick occurs beneath the clayey silt, sandy silt, or silty sand units. The sand unit is present throughout the site area.

Unconfined groundwater is locally present in the fill unit and is present in sandy lenses within the clayey silt unit. Beneath the clayey silt unit, deeper groundwater is present in the silty sand and sand units. The groundwater in the silty sand and sand units appears to be under semi-confined conditions.

2.4 Site Hydrogeology

From 2000 through 2006, the depths to groundwater in the shallow wells ranged from 3.61 to 7.50 feet. The groundwater elevations in the shallow wells have been inconsistent and could not be used to determine a general shallow groundwater flow direction beneath the site area. In August 2006, the depths to groundwater in the deep wells ranged from 4.55 to 7.74 feet. The deep groundwater elevations were inconsistent and could not be used to determine a general deep groundwater flow direction beneath the site area; however, there were flow components to the north and the east.

Due to the variable thickness of the fill unit, the groundwater table occurs in the fill unit (perched on top of the clayey silt unit) or in sandy lenses within the underlying clayey silt unit. The inconsistent shallow groundwater elevations beneath the site area appear to be

due to the variable depths of the top of the clayey silt unit (perching unit) where groundwater is present in the fill and the variable depths of the uppermost laterally discontinuous saturated sandy lenses in the clayey silt unit, where the water table is below the fill unit.

During drilling of the deep borings, the groundwater beneath the clayey silt unit was under pressure. In August 2006, the depths to groundwater in the deep wells were approximately 15 to 18 feet above the tops of the well screens. Since the deep groundwater is under pressure and rises significantly above the well screens, the groundwater beneath the clayey silt unit is under semi-confined or confined conditions. Based on the presence of saturated sandy lenses throughout the confining unit (the clayey silt), there is likely some hydraulic connection between the shallow groundwater and the deep groundwater. The inconsistent deep groundwater elevations may also indicate localized hydraulic connections between the shallow water-bearing zone and the deeper aquifer. Due to the likely hydraulic connections, SLR believes that the groundwater beneath the clayey silt unit (the uppermost aquifer beneath the site area) is under semi-confined conditions.

To assess the vertical hydraulic gradient between the shallow water-bearing zone and the deep semi-confined aquifer, five of the deep wells were located approximately 3 to 5 feet from shallow wells. The five sets of shallow and deep monitoring wells (DMW-1 and MW-3, DMW-2 and MW-2, DMW-4 and MW-5, DMW-5 and MW-11, and DMW-6 and MW-9) are shown on Figure 2. Based on the August 2006 groundwater monitoring data from the wells, the groundwater elevations in the shallow wells were typically 0.49 to 2.79 feet higher than the groundwater elevations in the nearby deep wells. The higher groundwater elevations in the shallow wells indicate a downward vertical gradient from the shallow unconfined water-bearing zone to the deeper semi-confined aquifer.

3 REMEDIAL ACTION

To reduce the petroleum hydrocarbon concentrations in the soil and groundwater to below the MTCA Method A cleanup levels, the primary phase of the remedial action was conducted in September, November, and December 2007, and March 2008. The work consisted of: 1) demolishing the site structures, 2) excavating the soil that contained petroleum hydrocarbon concentrations greater than the Method A cleanup levels to a maximum depth of approximately 15 feet bgs, 3) extracting and treating petroleum-impacted shallow groundwater that entered the primary soil excavation, 4) installing shallow and deep groundwater monitoring wells in the backfilled areas of excavation, and 5) conducting two quarterly groundwater sampling events. Photographs of the demolition and remediation activities are presented in Appendix A.

3.1 Demolition of Site Structures

To excavate the petroleum-impacted soil that occurred beneath the former service station building and the former dispenser island, Wyser Construction, Inc. (Wyser) of Bothell, Washington, demolished the building, canopy, and former dispenser island at the site. The work was conducted from September 18 through 27, 2008, in accordance with a Demolition Permit that was issued by the Cowlitz County Department of Building and Planning. Prior to demolition of the building, a total of 0.17 tons of asbestos-containing floor tiles were removed from the former station building and hauled to the Allied Waste facility in Seattle, Washington, for disposal as a hazardous waste.

During the demolition activities, all of the steel materials were hauled to Metro Metals facility in Vancouver, Washington, for recycling, and the concrete was transported to the Concrete Recyclers facility in Tumwater, Washington, for recycling. The remaining debris was hauled to the Cowlitz County landfill in Longview, Washington, for disposal as non-hazardous waste.

During the demolition of the former station building, a hydraulic hoist and an oil sump were discovered in the central and western parts of the building. The approximate locations of the hoist and sump are shown on Figure 5. A total of approximately 20 gallons of oil, rinse water, and sludge were pumped from the hoist and hauled to the Marine Vacuum Service facility in Seattle, Washington, for disposal. Wyser excavated the hoist and the sump, removed a minor amount of oil-stained soil from the sump, and

hauled the hoist and sump to Metro Metals for recycling. The oil-stained soil was stockpiled on site and hauled off-site with the excavated soil that was removed during the subsequent soil excavation activities described in Section 3.2. The hoist excavation covered an area of approximately 25 square feet, and extended to a depth of approximately 8 feet bgs. The sump excavation was approximately 10 square feet in area and extended to a depth of approximately 3 feet bgs. SLR collected soil samples from the bottom of the hoist excavation and the sump excavation (designated Hoist-Ex-Flr-8' and Sump-Ex-Flr-3', respectively), and submitted the samples to Friedman & Bruya, Inc. (F&B) in Seattle, Washington, for analysis. The samples were analyzed for DRO and HO by Ecology Method NWTPH-Dx (after silica gel cleanup), and for polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270C SIM. The samples did not contain DRO or HO concentrations above the MRLs. The samples contained toxicity-adjusted total carcinogenic PAH (cPAH) concentrations (up to 0.019 mg/kg) and naphthalene concentrations (up to 0.012 mg/kg) that were below the MRLs or the MTCA Method A cleanup levels (0.1 and 5 mg/kg, respectively). The sample analytical results are presented in Table 1 and a copy of the laboratory report is presented in Appendix B. The approximate sample locations are shown on Figure 6.

A total of approximately 10 cubic yards of soil was excavated during the removal of the hoist and oil sump. The soil was stockpiled on site and SLR collected three samples of the stockpiled soil (designated Soil Stockpile-1-1, Soil Stockpile-1-2, and Soil Stockpile-1-3) for laboratory analysis. The samples were submitted to F&B for analysis of DRO, HO, and PAHs. The samples did not contain DRO, HO, cPAH, or naphthalene concentrations greater than the MRLs. Based on the sample analytical results, Wyser used the soil to backfill the excavations. A copy of the laboratory report is presented in Appendix B.

As discussed in Section 3.2, the post-demolition soil excavation in the north-central part of the site extended further to the west than anticipated, and included the former hoist and oil sump areas.

3.2 Excavation of Petroleum-Impacted Soil

3.2.1 Pre-Excavation Activities

Prior to conducting the soil excavation activities, Wakefield obtained an Excavation and Grading Permit from the Cowlitz County Department of Building and Planning. The excavation was conducted in accordance with the conditions of the permit. Since the excavation would likely extend onto Washington Department of Transportation (WSDOT) property adjacent to the site, Wakefield entered into a Right of Entry Agreement with WSDOT that allowed excavation of soil beneath their property.

Environmental Services Network, Inc., a Washington-licensed well drilling company from Olympia, Washington, abandoned the monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-7, DMW-1, and DMW-2) that were located in the planned areas of excavation. The shallow wells were filled with hydrated bentonite and the deep wells were filled with cement grout under high pressure.

SLR personnel created a grid across the site that was the basis for the locations of the excavation confirmation samples. The anchor point of the grid (the northern corner of the temporary fence that surrounds the site) established the starting point for the X-axis and Y-axis coordinates of the grid. The X-axis coordinates were named using numbers (starting with "1") and the Y-axis coordinates were named using letters (starting with "A"). The grid nodes were surveyed at intervals of 25 feet (each grid cell covered an area of 625 square feet). The locations of the grid cells are shown on Figure 5.

3.2.2 Soil Excavation and Confirmation Soil Sampling

From November 5th through 30th, 2007, Wyser conducted the soil excavation activities under the direction of an SLR geologist. The excavations were focused on the three known contaminant source areas (the former dispenser island, the former gasoline UST basin, and the former used oil and heating oil UST basin), and extended laterally and vertically until all of the final confirmation sidewall samples and floor samples (to a maximum depth of 15 feet bgs) contained petroleum hydrocarbon concentrations below the MTCA Method A cleanup levels. The excavations were not extended below 15 feet bgs to ensure that the semi-confining unit (clayey silt) was not breached.

During the soil excavation activities, SLR collected a discrete floor sample from near the center of each excavated grid cell, and at least one discrete sidewall sample from within each partially excavated grid cell. Each sidewall sample was collected from the area closest to the center of the grid cell. The depths of the sidewall samples were based on the depths of the excavations. For excavation areas that extended to depths of less than 10 feet bgs, the sidewall samples were collected at a depth immediately above the high seasonal groundwater table (approximately 3.5 to 4 feet bgs). For excavation areas that extended deeper than 10 feet bgs, two sidewall samples were collected from each excavated grid cell. The samples were collected at a depth immediately above the high seasonal groundwater table and at a depth of approximately 10 feet bgs. All of the confirmation samples were submitted to F&B for analysis of GRO by Ecology Method NWTPH-Gx, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B. The soil samples collected from near the western corner of the site, where diesel had been detected during the previous investigations, were also analyzed for DRO. The soil samples located near the former used oil and heating oil UST basin were analyzed for DRO, HO, GRO, and BTEX.

A total of 54 confirmation floor and sidewall samples were collected from the excavations. The approximate locations of the samples are shown on Figure 6. When a sidewall sample contained an analyte concentration that exceeded the MTCA Method A cleanup level, the entire length of the sidewall within that grid cell was extended by up to 5 feet and re-sampled. When a floor sample contained an analyte concentration that exceeded the MTCA Method A cleanup level, the impacted area within that grid cell was extended by up to 4 feet and re-sampled. Based on the analytical results from the final confirmation samples, all of the final sidewall samples and 16 of the 19 final floor samples contained petroleum hydrocarbon concentrations below the Method A cleanup levels. The final floor samples from grid cells A3, B3, and C2 (samples A3-FL-15', B3-FL-15', and C2-FL-15', respectively) contained benzene, ethylbenzene, total xylenes, and/or GRO concentrations that exceeded the Method A cleanup levels. The excavations at cells A3, B3, and C2 were extended to the maximum planned depth (15 feet bgs). The excavation sample analytical results are shown in Table 1, and copies of the laboratory reports are presented in Appendix B.

The final areas of soil excavation are shown on Figure 5. The excavation of the gasoline UST area and the dispenser island area were connected, and this large excavation was approximately 155 feet long, up to approximately 65 feet wide, and approximately 5 to 15 feet deep. This excavation extended further to the south, southeast, and east than anticipated. Due to the extension of the excavation to the southeast, monitoring well MW-6 was destroyed during the excavation activities. The excavation of the former used oil and heating oil UST area was approximately 20 feet long, up to 14 feet wide, and up to 8 feet deep. A total of 3,403.36 tons of soil were excavated, and all of the excavated soil was transported to the Hillsboro Landfill in Hillsboro, Oregon, for disposal as non-hazardous waste.

3.2.3 Removal of USTs

While excavating to the east of the former dispenser island, Wyser encountered three 550-gallon USTs. The approximate locations of the tanks are shown on Figure 5. The steel tanks were in poor condition, and each tank contained up to approximately 300 gallons of product that smelled like gasoline. The product from each tank was removed and the tanks were excavated. A total of approximately 1,080 gallons of product, rinse water, and sludge were hauled to the Marine Vacuum Service facility in Seattle, Washington, for disposal. The tanks were transported to the Metro Metals facility for recycling.

After removal of the tanks, SLR collected a soil sample from beneath each tank location (designated Tank1-FL-8', Tank2-FL-8', and Tank3-FL-8') for laboratory analysis. The samples were submitted to F&B for analysis of GRO, BTEX, DRO, and HO. The samples beneath Tanks #2 and #3 contained petroleum hydrocarbon concentrations below

the MTCA Method A cleanup levels; however, the sample beneath Tank #1 contained a benzene concentration (0.10 mg/kg) that exceeded the Method A cleanup level. Based on the elevated benzene concentration, the excavation beneath Tank #1 was extended to a depth of approximately 12 feet bgs, and the floor of the excavation was re-sampled [sample Tank1-FL(2)-12']. The benzene concentration in the 12-foot-deep sample also exceeded the Method A cleanup level, and the excavation was extended to approximately 15 feet bgs before the final confirmation floor sample [Tank1-FL(4)-15'] contained petroleum hydrocarbon concentrations that were below the Method A cleanup levels. The tanks were located in grid cell A5, and the initial shallow sidewall sample from A5 (sample A5-SW-4') contained a GRO concentration (36 mg/kg) that exceeded the Method A cleanup level (30 mg/kg). After extending the sidewall by approximately 4 feet, the final confirmation sidewall sample [A5-SW(3)-4'] did not contain petroleum hydrocarbon concentrations above the MRLs. The tank excavation sample analytical results are shown in Table 1, and copies of the laboratory reports are presented in Appendix B.

3.2.4 Groundwater Extraction and Treatment

To remediate the petroleum hydrocarbon-impacted groundwater that entered the open soil excavation near the former dispenser island (the area of greatest petroleum hydrocarbon concentrations in the shallow groundwater), a suction pump was placed below the water level in the excavation and the water was pumped into a groundwater treatment system. The treated water was discharged to the City of Longview stormwater system under the conditions of a short-term discharge authorization that was issued by Ecology.

The groundwater treatment system initially consisted of two 21,000-gallon tanks in series followed by a canister filled with approximately 3,000 pounds of activated carbon. During the excavation activities, only a limited volume of groundwater collected in the excavation. Free product was not observed on the water that collected in the excavation. Due to the relatively low volume of water and the lack of free product, the second of the two tanks was removed during the second week of the excavation.

The groundwater extraction operations began on November 8, 2007, and SLR personnel collected a sample of the influent to the first tank within a few hours of activating the pump. The sample was submitted to F&B for analysis of BTEX by EPA Method 8021B; for GRO by Ecology Method NWTPH-Gx; for DRO and HO by Ecology Method NWTPH-Dx (after silica gel cleanup); for total lead by EPA Method 200.8; and for PAHs by EPA Method 8270C SIM. The analytical results showed that the benzene, total BTEX, GRO, and total lead concentrations [70, 686, 3,100, and 15.2 micrograms per liter (µg/L), respectively] in the sample exceeded the discharge limits assigned by Ecology, and that treatment was necessary. A copy of the laboratory report is attached.

After filling the 21,000-gallon tank, SLR personnel temporarily opened the tank effluent valve on November 27th, and forced some water through the carbon-filled canister to collect a treatment system effluent sample. The valve was shut off immediately after collecting the sample. The sample was submitted to F&B for analysis of BTEX, GRO, DRO, HO, total lead, and PAHs. The analytical results showed that none of the analytes were detected at concentrations above the MRLs. A copy of the laboratory report is attached.

After receiving the analytical results, a total of 20,785 gallons of water in the tank were forced through the carbon-filled canister and discharged to a storm sewer line located adjacent to the site on November 28th and 29th. Additional groundwater was not extracted from the excavation. The treatment system was decommissioned and removed from the site on November 30th.

3.2.5 Excavation Backfilling

After completing the excavation and groundwater extraction activities, Wyser backfilled the excavations with clean imported material from the Storedahl Sand & Gravel facility in Longview, Washington. A sand and gravel mixture was used to backfill the excavations up to a depth of approximately 0.5 feet bgs, and crushed rock was used to complete the backfilling near ground surface.

3.3 Installation of Groundwater Monitoring Wells

The secondary phase of the remedial action will consist of monitoring the natural attenuation of the remaining petroleum hydrocarbon concentrations in the groundwater over time. To allow for effective monitoring of the shallow and deep groundwater beneath the site property, three shallow groundwater monitoring wells (designated MW-12, MW-13, and MW-14) and two deep groundwater monitoring wells (designated DMW-9 and DMW-10) were installed at the site on December 3 and 4, 2007. The wells are located near several of the wells that were abandoned in September 2007 (see Figure 7). The wells were drilled and installed by Cascade Drilling, Inc. (Cascade) of Woodinville, Washington, under the direction of an SLR geologist.

Since the shallow monitoring wells were installed within areas of backfilled excavation, soil samples were not collected during the drilling of those borings. During drilling of the boring for deep well DMW-9, soil samples were collected on a continuous basis below the excavation backfill by using a split-spoon sampler. Since DMW-9 was located less than 5 feet from previous deep well DMW-1, the samples from the boring were not submitted for laboratory analysis. Due to heaving sand conditions in the boring and

sampler, soil samples could not be collected from the boring for deep well DMW-10 at depths below the excavation backfill.

Shallow groundwater monitoring wells MW-12, MW-13, and MW-14 were installed to a depth of approximately 13 feet bgs, and were constructed similar to the existing shallow monitoring wells at the site. The 10-foot-long well screens, which straddle the groundwater table, were installed from approximately 3 to 13 feet bgs. Deep groundwater monitoring wells DMW-9 and DMW-10 were installed to depths of approximately 26 and 29 feet bgs, respectively, and were constructed similar to the existing deep monitoring wells at the site. Both of the deep wells include a 5-foot-long screen that was installed at or near the top of the sand unit that occurs immediately below the semi-confining unit (clayey silt unit). Soil boring logs that describe the well construction details are presented in Appendix C.

After installation, Cascade developed each of the new wells by using surging and bailing methods. The development water is currently stored on site in properly labeled 55-gallon drums, pending off-site disposal at a licensed facility. Gibbs and Olson, Inc., of Longview, Washington, surveyed the top of casing elevation of each of the new wells relative to a NAVD 88 datum.

3.4 Conduct Groundwater Sampling Events

In December 2007 and March 2008, SLR conducted groundwater sampling events at the site to evaluate the short-term effects of the primary phase of the remedial action, and to begin monitoring the natural attenuation of the remaining petroleum hydrocarbon-impacted groundwater. During both sampling events, SLR collected groundwater samples from all of the shallow and deep groundwater monitoring wells (MW-5, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, DMW-3, DMW-4, DMW-5, DMW-6, DMW-7, DMW-8, DMW-9 and DMW-10). Prior to sampling, the depths to groundwater were measured in all of the wells by using an electronic water level probe.

The depths to groundwater were used to calculate the volume of standing water in each well casing (pore volume). Before sample collection, at least three pore volumes were removed from each well by using a disposable PVC bailer. Field parameters of pH, specific conductance, and temperature were measured following the removal of each pore volume. To evaluate the natural attenuation of the petroleum hydrocarbons, dissolved oxygen (DO), oxidation-reduction (redox) potential, and dissolved ferrous iron were also measured after the removal of each pore volume. A groundwater sample was collected following the stabilization of the pH, specific conductance, and temperature measurements to less than a 10 percent difference between pore volumes. A new disposable bailer was used to collect the sample set at each well. Each sample was submitted to F&B for analysis. All of the samples were analyzed for BTEX, GRO, and

DRO. To evaluate the natural attenuation of the petroleum hydrocarbons, the samples were also analyzed for dissolved manganese by EPA Method 200.8, alkalinity by Standard Method SM 2320, dissolved methane by EPA Method RSK 175 Modified, sulfate by EPA Method 375.2, and nitrate by EPA Method 353.2.

The purge water from both sampling events is temporarily stored on site in properly labeled 55-gallon drums, pending off-site disposal at a licensed facility.

3.4.1 Groundwater Monitoring Results

On December 11, 2007, the depths to groundwater in the shallow wells ranged from 1.10 to 4.64 feet and the depths to groundwater in the deep wells ranged from 4.60 to 6.68 feet. Free product was not observed in any of the wells. The depth to groundwater measurements were converted to groundwater elevations by using the results of the previous well elevation surveys. The groundwater elevations in the shallow wells ranged from 2.90 to 7.93 feet above the NAVD 88 datum. The groundwater elevations in the deep wells ranged from 2.06 to 3.47 feet above the NAVD 88 datum. The groundwater elevations in the shallow wells and the deep wells were inconsistent and could not be used to determine general shallow or deep groundwater flow directions beneath the site area. The groundwater monitoring data from the December 2007 sampling event, as well as from the previous groundwater sampling events, are presented in Table 2. The groundwater elevations in the shallow and deep wells in December 2007 are shown on Figures 8 and 9, respectively.

On March 11, 2008, the depths to groundwater in the shallow wells ranged from 1.53 to 6.02 feet and the depths to groundwater in the deep wells ranged from 5.68 to 7.15 feet. Free product was not observed in any of the wells. The groundwater elevations in the shallow wells ranged from 2.94 to 7.50 feet above the NAVD 88 datum. The groundwater elevations in the deep wells ranged from 0.98 to 2.03 feet above the NAVD 88 datum. The groundwater elevations in the shallow wells and the deep wells were inconsistent and could not be used to determine general shallow or deep groundwater flow directions beneath the site area. The groundwater monitoring data from the March 2008 sampling event, as well as from the previous groundwater sampling events, are presented in Table 2. The groundwater elevations in the shallow and deep wells in March 2008 are shown on Figures 10 and 11, respectively.

3.4.2 Groundwater Sample Analytical Results

3.4.2.1 Shallow Groundwater Wells

The analytical results from the December 2007 and March 2008 sampling events indicated that the samples from shallow well MW-10 contained benzene and GRO

concentrations [up to 16 and 3,100 micrograms per liter ($\mu\text{g/L}$), respectively] that exceeded the MTCA Method A cleanup levels (5 and 800 $\mu\text{g/L}$). The samples from MW-10 also contained DRO concentrations that exceeded the Method A cleanup level; however, the laboratory reported that the patterns of the chromatogram peaks were not indicative of diesel. The reported DRO concentrations were likely due to overlap from the gasoline range. MW-10 is located approximately 10 feet northeast of the soil excavation area (Figure 5). The samples from all of the other shallow monitoring wells contained petroleum hydrocarbon concentrations that were below the MRLs or the Method A cleanup levels. The shallow groundwater sample analytical results (petroleum hydrocarbons only) from the December 2007 and March 2008 events, as well as from the previous sampling events, are presented in Table 3 and are shown on Figures 8 and 10. Copies of the laboratory analytical reports are presented in Appendix B.

3.4.2.2 Deep Groundwater Wells

The analytical results from the December 2007 and March 2008 sampling events indicated that the samples from deep well DMW-9 contained benzene, toluene, ethylbenzene, total xylenes, and/or GRO concentrations (up to 6,100, 1,900, 970, 3,100, and 27,000 $\mu\text{g/L}$, respectively) that exceeded the MTCA Method A cleanup levels. The December 2007 sample from DMW-9 also contained a DRO concentration that exceeded the Method A cleanup level; however, the laboratory reported that the pattern of the chromatogram peaks was not indicative of diesel. The reported DRO concentration was likely due to overlap from the gasoline range. The samples from deep wells DMW-4, DMW-5, and DMW-10 contained benzene concentrations (from 6 to 75 $\mu\text{g/L}$) that exceeded the Method A cleanup level. The samples from deep wells DMW-3, DMW-6, DMW-7, and DMW-8 did not contain petroleum hydrocarbon concentrations above the MRLs. The deep groundwater sample analytical results (petroleum hydrocarbons only) from the December 2007 and March 2008 events, as well as from the previous sampling events, are presented in Table 3 and are shown on Figures 9 and 11. Copies of the laboratory analytical reports are presented in Appendix B.

3.4.2.3 Natural Attenuation Parameters

The groundwater sample analytical results and field measurements for the natural attenuation parameters are presented in Table 4, and copies of the laboratory analytical reports are included in Appendix B. Based on higher dissolved methane and alkalinity concentrations in the areas of shallow and deep groundwater contamination, it appears that the impacted groundwater occurs in reducing (little or no oxygen) environments and that there is more biological activity where petroleum hydrocarbons are present. After two more quarterly groundwater sampling events, the natural attenuation results, as well as the petroleum hydrocarbon concentrations, will be used to model the natural

attenuation of the remaining shallow groundwater contamination and the deep groundwater contamination.

4 CONCLUSIONS

During September, November, and December 2007, and March 2008, the primary phase of a remedial action was completed at the former Arco Service Station #0855 in Longview, Washington. The objectives of this phase of the remedial action were: 1) to remediate the soil that contained petroleum hydrocarbon concentrations greater than Model Toxics Control Act (MTCA) Method A cleanup levels, 2) to remove the source of the impacted shallow groundwater beneath the site, 3) to remove the primary sources of the impacted deep groundwater beneath the site, and 4) to extract the accessible impacted shallow groundwater.

To remediate the hydrocarbon-impacted soil beneath the site, the soil that contained petroleum hydrocarbon concentrations greater than the MTCA Method A cleanup levels was excavated to a maximum depth of approximately 15 feet bgs. A total of 3,403.46 tons of soil were excavated and hauled to the Hillsboro Landfill for disposal. Based on the analytical results from the final excavation floor and sidewall confirmation samples, the excavation activities effectively removed all of the soil that contained petroleum concentrations greater than the Method A cleanup levels, except at three locations. The final floor samples from grid cells A3, B3, and C2, at 15 feet bgs, contained benzene, ethylbenzene, total xylenes, and/or GRO concentrations that exceeded the Method A cleanup levels. The excavation was not extended below 15 feet bgs at those three locations to ensure that the semi-confining unit (clayey silt) was not breached. If the excavation had extended through the clayey silt unit, deeper groundwater would have filled the excavation area, and the excavation and backfilling activities would have been difficult to complete.

During the excavation activities, a total of 20,785 gallons of groundwater was extracted from the excavation near the former dispenser island (the area of greatest shallow groundwater concentrations). The volume of groundwater that collected in the excavation was less than anticipated, which indicated the restricted lateral flow within the clayey silt unit and demonstrated the lack of upward deep groundwater migration through the clayey silt unit. The extracted water was pumped through a treatment system prior to discharge to the City of Longview stormwater system.

After completion of the excavation activities, groundwater sampling events were conducted in December 2007 and March 2008 to evaluate the short-term effects of the primary phase of the remedial action, and to begin monitoring the natural attenuation of

the remaining petroleum hydrocarbon-impacted groundwater. The analytical results from the December 2007 and March 2008 sampling events indicated that the samples from shallow well MW-10 contained benzene and GRO concentrations (up to 16 and 3,100 µg/L, respectively) that exceeded the MTCA Method A cleanup levels. MW-10 is located approximately 10 feet northeast of the soil excavation area. The samples from all of the other shallow monitoring wells contained petroleum hydrocarbon concentrations that were below the MRLs or the Method A cleanup levels. The sampling results from the shallow wells indicated that the groundwater extraction activities removed the impacted groundwater within the excavation area and the soil excavation effectively eliminated the source of the shallow groundwater contamination; however, outside of the excavation area, the remediation activities had limited short-term effects on the shallow groundwater concentrations. The limited influence on the shallow groundwater outside of the excavation area is likely due to low groundwater flow rates within the laterally discontinuous sandy stringers of the clayey silt unit.

The analytical results from the December 2007 and March 2008 sampling events indicated that the samples from deep well DMW-9 contained benzene, toluene, ethylbenzene, total xylenes, and/or GRO concentrations (up to 6,100, 1,900, 970, 3,100, and 27,000 µg/L, respectively) that exceeded the MTCA Method A cleanup levels. The samples from deep wells DMW-4, DMW-5, and DMW-10 contained benzene concentrations (from 6 to 75 µg/L) that exceeded the Method A cleanup level. Wells DMW-4, DMW-5, DMW-9, and DMW-10 are located within or near the soil excavation area. The samples from deep wells DMW-3, DMW-6, DMW-7, and DMW-8 did not contain petroleum hydrocarbon concentrations above the MRLs. Based on the two groundwater sampling events, it appears that the excavation and shallow groundwater extraction activities had limited short-term effects on the deep groundwater concentrations. The limited influence on the deep groundwater beneath the excavation area is likely due to the restricted downward groundwater flow through the clayey silt unit above the aquifer.

The secondary phase of the remedial action will consist of long-term groundwater monitoring and possibly active remediation of the deep groundwater zone if the deep groundwater concentrations do not naturally attenuate to below the MTCA Method A cleanup levels within a reasonable period of time. The natural attenuation data from the December 2007 and March 2008 groundwater sampling events indicated that the shallow and deep groundwater contamination occur in reducing environments and that there is more biological activity where petroleum hydrocarbons are present.

LIMITATIONS

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

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

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TABLES

Table 1
Excavation Sample Analytical Results
Former Arco Service Station #0855
Longview, Washington

Sample Name	Date Collected	Approximate Sample Depth (feet)	Benzene ^a (mg/kg)	Toluene ^a (mg/kg)	Ethylbenzene ^a (mg/kg)	Total Xylenes ^a (mg/kg)	GRO ^b (mg/kg)	DRO ^c (mg/kg)	HO ^c (mg/kg)	Naphthalene ^d (mg/kg)	Toxicity-Adjusted Total cPAHs ^d (mg/kg)
MTCA Method A Cleanup Levels^e											
			0.03	7	6	9	30	2000	2000	5	0.1
Sidewall Samples											
A2-SW-4'	11/06/07	4	<0.02	<0.02	0.04	0.12	18	NA	NA	NA	NA
A3-SW-3.5'	11/06/07	3.5	<0.02	<0.02	<0.02	<0.06	11	NA	NA	NA	NA
B2-SW-4'	11/06/07	4	<0.02	<0.02	0.06	0.18	15	NA	NA	NA	NA
A3-SW-10'	11/07/07	10	<0.02	<0.02	<0.02	<0.06	12	NA	NA	NA	NA
A4-SW-4'	11/07/07	4	0.05	0.27	1.60	1.60	180	NA	NA	NA	NA
A2-SW(2)-4'	11/08/07	4	<0.02	<0.02	<0.02	<0.06	10	NA	NA	NA	NA
A2-SW(2)-10'	11/08/07	10	<0.02	<0.02	<0.02	<0.06	5.0	NA	NA	NA	NA
A4-SW-10'	11/08/07	10	0.58	0.17	15	91	760	NA	NA	NA	NA
B2-SW-10'	11/09/07	10	0.04	<0.02	<0.02	<0.06	7.0	NA	NA	NA	NA
A5-SW-4'	11/12/07	4	<0.02	0.13	0.13	0.45	36	<50	<250	NA	NA
A4-SW(2)-4'	11/13/07	4	<0.02	0.05	0.06	0.12	14	NA	NA	NA	NA
A4-SW(2)-10'	11/13/07	10	0.07	<0.02	0.07	<0.06	44	NA	NA	NA	NA
B1-SW-4'	11/13/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
B2-SW(2)-10'	11/13/07	10	<0.02	<0.02	0.06	<0.06	16	NA	NA	NA	NA
C1-SW-4'	11/13/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
C1-SW-10'	11/13/07	10	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
D1-SW-4'	11/13/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	<50	NA	NA	NA
C3-SW-4'	11/14/07	4	<0.02	<0.02	<0.02	0.26	25	NA	NA	NA	NA
C3-SW-10'	11/14/07	10	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
D1-SW-10'	11/14/07	10	<0.02	<0.02	<0.02	<0.06	<2.0	<50	NA	NA	NA
D2-SW-4'	11/14/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	<50	NA	NA	NA
D2-SW-10'	11/14/07	10	<0.02	<0.02	<0.02	<0.06	<2.0	<50	NA	NA	NA
D3-SW-4'	11/14/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	<50	<250	NA	NA
D4-SW-4'	11/14/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	<50	<250	NA	NA
E1-SW-4'	11/14/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	<50	NA	NA	NA
E2-SW-4'	11/14/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	<50	NA	NA	NA
A4-SW(3)-10'	11/15/07	10	0.24	<0.02	0.30	<0.06	22	NA	NA	NA	NA
A5-SW(2)-4'	11/15/07	4	<0.02	0.15	0.26	1.00	39	NA	NA	NA	NA
C4-SW-4'	11/15/07	4	<0.02	0.05	<0.02	0.13	14	NA	NA	NA	NA
C4-SW-10'	11/15/07	10	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
A5-SW-10'	11/16/07	10	<0.02	<0.02	<0.02	<0.06	6.0	NA	NA	NA	NA
B5-SW-4'	11/16/07	4	<0.02	0.06	<0.02	0.32	17	NA	NA	NA	NA
B6-SW-4'	11/19/07	4	<0.02	<0.02	0.08	0.39	8.0	NA	NA	NA	NA
C5-SW-4'	11/19/07	4	<0.02	<0.02	<0.02	<0.06	6.0	NA	NA	NA	NA
C6-SW-4'	11/19/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
A4-SW(4)-10'	11/20/07	10	1.10	<0.02	2.60	1.80	36	NA	NA	NA	NA
A5-SW(3)-4'	11/20/07	4	<0.02	<0.02	<0.02	<0.06	<2.0	NA	NA	NA	NA
A4-SW(5)-10'	11/26/07	10	<0.02	<0.02	<0.02	<0.06	15	NA	NA	NA	NA

Table 1

Floor Samples

NOTES:

mg/kg = micrograms per kilogram (ppb).

Values in **bold** exceed the soil cleanup levels.

NA = Not analyzed.

Sample names in *italics* represent sample locations that were subsequently excavated based on petroleum hydrocarbon concentrations greater than the Method A cleanup levels

Sample A2-SW-4¹ was subsequently excavated based on preliminary petroleum hydrocarbon concentrations that exceeded the Method A cleanup levels. However, the final concentrations in the sample were below the cleanup levels.

^a Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8201B.^b Gasoline range organics (GRO) by Ecology Method NIWTRH Gv

Diethyl range organics (DEO) and heavy oil range organics (HO) by Ecolabv Method NIWTPH Dv (after silica gel clean-up)

^dNaphthalene and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270C SIM. Total carcinogenic PAH (cPAH) concentration adjusted using toxicity equivalency methodology in WAC. 173-340-708(8)

^eChapter 173-340 WAC. Model Toxics Control Act (MTCA) Cleanup Regulation. Method A Cleanup Levels. Amended February 12, 2001.

^fDue to a deeper sidewall sample that contained petroleum hydrocarbon concentrations greater than the MTCA Method A cleanup levels, the sample location was subsequently excavated

Table 2
Groundwater Monitoring Data
Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation ^a (feet)	Date Measured	Depth to Groundwater ^b (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Shallow Monitoring Wells					
MW-1	8.34 8.25°	03/27/00	4.36	NP	3.98
		05/23/00	5.20	NP	3.14
		07/20/00	5.55	NP	2.79
		10/18/00	5.41	NP	2.93
		01/18/01	4.81	NP	3.53
		04/18/01	4.58	NP	3.76
		07/17/01	5.54	NP	2.80
		10/18/01	5.26	NP	3.08
		01/16/02	4.45	NP	3.89
		07/09/03	5.80	NP	2.54
		05/25/05	4.12	NP	4.13
		12/07/05	3.77	NP	4.48
		08/16/06	6.58	NP	1.67
		Well abandoned in September 2007.			
MW-2	8.76 8.89°	03/27/00	3.61	NP	5.15
		05/23/00	4.64	NP	4.12
		07/20/00	5.06	NP	3.70
		10/18/00	5.19	NP	3.57
		01/18/00	3.96	NP	4.80
		04/18/01	3.83	NP	4.93
		07/17/01	5.08	NP	3.68
		10/18/01	4.83	NP	3.93
		01/16/02	3.71	NP	5.05
		07/09/03	5.36	NP	3.40
		05/25/05	4.15	NP	4.74
		12/07/05	4.09	NP	4.80
		08/16/06	5.96	NP	2.93
		Well abandoned in September 2007.			
MW-3	8.78 8.58°	03/27/00	5.61	NP	3.17
		05/23/00	6.46	NP	2.32
		07/20/00	7.05	NP	1.73
		10/18/00	6.84	NP	1.94
		01/18/01	6.37	NP	2.41
		04/18/01	5.46	NP	3.32
		07/17/01	6.93	NP	1.85
		10/18/01	6.47	NP	2.31
		01/16/01	4.83	NP	3.95
		07/09/03	6.72	0.02	2.08*
		05/25/05	-4.65	Film	3.93
		12/07/05	4.45	0.01	4.14*
		08/16/06	6.91	0.24	1.86*
		Well abandoned in September 2007.			
MW-4	8.78 8.69°	11/15/00	6.88	NP	1.90
		01/18/01	6.78	NP	2.00
		04/18/01	6.90	NP	1.88
		07/17/01	7.50	NP	1.28
		10/18/01	6.92	NP	1.86
		01/16/02	6.15	NP	2.63
		07/09/03	7.04	NP	1.74
		05/25/05	6.24	NP	2.45
		12/07/05	5.70	NP	2.99
		08/16/06	6.84	NP	1.85
		Well abandoned in September 2007.			

Table 2
Groundwater Monitoring Data
Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation ^a (feet)	Date Measured	Depth to Groundwater ^b (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Shallow Monitoring Wells (continued)					
MW-5	8.78	11/15/00	6.54	NP	2.24
		01/18/01	6.07	NP	2.71
		04/18/01	5.46	NP	3.32
	8.67 ^c	07/17/01	6.79	NP	1.99
		10/18/01	6.50	NP	2.28
		01/16/02	5.49	NP	3.29
		07/09/03	6.86	NP	1.92
		05/25/05	5.64	NP	3.03
		12/07/05	5.53	NP	3.14
		08/16/06	6.28	NP	2.39
		12/11/07	4.64	NP	4.03
		03/11/08	4.90	NP	3.77
		Well destroyed in November 2007.			
MW-6	8.21	11/15/00	6.15	NP	2.06
		01/18/01	5.85	NP	2.36
		04/18/01	5.70	NP	2.51
	8.11 ^c	07/17/01	6.02	NP	2.19
		10/18/01	6.03	NP	2.18
		01/16/02	5.80	NP	2.41
		07/09/03	6.16	NP	2.05
		05/25/05	4.00	NP	4.11
		12/07/05	5.70	NP	2.41
		08/16/06	6.40	NP	1.71
		Well destroyed in November 2007.			
MW-7	8.45	11/15/00	6.52	NP	1.93
		01/18/01	6.24	NP	2.21
		04/18/01	5.98	NP	2.47
	8.26 ^c	07/17/01	6.44	NP	2.01
		10/18/01	6.39	NP	2.06
		01/16/02	6.31	NP	2.14
		07/09/03	7.00	NP	1.45
		05/25/05	5.61	NP	2.65
		12/07/05	6.36 ^d	NP	1.90
		08/16/06	6.40	NP	1.86
		Well abandoned in September 2007.			
MW-8	6.45	05/25/05	4.50	NP	1.95
		12/07/05	3.69	NP	2.76
		08/16/06	4.67	NP	1.78
		12/11/07	3.55	NP	2.90
		03/11/08	3.51	NP	2.94
MW-9	9.43	05/25/05	4.66	NP	4.77
		12/07/05	4.59	NP	4.84
		08/16/06	5.23	NP	4.20
		12/11/07	4.52	NP	4.91
		03/11/08	4.65	NP	4.78
MW-10	9.52	05/25/05	10.30	NP	-0.78
		12/07/05	5.90	NP	3.62
		08/16/06	7.18	NP	2.34
		12/11/07	4.22	NP	5.30
		03/11/08	6.02	NP	3.50
MW-11	8.16	12/07/05	3.87	NP	4.29
		08/16/06	6.10	NP	2.06
		12/11/07	3.51	NP	4.65
		03/11/08	4.86	NP	3.30

Table 2
Groundwater Monitoring Data
Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation ^a (feet)	Date Measured	Depth to Groundwater ^b (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Shallow Monitoring Wells (continued)					
MW-12	8.21	12/11/07	2.69	NP	5.52
		03/11/08	4.25	NP	3.96
MW-13	9.03	12/11/07	1.10	NP	7.93
		03/11/08	1.53	NP	7.50
MW-14	8.39	12/11/07	1.50	NP	6.89
		03/11/08	3.85	NP	4.54
Deep Monitoring Wells					
DMW-1	8.55	12/07/05	6.73	NP	1.82
		08/16/06	6.28	NP	2.27
Well abandoned in September 2007.					
DMW-2	8.29	12/07/05	6.10	NP	2.19
		08/16/06	6.71	NP	1.58
Well abandoned in September 2007.					
DMW-3	6.66	12/07/05	12.15 ^d	NP	-5.49
		08/16/06	4.55	NP	2.11
		12/11/07	4.60	NP	2.06
		03/11/08	5.68	NP	0.98
DMW-4	8.55	12/07/05	6.30	NP	2.25
		08/16/06	7.12	NP	1.43
		12/11/07	6.08	NP	2.47
		03/11/08	6.54	NP	2.01
DMW-5	8.14	12/07/05	5.88	NP	2.26
		08/16/06	6.57	NP	1.57
		12/11/07	5.75	NP	2.39
		03/11/08	6.14	NP	2.00
DMW-6	9.15	08/16/06	7.74	NP	1.41
		12/11/07	6.68	NP	2.47
		03/11/08	7.15	NP	2.00
DMW-7	8.12	08/16/06	6.68	NP	1.44
		12/11/07	5.68	NP	2.44
		03/11/08	6.11	NP	2.01
DMW-8	9.09	08/16/06	7.65	NP	1.44
		12/11/07	6.60	NP	2.49
		03/11/08	7.06	NP	2.03
DMW-9	8.86	12/11/07	5.39	NP	3.47
		03/11/08	6.84	NP	2.02
DMW-10	8.38	12/11/07	4.91	NP	3.47
		03/11/08	6.35	NP	2.03
NOTES:					
NP = Free product was not present.					
^a Top of well casing elevations were surveyed relative to NAVD 88 datum.					
^b Measurements in feet below top of well casing.					
^c Top of casing (TOC) elevation was re-surveyed in May 2005.					
^d Water in well was under pressure and rising when the cap was removed. The water level was recorded after the well cap was off for over 2 hours.					
^e Groundwater elevation corrected for product thickness by using the equation: Groundwater elevation = TOC elevation - depth to groundwater + (product thickness x 0.80).					

Table 3
Groundwater Sample Analytical Results - Petroleum Hydrocarbons and Lead
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	Napthalene ^b (µg/L)	EDB ^b (µg/L)	EDC ^b (µg/L)	MTBE ^b (µg/L)	GRO ^c (µg/L)	DRO ^d (µg/L)	HO ^d (µg/L)	Total Lead ^e (µg/L)	Dissolved Lead ^e (µg/L)
MTCA Method A Cleanup Levels^f														
Shallow Wells														
MW-1	03/27/00	ND	ND	ND	ND	NA	NA	NA	NA	ND	ND	ND	NA	NA
	05/23/00	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA
	07/20/00	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA
	10/18/00	ND	ND	1.61	ND	NA	NA	NA	NA	404	NA	NA	NA	NA
	01/18/01	ND	ND	ND	ND	ND	ND	ND	ND	95.6	NA	NA	NA	NA
	04/18/01	ND	ND	ND	ND	4.30	ND	ND	ND	NA	NA	NA	NA	NA
	07/17/01	ND	2.63	1.46	ND	NA	NA	NA	NA	386	NA	NA	NA	NA
	10/18/01	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA
	01/16/02	ND	ND	ND	ND	NA	NA	NA	NA	104	NA	NA	NA	NA
	07/09/03	<0.50	<0.50	<0.50	<1.0	NA	<0.01	<1.0	<1.0	<50	<50	<500	1.70	<1.0
	05/25/05	<1.0	<1.0	<1.0	<2.0	NA	NA	<1.0	NA	<100	<50	<250	NA	NA
	11/30/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
Well abandoned in September 2007.														
MW-2	03/27/00	6.89	49.5	599	2,490	NA	NA	NA	NA	17,100	ND	ND	NA	NA
	05/23/00	26.2	16.2	614	1,770	NA	NA	NA	NA	13,200	NA	NA	NA	NA
	07/20/00	11.9	11.8	304	330	NA	NA	NA	NA	7,220	NA	NA	NA	NA
	10/18/00	3.67	1.23	13.9	7.55	NA	NA	NA	NA	743	NA	NA	NA	NA
	01/18/00	ND	ND	41.1	5.62	ND	ND	ND	ND	691	NA	NA	NA	NA
	04/18/01	ND	ND	8.73	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
	07/17/01	ND	1.26	14	ND	NA	NA	NA	NA	430	NA	NA	NA	NA
	10/18/01	2.11	ND	3.64	ND	NA	NA	NA	NA	304	NA	NA	NA	NA
	01/16/02	1.16	0.81	37.1	6.71	NA	NA	NA	NA	370	NA	NA	NA	NA
	07/09/03	0.86	<0.50	6.43	1.28	NA	<0.01	<1.0	<5.0	131	<250	<500	15.9	<1.0
	05/30/05	<1.0	<1.0	<1.0	<2.0	NA	NA	<2.0	NA	<100	52	<250	NA	NA
	12/01/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	120	<50	NA	NA	NA
Well abandoned in September 2007.														
MW-3	03/07/00	7,520	12,900	2,780	14,500	NA	NA	NA	NA	93,700	ND	ND	NA	NA
	05/23/00	4,710	8,330	2,280	11,200	NA	NA	NA	NA	65,200	NA	NA	NA	NA
	07/20/00	10,700	22,600	3,160	17,400	NA	NA	NA	NA	145,000	NA	NA	NA	NA
	10/18/00	12,900	33,000	4,890	26,700	NA	NA	NA	NA	179,000	NA	NA	NA	NA
	01/18/01	9,388	17,200	3,940	20,230	607	ND	155	ND	121,000	NA	NA	NA	NA
	04/18/01	7,700	15,300	3,430	16,990	405	ND	101	ND	NA	NA	NA	NA	NA
	07/17/01	10,100	21,400	4,120	20,900	NA	NA	NA	NA	940,000	NA	NA	NA	NA
	10/18/01	7,200	19,700	3,340	17,300	NA	NA	NA	NA	139,000	NA	NA	NA	NA
	01/16/02	13,600	26,600	3,920	20,800	NA	NA	NA	NA	177,000	NA	NA	NA	NA
	07/09/03	11,800	20,100	4,560	21,200	NA	<0.01	107	<20	124,000	3,750	623	28.5	7.98
	05/25/05													
	11/28/05													
Not sampled due to presence of free product.														
Well abandoned in September 2007.														

Table 3
Groundwater Sample Analytical Results - Petroleum Hydrocarbons and Lead
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	Napthalene ^b (µg/L)	EDB ^b (µg/L)	EDC ^b (µg/L)	MTBE ^b (µg/L)	GRO ^c (µg/L)	DRO ^d (µg/L)	HO ^d (µg/L)	Total Lead ^e (µg/L)	Dissolved Lead ^e (µg/L)
MTCA Method A Cleanup Levels^f														
Shallow Wells (continued)														
MW-4	11/15/00													
	01/18/01	1,310	53.6	2,430	7,250	NA	NA	NA	NA	45,500	NA	NA	NA	NA
	04/18/01	1,130	ND	2,030	2,764	331	ND	ND	ND	29,400	NA	NA	NA	NA
	07/17/01	1,280	ND	1,700	2,591	289	ND	ND	ND	NA	NA	NA	NA	NA
	10/18/01	1,610	35	2,870	1,870	NA	NA	NA	NA	34,900	NA	NA	NA	NA
	01/16/02	1,040	ND	2,300	1,320	NA	NA	NA	NA	33,000	NA	NA	NA	NA
	07/09/03	733	ND	920	948	NA	NA	NA	NA	19,300	NA	NA	NA	NA
	05/24/05	906	39.1	1,350	156	NA	<0.01	<2.5 ^h	<20	14,100	798	<500	6.50	2.57
	12/01/05	310	2.90	410	185 ^g	NA	NA	<2.0	NA	9,600	2,300	<250	NA	NA
		990	140	1,100	1,353 ^g	NA	NA	<10 ^h	NA	11,000	2,900 ⁱ	NA	NA	NA
Well abandoned in September 2007.														
MW-5	11/15/00	ND	ND	ND	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA
	01/18/01	ND	ND	ND	ND	2.44	ND	ND	ND	786	NA	NA	NA	NA
	04/18/01	9.42	ND	6.76	10.1	2.42	ND	ND	ND	NA	NA	NA	NA	NA
	07/17/01	1.83	1.16	1.90	3.28	NA	NA	NA	NA	694	NA	NA	NA	NA
	10/18/01	3.05	1.39	1.48	1.45	NA	NA	NA	NA	647	NA	NA	NA	NA
	01/16/02	52.3	3.82	48	24.9	NA	NA	NA	NA	2,800	NA	NA	NA	NA
	07/09/03	1.26	0.99	1.54	4.64	NA	<0.01	<1.0	<5.0	615	<250	<500	5.83	<1.0
	05/24/05	<1.0	<1.0	<1.0	<2.0	NA	NA	<1.0	NA	460	120	<250	NA	NA
	11/28/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	420	230i	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	140	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	11/15/00	ND	ND	ND	ND	NA	NA	NA	NA	131	NA	NA	NA	NA
	01/18/01	ND	ND	ND	ND	ND	ND	ND	ND	732	NA	NA	NA	NA
MW-6	04/18/01	ND	ND	ND	ND	NA	NA	NA	NA	892	NA	NA	NA	NA
	07/17/01	ND	1.35	1.33	5.79	NA	NA	NA	NA	1,000	NA	NA	NA	NA
	10/18/01	ND	ND	2.60	5.48	NA	NA	NA	NA	810	NA	NA	NA	NA
	01/16/02	ND	0.72	1.58	2.78	NA	NA	NA	NA	462	958	<500	12.1	<1.0
	07/09/03	<0.50	0.53	1.15	4.84	NA	<0.01	<1.0	<1.0	370	270	<250	NA	NA
	05/25/05	<1.0	<1.0	<1.0	<2.0	NA	NA	<1.0	NA	NA	<1.0	NA	290	210i
	11/28/05	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	NA	NA
Well destroyed in November 2007.														
MW-7	11/15/00	ND	ND	ND	1.35	NA	NA	NA	NA	113	NA	NA	NA	NA
	01/18/01	ND	ND	ND	ND	ND	ND	ND	ND	242	NA	NA	NA	NA
	04/18/01	ND	ND	ND	ND	ND	ND	ND	ND	275	NA	NA	NA	NA
	07/17/01	ND	ND	ND	ND	NA	NA	NA	NA	286	NA	NA	NA	NA
	10/18/01	ND	ND	ND	ND	NA	NA	NA	NA	362	NA	NA	NA	NA
	01/16/02	ND	ND	ND	ND	NA	NA	NA	NA	232	2,050	<500	4.32	<1.0
	07/09/03	<0.50	<0.50	<0.50	1.48	NA	<0.01	<1.0	<1.0	<100	220	<250	NA	NA
	05/25/05	<1.0	<1.0	<1.0	<2.0	NA	NA	<1.0	NA	<100	140	NA	NA	NA
	11/30/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	NA	NA	NA	NA
Well abandoned in September 2007.														

Table 3
Groundwater Sample Analytical Results - Petroleum Hydrocarbons and Lead
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	Napthalene ^b (µg/L)	EDB ^b (µg/L)	EDC ^b (µg/L)	MTBE ^b (µg/L)	GRO ^c (µg/L)	DRO ^d (µg/L)	HO ^d (µg/L)	Total Lead ^c (µg/L)	Dissolved Lead ^c (µg/L)
MTCA Method A Cleanup Levels^f														
Shallow Wells (continued)														
MW-8	05/25/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<70	<250	NA	NA
	11/29/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
MW-9	05/25/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	<250	NA	NA
	11/28/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
MW-10	05/25/05	45	<1.0	110	<2.0	NA	NA	<1.0	NA	1,000	1,200	<250	NA	NA
	11/30/05	31	<1.0	110	<3.0	NA	NA	<1.0	NA	1,400	1,000 ⁱ	NA	NA	NA
	12/11/07	9.0	3.0	65	<3.0	NA	NA	NA	NA	3,100	1,000 ^j	NA	NA	NA
	03/11/08	16	2.0	40	<3.0	NA	NA	NA	NA	3,000	1,200 ^j	NA	NA	NA
MW-11	12/05/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
MW-12	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
MW-14	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	03/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	50	NA	NA	NA
Deep Wells/Wellpoint														
SSB-15	05/25/05	9,600	1,200	2,400	11,600 ^g	NA	NA	<10 ^h	NA	67,000 E	2,300	<250	NA	NA
	12/07/05	4,000	160	1,100	4,090 ^g	NA	NA	<100 ^h	NA	22,000	2,900 ⁱ	NA	NA	NA
	08/17/06	4,100	<1.0	520	841g	NA	NA	<1.0	NA	16,000	930i	NA	NA	NA
Well abandoned in September 2007.														
DMW-2	12/07/05	11	<1.0	40	46 ^g	NA	NA	<1.0	NA	270	<50	NA	NA	NA
	08/16/06	10	<1.0	5.6	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
Well abandoned in September 2007.														
DMW-3	12/07/05	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<50	<50	NA	NA	NA
	08/17/06	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	3/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
DMW-4	12/05/05	56	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	230	<50	NA	NA	NA
	08/17/06	5.7	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	210	<50	NA	NA	NA
	12/11/07	27	3.0	2.0	4.0	NA	NA	NA	NA	260	<50	NA	NA	NA
	3/11/08	6.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	230	68 ^g	NA	NA	NA
DMW-5	12/05/05	36	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	130	<50	NA	NA	NA
	08/17/06	74	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	170	<50	NA	NA	NA
	12/11/07	41	<1.0	<1.0	<3.0	NA	NA	NA	NA	100	<50	NA	NA	NA
	3/11/08	10	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA

Table 3
Groundwater Sample Analytical Results - Petroleum Hydrocarbons and Lead
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene ^a (µg/L)	Toluene ^a (µg/L)	Ethylbenzene ^a (µg/L)	Total Xylenes ^a (µg/L)	Naphthalene ^b (µg/L)	EDB ^b (µg/L)	EDC ^b (µg/L)	MTBE ^b (µg/L)	GRO ^c (µg/L)	DRO ^d (µg/L)	HO ^d (µg/L)	Total Lead ^e (µg/L)	Dissolved Lead ^e (µg/L)
MTCA Method A Cleanup Levels^f		5	1,000	700	1,000	160	0	5	20	800	500	500	15	15
DMW-6	08/16/06	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	3/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
DMW-7	08/16/06	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	3/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
DMW-8	08/16/06	<1.0	<1.0	<1.0	<3.0	NA	NA	<1.0	NA	<100	<50	NA	NA	NA
	12/11/07	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
	3/11/08	<1.0	<1.0	<1.0	<3.0	NA	NA	NA	NA	<100	<50	NA	NA	NA
DMW-9	12/11/07	6,100	1,900	970	3,100	NA	NA	NA	NA	27,000	600^g	NA	NA	NA
	3/11/08	3,000	150	380	880	NA	NA	NA	NA	13,000	450 ^h	NA	NA	NA
	12/11/07	60	4.0	88	130	NA	NA	NA	NA	750	53 ⁱ	NA	NA	NA
DMW-10	3/11/08	75	4.0	140	120	NA	NA	NA	NA	1,000	74 ^j	NA	NA	NA

NOTES: Values in bold exceed the MTCA Method A cleanup levels.

All concentrations in micrograms per liter (µg/L).

ND = Not detected above the laboratory method reporting limit (MRL).

NA = Not analyzed.

E = Laboratory estimated value.

^a Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B or EPA Method 8260B.

^b Volatile organic compounds (VOCs) by EPA Method 8260B or 8270C SIM (naphthalene only).

^c Gasoline-range organics (GRO) by Ecology Method NWTTPH-Gx.

^d Diesel-range organics (DRO) and heavy oil-range organics (HO) by Ecology Method NWTTPH-Dx.

^e Total and dissolved lead by EPA Method 6020.

^f Chapter 173-340 WAC, Model Toxics Control Act (MTCA) Cleanup Regulation, Method A Cleanup Levels. Amended February 12, 2001.

^g Total xylenes calculated by using the formula: total xylenes concentration = (m, p-xylene concentration) + (o-xylene concentration).

^h Method reporting limit exceeds the Method A cleanup level.

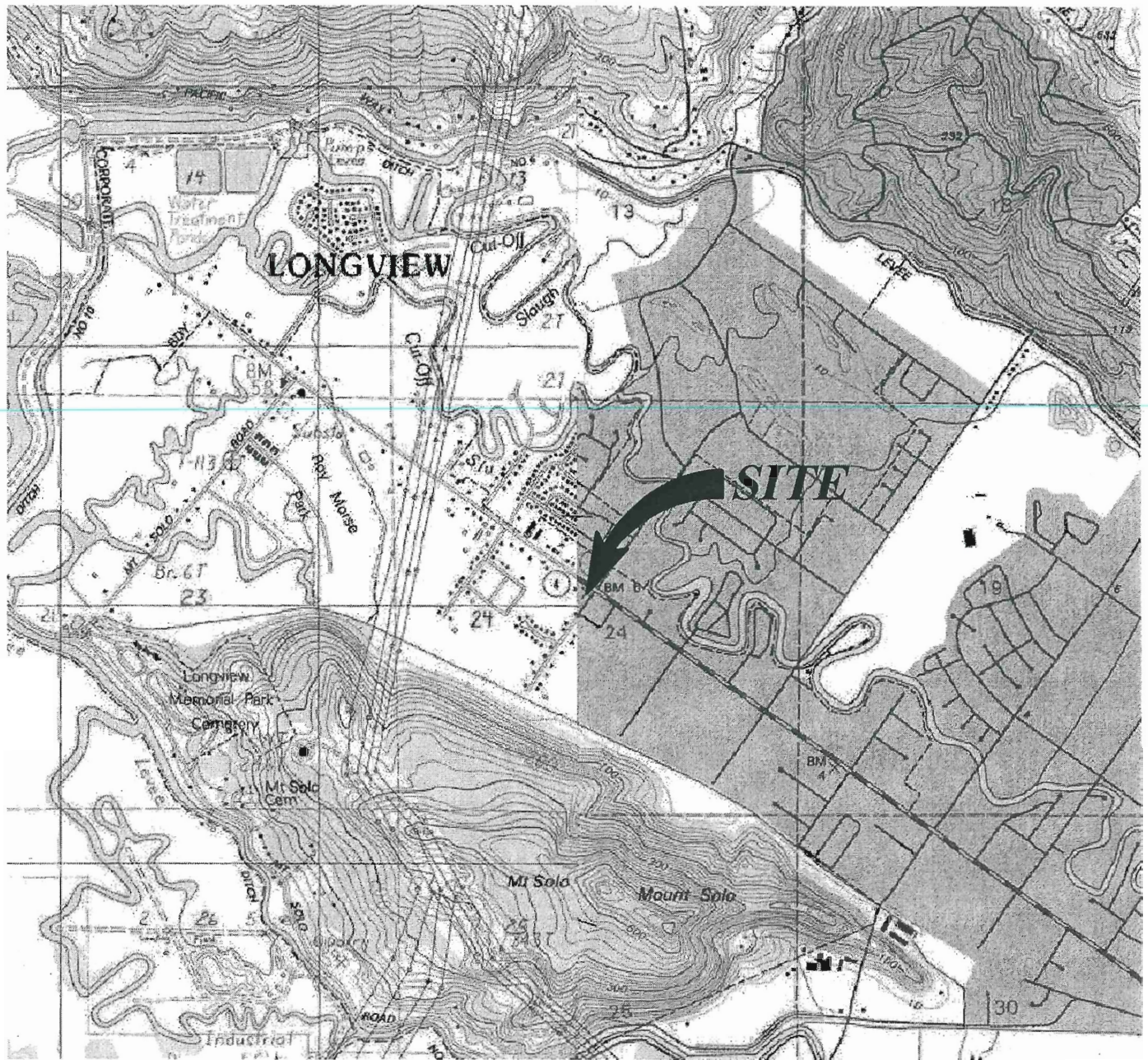
ⁱ The laboratory reported that the DRO concentration is due to overlap from the gasoline range.

^j The laboratory reported that the pattern of chromatogram peaks from the sample were not indicative of diesel.

Table 4
Groundwater Sample Analytical Results - Natural Attenuation Parameters
Former Arco Service Station #0855
Longview, Washington

Sample Location	Sample Date	Nitrate ^a (mg/L)	Sulfate ^a (mg/L)	Dissolved Methane ^b (µg/L)	Dissolved Oxygen ^c (mg/L)	Dissolved Manganese ^d (µg/L)	Dissolved Ferrous Iron ^e (mg/L)	Alkalinity ^f (mg/L CaCO ₃)	Redox Potential ^g (mV)
Shallow Wells									
MW-5	12/12/2007	12.2	969	608	0.15	2,850	5.0	10.3	119.2
	3/13/2008	2.25	341	<0.7	0.39	2,480	3.3	19.3	-122.8
MW-8	12/12/2007	<0.010	4.8	98.8	1.91	531	1.7	33.3	248.2
	3/13/2008	<0.2	6.6	1.2	0.66	463	2.1	57.6	-140.0
MW-9	12/12/2007	0.50	5.0	0.8	4.0	3.99	<0.10	40.1	237.0
	3/13/2008	0.47	8.5	3,330	3.18	14.0	0.6	39.7	-33.5
MW-10	12/12/2007	0.036	74.9	6,510	2.99	2,420	2.0	174	294.2
	3/13/2008	<0.2	186	1,820	2.12	2,170	3.1	160	-117.0
MW-11	12/12/2007	0.78	643	103	0.63	1,780	3.8	28.4	199.7
	3/13/2008	0.39	199	<0.7	0.63	2,520	1.4	45.1	-81.5
MW-12	12/12/2007	37.0	1,500	160	0.67	5,330	3.8	6.9	178.0
	3/13/2008	27.5	1,060	0.90	0.77	6,770	<0.10	58.8	-146.8
MW-13	12/12/2007	31.7	1,590	40.2	NM	8,690	<0.10	70.7	235.9
	3/13/2008	21.5	1,540	4.5	0.56	9,140	<0.10	218	-112.8
MW-14	12/12/2007	16.7	1,190	72.8	2.48	9,350	0.2	16.0	215.1
	3/13/2008	5.7	945	0.90	2.42	7,050	1.2	57.8	-163.7
Deep Wells									
DMW-3	12/12/2007	<0.050	31.8	1,630	3.84	2,770	1.0	220	255.6
	3/13/2008	<0.2	23.4	2,480	2.0	2,550	3.0	197	-129.1
DMW-4	12/12/2007	<0.010	22.4	10,100	0.11	2,190	3.6	174	105.1
	3/13/2008	<0.2	297	0.9	0.17	15,500	4.6	22.2	-136.6
DMW-5	12/12/2007	<0.010	13.0	13,700	0.13	2,280	3.4	177	101.8
	3/13/2008	<0.2	10.3	8,180	0.17	2,900	3.6	180	-127.9
DMW-6	12/12/2007	<0.010	8.0	11,700	0.15	1,740	2.2	104	121.0
	3/13/2008	<0.2	7.5	9,530	0.19	4,270	2.2	112	-136.5
DMW-7	12/12/2007	<0.010	23.3	9,140	0.25	3,720	3.1	158	93.6
	3/13/2008	<0.2	29.6	8,320	0.39	12,400	3.0	155	-171.6
DMW-8	12/12/2007	0.014	6.2	3,780	0.22	1,940	4.4	133	109.4
	3/13/2008	<0.2	17.6	1,950	0.28	2,070	3.1	107	-159.9
DMW-9	12/12/2007	<0.010	55.7	27,400	0.15	1,920	5.7	270	113.2
	3/13/2008	<0.5	32.2	19,800	0.19	3,400	3.7	355	-128.4
DMW-10	12/12/2007	<0.010	24.2	11,300	0.09	2,950	3.6	191	92.5
	3/13/2008	<0.2	7.7	8,050	0.12	5,360	3.1	227	-94.2
NOTES: NM = Not measured. mg/L = milligrams per liter (ppm). µg/L = micrograms per liter (ppb). ^a Nitrate by EPA Method 353.2. ^a Sulfate by EPA Method 375.2. ^b Dissolved methane by EPA Method RSK 175 Modified. ^c Dissolved oxygen by EPA Method 360.1 (field instrument reading). ^d Dissolved manganese by EPA Method 200.8. ^e Dissolved ferrous iron by Standard Method SM 3500 (field test kit). ^f Alkalinity by Standard Method SM 2320. ^g Oxidation-reduction (redox) potential by EPA Method D1498-76 (field instrument reading).									

FIGURES



0 2000 4000
SCALE IN FEET

SLR

SLR International Corp

22122 20th AVE SE
BLDG. H, SUITE 150
BOTHELL, WA 98021

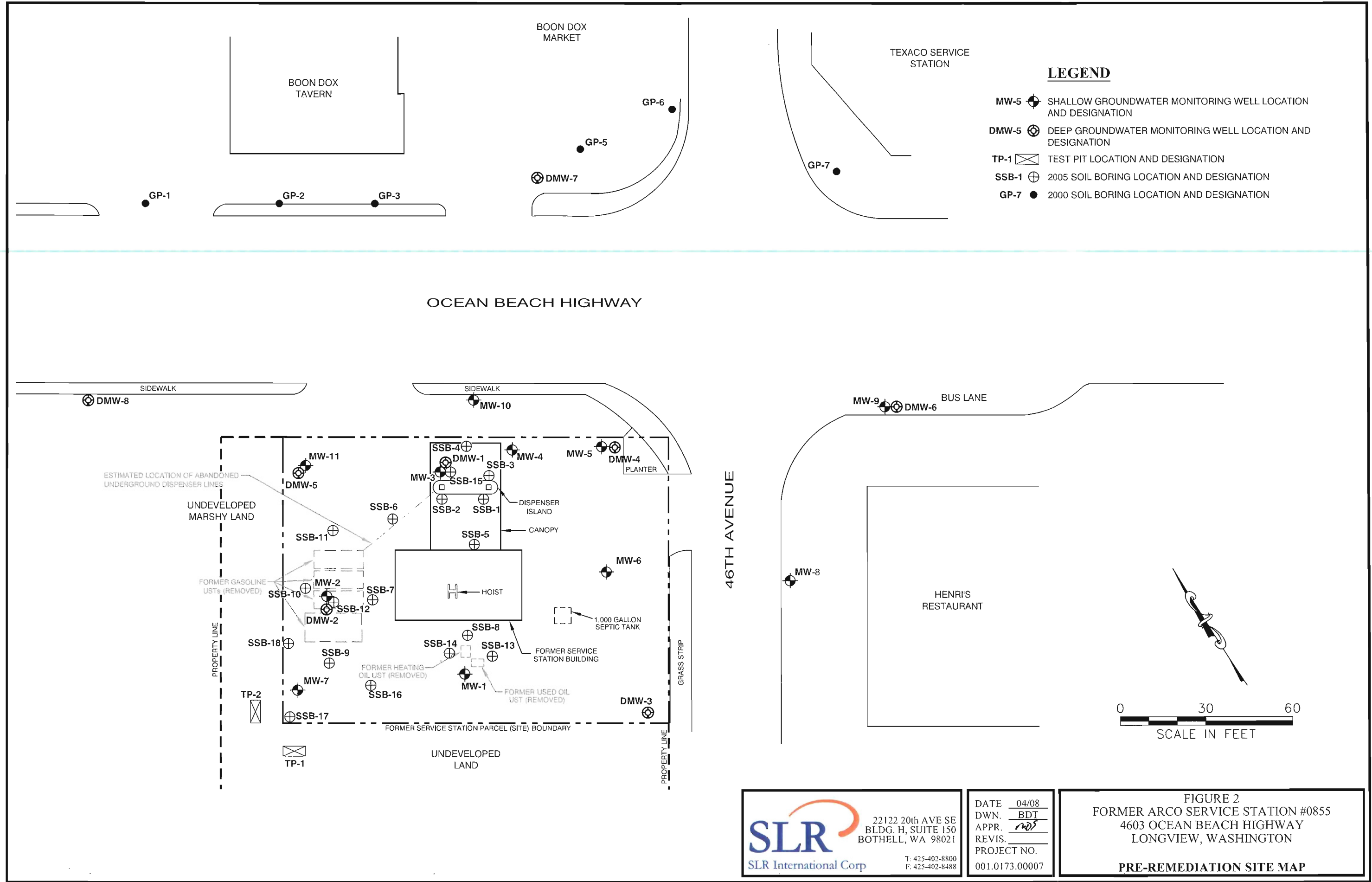
T: 425-402-8800
F: 425-402-8488

DATE 06/04
DWN. BDT
APPR. *KAS*
REVIS.
PROJECT NO.
001.0173.00003

FIGURE 1
FORMER ARCO SERVICE STATION #0855
LONGVIEW, WASHINGTON

SITE LOCATION MAP

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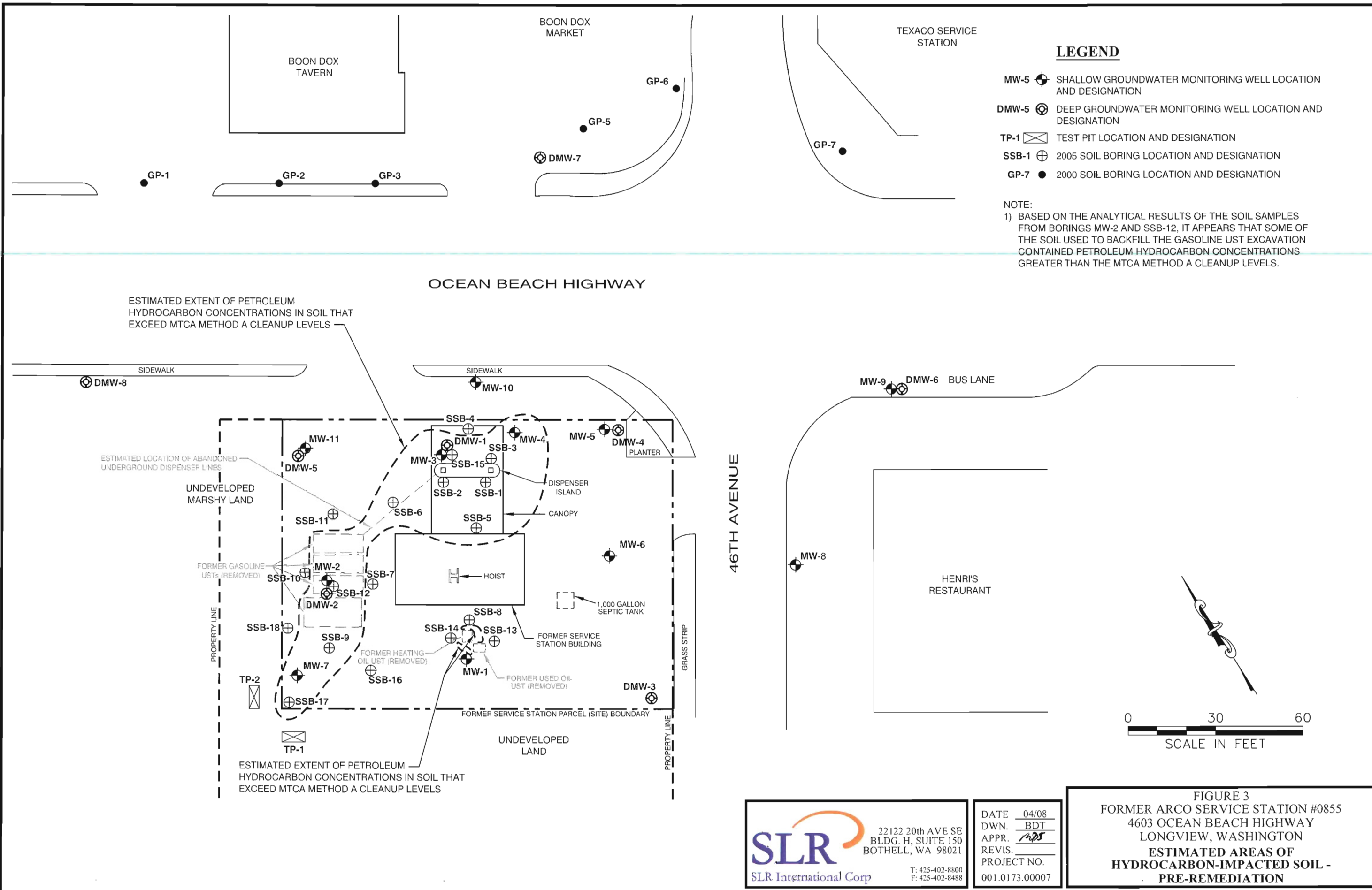


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SLR International Corp

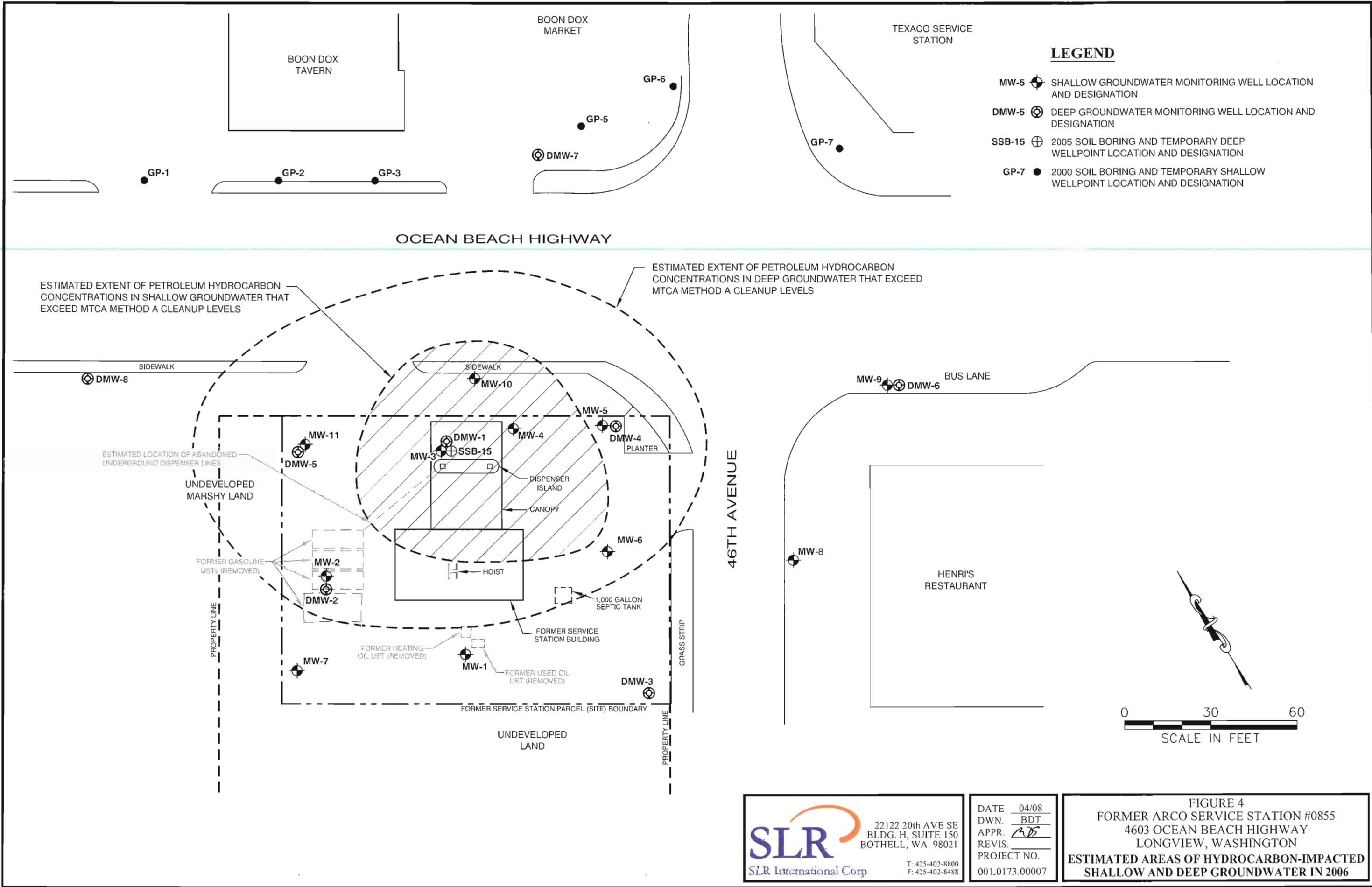
22122 20th AVE SE
BLDG. H, SUITE 150
BOTHELL, WA 98021

T: 425-402-8800
F: 425-402-8488

DATE	04/08
DWN.	BDT
APPR.	<i>BDT</i>
REVIS.	
PROJECT NO.	001.0173.00007



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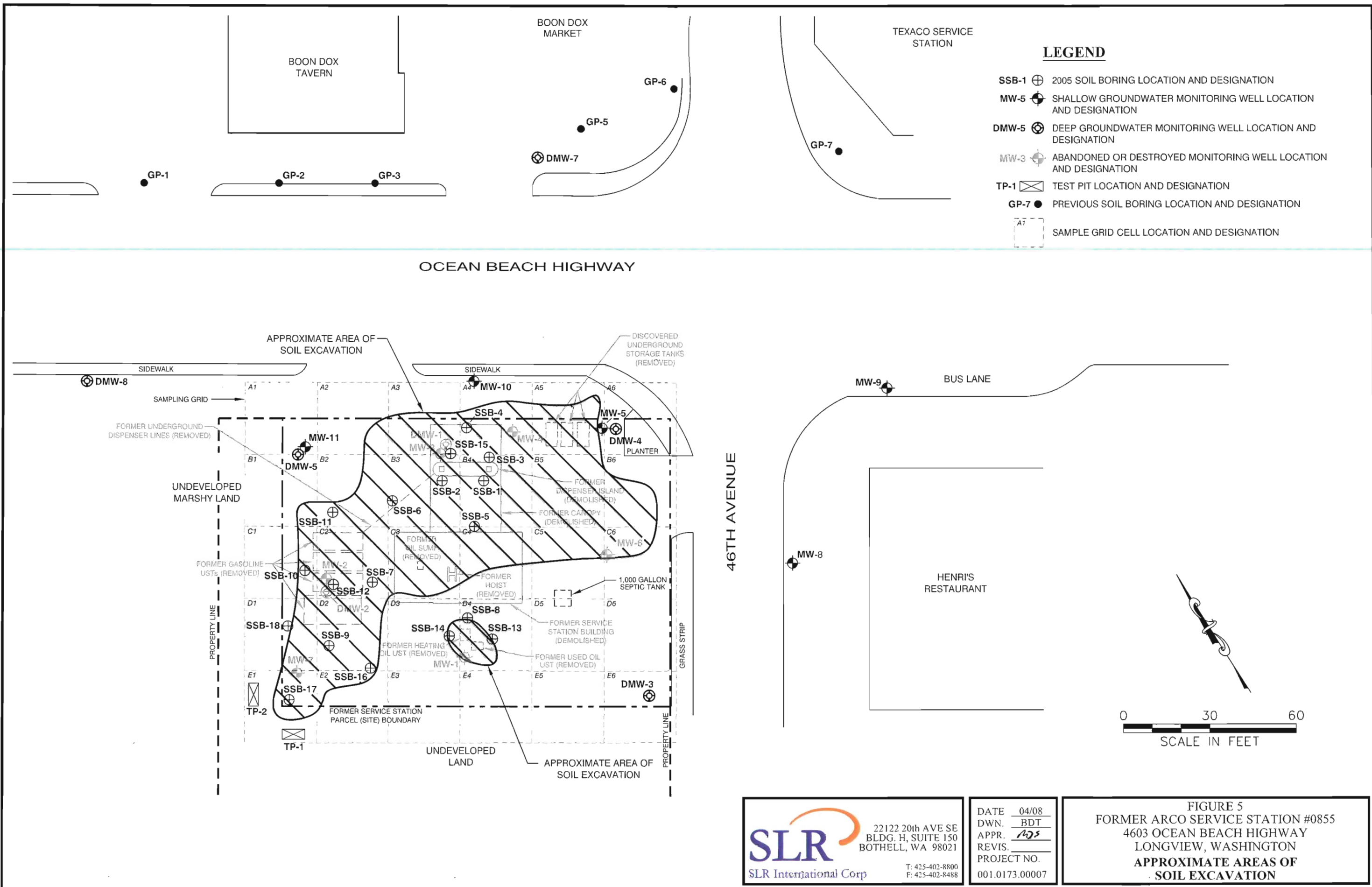
SLR
SLR International Corp

22122 20th AVE SE
BLDG. H, SUITE 150
BOTHELL, WA 98021

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F: 425-402-8488

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REVIS.	
PROJECT NO.	001.0173.00007

FIGURE 5
FORMER ARCO SERVICE STATION #0855
4603 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON
APPROXIMATE AREAS OF
SOIL EXCAVATION

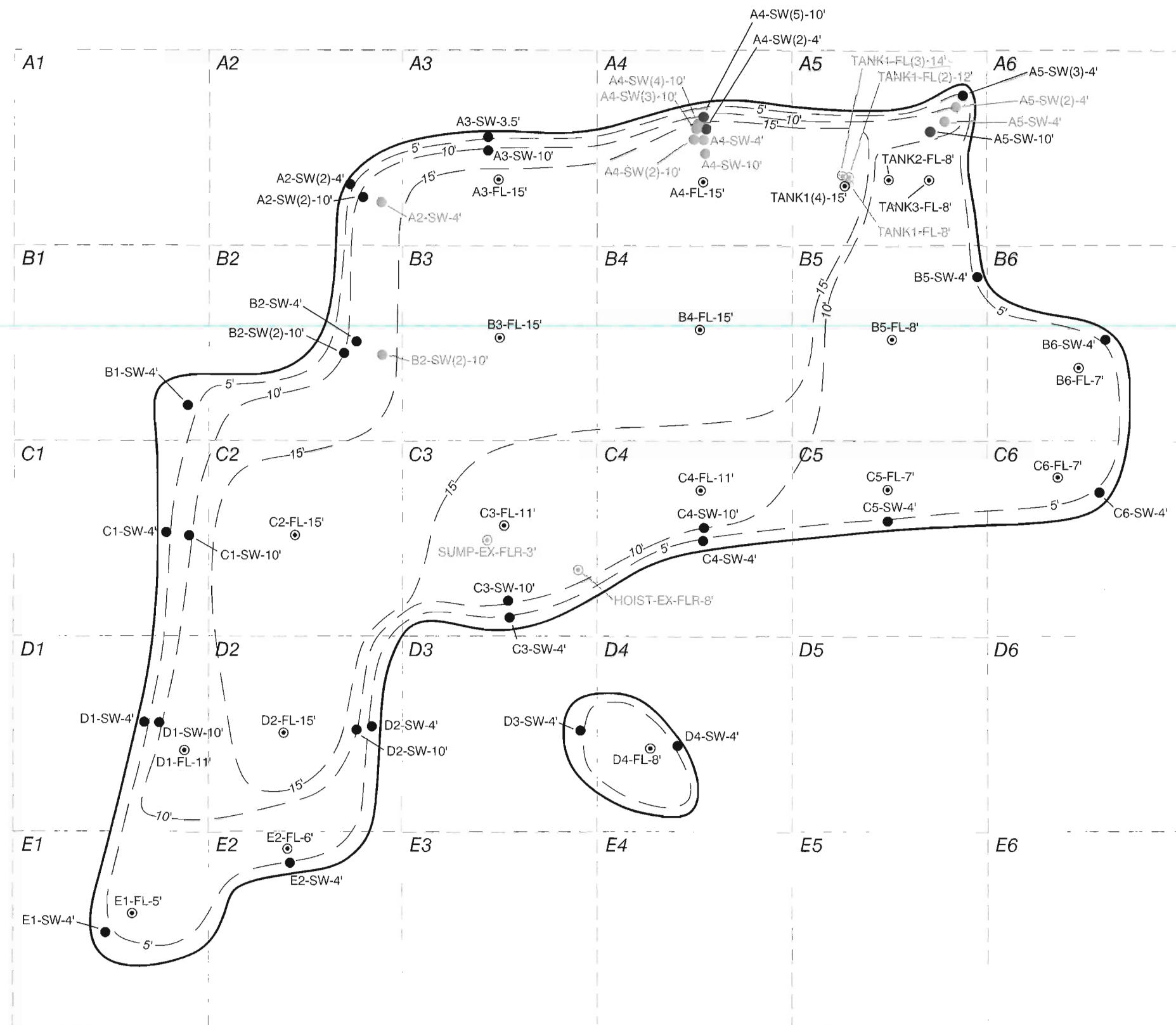
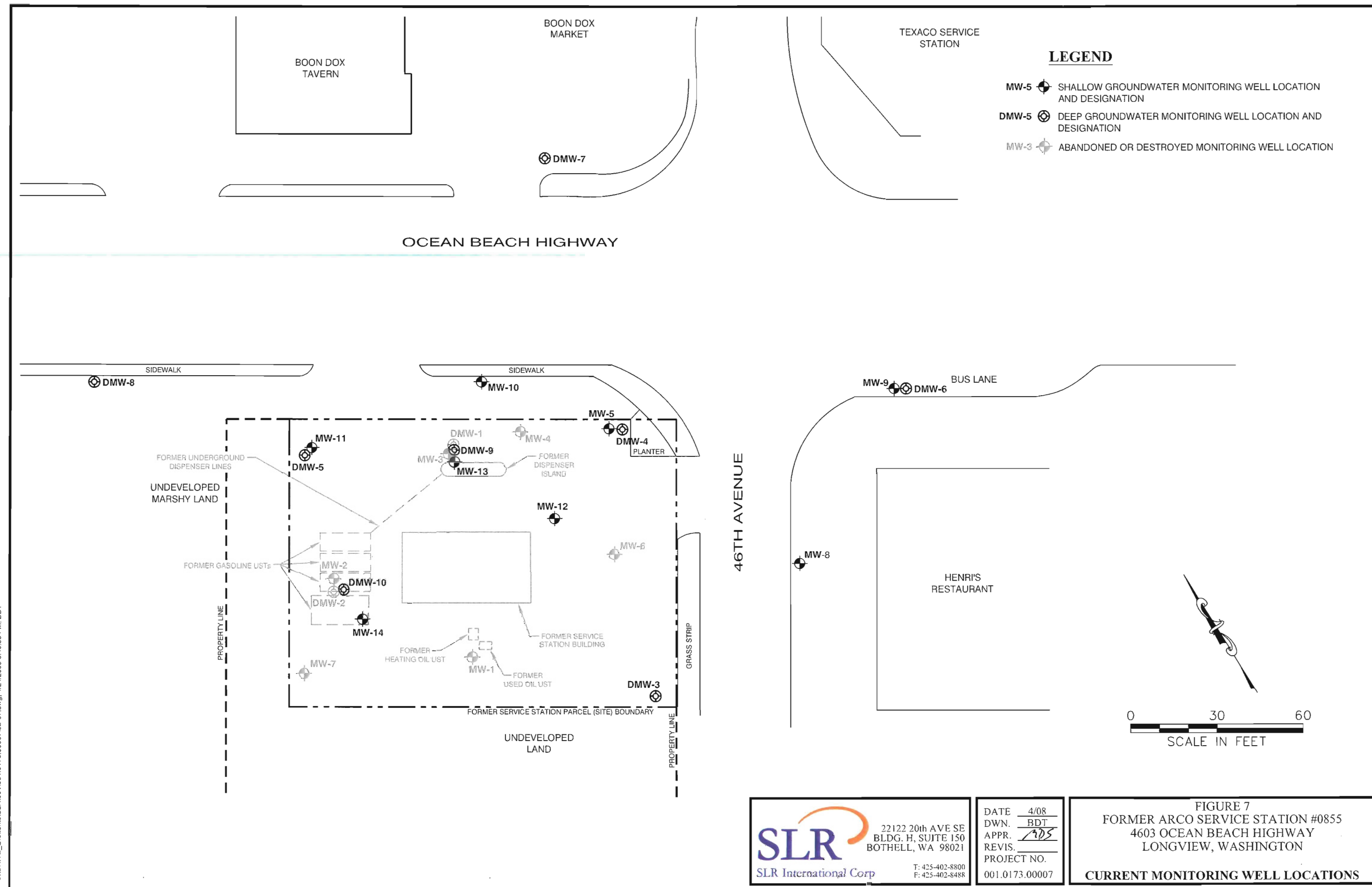

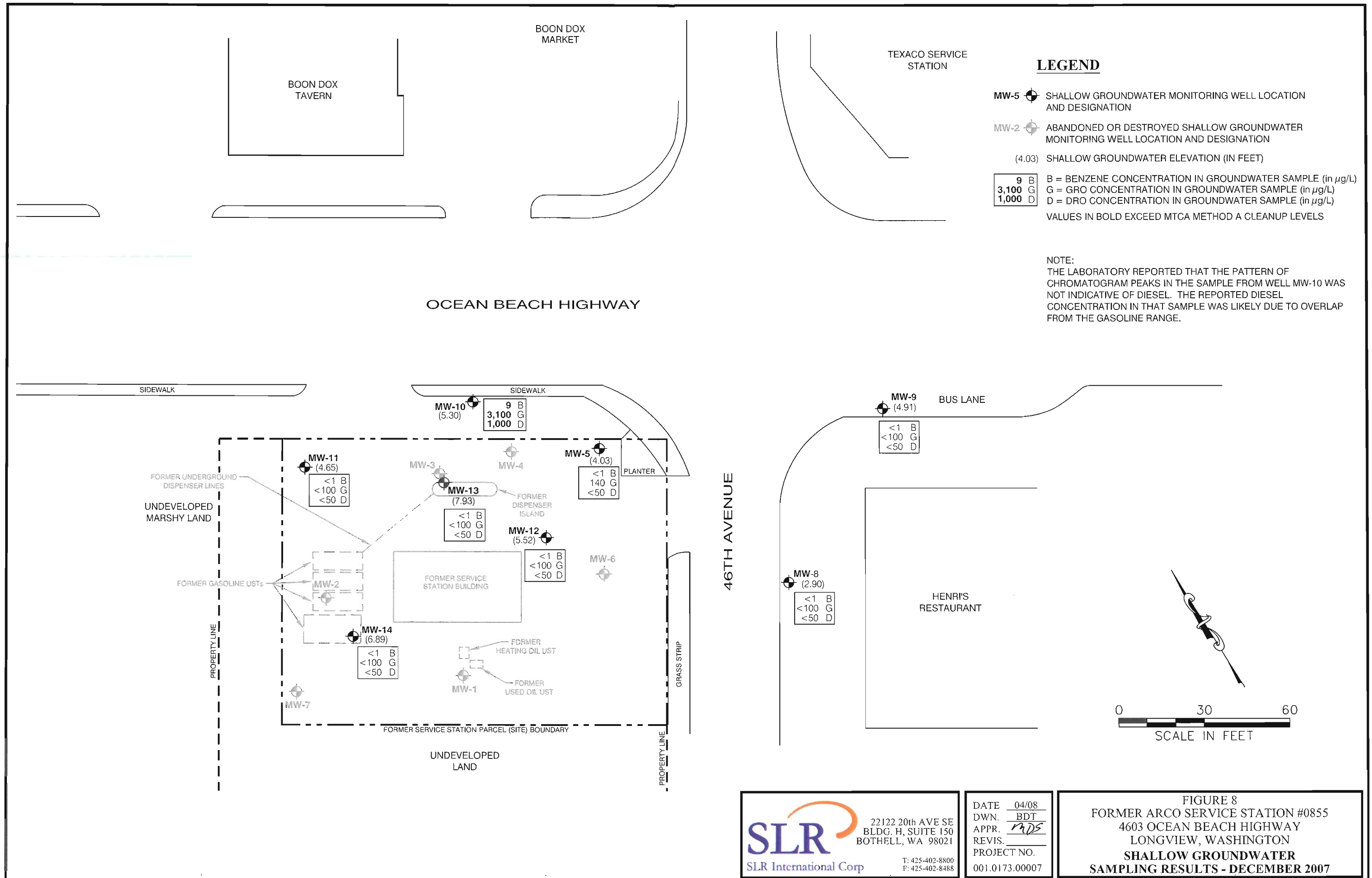


FIGURE 6
FORMER ARCO SERVICE STATION #0855
4603 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON
**APPROXIMATE CONFIRMATION
SAMPLE LOCATIONS**

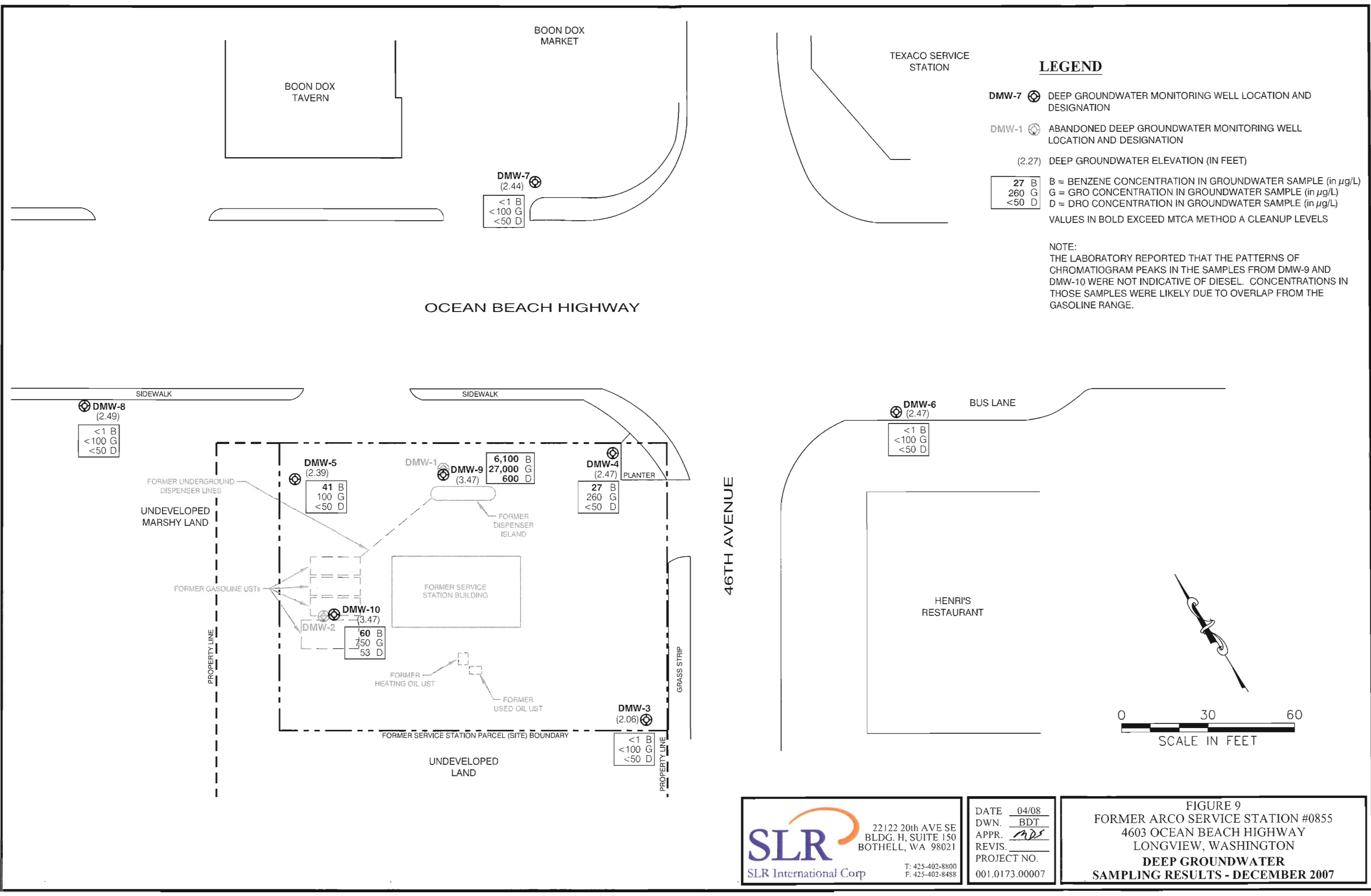
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 SLR International Corp	22122 20th AVE SE BLDG. H, SUITE 150 BOTHELL, WA 98021	DATE 4/08 DWN. BDT APPR. <i>BDT</i> REVIS. PROJECT NO. 001.0173.00007	FIGURE 7 FORMER ARCO SERVICE STATION #0855 4603 OCEAN BEACH HIGHWAY LONGVIEW, WASHINGTON CURRENT MONITORING WELL LOCATIONS
	T: 425-402-8800 F: 425-402-8488		



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BOON DOX
MARKET

BOON DOX
TAVERN

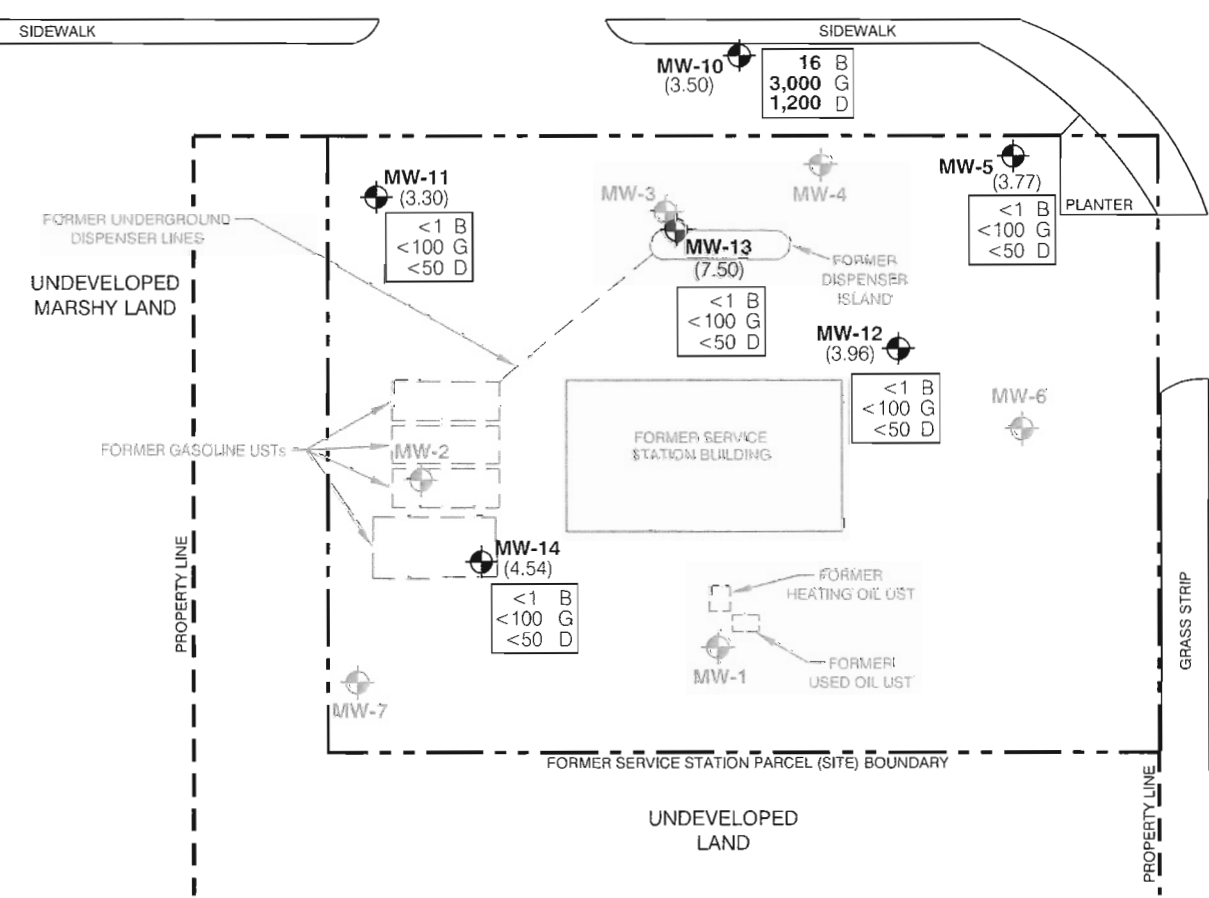
TEXACO SERVICE
STATION

LEGEND

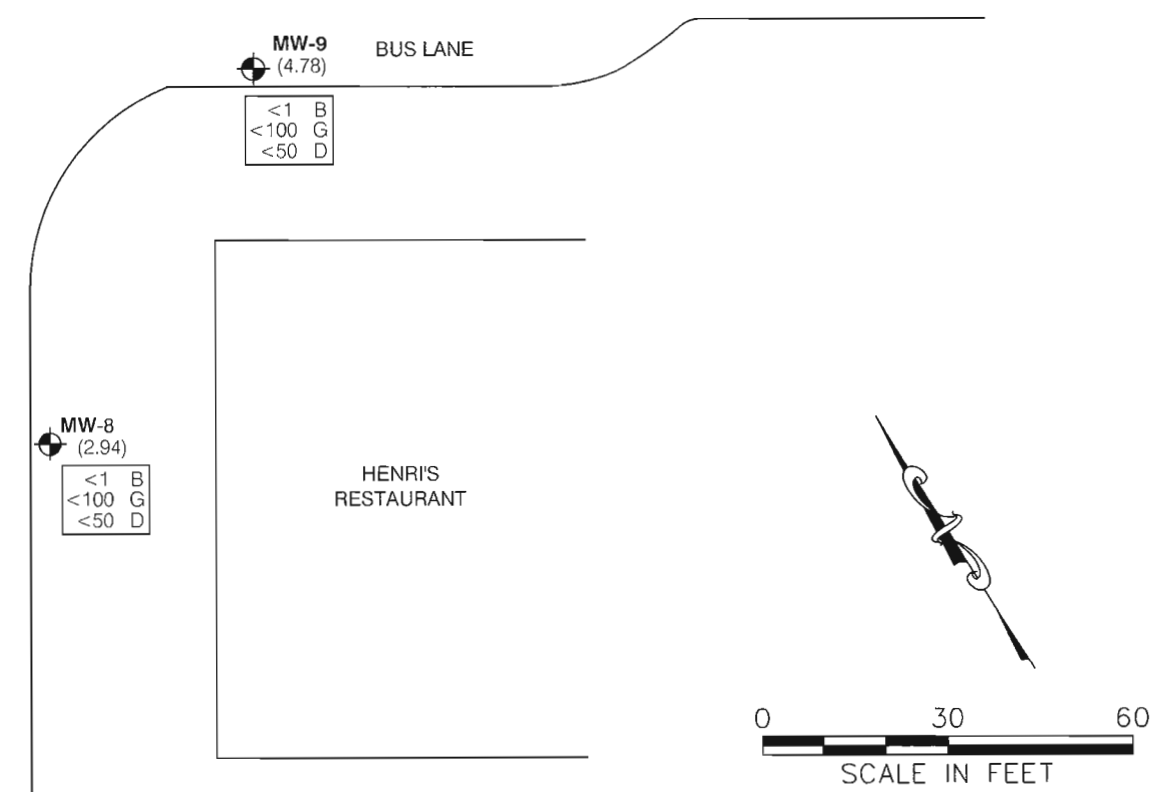
- MW-5**  SHALLOW GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- MW-2**  ABANDONED OR DESTROYED SHALLOW GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- (3.77) SHALLOW GROUNDWATER ELEVATION (IN FEET)
- | | |
|-------|---|
| 16 | B |
| 3,000 | G |
| 1,200 | D |
- B = BENZENE CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L)
G = GRO CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L)
D = DRO CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L)
VALUES IN BOLD EXCEED MTCA METHOD A CLEANUP LEVELS


NOTE:
THE LABORATORY REPORTED THAT THE PATTERN OF CHROMATOGRAM PEAKS IN THE SAMPLE FROM WELL MW-10 WAS NOT INDICATIVE OF DIESEL. THE REPORTED DIESEL CONCENTRATION IN THAT SAMPLE WAS LIKELY DUE TO OVERLAP FROM THE GASOLINE RANGE.

OCEAN BEACH HIGHWAY



46TH AVENUE



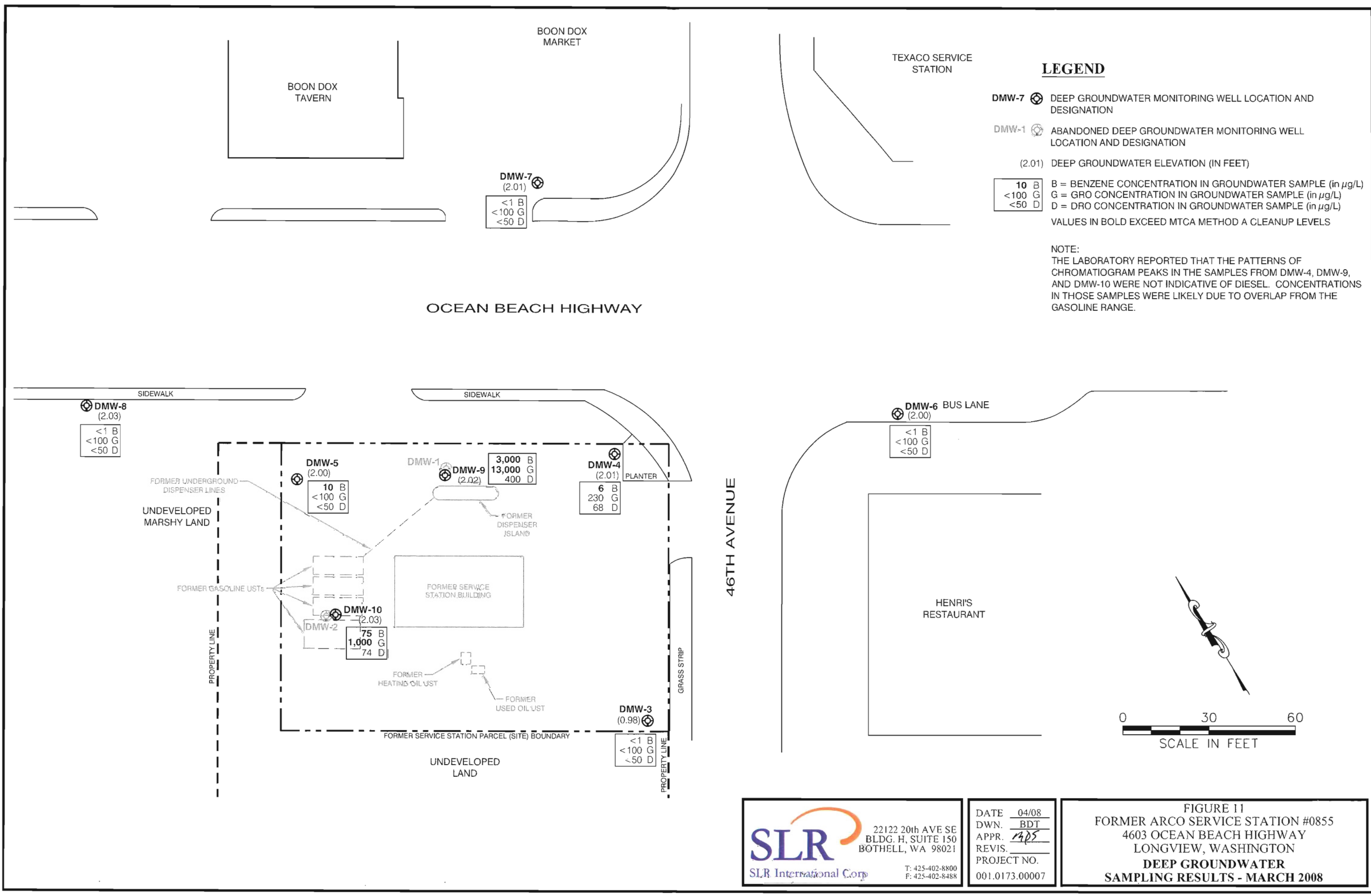


22122 20th AVE SE
BLDG. H, SUITE 150
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F: 425-402-8488

DATE 04/08
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PROJECT NO.
001.0173.00007

FIGURE 10
FORMER ARCO SERVICE STATION #0855
4603 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON
SHALLOW GROUNDWATER
SAMPLING RESULTS - MARCH 2008

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22122 20th AVE SE
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BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

DATE	04/08
DWN.	BDT
APPR.	1405
REVIS.	
PROJECT NO.	001.0173.00007

APPENDIX A
PROJECT PHOTOGRAPHS

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Demolition of former dispenser island and canopy.



Demolition of northeast side of former service station building.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Demolition of northwestern part of former service station building.



East to west view of former building and dispenser island locations.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Removal of former hydraulic hoist.



North to south view of former hoist excavation.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Northwest to southeast view of former oil sump.



Removal of former oil sump.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Southwest to northeast view of former oil sump excavation.



North to south view of site prior to backfilling of stockpiled soil into former hoist and sump excavations.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Northwest to southeast view of excavation at former heating oil and used oil UST area.



Southeast to northwest view of initial northern corner of excavation near the former dispenser island area.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington

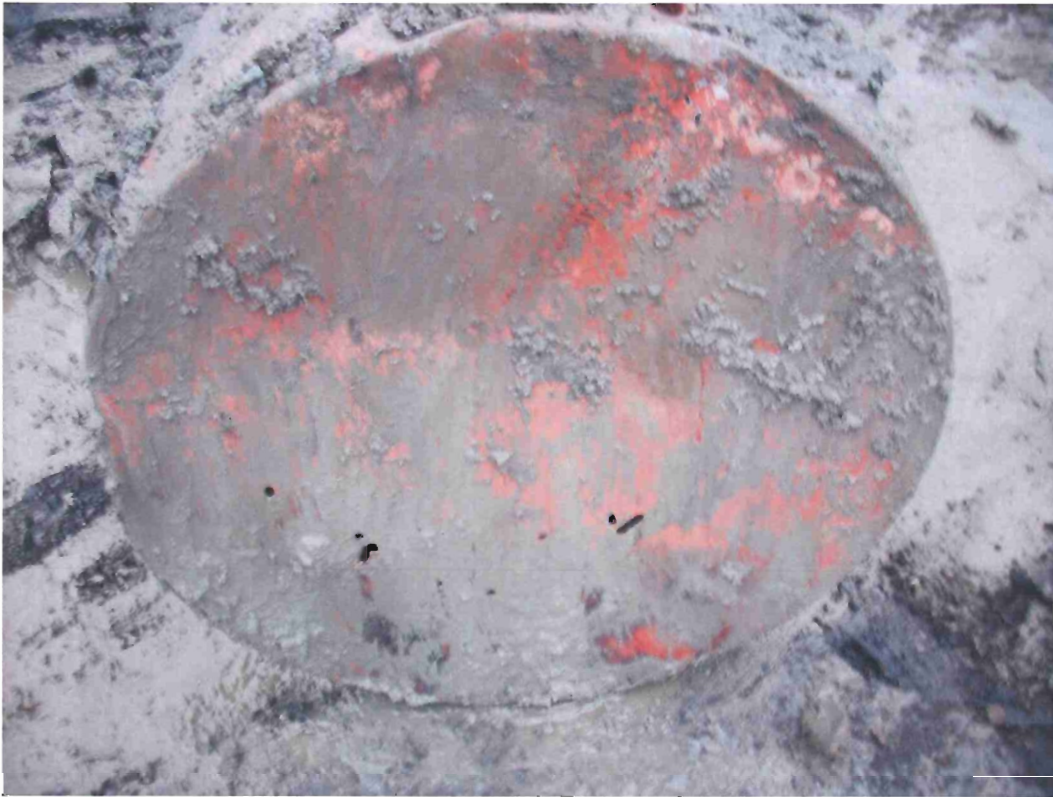


West to east view of excavation at the former dispenser island area.



Southwest to northeast view of the three USTs that were discovered in the eastern part of the excavation near the former dispenser island area.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Holes in end of northwesternmost UST (designated Tank 1).



The three USTs after removal.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Southwest to northeast view of the final northern and northeastern extents of excavation near the former dispenser island area.



Northwest to southeast view of the final northeastern and eastern extents of the excavation near the former dispenser island area.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Southwest to northeast view of final eastern extent of the excavation near the former dispenser island area.



East to west view of the final southern extent of the excavation near the former dispenser island area. The groundwater treatment system is in the background.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Southwest to northeast view of final western and northern areas of excavation near the former gasoline UST area.



Northeast to southwest view of the final western area of excavation near the former gasoline UST area.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



The groundwater treatment system, which consisted of a 21,000-gallon storage tank and a canister filled with 3,000 pounds of activated carbon.



Discharge of treated water to storm sewer system.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Backfilling the excavation near the former dispenser island area.



Backfilling near the ground surface with crushed rock.

PROJECT PHOTOGRAPHS
Former Arco Service Station #0855
Longview, Washington



Southwest to northeast view of backfilled excavation.



North to south view of backfilled excavation.

APPENDIX B
LABORATORY REPORTS

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

October 9, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on September 26, 2007 from the Longview Arco, F&BI 709299 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1009R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 26, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview Arco, F&BI 709299 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
709299-01	HOIST-EX-FLR-8'
709299-02	Soil Stockpile-1-1
709299-03	Soil Stockpile-1-2
709299-04	Soil Stockpile-1-3
709299-05	SUMP-EX-FLR-3'

The 8270C naphthalene laboratory control spike and laboratory control spike duplicate exceeded the acceptance criteria. The samples were flagged accordingly. All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/09/07
Date Received: 09/26/07
Project: Longview Arco, F&BI 709299
Date Extracted: 09/26/07
Date Analyzed: 09/28/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 67-127)
HOIST-EX-FLR-8' 709299-01	<50	<250	94
Soil Stockpile-1-1 709299-02	<50	<250	87
Soil Stockpile-1-2 709299-03	<50	<250	89
Soil Stockpile-1-3 709299-04	<50	<250	88
SUMP-EX-FLR-3' 709299-05	<50	<250	87
Method Blank	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	HOIST-EX-FLR-8'	Client:	SLR International Corp.
Date Received:	09/26/07	Project:	Longview Arco, F&BI 709299
Date Extracted:	09/27/07	Lab ID:	709299-01 1/5
Date Analyzed:	09/27/07	Data File:	092726.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	113	50	150
Benzo(a)anthracene-d12	104	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Soil Stockpile-1-1	Client:	SLR International Corp.
Date Received:	09/26/07	Project:	Longview Arco, F&BI 709299
Date Extracted:	09/27/07	Lab ID:	709299-02 1/5
Date Analyzed:	09/27/07	Data File:	092727.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	114	50	150
Benzo(a)anthracene-d12	103	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Soil Stockpile-1-2	Client:	SLR International Corp.
Date Received:	09/26/07	Project:	Longview Arco, F&BI 709299
Date Extracted:	09/27/07	Lab ID:	709299-03 1/5
Date Analyzed:	09/27/07	Data File:	092728.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	115	50	150
Benzo(a)anthracene-d12	104	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.016
Anthracene	0.017
Fluoranthene	<0.01
Pyrene	0.012
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Soil Stockpile-1-3	Client:	SLR International Corp.
Date Received:	09/26/07	Project:	Longview Arco, F&BI 709299
Date Extracted:	09/27/07	Lab ID:	709299-04 1/5
Date Analyzed:	09/27/07	Data File:	092729.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	116	50	150
Benzo(a)anthracene-d12	108	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	SUMP-EX-FLR-3'	Client:	SLR International Corp.
Date Received:	09/26/07	Project:	Longview Arco, F&BI 709299
Date Extracted:	09/27/07	Lab ID:	709299-05 1/5
Date Analyzed:	09/28/07	Data File:	092730.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	YA

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
Anthracene-d10	123	50	150
Benzo(a)anthracene-d12	107	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.012 jl
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	0.012
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	0.017
Benz(a)anthracene	<0.01
Chrysene	0.010
Benzo(a)pyrene	0.015
Benzo(b)fluoranthene	0.017
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	0.025
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	0.041

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Longview Arco, F&BI 709299
Date Extracted:	09/27/07	Lab ID:	071474mb2 1/5 rr
Date Analyzed:	09/28/07	Data File:	092808.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	163 vo	50	150
Benzo(a)anthracene-d12	159 vo	50	150

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/09/07

Date Received: 09/26/07

Project: Longview Arco, F&BI 709299

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL
SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: 709303-04 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	360	87	94	69-125	8

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	92	70-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/09/07

Date Received: 09/26/07

Project: Longview Arco, F&BI 709299

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: 709308-06 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Naphthalene	mg/kg (ppm)	<0.01	<0.01	nm
Acenaphthylene	mg/kg (ppm)	<0.01	<0.01	nm
Acenaphthene	mg/kg (ppm)	<0.01	<0.01	nm
Fluorene	mg/kg (ppm)	<0.01	<0.01	nm
Phenanthrene	mg/kg (ppm)	<0.01	<0.01	nm
Anthracene	mg/kg (ppm)	<0.01	<0.01	nm
Fluoranthene	mg/kg (ppm)	<0.01	<0.01	nm
Pyrene	mg/kg (ppm)	<0.01	<0.01	nm
Benz(a)anthracene	mg/kg (ppm)	<0.01	<0.01	nm
Chrysene	mg/kg (ppm)	<0.01	<0.01	nm
Benzo(b)fluoranthene	mg/kg (ppm)	<0.01	<0.01	nm
Benzo(k)fluoranthene	mg/kg (ppm)	<0.01	<0.01	nm
Benzo(a)pyrene	mg/kg (ppm)	<0.01	<0.01	nm
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	<0.01	<0.01	nm
Dibenz(a,h)anthracene	mg/kg (ppm)	<0.01	<0.01	nm
Benzo(g,h,i)perylene	mg/kg (ppm)	<0.01	<0.01	nm

Laboratory Code: 709308-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	101	50-150
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	103	16-167
Acenaphthene	mg/kg (ppm)	0.17	<0.01	103	58-108
Fluorene	mg/kg (ppm)	0.17	<0.01	104	57-113
Phenanthrene	mg/kg (ppm)	0.17	<0.01	103	30-138
Anthracene	mg/kg (ppm)	0.17	<0.01	104	42-132
Fluoranthene	mg/kg (ppm)	0.17	<0.01	108	45-145
Pyrene	mg/kg (ppm)	0.17	<0.01	109	44-139
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	96	17-134
Chrysene	mg/kg (ppm)	0.17	<0.01	105	10-157
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	98	37-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	108	28-134
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	99	55-115
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	92	61-104
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	96	69-100
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	98	60-105

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/09/07

Date Received: 09/26/07

Project: Longview Arco, F&BI 709299

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL
SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	110 vo	110 vo	66-106	0
Acenaphthylene	mg/kg (ppm)	0.17	105	108	63-110	3
Acenaphthene	mg/kg (ppm)	0.17	107	108	65-108	1
Fluorene	mg/kg (ppm)	0.17	110	111	63-112	1
Phenanthrene	mg/kg (ppm)	0.17	106	107	64-107	1
Anthracene	mg/kg (ppm)	0.17	106	106	64-107	0
Fluoranthene	mg/kg (ppm)	0.17	109	109	66-113	0
Pyrene	mg/kg (ppm)	0.17	110	110	66-111	0
Benz(a)anthracene	mg/kg (ppm)	0.17	99	98	55-103	1
Chrysene	mg/kg (ppm)	0.17	106	106	59-109	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	104	102	53-107	2
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	110	111	61-112	1
Benzo(a)pyrene	mg/kg (ppm)	0.17	98	95	60-111	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	99	97	59-111	2
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	102	101	56-114	1
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	104	101	60-110	3

Note: The calibration verification result for anthracene-d10 exceeded 15% deviation. The average deviation for all compounds was not greater than 15%; therefore, the initial calibration is considered valid.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.
- A1** - More than one compound of similar molecule structure was identified with equal probability.
- 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 this range fell outside of acceptance criteria. The value reported is an estimate.
- c** - The presence of the analyte indicated may be due to carryover from previous sample injections.
- d** - The sample was diluted. Detection limits may be raised due to dilution.
- ds** - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv** - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb** - The analyte indicated was found in the method blank. The result should be considered an estimate.
- fc** - The compound is a common laboratory and field contaminant.
- fp** - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.
- hr** - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht** - The sample was extracted outside of holding time. Results should be considered estimates.
- ip** - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j** - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr** - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc** - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.
- pr** - The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve** - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.
- vo** - The value reported fell outside the control limits established for this analyte.
- x** - The pattern of peaks present is not indicative of diesel.
- y** - The pattern of peaks present is not indicative of motor oil.

709299
Send Report To Michael Staton
Company SLR

SAMPLE CHAIN OF CUSTODY

ME 09-26-07

BOB

Sond Report To Michael Stanton

Company: SLR

Address 22122 20th Ave SE, Bldg. H Suite 150

Bothell, WA 98021

Phone # 425) 407-8800 Fax # 425) 407-8488

SAMPLERS (signature)

PROJECT NAME/NO.

Longview ARCO

REMARKS

TURNAROUND TIME

~~Standard (2 Weeks)~~

☐ RUSH _____
Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples

~~X~~ Will call with instructions

[illegible]

Friedman & Bruya, Inc.



3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax: (206) 283-5044

FORMS\COA\COA.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Jeremy Zimmer	SUR	9/25/07	12:05
Received by: 	Nihan Pham	FeBI	9/26/07	10:00
Relinquished by:				
Received by:		Samples received at:	°C	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 12, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 6, 2007 from the Longview, F&BI 711104 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1112R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 6, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711104 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711104-01	A2-SW-4'
711104-02	B2-SW-4'
711104-03	A3-SW-3.5'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/07
Date Received: 11/06/07
Project: Longview, F&BI 711104
Date Extracted: 11/09/07
Date Analyzed: 11/10/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
A2-SW-4' 711104-01	<0.02	<0.02	0.04	0.12	18	120
B2-SW-4' 711104-02	<0.02	<0.02	0.06	0.18	15	111
A3-SW-3.5' 711104-03	<0.02	<0.02	<0.02	<0.06	11	126
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	102

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/07
 Date Received: 11/06/07
 Project: Longview, F&BI 711104

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
 FOR BENZENE, TOLUENE, ETHYLBENZENE,
 XYLENES, AND TPH AS GASOLINE
 USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711091-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	80	70-130
Toluene	mg/kg (ppm)	0.5	78	70-130
Ethylbenzene	mg/kg (ppm)	0.5	80	70-130
Xylenes	mg/kg (ppm)	1.5	81	70-130
Gasoline	mg/kg (ppm)	20	86	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 12, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 8, 2007 from the Longview, F&BI 711122 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1112R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 8, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711122 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711122-01	A4-SW-4'
711122-02	A3-SW-10'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/07
Date Received: 11/08/07
Project: Longview, F&BI 711122
Date Extracted: 11/08/07
Date Analyzed: 11/09/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl</u> <u>Benzene</u>	<u>Total</u> <u>Xylenes</u>	<u>Gasoline</u> <u>Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
A4-SW-4' 711122-01	0.05	0.27	1.6	1.6	180	125
A3-SW-10' 711122-02	<0.02	<0.02	<0.02	<0.06	12	109
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	146

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/07

Date Received: 11/08/07

Project: Longview, F&BI 711122

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711117-08 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	90	66-121
Toluene	mg/kg (ppm)	0.5	96	72-128
Ethylbenzene	mg/kg (ppm)	0.5	96	69-132
Xylenes	mg/kg (ppm)	1.5	97	69-131
Gasoline	mg/kg (ppm)	20	106	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

15A/10A

SAMPLERS (signature) *Chris*

[illegible]

City, State, ZIP Bethel, WA

Phone # 6251 402-8800 Fax # 6251 402-8489

Phone # 6251 402-8800 Fax # 6251 402-8489

SAMPLERS (signature) *Chris*

[illegible]

REMARKS
24 Mr. Tennant

Page # _____ of _____
TURNAROUND TIME

☐ Standard (2 Weeks)
☒ CRUSH 24 7/7

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							Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	IIFS			
144-SW-4'	01-A-E	11/27/02	2:00	soil	5		X							
A3-SW-10'	02-A-E	↓	1:54	↓	5		X							
	</													

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE

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<p> 1. <u>NAME</u> 2. <u>ADDRESS</u> 3. <u>CITY</u> 4. <u>STATE</u> 5. <u>ZIP</u> 6. <u>PHONE</u> 7. <u>DATE</u> 8. <u>SIGNATURE</u> 9. <u>PRINT NAME</u> 10. <u>PRINT ADDRESS</u> 11. <u>PRINT CITY</u> 12. <u>PRINT STATE</u> 13. <u>PRINT ZIP</u> 14. <u>PRINT PHONE</u> 15. <u>PRINT DATE</u> 16. <u>PRINT SIGNATURE</u> 17. <u>PRINT NAME</u> 18. <u>PRINT ADDRESS</u> 19. <u>PRINT CITY</u> 20. <u>PRINT STATE</u> 21. <u>PRINT ZIP</u> 22. <u>PRINT PHONE</u> 23. <u>PRINT DATE</u> 24. <u>PRINT SIGNATURE</u> 25. <u>PRINT NAME</u> 26. <u>PRINT ADDRESS</u> 27. <u>PRINT CITY</u> 28. <u>PRINT STATE</u> 29. <u>PRINT ZIP</u> 30. <u>PRINT PHONE</u> 31. <u>PRINT DATE</u> 32. <u>PRINT SIGNATURE</u> 33. <u>PRINT NAME</u> 34. <u>PRINT ADDRESS</u> 35. <u>PRINT CITY</u> 36. <u>PRINT STATE</u> 37. <u>PRINT ZIP</u> 38. <u>PRINT PHONE</u> 39. <u>PRINT DATE</u> 40. <u>PRINT SIGNATURE</u> 41. <u>PRINT NAME</u> 42. <u>PRINT ADDRESS</u> 43. <u>PRINT CITY</u> 44. <u>PRINT STATE</u> 45. <u>PRINT ZIP</u> 46. <u>PRINT 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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 12, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 10, 2007 from the Longview, F&BI 711170 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1112R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 10, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711170 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID
711170-01

SLR International Corp.
B2-SW-10'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/07
Date Received: 11/10/07
Project: Longview, F&BI 711170
Date Extracted: 11/10/07
Date Analyzed: 11/10/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
B2-SW-10' 711170-01	0.04	<0.02	<0.02	<0.06	7	106
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	150

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/12/07

Date Received: 11/10/07

Project: Longview, F&BI 711170

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711088-12 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	76	66-121
Toluene	mg/kg (ppm)	0.5	78	72-128
Ethylbenzene	mg/kg (ppm)	0.5	78	69-132
Xylenes	mg/kg (ppm)	1.5	80	69-131
Gasoline	mg/kg (ppm)	20	106	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

HO VS

11/07/10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 19, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 14, 2007 from the Longview, F&BI 711198 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1119R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 14, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711198 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711198-01	Tank2-FL-8'
711198-02	A5-SW-4'
711198-03	Tank1-FL-8'
711198-04	Tank3-FL-8'
711198-05	C1-SW-4'
711198-06	C1-SW-10'
711198-07	C2-FL-15'
711198-08	B2-SW(2)-10'
711198-09	B1-SW-4'
711198-10	D1-SW-4'
711198-11	D2-FL-15'
711198-12	A4-SW(2)-4'
711198-13	A4-SW(2)-10'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07
Date Received: 11/14/07
Project: Longview, F&BI 711198
Date Extracted: 11/14/07
Date Analyzed: 11/15/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
Tank2-FL-8' 711198-01	<0.02	<0.02	<0.02	<0.06	4	88
A5-SW-4' 711198-02	<0.02	0.13	0.13	0.45	36	70
Tank1-FL-8' 711198-03	0.10	<0.02	0.04	<0.06	8	110
Tank3-FL-8' 711198-04	<0.02	<0.02	<0.02	<0.06	<2	98
C1-SW-4' 711198-05	<0.02	<0.02	<0.02	<0.06	<2	56
C1-SW-10' 711198-06	<0.02	<0.02	<0.02	<0.06	<2	107
C2-FL-15' 711198-07	<0.02	0.07	1.4	0.31	37	122
B2-SW(2)-10' 711198-08	<0.02	<0.02	0.06	<0.06	16	146
B1-SW-4' 711198-09	<0.02	<0.02	<0.02	<0.06	<2	103
D1-SW-4' 711198-10	<0.02	<0.02	<0.02	<0.06	<2	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07
Date Received: 11/14/07
Project: Longview, F&BI 711198
Date Extracted: 11/14/07
Date Analyzed: 11/15/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
D2-FL-15' 711198-11	<0.02	<0.02	<0.02	<0.06	6	107
A4-SW(2)-4' 711198-12	<0.02	0.05	0.06	0.12	14	93
A4-SW(2)-10' 711198-13	0.07	<0.02	0.07	<0.06	44	119
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	137

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07
Date Received: 11/14/07
Project: Longview, F&BI 711198
Date Extracted: 11/14/07
Date Analyzed: 11/14/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 67-127)
Tank2-FL-8' 711198-01	<50	<250	93
A5-SW-4' 711198-02	<50	<250	94
Tank1-FL-8' 711198-03	<50	<250	89
Tank3-FL-8' 711198-04	<50	<250	90
Method Blank	<50	<250	103

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07
Date Received: 11/14/07
Project: Longview, F&BI 711198
Date Extracted: 11/14/07
Date Analyzed: 11/14/07 and 11/15/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL
USING METHOD NWTPH-Dx**

**Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Surrogate</u> (% Recovery) (Limit 67-127)
D1-SW-4' 711198-10	<50	105
D2-FL-15' 711198-11	<50	95
Method Blank	<50	103

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07

Date Received: 11/14/07

Project: Longview, F&BI 711198

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-G_x**

Laboratory Code: 711203-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	92	66-121
Toluene	mg/kg (ppm)	0.5	96	72-128
Ethylbenzene	mg/kg (ppm)	0.5	96	69-132
Xylenes	mg/kg (ppm)	1.5	99	69-131
Gasoline	mg/kg (ppm)	20	103	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07

Date Received: 11/14/07

Project: Longview, F&BI 711198

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

Laboratory Code: 711198-10 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	94	89	69-125	5

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	87	70-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/19/07

Date Received: 11/14/07

Project: Longview, F&BI 711198

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

Laboratory Code: 711198-10 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	94	89	69-125	5

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	87	70-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

v0 - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

7/11/98

SAMPLE CHAIN OF CUSTODY ME 11-14-07

VS4/A04

Page # 1 of 2

TURNAROUND TIME
☐ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

SAMPLERS (signature) *Chris*
PROJECT NAME/NO. PO #
REMARKS
24 hr turnaround on 4 samples
New TPH-DX after silica gel clean-up

Send Report To Mike Staton
Company SLR
Address 22222 70th Ave SE, Bldg 4, Ste 150
City, State, ZIP Bothell, WA
Phone # (425) 402-8900 Fax # (425) 402-8900
Relinquished by: *Chris*
Received by: *David*
Relinquished by:

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED						Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HRS	
Tank 2-FL-8'	01 A-E	11/12/07		S	4	X	X	X				8-PM MS 11/14/07 24
A5-SW-4'	02 A-E					X	X	X				openable To flow-up based on
Tank 1-FL-8'	03 A-E					X	X	X				TPH-D, 11/10 (Call Mike)
Tank 3-FL-8'	04 A-E					X	X	X				
C1-SW-4'	05 A-E	11/13/07	850			X	X	X				
C1-SW-10'	06 A-E		855			X	X	X				
C2-FL-15'	07 A-E		915			X	X	X				
B2-SW(2)-10'	08 A-E		925			X	X	X				
B1-SW-4'	09 A-E		1045			X	X	X				
D1-SW-4'	10 A-E		1103			X	X	X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044
FORMS\COC\COC.DOC

Relinquished by: *Chris*
Received by: *David*
Relinquished by:

SIGNATURE PRINT NAME COMPANY DATE TIME
11/13/07 5:05
11-14/07 8:00 AM
Samples received at 3 °C

004/1104

SAMPLERS (signature)

PROJECT NAME/NO.	PO #
------------------	------

PO #

REMARKS

Del. by turnaround on samples

Fax #

Page # 2 of 2

TURNAROUND TIME

☐ Standard (2 Weeks)

~~CRUSH~~ 24/2

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

- Return samples

☐ Will call with instructions

ANALYSES REQUESTED													
Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Notes	
D2-FL-15'	11	11/3/07	12:15	S	4	X	X	X					
A4-SW(2)-4'	12 A-E	↓	2:15	↓	↓	X	X	X				*	
A4-SW(2)-10'	13 A-E	↓	2:25	↓	↓	X	X	X				*	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 21, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 15, 2007 from the Longview, F&BI 711208 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1121R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 15, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711208 project.

Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711208-01	C3-FL-11'
711208-02	C3-SW-4'
711208-03	C3-SW-10'
711208-04	D3-SW-4'
711208-05	D4-FL-8'
711208-06	D4-SW-4'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/21/07
Date Received: 11/15/07
Project: Longview, F&BI 711208
Date Extracted: 11/15/07
Date Analyzed: 11/15/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
C3-FL-11' 711208-01	<0.02	<0.02	<0.02	<0.06	12	124
C3-SW-4' 711208-02	<0.02	<0.02	<0.02	0.26	25	132
C3-SW-10' 711208-03	<0.02	<0.02	<0.02	<0.06	<2	110
D3-SW-4' 711208-04	<0.02	<0.02	<0.02	<0.06	<2	128
D4-FL-8' 711208-05	<0.02	<0.02	<0.02	<0.06	<2	130
D4-SW-4' 711208-06	<0.02	<0.02	<0.02	<0.06	<2	123
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/21/07
Date Received: 11/15/07
Project: Longview, F&BI 711208
Date Extracted: 11/15/07
Date Analyzed: 11/16/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-D_x**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 67-127)
D3-SW-4' 711208-04	<50	<250	104
D4-FL-8' 711208-05	<50	<250	101
D4-SW-4' 711208-06	<50	<250	97
Method Blank	<50	<250	111

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/21/07

Date Received: 11/15/07

Project: Longview, F&BI 711208

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 711207-08 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	106	66-121
Toluene	mg/kg (ppm)	0.5	102	72-128
Ethylbenzene	mg/kg (ppm)	0.5	100	69-132
Xylenes	mg/kg (ppm)	1.5	100	69-131
Gasoline	mg/kg (ppm)	20	92	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/21/07

Date Received: 11/15/07

Project: Longview, F&BI 711208

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: 711209-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	98	94	69-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	93	70-127

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

104/A01



e)  

PROJECT NAME/NO.

REMARKS

24 hr turnaround
- possible follow-up on DET (call mthru)

Phone # (425) 402-8488 Fax # (425) 402-8488

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:		Chris Krume	SCR	4/14/07	4:13	
Received by:		May Law	FEB I	11/15/07	09:00	
Relinquished by:						
Received by:						

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 26, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 16, 2007 from the Longview, F&BI 711234 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1126R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 16, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711234 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711234-01	D2-SW-4'
711234-02	D1-SW-10'
711234-03	E2-SW-4'
711234-04	E1-SW-4'
711234-05	D2-SW-10'
711234-06	E2-FL-6'
711234-07	D1-FL-11'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/26/07
Date Received: 11/16/07
Project: Longview, F&BI 711234
Date Extracted: 11/16/07
Date Analyzed: 11/17/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
D2-SW-4' 711234-01	<0.02	<0.02	<0.02	<0.06	<2	64
D1-SW-10' 711234-02	<0.02	<0.02	<0.02	<0.06	<2	87
E2-SW-4' 711234-03	<0.02	<0.02	<0.02	<0.06	<2	79
E1-SW-4' 711234-04	<0.02	<0.02	<0.02	<0.06	<2	66
D2-SW-10' 711234-05	<0.02	<0.02	<0.02	<0.06	<2	90
E2-FL-6' 711234-06	<0.02	<0.02	<0.02	<0.06	6	102
D1-FL-11' 711234-07	<0.02	<0.02	<0.02	<0.06	8	83
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	70

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/26/07
Date Received: 11/16/07
Project: Longview, F&BI 711234
Date Extracted: 11/16/07
Date Analyzed: 11/19/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL**

USING METHOD NWTPH-Dx

**Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Surrogate</u> (% Recovery) (Limit 53-144)
D2-SW-4' 711234-01	<50	94
D1-SW-10' 711234-02	<50	97
E2-SW-4' 711234-03	<50	98
E1-SW-4' 711234-04	<50	95
D2-SW-10' 711234-05	<50	96
E2-FL-6' 711234-06	<50	102
D1-FL-11' 711234-07	<50	92
Method Blank	<50	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/26/07

Date Received: 11/16/07

Project: Longview, F&BI 711234

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 711234-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	102	70-130
Toluene	mg/kg (ppm)	0.5	96	70-130
Ethylbenzene	mg/kg (ppm)	0.5	94	70-130
Xylenes	mg/kg (ppm)	1.5	93	70-130
Gasoline	mg/kg (ppm)	20	83	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/26/07

Date Received: 11/16/07

Project: Longview, F&BI 711234

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-D_x**

Laboratory Code: 711216-02 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	85	87	71-137	2

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	83	70-129

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

BOZ/VS2

FORMS\COC\COC.DOC

Remained in	Remained in
Remained in	Remained in

Dalvi

$$= 32.$$

11-16-07 JAC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 27, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the water results from the testing of material submitted on November 9, 2007 from the Longview, F&BI 711147 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 should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1127R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 9, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711147 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711147-01	Inf-11807
711147-02	A2-SW(2)-4'
711147-03	A2-SW(2)-10'
711147-04	A3-FL-15'
711147-05	B3-FL-15'
711147-06	A4-FL-15'
711147-07	B4-FL-15'
711147-08	A4-SW-10'
711147-09	Trip Blank

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07
Date Received: 11/09/07
Project: Longview, F&BI 711147
Date Extracted: 11/12/07
Date Analyzed: 11/12/07

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl</u> <u>Benzene</u>	<u>Total</u> <u>Xylenes</u>	<u>Gasoline</u> <u>Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 52-124)
Inf-11807 d 711147-01 1/5	70	92	94	420	3,100	96
Method Blank	<1	<1	<1	<3	<100	108

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07
Date Received: 11/09/07
Project: Longview, F&BI 711147
Date Extracted: 11/09/07
Date Analyzed: 11/09/07

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx**
Results Reported as ug/L (ppb)

<u>Sample ID</u>	<u>Diesel Range</u>	<u>Motor Oil Range</u>	<u>Surrogate</u>
Laboratory ID	(C ₁₀ -C ₂₅)	(C ₂₅ -C ₃₆)	(% Recovery)
			(Limit 51-132)
Inf-11807 711147-01	1,700 x	330	75
Method Blank	<50	<250	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Inf-11807	Client:	SLR International Corp.
Date Received:	11/09/07	Project:	Longview, F&BI 711147
Date Extracted:	11/13/07	Lab ID:	711147-01
Date Analyzed:	11/13/07	Data File:	711147-01.076
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Bismuth	80	60	125

Analyte:	Concentration ug/L (ppb)
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Lead	15.2
------	------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	Longview, F&BI 711147
Date Extracted:	11/13/07	Lab ID:	I7-419 mb
Date Analyzed:	11/13/07	Data File:	I7-419 mb.074
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	HR

Internal Standard:	% Recovery:	Lower	Upper
Bismuth	109	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Lead	<1
------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Inf-11807	Client:	SLR International Corp.
Date Received:	11/09/07	Project:	Longview, F&BI 711147
Date Extracted:	11/09/07	Lab ID:	711147-01
Date Analyzed:	11/09/07	Data File:	110920.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	115	50	150
Benzo(a)anthracene-d12	93	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	52 ve
Acenaphthylene	<0.1
Acenaphthene	0.10
Fluorene	<0.1
Phenanthrene	<0.1
Anthracene	<0.1
Fluoranthene	<0.1
Pyrene	<0.1
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1
Benzo(g,h,i)perylene	<0.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Inf-11807	Client:	SLR International Corp.
Date Received:	11/09/07	Project:	Longview, F&BI 711147
Date Extracted:	11/09/07	Lab ID:	711147-01 1/10
Date Analyzed:	11/09/07	Data File:	110919.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	232 ds	50	150
Benzo(a)anthracene-d12	81	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	58
Acenaphthylene	<1
Acenaphthene	<1
Fluorene	<1
Phenanthrene	<1
Anthracene	<1
Fluoranthene	<1
Pyrene	<1
Benz(a)anthracene	<1
Chrysene	<1
Benzo(a)pyrene	<1
Benzo(b)fluoranthene	<1
Benzo(k)fluoranthene	<1
Indeno(1,2,3-cd)pyrene	<1
Dibenz(a,h)anthracene	<1
Benzo(g,h,i)perylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Longview, F&BI 711147
Date Extracted:	11/09/07	Lab ID:	071802mb
Date Analyzed:	11/09/07	Data File:	110918.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	119	50	150
Benzo(a)anthracene-d12	77	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.1
Acenaphthylene	<0.1
Acenaphthene	<0.1
Fluorene	<0.1
Phenanthrene	<0.1
Anthracene	<0.1
Fluoranthene	<0.1
Pyrene	<0.1
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1
Benzo(g,h,i)perylene	<0.1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/09/07

Project: Longview, F&BI 711147

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711142-10 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	5	4	22 a
Toluene	ug/L (ppb)	16	16	0
Ethylbenzene	ug/L (ppb)	3	3	0
Xylenes	ug/L (ppb)	8	8	0
Gasoline	ug/L (ppb)	610	590	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	25	102	65-118
Toluene	ug/L (ppb)	25	105	72-122
Ethylbenzene	ug/L (ppb)	25	106	73-126
Xylenes	ug/L (ppb)	75	109	74-118
Gasoline	ug/L (ppb)	1,000	105	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/09/07

Project: Longview, F&BI 711147

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	91	89	67-141	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/09/07

Project: Longview, F&BI 711147

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 711159-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	ug/L (ppb)	<1	<1	nm	0-20

Laboratory Code: 711159-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Lead	ug/L (ppb)	10	<1	102	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	98	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/09/07

Project: Longview, F&BI 711147

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	95	95	70-130	0
Acenaphthylene	ug/L (ppb)	5	102	100	70-130	2
Acenaphthene	ug/L (ppb)	5	98	97	70-130	1
Fluorene	ug/L (ppb)	5	96	93	70-130	3
Phenanthrene	ug/L (ppb)	5	98	96	70-130	2
Anthracene	ug/L (ppb)	5	106	107	70-130	1
Fluoranthene	ug/L (ppb)	5	101	102	70-130	1
Pyrene	ug/L (ppb)	5	100	101	70-130	1
Benz(a)anthracene	ug/L (ppb)	5	82	81	70-130	1
Chrysene	ug/L (ppb)	5	92	93	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	99	93	70-130	6
Benzo(k)fluoranthene	ug/L (ppb)	5	115	114	70-130	1
Benzo(a)pyrene	ug/L (ppb)	5	111	108	70-130	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	97	90	70-130	7
Dibenz(a,h)anthracene	ug/L (ppb)	5	111	109	70-130	2
Benzo(g,h,i)perylene	ug/L (ppb)	5	107	104	70-130	3

Note: The calibration verification result for indeno(1,2,3-cd)pyrene exceeded 15% deviation. The average deviation for all compounds was not greater than 15%; therefore, the initial calibration is considered valid.

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

71147

SAMPLE CHAIN OF CUSTODY

M.E. 11/9/07 CI3/KS/V

Send Report To Nike StationCompany SLRAddress 22122 70th Ave SE, Bldg H, Ste. 150City, State, ZIP Bothell, WAPhone # (206) 402-8800 Fax # (206) 402-8848SAMPLERS (signature) Chris Kramer

PROJECT NAME/NO.

PO #

REMARKS

48 turnaround for Water (w)
24 for 4 samplesPage # 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

ANALYSES REQUESTED						# of containers	Sample Type	Time Sampled	Lab ID	Date Sampled	Notes
TPH-Diesel	TPH-Gasoline	RTX by 8021B	VOCs by 8260	SVOCs by 8270	IIFS						
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	
X											

Samples received at 4:00

AA (HA)

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE

Relinquished by:

Chris Kramer

Received by:

H. Ormoye

Relinquished by:

Received by:

PRINT NAME

Chris Kramer

COMPANY

SLR

DATE

11/8/07

TIME

5:00 pm

11/9/07

9:00A

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 27, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 19, 2007 from the Longview, F&BI 711257 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1127R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 19, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview, F&BI 711257 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711257-01	E1-FL-5'
711257-02	C4-SW-4'
711257-03	C4-SW-10'
711257-04	C4-FL-11'
711257-05	A4-SW(3)-10'
711257-06	A5-SW(2)-4'
711257-07	Tank1-FL(2)-12'
711257-08	B5-FL-8'
711257-09	B5-SW-4'
711257-10	A5-SW-10'

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07
Date Received: 11/19/07
Project: Longview, F&BI 711257
Date Extracted: 11/19/07
Date Analyzed: 11/19/07 and 11/20/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
E1-FL-5' 711257-01	<0.02	<0.02	<0.02	<0.06	<2	133
C4-SW-4' 711257-02	<0.02	0.05	<0.02	0.13	14	99
C4-SW-10' 711257-03	<0.02	<0.02	<0.02	<0.06	<2	122
C4-FL-11' 711257-04	<0.02	<0.02	<0.02	<0.06	5	125
A4-SW(3)-10' 711257-05	0.24	<0.02	0.30	<0.06	22	124
A5-SW(2)-4' 711257-06	<0.02	0.15	0.26	1.0	39	ip
Tank1-FL(2)-12' 711257-07	0.06	0.15	0.06	<0.06	29	148
B5-FL-8' 711257-08	<0.02	0.05	<0.02	<0.06	10	126
B5-SW-4' 711257-09	<0.02	0.06	<0.02	0.32	17	84

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/19/07

Project: Longview, F&BI 711257

Date Extracted: 11/19/07

Date Analyzed: 11/19/07 and 11/20/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
A5-SW-10' 711257-10	<0.02	<0.02	<0.02	<0.06	6	125
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07
Date Received: 11/19/07
Project: Longview, F&BI 711257
Date Extracted: 11/19/07
Date Analyzed: 11/20/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)**

<u>Sample ID</u>	<u>Diesel Range</u>	<u>Surrogate</u>
Laboratory ID	(C ₁₀ -C ₂₅)	(% Recovery)
		(Limit 50-150)
E1-FL-5'	<50	91
711257-01		
Method Blank	<50	91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/19/07

Project: Longview, F&BI 711257

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711256-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	96	70-130
Toluene	mg/kg (ppm)	0.5	96	70-130
Ethylbenzene	mg/kg (ppm)	0.5	92	70-130
Xylenes	mg/kg (ppm)	1.5	93	70-130
Gasoline	mg/kg (ppm)	20	115	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/19/07

Project: Longview, F&BI 711257

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

Laboratory Code: 711251-01 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	92	91	50-150	1

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

711257

SAMPLE CHAIN OF CUSTODY ME 11-19-07

801 / 152

Send Report To Mike Station

Company SLR

Address 22122 20th Ave SE ; Bldg H; Ste. 150

City, State, ZIP Bothell, WA

Phone # (425) 402-8800 Fax #

SAMPLERS (signature) <u>Chris Kemer</u>	
PROJECT NAME/NO.	PO #
REMARKS <u>24 hr. turnaround</u> <u>5 Blank Vials for weight Average</u>	

Page # _____ of _____
TURNAROUND TIME <input type="checkbox"/> Standard (2 Weeks) <input checked="" type="checkbox"/> RUSH <u>24 hr.</u>
Rush charges authorized by: _____
SAMPLE DISPOSAL <input type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Return samples <input type="checkbox"/> Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	IIFS	
E1-FL-5'	01A-E	11/15/07	953	S	5	X	X	X				* possible follow up for Det
C4-SW-4'	02A-D		1153		4	X	X	X				
C4-SW-10'	03A-D		1156		4	X	X	X				
C4-FL-11'	04A-D		1201		4	X	X	X				
A4-SW(3)-10'	05A-D		312		4	X	X	X				
A5-SW(2)-4'	06A-D		325		4	X	X	X				
Tank 1-FL(2)-12'	07A-D	11/16/07	751		4	X	X	X				
B5-FL-8'	08A-D		940		4	X	X	X				
B5-SW-4'	09A-D		935		4	X	X	X				
A5-SW-10'	10A-D		922	↓	4	X	X	X				

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044	SIGNATURE <u>Chris Kemer</u> Relinquished by Received by: <u>mmj and</u> Relinquished by: Received by:	PRINT NAME <u>Chris Kemer</u> <u>Diana Phan</u>	COMPANY <u>SLR</u> <u>FEBIT</u>	DATE <u>11/16/07</u> <u>11/19/07</u>	TIME <u>142</u> <u>08:30</u>
Samples received at: <u>4 °C</u>					

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 27, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 20, 2007 from the Longview PO 001.0173.00007, F&BI 711270 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1127R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 20, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview PO 001.0173.00007, F&BI 711270 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711270-01	C6-SW-4
711270-02	C6-FL-7
711270-03	C5-SW-4
711270-04	C5-FL-7
711270-05	B6-SW-4
711270-06	B6-FL-7

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/20/07

Project: Longview PO 001.0173.00007, F&BI 711270

Date Extracted: 11/20/07 and 11/21/07

Date Analyzed: 11/20/07 and 11/21/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
C6-SW-4 711270-01	<0.02	<0.02	<0.02	<0.06	<2	146
C6-FL-7 711270-02	<0.02	0.17	0.06	0.11	16	104
C5-SW-4 711270-03	<0.02	<0.02	<0.02	<0.06	6	128
C5-FL-7 711270-04	<0.02	<0.02	<0.02	<0.06	<2	107
B6-SW-4 711270-05	<0.02	<0.02	0.08	0.39	8	122
B6-FL-7 711270-06	<0.02	0.07	0.09	0.30	16	99
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	77
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/20/07

Project: Longview PO 001.0173.00007, F&BI 711270

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711270-04 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	88	70-130
Toluene	mg/kg (ppm)	0.5	84	70-130
Ethylbenzene	mg/kg (ppm)	0.5	82	70-130
Xylenes	mg/kg (ppm)	1.5	83	70-130
Gasoline	mg/kg (ppm)	20	88	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 27, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 21, 2007 from the Longview 001.0173.00007, F&BI 711291 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1127R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 21, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview 001.0173.00007, F&BI 711291 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711291-01	Tank1-FL(3)-14
711291-02	A4-SW(4)-10

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/21/07

Project: Longview 001.0173.00007, F&BI 711291

Date Extracted: 11/21/07

Date Analyzed: 11/21/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl</u> <u>Benzene</u>	<u>Total</u> <u>Xylenes</u>	<u>Gasoline</u> <u>Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
Tank1-FL(3)-14 711291-01	0.06	0.18	<0.02	<0.06	15	127
A4-SW(4)-10 711291-02	1.1	<0.02	2.6	1.8	36	124
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/27/07

Date Received: 11/21/07

Project: Longview 001.0173.00007, F&BI 711291

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711238-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	106	70-130
Toluene	mg/kg (ppm)	0.5	102	70-130
Ethylbenzene	mg/kg (ppm)	0.5	100	70-130
Xylenes	mg/kg (ppm)	1.5	101	70-130
Gasoline	mg/kg (ppm)	20	91	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 28, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 21, 2007 from the 001.0173.00007 Longview, F&BI 711306 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1128R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 21, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. 001.0173.00007 Longview, F&BI 711306 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

711306-01

SLR International Corp.

A5-SW(3)-4

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/28/07

Date Received: 11/21/07

Project: 001.0173.00007 Longview, F&BI 711306

Date Extracted: 11/26/07

Date Analyzed: 11/26/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
A5-SW(3)-4 711306-01	<0.02	<0.02	<0.02	<0.06	<2	98
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/28/07

Date Received: 11/21/07

Project: 001.0173.00007 Longview, F&BI 711306

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711293-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	104	70-130
Toluene	mg/kg (ppm)	0.5	100	70-130
Ethylbenzene	mg/kg (ppm)	0.5	98	70-130
Xylenes	mg/kg (ppm)	1.5	99	70-130
Gasoline	mg/kg (ppm)	20	79	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

711306
Send Report To MIKE STATION
Company SUR Int'l
Address 22122- 20th Ave. SE #H-150
City, State, ZIP Bothell, WA 98021
Phone # 425-402-8800 Fax # 425-402-8488

SAMPLE CHAIN OF CUSTODY

ME-11-21-07-

$$V_{SI}/V_{SI}$$

Page # _____ of _____

SAMPLERS (signature)

Company SLR Int'l

PROJECT NAME/NO.
001.0173.00007-

OJ

001-073,0007

Longview

City, State, ZIP Bothell, WA 98021

Phone # 425-402-8800 Fax # 425-402-8488

TURNAROUND TIME

□ Standard (2 Weeks)

~~RUSH~~

Rush charges authorized by:

CN



SAMPLE DISPOSAL

☐ Dispose after 30 days

□ Return samples

□ Will call with instructions

[illegible]

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	CHRIS LEE	SLR	11-21-06	1500
Received by: 	Alexandra Yershova	F/B	11-24-06	15:15
Relinquished by:				
Received by:	Samples received at 4 °C			

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.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 30, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on November 27, 2007 from the Longview 001.0173.00007, F&BI 711328 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1130R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 27, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview 001.0173.00007, F&BI 711328 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
711328-01	Tank1-FL(4)-15
711328-02	A4-SW(5)-10

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/30/07

Date Received: 11/27/07

Project: Longview 001.0173.00007, F&BI 711328

Date Extracted: 11/27/07

Date Analyzed: 11/27/07

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 50-150)
Tank1-FL(4)-15 711328-01	<0.02	0.04	<0.02	<0.06	4	80
A4-SW(5)-10 711328-02	<0.02	<0.02	<0.02	<0.06	15	102
Method Blank	<0.02	<0.02	<0.02	<0.06	<2	90

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/30/07

Date Received: 11/27/07

Project: Longview 001.0173.00007, F&BI 711328

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 711293-21 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	108	70-130
Toluene	mg/kg (ppm)	0.5	102	70-130
Ethylbenzene	mg/kg (ppm)	0.5	100	70-130
Xylenes	mg/kg (ppm)	1.5	101	70-130
Gasoline	mg/kg (ppm)	20	72	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

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

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

December 7, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the additional results from the testing of material submitted on November 27, 2007 from the 001.0173.00007 Longview, F&BI 711336 project. There are 5 pages included in this report.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1207R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 27, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. 001.0173.00007 Longview, F&BI 711336 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID
711336-01

SLR International Corp.
Effluent-1127

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Effluent-1127	Client:	SLR International Corp.
Date Received:	11/27/07	Project:	001.0173.00007 Longview
Date Extracted:	11/28/07	Lab ID:	711336-01
Date Analyzed:	12/06/07	Data File:	120520.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	104	50	150
Benzo(a)anthracene-d12	93	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270C SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	001.0173.00007 Longview
Date Extracted:	11/28/07	Lab ID:	071923mb
Date Analyzed:	12/06/07	Data File:	120519.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	105	50	150
Benzo(a)anthracene-d12	99	50	150

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
Acenaphthylene	<0.03
Acenaphthene	<0.03
Fluorene	<0.03
Phenanthrene	<0.03
Anthracene	<0.03
Fluoranthene	<0.03
Pyrene	<0.03
Benz(a)anthracene	<0.03
Chrysene	<0.03
Benzo(a)pyrene	<0.03
Benzo(b)fluoranthene	<0.03
Benzo(k)fluoranthene	<0.03
Indeno(1,2,3-cd)pyrene	<0.03
Dibenz(a,h)anthracene	<0.03
Benzo(g,h,i)perylene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/07/07

Date Received: 11/27/07

Project: 001.0173.00007 Longview, F&BI 711336

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PNA'S BY EPA METHOD 8270C SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	86	89	70-130	3
Acenaphthylene	ug/L (ppb)	5	88	92	70-130	4
Acenaphthene	ug/L (ppb)	5	87	91	70-130	4
Fluorene	ug/L (ppb)	5	86	88	70-130	2
Phenanthrene	ug/L (ppb)	5	87	90	70-130	3
Anthracene	ug/L (ppb)	5	84	89	70-130	6
Fluoranthene	ug/L (ppb)	5	88	92	70-130	4
Pyrene	ug/L (ppb)	5	88	92	70-130	4
Benz(a)anthracene	ug/L (ppb)	5	84	89	70-130	6
Chrysene	ug/L (ppb)	5	88	93	70-130	6
Benzo(b)fluoranthene	ug/L (ppb)	5	99	100	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	87	92	70-130	6
Benzo(a)pyrene	ug/L (ppb)	5	90	94	70-130	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	95	97	70-130	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	91	95	70-130	4
Benzo(g,h,i)perylene	ug/L (ppb)	5	91	93	70-130	2

Note: The initial calibration verification result for anthracene-d10 exceeded 15% deviation. The average deviation for all compounds was not greater than 15%; therefore, the initial calibration is considered valid.

Note: The calibration verification result for anthracene-d10 exceeded 15% deviation. The average deviation for all compounds was not greater than 15%; therefore, the initial calibration is considered valid.

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.
- A1 - More than one compound of similar molecule structure was identified with equal probability.
- 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 this range fell outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte indicated may be due to carryover from previous sample injections.
- d - The sample was diluted. Detection limits may be raised due to dilution.
- ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb - The analyte indicated was found in the method blank. The result should be considered an estimate.
- fc - The compound is a common laboratory and field contaminant.
- fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.
- hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht - The sample was extracted outside of holding time. Results should be considered estimates.
- ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc - The presence of the compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.
- pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The pattern of peaks present is not indicative of diesel.
- y - The pattern of peaks present is not indicative of motor oil.

V2/AI2/BOY

Send Report To Mike Staton

Company: SUX2 Int'l

Address 2222 20th Ave. SE, H-150

City, State, ZIP Bothell, WA 98021

Phone # 0088-604-5678 Fax # 8840-604-5678

SAMPLERS (signature)

PROJECT NAME/NO.

001.0173.00007

1. Environment

REMARKS

Silver gel clamp

Samples have fine silt - pls. filter

OJ

7-2000

TURNAROUND TIME

□ Standard (2 Weeks) :

~~CRUSH~~ 4340

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

Return samples

Will call with instructions

[illegible]

Friedman & Bruya, Inc.

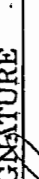

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COGNOC\DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	CHRIS LEE	SLR	11-27	14:15
Received by: 	Nathan Phan	FeBI	11/27/07	14:15
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

December 26, 2007

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on December 13, 2007 from the Longview 001.0173.00007, F&BI 712136 project. There are 26 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1226R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 13, 2007 by Friedman & Bruya, Inc. from the SLR International Corp. Longview 001.0173.00007, F&BI 712136 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
712136-01	DMW7-1207
712136-02	DMW8-1207
712136-03	MW9-1207
712136-04	DMW6-1207
712136-05	MW11-1207
712136-06	DMW5-1207
712136-07	DMW9-1207
712136-08	MW13-1207
712136-09	MW12-1207
712136-10	MW5-1207
712136-11	DMW4-1207
712136-12	DMW10-1207
712136-13	MW-14-1207
712136-14	DMW3-1207
712136-15	MW10-1207
712136-16	MW8-1207

The samples were sent to Analytical Resources, Inc. for nitrate, sulfate, alkalinity, and dissolved methane analyses. The report generated by ARI will be forwarded to your office upon receipt.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/26/07

Date Received: 12/13/07

Project: Longview 001.0173.00007, F&BI 712136

Date Extracted: 12/14/07

Date Analyzed: 12/14/07 and 12/17/07

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
DMW7-1207 712136-01	<1	<1	<1	<3	<100	111
DMW8-1207 712136-02	<1	<1	<1	<3	<100	110
MW9-1207 712136-03	<1	<1	<1	<3	<100	109
DMW6-1207 712136-04	<1	<1	<1	<3	<100	110
MW11-1207 712136-05	<1	<1	<1	<3	<100	108
DMW5-1207 712136-06	41	<1	<1	<3	100	110
DMW9-1207 d 712136-07 1/100	6,100	1,900	970	3,100	27,000	106
MW13-1207 712136-08	<1	<1	<1	<3	<100	102
MW12-1207 712136-09	<1	<1	<1	<3	<100	101
MW5-1207 712136-10	<1	<1	<1	<3	140	102
DMW4-1207 712136-11	27	3	2	4	260	113

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/26/07

Date Received: 12/13/07

Project: Longview 001.0173.00007, F&BI 712136

Date Extracted: 12/14/07

Date Analyzed: 12/14/07 and 12/17/07

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
DMW10-1207 712136-12	60	4	88	130	750	100
MW-14-1207 712136-13	<1	<1	<1	<3	<100	102
DMW3-1207 712136-14	<1	<1	<1	<3	<100	103
MW10-1207 712136-15	9	3	65	<3	3,100	104
MW8-1207 712136-16	<1	<1	<1	<3	<100	102
Method Blank	<1	<1	<1	<3	<100	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/26/07

Date Received: 12/13/07

Project: Longview 001.0173.00007, F&BI 712136

Date Extracted: 12/13/07

Date Analyzed: 12/17/07

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL**

USING METHOD NWTPH-Dx

**Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis**

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	Surrogate (% Recovery) (Limit 50-150)
DMW7-1207 712136-01	<50	72
DMW8-1207 712136-02	<50	77
MW9-1207 712136-03	<50	81
DMW6-1207 712136-04	<50	75
MW11-1207 712136-05	<50	76
DMW5-1207 712136-06	<50	76
DMW9-1207 712136-07	600 x	82
MW13-1207 712136-08	<50	81
MW12-1207 712136-09	<50	73
MW5-1207 712136-10	<50	89
DMW4-1207 712136-11	<50	83
DMW10-1207 712136-12	53 x	84

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW7-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-01
Date Analyzed:	12/18/07	Data File:	712136-01.033
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	121	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	3,720

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW8-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-02
Date Analyzed:	12/18/07	Data File:	712136-02.036
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	99	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	1,940
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW9-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-03
Date Analyzed:	12/18/07	Data File:	712136-03.037
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	97	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	3.99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW6-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-04
Date Analyzed:	12/18/07	Data File:	712136-04.038
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	121	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	1,740

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW11-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-05
Date Analyzed:	12/18/07	Data File:	712136-05.039
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	89	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	1,780

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW5-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-06
Date Analyzed:	12/18/07	Data File:	712136-06.041
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	109	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
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Manganese	2,280
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW9-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-07
Date Analyzed:	12/18/07	Data File:	712136-07.042
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	99	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	1,920
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW13-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-08
Date Analyzed:	12/18/07	Data File:	712136-08.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	80	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	8,690

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW12-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-09
Date Analyzed:	12/18/07	Data File:	712136-09.044
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	86	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	5,330

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW5-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-10
Date Analyzed:	12/18/07	Data File:	712136-10.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	90	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,850

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW4-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-11
Date Analyzed:	12/18/07	Data File:	712136-11.046
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	114	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,190

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW10-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-12
Date Analyzed:	12/18/07	Data File:	712136-12.047
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	108	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,950

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW-14-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-13
Date Analyzed:	12/18/07	Data File:	712136-13.048
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	93	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	9,350

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW3-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-14
Date Analyzed:	12/18/07	Data File:	712136-14.049
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	96	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	2,770
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW10-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-15
Date Analyzed:	12/18/07	Data File:	712136-15.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	110	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,420

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW8-1207	Client:	SLR International Corp.
Date Received:	12/13/07	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	712136-16
Date Analyzed:	12/18/07	Data File:	712136-16.052
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	102	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	531
-----------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	Longview, F&BI 712136
Date Extracted:	12/17/07	Lab ID:	I7-481 mb
Date Analyzed:	12/18/07	Data File:	I7-481 mb.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	88	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/26/07

Date Received: 12/13/07

Project: Longview 001.0173.00007, F&BI 712136

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 712143-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	101	65-118
Toluene	ug/L (ppb)	50	104	72-122
Ethylbenzene	ug/L (ppb)	50	104	73-126
Xylenes	ug/L (ppb)	150	106	74-118
Gasoline	ug/L (ppb)	1,000	93	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/26/07

Date Received: 12/13/07

Project: Longview 001.0173.00007, F&BI 712136

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS
OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL USING METHOD NWTPH-D_x**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	ug/L (ppb)	2,500	88	94	70-130	7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/26/07

Date Received: 12/13/07

Project: Longview 001.0173.00007, F&BI 712136

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 712136-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Manganese	ug/L (ppb)	3,720	3,870	4	0-20

Laboratory Code: 712136-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Manganese	ug/L (ppb)	20	3,720	1,080 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Manganese	ug/L (ppb)	20	95	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.
- A1 - More than one compound of similar molecule structure was identified with equal probability.
- 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 this range fell outside of acceptance criteria. The value reported is an estimate.
- c - The presence of the analyte indicated may be due to carryover from previous sample injections.
- d - The sample was diluted. Detection limits may be raised due to dilution.
- ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb - The analyte indicated was found in the method blank. The result should be considered an estimate.
- 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. The variability is attributed to sample inhomogeneity.
- ht - The sample was extracted outside of holding time. Results should be considered estimates.
- ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr - The rpd result in laboratory control sample associated with the analyte is 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 compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.
- pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.
- vo - The value reported fell outside the control limits established for this analyte.
- x - The pattern of peaks present is not indicative of diesel.
- y - The pattern of peaks present is not indicative of motor oil.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 3, 2008

Mike Erdahl
Friedman & Bruya
3012 - 16th Avenue West
Seattle, WA 9819-2029

Client Project: 712136 PO# H-1219
ARI ID: MB81

Dear Mr. Erdahl:

Please find enclosed the original Chain of Custody record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. accepted sixteen water samples in good condition on December 13, 2007. Please refer to the enclosed Cooler Receipt Form for further details regarding sample receipt.

The samples were analyzed for Methane, Alkalinity, Sulfate, and Nitrate, as requested on the Chain of Custody.

The analyses were completed routinely, with the exception of the irregularities detailed below.

Alkalinity

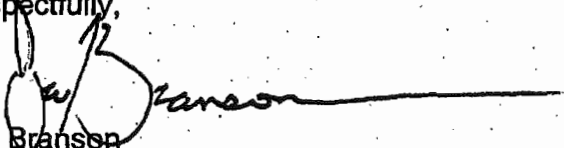
Nitrate, which has a limited hold time, had to be performed from the same sample container provided for Alkalinity, which can be compromised if it is not run immediately upon opening the container, but does not have a critical hold time. Due to this situation, Alkalinity results may be compromised.

Nitrate

The low Spike recoveries associated with the Nitrate analysis were determined to have been caused by the matrix.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Respectfully,



Eric Branson

Client Services - Project Support
ANALYTICAL RESOURCES, INC.
(206) 695-6213
eric@arilabs.com
www.arilabs.com

• Enclosures •



Data Reporting Qualifiers

Effective 12/28/04

Inorganic Data

- U** Indicates that the target analyte was not detected at the reported concentration
- *** Duplicate RPD is not within established control limits
- B** Reported value is less than the CRDL but \geq the Reporting Limit
- N** Matrix Spike recovery not within established control limits
- NA** Not Applicable, analyte not spiked
- H** The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L** Analyte concentration is ≤ 5 times the Reporting Limit and the replicate control limit defaults to ± 1 RL instead of the normal 20% RPD

Organic Data

- U** Indicates that the target analyte was not detected at the reported concentration
- *** Flagged value is not within established control limits
- B** Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J** Estimated concentration when the value is less than ARI's established reporting limits
- D** The spiked compound was not detected due to sample extract dilution
- NR** Spiked compound recovery is not reported due to chromatographic interference
- E** Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- S** Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA** The flagged analyte was not analyzed for



- NS** The flagged analyte was not spiked into the sample
- M** Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N** The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y** The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- C** The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P** The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference

Geotechnical Data

- A** The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F** Samples were frozen prior to particle size determination
- SM** Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS** Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W** Weight of sample in some pipette aliquots was below the level required for accurate weighting

ORGANICS ANALYSIS DATA SHEET

METHANE ETHANE ETHENE

Modified RSK 175

Page 1 of 2


Matrix: Water

QC Report No: MB81-Friedman & Bruya, Inc.

Project: H-1219

712136

Date Received: 12/13/07

Data Release Authorized: 

Reported: 12/18/07

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
MB81A 07-26785	DMW7-1207	12/17/07	1.0	Methane	0.7	9,140
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81B 07-26786	DMW8-1207	12/17/07	1.0	Methane	0.7	3,780
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81C 07-26787	MW9-1207	12/17/07	1.0	Methane	0.7	0.8
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81D 07-26788	DMW6-1207	12/17/07	1.0	Methane	0.7	11,700
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81E 07-26789	MW11-1207	12/17/07	1.0	Methane	0.7	103
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81ERE 07-26789	MW11-1207	12/17/07	1.0	Acetylene	1.1	< 1.1 U
				Methane	0.7	105
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81F 07-26790	DMW5-1207	12/17/07	1.0	Methane	0.7	13,700
				Ethane	1.2	3.1
				Ethene	1.1	< 1.1 U
MB81G 07-26791	DMW9-1207	12/17/07	1.0	Methane	0.7	27,400
				Ethane	1.2	34.6
				Ethene	1.1	< 1.1 U
MB81H 07-26792	MW13-1207	12/17/07	1.0	Methane	0.7	40.2
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81I 07-26793	MW12-1207	12/17/07	1.0	Methane	0.7	160
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81J 07-26794	MW5-1207	12/17/07	1.0	Methane	0.7	608
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81K 07-26795	DMW4-1207	12/17/07	1.0	Methane	0.7	10,100
				Ethane	1.2	2.5
				Ethene	1.1	< 1.1 U

ORGANICS ANALYSIS DATA SHEET

METHANE ETHANE ETHENE

Modified RSK 175

Page 2 of 2

Matrix: Water



QC Report No: MB81-Friedman & Bruya, Inc.

Project: H-1219

712136

Date Received: 12/13/07

Data Release Authorized:

Reported: 12/18/07

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
MB81L 07-26796	DMW10-1207	12/17/07	1.0	Methane	0.7	11,300
				Ethane	1.2	18.8
				Ethene	1.1	< 1.1 U
MB81M 07-26797	MW-14-1207	12/17/07	1.0	Methane	0.7	72.8
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81N 07-26798	DMW3-1207	12/17/07	1.0	Methane	0.7	1,630
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MB81O 07-26799	MW10-1207	12/17/07	1.0	Methane	0.7	6,510
				Ethane	1.2	3.2
				Ethene	1.1	< 1.1 U
MB81P 07-26800	MW8-1207	12/17/07	1.0	Methane	0.7	98.8
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
121707MB	Method Blank	12/17/07	1.0	Methane	0.7	< 0.7 U
121707MB	Method Blank	12/17/07	1.0	Ethane	1.2	< 1.2 U
121707MB	Method Blank	12/17/07	1.0	Ethene	1.1	< 1.1 U

Reported in ug/L (ppb)

RSK 175/METHANE-ETHANE-ETHENE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: MB81-Friedman & Bruya, Inc.
Project: H-1219
712136

ARI ID	Client ID	PRP	TOT OUT
MB81A	DMW7-1207	98.8%	0
MB81B	DMW8-1207	100%	0
MB81C	MW9-1207	106%	0
MB81D	DMW6-1207	100%	0
MB81E	MW11-1207	105%	0
MB81ERE	MW11-1207	106%	0
MB81F	DMW5-1207	96.6%	0
MB81G	DMW9-1207	99.6%	0
MB81H	MW13-1207	108%	0
MB81I	MW12-1207	102%	0
MB81J	MW5-1207	103%	0
MB81K	DMW4-1207	92.9%	0
MB81L	DMW10-1207	98.3%	0
MB81M	MW-14-1207	103%	0
MB81N	DMW3-1207	103%	0
MB81O	MW10-1207	94.0%	0
MB81P	MW8-1207	101%	0
MB-121707	Method Blank	106%	0
LCS-121707	Lab Control	100%	0
LCSD-121707	Lab Control Dup	101%	0

LCS/MB LIMITS QC LIMITS

(PRP) = Propane (78-119) (69-110)

Log Number Range: 07-26785 to 07-26800

ORGANICS ANALYSIS DATA SHEET

METHANE ETHANE ETHENE

Modified RSK 175

Page 1 of 1

Matrix: Water


ANALYTICAL
RESOURCES
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QC Report No: MB81-Friedman & Bruya, Inc.

Project: H-1219

712136

Date Received: 12/13/07

Data Release Authorized: 

Reported: 12/18/07

ARI ID	Analysis Date	Analyte	Spike	Result	Recovery	RPD
121707LCS	12/17/07	Methane	654	649	99.2%	10.5%
121707LCSD				721	110.2%	
121707LCS	12/17/07	Ethane	1,230	1,200	97.8%	4.1%
121707LCSD				1,250	101.9%	
121707LCS	12/17/07	Ethene	1,150	1,160	101.3%	1.7%
121707LCSD				1,180	103.0%	

Reported in ug/L (ppb)

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

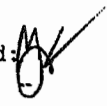
Client ID: DMW7-1207
ARI ID: 07-26785 MB81A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	158
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.023
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.019
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	23.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

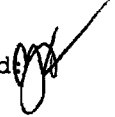
Client ID: DMW8-1207
ARI ID: 07-26786 MB81B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	133
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	0.014
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.012
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.026
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	6.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: MW9-1207
ARI ID: 07-26787 MB81C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	40.1
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	0.499
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.499
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	5.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Client ID: DMW6-1207
ARI ID: 07-26788 MB81D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	104
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.032
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.017
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	8.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized *[Signature]*
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: MW11-1207
ARI ID: 07-26789 MB81E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	28.4
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	0.777
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.024
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.801
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	100	643

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: DMW5-1207
ARI ID: 07-26790 MB81F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	177
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.028
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.020
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	13.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: DMW9-1207
ARI ID: 07-26791 MB81G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	270
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.051
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.058
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	4.0	55.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: MW13-1207
ARI ID: 07-26792 MB81H

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	70.7
N-Nitrate	12/13/07	Calculated	mg-N/L	1.00	31.7
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.203
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	1.00	31.9
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	100	1,590

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: MW12-1207
ARI ID: 07-26793 MB81I

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	6.9
N-Nitrate	12/13/07	Calculated	mg-N/L	1.00	37.0
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.339
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	1.00	37.3
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	100	1,500

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.

ANALYTICAL
RESOURCES
INCORPORATED 

Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

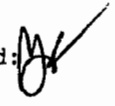
Client ID: MW5-1207
ARI ID: 07-26794 MB81J

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	10.3
N-Nitrate	12/13/07	Calculated	mg-N/L	1.00	12.2
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.287
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	1.00	12.5
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	100	969

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

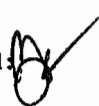
Client ID: DMW4-1207
ARI ID: 07-26795 MB81K

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	174
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.033
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	22.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Client ID: DMW10-1207
ARI ID: 07-26796 MB81L

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	191
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.028
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.024
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	24.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07


Client ID: MW-14-1207
ARI ID: 07-26797 MB81M

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	16.0
N-Nitrate	12/13/07	Calculated	mg-N/L	1.00	16.7
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	0.213
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	1.00	16.9
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	100	1,190

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Client ID: DMW3-1207
ARI ID: 07-26798 MB81N

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	220
N-Nitrate	12/13/07	Calculated	mg-N/L	0.050	< 0.050 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.050	0.120
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.050	0.155
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	31.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Client ID: MW10-1207
ARI ID: 07-26799 MB810

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	174
N-Nitrate	12/13/07	Calculated	mg-N/L	0.020	0.036
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.020	0.042
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.020	0.078
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	10.0	74.9

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Client ID: MW8-1207
ARI ID: 07-26800 MB81P

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	12/20/07 122007#1	SM 2320	mg/L CaCO3	1.0	33.3
N-Nitrate	12/13/07	Calculated	mg-N/L	0.010	< 0.010 U
N-Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	12/13/07 121307#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Sulfate	12/31/07 123107#1	EPA 375.2	mg/L	2.0	4.8

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: MB81A Client ID: DMW7-1207							
N-Nitrite	EPA 353.2	12/13/07	mg-N/L	0.023	0.406	0.500	76.6%
Nitrate + Nitrite	EPA 353.2	12/13/07	mg-N/L	0.019	0.309	0.500	58.0%
Nitrate + Nitrite	EPA 353.2	12/13/07	mg-N/L	0.019	0.322	0.500	60.6%
Sulfate	EPA 375.2	12/31/07	mg/L	23.3	40.9	20.0	88.0%

REPLICATE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.




Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: 12/12/07
Date Received: 12/13/07

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: MB81A Client ID: DMW7-1207						
Alkalinity	SM 2320	12/20/07	mg/L CaCO3	158	158	0.0%
N-Nitrite	EPA 353.2	12/13/07	mg-N/L	0.023	0.023	0.0%
Nitrate + Nitrite	EPA 353.2	12/13/07	mg-N/L	0.019	0.019	0.0%
Sulfate	EPA 375.2	12/31/07	mg/L	23.3	23.3	0.0%

METHOD BLANK RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.




Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank
N-Nitrite	EPA 353.2	12/13/07	mg-N/L	< 0.010 U
Nitrate + Nitrite	EPA 353.2	12/13/07	mg-N/L	< 0.010 U
Sulfate	EPA 375.2	12/31/07	mg/L	< 2.0 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
MB81-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 01/02/08

Project: H-1219
Event: 712136
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity ERA #P114506	SM 2320	12/20/07	mg/L CaCO3	32.6	32.8	99.4%
N-Nitrite ERA #23034	EPA 353.2	12/13/07	mg-N/L	0.491	0.500	98.2%
Nitrate + Nitrite ERA #20034	EPA 353.2	12/13/07	mg-N/L	0.472	0.500	94.4%
Sulfate ERA #37065	EPA 375.2	12/31/07	mg/L	26.7	25.0	106.8%

712136

SAMPLE CHAIN OF CUSTODY ME 12-13-07


Send Report To: Mike Steton

Company: SLR Int'l

Address: ~~20100~~ 20th Ave SE # H-150

City, State, ZIP: Bothell, WA 98021

Phone #: (206) 400-8800 Fax #: (206) 400-8488

SAMPLERS (signature) 

PROJECT NAME/NO.

Longview

001.0173.00007

REMARKS

DRO After Silicon Gel Cleanup

Page # 1 of 2

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										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 802113	VOCs by 8260	SVOCs by 8270	IIFS	Sulfate & Nitrate by 300.0	Dissolved by 200.8	Alkalinity by 310.1	Dissolved by 175	
DMW7-1207	01A-H2-12-07		0900	W	8	X	X	X				X	X	X	X	
DMW8-1207	02A-H		1010													
MW9-1207	03A-H		1100													
DMW6-1207	04A-H		1110													
MW11-1207	05A-H		1200													
DMW5-1207	06A-H		1340													
DMW9-1207	07A-H		1355													
MW13-1207	08A-H		1410													
MW12-1207	09A-H		1520													
MW5-1207	10A-H		1545													

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE

Relinquished by:

Received by:

Relinquished by:

Received by:

PRINT NAME

Chris Lee

Nhan Phan

COMPANY

SLR

FBI

TIME

09:40

09:40

DATE

12/13/07

12/13/07

Samples received at 3°C

$$\sqrt{5}/\cos/BT4$$

ANALYSIS REQUESTED :

Notes

MS-1202

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[illegible]

→ →

→ →

10

Fax: (206) 283-5044

[illegible]

1301	142
1302	143

1301	142
04267	01115

1301	142
1302	143

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

April 1, 2008

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on March 14, 2008 from the Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141 project. There are 27 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR0401R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 14, 2008 by Friedman & Bruya, Inc. from the SLR International Corp. Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>SLR International Corp.</u>
803141-01	DMW7-0308
803141-02	DMW3-0308
803141-03	MW12-0308
803141-04	MW14-0308
803141-05	DMW10-0308
803141-06	DMW9-0308
803141-07	MW13-0308
803141-08	DMW5-0308
803141-09	MW11-0308
803141-10	MW5-0308
803141-11	DMW4-0308
803141-12	MW9-0308
803141-13	DMW6-0308
803141-14	MW8-0308
803141-15	MW10-0308
803141-16	DMW8-0308

The samples were sent to Analytical Resources, Inc. for Sulfate, Nitrate, Alkalinity, and Dissolved Methane analyses. The report is enclosed.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

Date Extracted: 03/17/08

Date Analyzed: 03/17/08 and 03/18/08

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
DMW7-0308 803141-01	<1	<1	<1	<3	<100	102
DMW3-0308 803141-02	<1	<1	<1	<3	<100	93
MW12-0308 803141-03	<1	<1	<1	<3	<100	100
MW14-0308 803141-04	<1	<1	<1	<3	<100	95
DMW10-0308 d 803141-05 1/10	75	4	140	120	1,000	108
DMW9-0308 d 803141-06 1/100	3,000	150	380	880	13,000	92
MW13-0308 803141-07	<1	<1	<1	<3	<100	93
DMW5-0308 803141-08	10	<1	<1	<3	<100	99
MW11-0308 803141-09	<1	<1	<1	<3	<100	92
MW5-0308 803141-10	<1	<1	<1	<3	<100	93
DMW4-0308 803141-11	6	<1	<1	<3	230	98

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

Date Extracted: 03/17/08

Date Analyzed: 03/17/08 and 03/18/08

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW9-0308 803141-12	<1	<1	<1	<3	<100	98
DMW6-0308 803141-13	<1	<1	<1	<3	<100	82
MW8-0308 803141-14	<1	<1	<1	<3	<100	93
MW10-0308 803141-15	16	2	40	<3	3,000	101
DMW8-0308 803141-16	<1	<1	<1	<3	<100	94
Method Blank	<1	<1	<1	<3	<100	93
Method Blank	<1	<1	<1	<3	<100	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

Date Extracted: 03/19/08

Date Analyzed: 03/24/08

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL RANGE**

**USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Surrogate</u> (% Recovery) (Limit 51-132)
DMW7-0308 803141-01	<50	74
DMW3-0308 803141-02	<50	69
MW12-0308 803141-03	<50	64
MW14-0308 803141-04	50	59
DMW10-0308 803141-05	74 x	72
DMW9-0308 803141-06	450 x	74
MW13-0308 803141-07	<50	71
DMW5-0308 803141-08	<50	77
MW11-0308 803141-09	<50	79

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

Date Extracted: 03/19/08

Date Analyzed: 03/24/08

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL RANGE**

**USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Surrogate</u> (% Recovery) (Limit 51-132)
MW5-0308 803141-10	<50	67
DMW4-0308 803141-11	68 x	77
MW9-0308 803141-12	<50	72
DMW6-0308 803141-13	<50	73
MW8-0308 803141-14	<50	70
MW10-0308 803141-15	1,200 x	79
DMW8-0308 803141-16	<50	73
Method Blank	<50	72

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW7-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-01 x10
Date Analyzed:	03/31/08	Data File:	803141-01 x10.013
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	100	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	12,400

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW3-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-02
Date Analyzed:	03/25/08	Data File:	803141-02.010
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	81	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,550

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW12-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-03 x10
Date Analyzed:	03/31/08	Data File:	803141-03 x10.010
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	109	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	6,770

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW14-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-04 x10
Date Analyzed:	03/31/08	Data File:	803141-04 x10.011
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	107	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
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Manganese	7,050
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW10-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-05 x10
Date Analyzed:	03/31/08	Data File:	803141-05 x10.014
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	96	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	5,360

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW9-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-06 x10
Date Analyzed:	03/25/08	Data File:	803141-06 x10.054
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	87	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	3,400
-----------	-------

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW13-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-07 x10
Date Analyzed:	03/31/08	Data File:	803141-07 x10.012
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	104	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
Manganese	9,140

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW5-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-08
Date Analyzed:	03/25/08	Data File:	803141-08.017
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	67	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,900

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW11-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-09
Date Analyzed:	03/25/08	Data File:	803141-09.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	75	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,520

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW5-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-10
Date Analyzed:	03/25/08	Data File:	803141-10.032
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	75	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,480

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW4-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-11 x10
Date Analyzed:	03/31/08	Data File:	803141-11 x10.015
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	107	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	15,500

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW9-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-12
Date Analyzed:	03/25/08	Data File:	803141-12.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	73	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	14.0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW6-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-13
Date Analyzed:	03/25/08	Data File:	803141-13.035
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	75	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	4,270

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW8-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-14
Date Analyzed:	03/25/08	Data File:	803141-14.019
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	67	Limit:	Limit:
		60	125

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Manganese	463
-----------	-----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW10-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-15
Date Analyzed:	03/25/08	Data File:	803141-15.020
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	77	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)
Manganese	2,170

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW8-0308	Client:	SLR International Corp.
Date Received:	03/14/08	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	803141-16
Date Analyzed:	03/25/08	Data File:	803141-16.021
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	69	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	2,070
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	Longview Fmr. Arco 0855
Date Extracted:	03/25/08	Lab ID:	I8-098 mb
Date Analyzed:	03/25/08	Data File:	I8-098.mb.008
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower	Upper
Germanium	82	Limit:	Limit:
		60	125

Analyte:	Concentration
	ug/L (ppb)

Manganese	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE,
XYLENES, AND TPH AS GASOLINE
USING EPA METHOD 8021B AND NWTPH-Gx**

Laboratory Code: 803158-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	1	1	0
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	200	210	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	91	65-118
Toluene	ug/L (ppb)	50	95	72-122
Ethylbenzene	ug/L (ppb)	50	94	73-126
Xylenes	ug/L (ppb)	150	95	74-118
Gasoline	ug/L (ppb)	1,000	81	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-G_x

Laboratory Code: 803160-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	90	65-118
Toluene	ug/L (ppb)	50	94	72-122
Ethylbenzene	ug/L (ppb)	50	93	73-126
Xylenes	ug/L (ppb)	150	95	74-118
Gasoline	ug/L (ppb)	1,000	102	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

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

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery	Percent Recovery	Acceptance Criteria	RPD (Limit 20)
			LCS	LCSD		
Diesel	ug/L (ppb)	2,500	99	100	67-141	1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/08

Date Received: 03/14/08

Project: Longview Fmr. Arco 0855 001.0173.00007, F&BI 803141

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR DISSOLVED METALS USING EPA METHOD 200.8**

Laboratory Code: 803141-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Manganese	ug/L (ppb)	8,040	7,990	13	0-20

Laboratory Code: 803141-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Manganese	ug/L (ppb)	20	8,040	3,310 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Manganese	ug/L (ppb)	20	100	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

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. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is 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 compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

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

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

803/41

Send Report To MIKE STATION

Company SLR INT'L CORP

Address 22122 20TH AVE. SE # H-150

City, State, ZIP BOTHELL, WA 98021

Phone # (425) 402-8800 Fax # (425) 402-8488

SAMPLE CHAIN OF CUSTODY ME 03/14/08

VS/A04/BI4

SAMPLERS (signature)

Page # 1 of 2

PROJECT NAME/NO. LONGVIEW FMR. ALCO 0855

PO # 001.0173.00007

REMARKS 001.0173.00007

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

REMARKS DRO AFTER SILICA GEL CLEANUP

					ANALYSES REQUESTED														
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	IIFS	Sulfate + Nitrate	By 300.0	Dissolved 200.8	Manganese	Aluminum by 810.1	Dissolved P&K-75	Notes	
DMW7-0308	01H	3/13/08	0950	Water	8	X	X	X				X	X	X	X	X	X	X	
DMW3-0308	02H		1020																
MW12-0308	03H		1045																
MW14-0308	04H		1105																
DMW10-0308	05H		1125																
DMW9-0308	06H		1150																
MW13-0308	07H		1210																
DMW5-0308	08H		1230																
MW11-0308	09H		1300																
MW5-0308	10H		1320																

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE

Relinquished by:

Received by:

Relinquished by:

Received by:

PRINT NAME

Chris LEE

Eric Johnson

Samples received by: Lee

COMPANY

SLR

FAB

TIME

3/13/08 1900

3/14/08 1100



Analytical Resources, Incorporated
Analytical Chemists and Consultants

RECEIVED
APR 01 2008

March 28, 2008

Mike Erdahl
Friedman & Bruya
3012 – 16th Avenue West
Seattle, WA 9819-2029

Project: 803141 PO# H-1335
ARI ID: MN22

Dear Mr. Erdahl:

Please find enclosed the original Chain of Custody record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. accepted sixteen water samples in good condition on March 14, 2008. Please refer to the enclosed Cooler Receipt Form for further details regarding sample receipt.

The samples were analyzed for Dissolved Methane/Ethane/Ethene, Nitrate, Sulfate, and Alkalinity, as requested on the Chain of Custody.

All analyses were completed routinely.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Respectfully,

Eric Branson
Client Services – Project Support
ANALYTICAL RESOURCES, INC.
(206) 695-6213
eric@arilabs.com
www.arilabs.com

• Enclosures •



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: FBI

Project Name: 803141

COC No: _____

Delivered by: Courier

Assigned ARI Job No: _____

Tracking No: _____

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES ☒ NO
Were custody papers included with the cooler? ☒ YES NO
Were custody papers properly filled out (ink, signed, etc.) ☒ YES NO
Record cooler temperature (recommended 2.0-6.0 °C for chemistry) 9.8° °C

Cooler Accepted by: Bob Cangel Date: 3/14/08 Time: 1415

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES ☒ NO
What kind of packing material was used? ice
Was sufficient ice used (if appropriate)? ☒ YES NO
Were all bottles sealed in individual plastic bags? YES ☒ NO
Did all bottle arrive in good condition (unbroken)? ☒ YES NO
Were all bottle labels complete and legible? ☒ YES NO
Did all bottle labels and tags agree with custody papers? ☒ YES NO
Were all bottles used correct for the requested analyses? ☒ YES NO
Do any of the analyses (bottles) require preservation? (attach preservation checklist) YES ☒ NO
Were all VOC vials free of air bubbles? BC ☒ YES NO
Was sufficient amount of sample sent in each bottle? ☒ YES NO

Samples Logged by: Josh/BC Date: 3/14/08 Time: 1435

**** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

3 bottles sent per
Sample
on 3/14/08

By:

Date:

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE

Modified RSK 175
Page 1 of 2
Matrix: Water



QC Report No: MN22-Friedman & Bruya, Inc.
Project: H-1335
803141
Date Received: 03/14/08

Data Release Authorized: *MW*
Reported: 03/27/08

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
MN22A 08-5369	DMW7-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	8,320 < 1.2 U < 1.1 U
MN22ARE 08-5369	DMW7-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	7,720 < 1.2 U < 1.1 U
MN22B 08-5370	DMW3-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	2,480 < 1.2 U < 1.1 U
MN22C 08-5371	MW12-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	0.9 < 1.2 U < 1.1 U
MN22D 08-5372	MW14-0308	03/25/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	0.9 < 1.2 U < 1.1 U
MN22E 08-5373	DMW10-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	8,050 10.1 < 1.1 U
MN22F 08-5374	DMW9-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	19,800 35.7 < 1.1 U
MN22G 08-5375	MW13-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	4.5 < 1.2 U < 1.1 U
MN22H 08-5376	DMW5-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	8,180 1.7 < 1.1 U
MN22I 08-5377	MW11-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	< 0.7 U < 1.2 U < 1.1 U
MN22J 08-5378	MW5-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	< 0.7 U < 1.2 U < 1.1 U
MN22K 08-5379	DMW4-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	0.9 < 1.2 U < 1.1 U
MN22L 08-5380	MW9-0308	03/21/08	1.0	Methane Ethane Ethene	0.7 1.2 1.1	3,330 < 1.2 U < 1.1 U

ORGANICS ANALYSIS DATA SHEET

METHANE ETHANE ETHENE

Modified RSK 175

Page 2 of 2

Matrix: Water



QC Report No: MN22-Friedman & Bruya, Inc.

Project: H-1335

803141

Date Received: 03/14/08

Data Release Authorized: *mw*

Reported: 03/27/08

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
MN22M 08-5381	DMW6-0308	03/21/08	1.0	Methane	0.7	9,530
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MN22N 08-5382	MW8-0308	03/21/08	1.0	Methane	0.7	1.2
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MN22O 08-5383	MW10-0308	03/21/08	1.0	Methane	0.7	1,820
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
MN22P 08-5384	DMW8-0308	03/21/08	1.0	Methane	0.7	1,950
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
032108MB	Method Blank	03/21/08	1.0	Methane	0.7	< 0.7 U
032508MB	Method Blank	03/25/08	1.0	Methane	0.7	< 0.7 U
032108MB	Method Blank	03/21/08	1.0	Ethane	1.2	< 1.2 U
032508MB	Method Blank	03/25/08	1.0	Ethane	1.2	< 1.2 U
032108MB	Method Blank	03/21/08	1.0	Ethene	1.1	< 1.1 U
032508MB	Method Blank	03/25/08	1.0	Ethene	1.1	< 1.1 U

Reported in ug/L (ppb)

RSK 175/METHANE-ETHANE-ETHENE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: MN22-Friedman & Bruya, Inc.
Project: H-1335
803141

ARI ID	Client ID	PRP	TOT OUT	
MN22A	DMW7-0308	91.9%	0	
MN22ARE	DMW7-0308	93.7%	0	
MN22B	DMW3-0308	96.4%	0	
MN22C	MW12-0308	101%	0	
MN22D	MW14-0308	97.6%	0	
MN22E	DMW10-0308	92.6%	0	
MN22F	DMW9-0308	90.0%	0	
MN22G	MW13-0308	97.2%	0	
MN22H	DMW5-0308	95.5%	0	
MN22I	MW11-0308	96.6%	0	
MN22J	MW5-0308	99.7%	0	
MN22K	DMW4-0308	99.4%	0	
MN22L	MW9-0308	94.8%	0	
MN22M	DMW6-0308	97.1%	0	
MN22N	MW8-0308	98.3%	0	
MN22O	MW10-0308	95.5%	0	
MN22P	DMW8-0308	96.4%	0	
MB-032108	Method Blank	102%	103%	0
LCS-032108	Lab Control	102%	105%	0
LCSD-032108	Lab Control Dup	103%	101%	0

LCS/MB LIMITS QC LIMITS

(PRP) = Propane (80-120) (77-120)

Log Number Range: 08-5369 to 08-5384

ORGANICS ANALYSIS DATA SHEET

METHANE ETHANE ETHENE

Modified RSK 175

Page 1 of 1

Matrix: Water

QC Report No: MN22-Friedman & Bruya, Inc.

Project: H-1335

803141

Date Received: 03/14/08

Data Release Authorized: *mw*

Reported: 03/27/08

ARI ID	Analysis Date	Analyte	Spike	Result	Recovery	RPD
032108LCS	03/21/08	Methane	654	693	105.9%	1.3%
032508LCSD				693	105.9%	
032508LCS	03/25/08	Methane	654	702	107.3%	
032108LCS	03/21/08	Ethane	1,230	1,210	98.6%	0.8%
032508LCSD				1,230	100.2%	
032508LCS	03/25/08	Ethane	1,230	1,220	99.4%	
032108LCS	03/21/08	Ethene	1,150	1,130	98.7%	0.9%
032508LCSD				1,130	98.7%	
032508LCS	03/25/08	Ethene	1,150	1,140	99.5%	

Reported in ug/L (ppb)

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized:
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: DMW7-0308
ARI ID: 08-5369 MN22A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	155
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	29.6

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

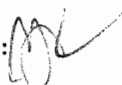
Client ID: DMW3-0308
ARI ID: 08-5370 MN22B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	197
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	23.4

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: MW12-0308
ARI ID: 08-5371 MN22C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	58.8
N-Nitrate	03/14/08	Calculated	mg-N/L	0.500	27.5
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	0.073
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.500	27.6
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	200	1,060

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: MW14-0308
ARI ID: 08-5372 MN22D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	57.8
N-Nitrate	03/14/08	Calculated	mg-N/L	0.100	5.70
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	0.066
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.100	5.77
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	200	945

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: *MB*
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: DMW10-0308
ARI ID: 08-5373 MN22E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	227
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	7.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: *[Signature]*
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: DMW9-0308
ARI ID: 08-5374 MN22F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	355
N-Nitrate	03/14/08	Calculated	mg-N/L	0.500	< 0.500 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.500	< 0.500 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.500	< 0.500 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	32.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: MW13-0308
ARI ID: 08-5375 MN22G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	218
N-Nitrate	03/14/08	Calculated	mg-N/L	0.500	21.5
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	0.263
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.500	21.8
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	200	1,540

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: DMW5-0308
ARI ID: 08-5376 MN22H

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	180
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	10.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: MW11-0308
ARI ID: 08-5377 MN22I

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	45.1
N-Nitrate	03/14/08	Calculated	mg-N/L	0.010	0.388
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	0.388
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	20.0	199

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized:
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: MW5-0308
ARI ID: 08-5378 MN22J

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	19.3
N-Nitrate	03/14/08	Calculated	mg-N/L	0.050	2.25
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	0.053
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.050	2.30
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	20.0	341

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

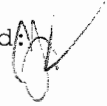
Client ID: DMW4-0308
ARI ID: 08-5379 MN22K

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	22.2
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	20.0	297

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: MW9-0308
ARI ID: 08-5380 MN22L

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	39.7
N-Nitrate	03/14/08	Calculated	mg-N/L	0.010	0.469
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	< 0.010 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.010	0.469
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	8.5

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized *[Signature]*
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Client ID: DMW6-0308
ARI ID: 08-5381 MN22M

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	112
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	7.5

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized:
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: MW8-0308
ARI ID: 08-5382 MN22N

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	57.6
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	6.6

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: MW10-0308
ARI ID: 08-5383 MN220

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	160
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	20.0	186

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08


Client ID: DMW8-0308
ARI ID: 08-5384 MN22P

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	03/26/08 032608#1	SM 2320	mg/L CaCO3	1.0	107
N-Nitrate	03/14/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	03/14/08 031408#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	03/24/08 032408#1	EPA 375.2	mg/L	2.0	17.6

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.




Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: MN22A Client ID: DMW7-0308							
Sulfate	EPA 375.2	03/24/08	mg/L	29.6	50.7	20.0	105.5%

REPLICATE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.




Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: 03/13/08
Date Received: 03/14/08

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: MN22A Client ID: DMW7-0308						
Sulfate	EPA 375.2	03/24/08	mg/L	29.6	29.8	0.7%

METHOD BLANK RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.




Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank
N-Nitrite	EPA 353.2	03/14/08	mg-N/L	< 0.010 U
Nitrate + Nitrite	EPA 353.2	03/14/08	mg-N/L	< 0.010 U
Sulfate	EPA 375.2	03/24/08	mg/L	< 2.0 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
MN22-Friedman & Bruya, Inc.



Matrix: Water
Data Release Authorized: 
Reported: 03/27/08

Project: H-1335
Event: 803141
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity ERA #P114506	SM 2320	03/26/08	mg/L CaCO3	27.6	27.7	99.6%
N-Nitrite ERA #23034	EPA 353.2	03/14/08	mg-N/L	0.493	0.500	98.6%
Nitrate + Nitrite ERA #20034	EPA 353.2	03/14/08	mg-N/L	0.500	0.500	100.0%
Sulfate ERA #37065	EPA 375.2	03/24/08	mg/L	26.6	25.0	106.4%

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

5.80

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

SUBCONTRACTOR

PROJECT NAME/NO.

PO #

8 03141

H-1335

REMARKS

Please Email Results

merdahl@friedmanandbruya.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	Matrix	# of jars	ANALYSES REQUESTED						Notes
						Oil and Grease	EPH	VPH	Nitrate	Sulfate	Alkalinity	
DMW7-0308		3/13/08		3	4				X	X	X	Dissolved Metals
DMW3-0308												
MW12-0308												
MW14-0308												
DMW10-0308												
DMW9-0308												
MW13-0308												
DMW5-0308												
MW11-0308												
MW5-0308												
DMW4-0308												
MW11-0308												
DMW6-0308												

Friedman & Bruya, Inc.

3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE

Relinquished by:

Received by:

Relinquished by:

Received by:

PRINT NAME

Michael Erdahl

Bob Congleton

COMPANY

Friedman & Bruya

ACE

TIME

1:30 PM

1415

DATE

3/14/08

3/14/08

Page # _____ of _____

Phone # (206) 285-8282 Fax # (206) 283-5044

151508

521-H

Please Email Results

merdahl@friedmanandbruva.com

TURNAROUND TIME

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH




Rush charges authorized by:

SAMPLE DISPOSAL

☐ **Dispose after 30 days**

□ Return samples

☐ Will call with instructions

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
	Michael Erdahl	Friedman & Bruya	3/14/02	1:30 PM
Received by: 	Bob Congleton		3/14/02	1:45
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

APPENDIX C
SOIL BORING LOGS



SLR International Corp

22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

WELL NUMBER MW-12

PAGE 1 OF 1

CLIENT Wakefield Family, LLC

PROJECT NAME Former Arco Service Station #0855

PROJECT NUMBER 001.0173.00007

PROJECT LOCATION Longview, Washington

DATE STARTED 12/4/07

COMPLETED 12/4/07

GROUND ELEVATION _____

HOLE SIZE 8" diameter

DRILLING DRILLING CONTRACTOR Cascade Drilling

GROUND WATER LEVELS:

DRILLING DRILLING METHOD Hollow Stem Auger

AT TIME OF DRILLING ---

LOGGED BY C. Lee

CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
					0.5	1"-3" CRUSHED ROCK (FILL)	
						GRAVELLY SAND, light brown, fine to coarse, some fine to medium gravel, (FILL).	
5				SP			
					7.0		
						CLAYEY SILT, gray to brown, moist, no hydrocarbon-like odor.	
10				MH			
					13.5		

Boring completed at 13.5 feet

WELL COMPLETION DETAILS

0 to 2.9 feet: 2.0-inch-diameter, flush-threaded Schedule 40 PVC blank riser pipe.

2.9 to 12.9 feet: 2.0-inch-diameter, flush-threaded Schedule 40 PVC well screen with 0.010-inch machined slots.

12.9 to 13.0 feet: 2.0-inch-diameter, flush-threaded Schedule 40 PVC well cap.

0 to 1.5 feet: Concrete.

1.5 to 2.5 feet: Hydrated bentonite chips.

2.5 to 13.5 feet: #2/12 silica sand.

REMARKS



SLR International Corp

22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

WELL NUMBER DMW-10

PAGE 1 OF 2

CLIENT Wakefield Family, LLCPROJECT NAME Former Arco Service Station #0855PROJECT NUMBER 001.0173.00007PROJECT LOCATION Longview, WashingtonDATE STARTED 12/4/07COMPLETED 12/4/07

GROUND ELEVATION _____

HOLE SIZE 8" diameterDRILLING DRILLING CONTRACTOR Cascade Drilling

GROUND WATER LEVELS:

DRILLING DRILLING METHOD Hollow Stem AugerAT TIME OF DRILLING ---LOGGED BY C. Lee

CHECKED BY _____

AT END OF DRILLING ---

NOTES _____

AFTER DRILLING ---

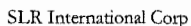
DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
0.5						1"-3" CRUSHED ROCK (FILL)	
1.5						3"-8" CRUSHED ROCK (FILL)	Concrete
5						GRAVELLY SAND, light brown, fine to coarse, some fine to medium gravel (FILL).	
10				SP			
15							
18.0							
20				MH		CLAYEY SILT, gray to brown, stiff, moist to wet, trace organics, slight hydrocarbon-like odor.	Hydrated bentonite chips

REMARKS

Soil samples were not collected because auger was plugged to control heaving sands.

ARCO #0855 FORMER ARCO #0855.GPJ GINT US.GDT 5/5/08

(Continued Next Page)




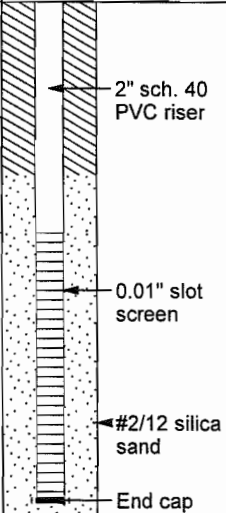


CLIENT Wakefield Family, LLC

PROJECT NUMBER 001.0173.00007

PAGE 2 OF 2

PROJECT NAME Former Arco Service Station #0855

PROJECT LOCATION Longview, Washington

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20							
				MH		CLAYEY SILT, gray to brown, stiff, moist to wet, trace organics, slight hydrocarbon-like odor. <i>(continued)</i>	 <p>2" sch. 40 PVC riser</p> <p>0.01" slot screen</p> <p>#2/12 silica sand</p> <p>End cap</p>
				ML		SILT WITH SAND, gray to brown, few fine sand, wet, no hydrocarbon-like odor.	
25				SP		SAND, gray, fine to coarse, wet, no hydrocarbon-like odors.	

Boring completed at 29.0 feet

WELL COMPLETION DETAILS

0 to 23.6 feet: 2.0-inch-diameter, flush-threaded Schedule 40 PVC blank riser pipe.

23.6 to 28.6 feet: 2.0-inch-diameter, flush-threaded Schedule 40 PVC well screen with 0.010-inch machined slots.

28.6 to 28.7 feet: 2.0-inch-diameter, flush-threaded Schedule 40 PVC well cap.

0 to 2.0 feet: Concrete.

2.0 to 23.0 feet: Hydrated bentonite chips.

23.0 to 29.0 feet: #2/12 silica sand.

REMARKS

Soil samples were not collected because auger was plugged to control heaving sands.