December 17, 2010
Project 101.00433.00001

Mr. Larry Smith
Olympic Water & Sewer, Inc.
70 Breaker Lane
Port Ludlow, Washington 98635

Re: Site Characterization Report, Olympic Water & Sewer, Inc. Property, 781 Walker Way, Port Ludlow, Washington

Dear Larry:

SLR International Corp (SLR) has prepared this report to present the results of a subsurface investigation at the above-referenced property. The primary objectives of the work were to: 1) assess the gasoline concentrations in the soil at the area of the northern former gasoline underground storage tanks (USTs; apparent source of known gasoline-impacted perched groundwater), 2) delineate the lateral and vertical extents of the gasoline-impacted perched groundwater, and 3) to characterize any seasonal effects on the perched groundwater elevations and contaminant concentrations.

PROPERTY DESCRIPTION AND HISTORY

The subject property, which is owned by Olympic Water & Sewer, Inc. (OWSI), is located at 781 Walker Way in Port Ludlow, Washington. The location of the property is shown on Figure 1. The property is located at the southwest corner of the intersection of Walker Way and Rainier Lane (see Figure 2). The property is surrounded by private residences to the south and west; by Walker Way and a commercial business (storage facility) and private residences to the north; and by Rainier Lane and private residences to the east.

The OWSI property is an approximate 2.2-acre parcel that is partially developed with an OWSI operation and maintenance facility. The facility consists of an approximate ½-acre area that includes an office/shop/garage building, a public water supply well (Well #2) and associated pump house building, and a storage trailer (see Figure 2). The ground surface within the facility is primarily unpaved, except for a narrow asphalt driveway that runs down the center of the facility from Walker Way to approximately the storage trailer. The ground surface of the facility slopes gently to the southwest. Within the OWSI property, the facility is surrounded on all sides by dense forest, and a gulley is located within the forest to the west of the facility. The facility has been operating since 1968,

after the installation of the water supply well. Prior to 1968, the property was undeveloped.

SUMMARY OF PREVIOUS ENVIRONMENTAL ACTIVITIES

UST Removals

In September 1990, Applied Geotechnology, Inc. (AGI) removed three gasoline USTs at the property. A 1,000-gallon UST was located beneath the floor of the northern garage bay, a 2,000-gallon UST was located outside (west) of the northern garage bay, and another 2,000-gallon UST was located approximately 40 feet south of the garage. The approximate locations of the UST excavations are shown on Figure 2. After removing each UST, one soil sample was collected from the sidewalls and/or floor of each excavation for laboratory analysis. The soil sample analytical results showed that the floor samples from the 1,000-gallon UST excavation and the northern 2,000-gallon UST excavation contained total petroleum hydrocarbons (TPH; identified as gasoline) concentrations of 3,000 and 963 milligrams per kilogram (mg/kg), respectively (AGI, 1991). There was no field evidence of gasoline-impacted soil in the southern 2,000-gallon UST excavation, and a composite soil sample from the sidewalls and floor of the excavation did not contain a TPH concentration greater than the method reporting limit (MRL).

To remove additional impacted soil in the 1,000-gallon UST excavation and the northern 2,000-gallon UST excavation, soil excavation activities were conducted in October 1990. The 2,000-gallon UST excavation was extended to a depth of approximately 12 feet below ground surface (bgs). Soil samples collected from the sidewalls and floor of the expanded excavation contained TPH concentrations of up to 30 mg/kg (AGI, 1991). To prevent any structural damage to the building, the 1,000-gallon UST excavation could only be extended to a depth of approximately 10 feet bgs. A composite floor sample from the expanded excavation contained a TPH concentration of 1,237 mg/kg, and a composite sidewall sample contained a TPH concentration of 30 mg/kg. Approximately 120 cubic yards of impacted soil were removed from the northern 2,000-gallon UST excavation, and approximately 30 cubic yards of impacted soil were removed from the 1,000-gallon UST excavation. The soil was transported off-site for treatment by aeration and biodegradation methods.

In October 1990, a water sample from Well #2 was collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). The sample did not contain BTEX concentrations greater than the MRLs (AGI, 1991). In January 1991, AGI assessed the soil conditions beneath the 1,000-gallon UST excavation by drilling an angle boring (designated MW-1) and collected soil samples. The approximate location of the boring is

shown on Figure 2. The boring was drilled at an angle of 25 degrees east of vertical and extended to a measured depth of approximately 30 feet (27 feet vertical depth and 12 feet east of the top of the hole). Soil samples collected from the boring, at depths of approximately 15 and 30 feet, did not contain TPH concentrations greater than the MRL (AGI, 1991).

Water Supply Well Installation

On April 21, 2009, during the drilling of a replacement water supply well (designated Well #17) at the southern part of the OWSI facility, the driller noticed a gasoline odor emanating from the well casing at a depth of approximately 50 feet [Robinson Noble & Saltbush, Inc. (Robinson Noble), 2009]. The drilling was discontinued, and soil and perched groundwater samples were collected from the bottom of the casing for laboratory analysis. The analytical results showed that the groundwater sample contained gasoline-range organics (GRO) and benzene concentrations [5,530 and 948 micrograms per liter (µg/L), respectively] that exceeded the Model Toxics Control Act (MTCA) Method A groundwater cleanup levels (800 and 5 µg/L, respectively). Due to the presence of gasoline-impacted perched groundwater, the well was not completed and the casing was capped. The location of the casing for Well #17 is shown on Figure 2. On April 23, 2009 and April 15, 2010, water samples were collected from Well #2 to verify that petroleum hydrocarbons had not impacted the water supply. The sample analytical results showed that petroleum hydrocarbons were not detected above the MRLs. The analytical results of the 2009 sample were presented in a report by Robinson Noble (Robinson Noble, 2009), and a copy of the laboratory report for the 2010 sample is presented in Appendix A.

Notification of Release

Within 24 hours after the laboratory confirmed that GRO and benzene concentrations were present above MTCA Method A cleanup levels in the perched groundwater, Mr. Greg Rae of OWSI notified the Jefferson County Health Department (Health Department) of the impacted groundwater, and the Health Department notified the Washington Department of Ecology (Ecology). Ecology added the OWSI property to their Confirmed or Suspected Contaminated Sites database.

SITE CHARACTERIZATION ACTIVITIES

From April through October 2010, SLR conducted a subsurface investigation at the subject property to meet the objectives described previously. The investigation activities and the results of the work are presented below.

Drill and Install Groundwater Monitoring Wells

April 2010 Drilling and Sampling Activities

On April 14, 2010, four soil borings (designated MW-1A, MW-1B, MW-1C, and MW-2A) were drilled in an attempt to install perched groundwater monitoring wells at the former northern gasoline UST area and near the storage trailer. The approximate locations of the borings are shown on Figure 2. Prior to conducting the drilling activities, public and private utility locating services identified and marked the locations of underground utilities at the property. Cascade Drilling, Inc. (Cascade) of Woodinville, Washington, conducted the drilling activities under the direction of an SLR geologist. The borings were drilled by using hollow-stem auger methods, and soil samples were collected from the borings at approximate 5-foot intervals by using 3-inch diameter split-barrel samplers. Three borings (designated MW-1A, MW-1B, and MW-1C) were drilled near the northern 2,000-gallon gasoline UST excavation, and were advanced to depths of approximately 19.5, 39, and 36.5 feet, respectively, before meeting refusal due to cobbles. One boring (designated MW-2A) was drilled to the north of the storage trailer, and was advanced to a depth of approximately 29.5 feet before meeting refusal due to cobbles. The soil cuttings are stored on the property in properly labeled 55-gallon drums, pending off-site disposal at an Ecology-approved facility.

SLR screened each soil sample for evidence of petroleum hydrocarbons such as sheen, staining, odor, and detectable photoionization detector (PID) readings. Strong hydrocarbon-like odors were present in the three MW-1 borings at depths between approximately 16.5 and 31.5 feet bgs. There was no field evidence of petroleum hydrocarbons in boring MW-2A. The soil sample with the highest PID reading, the 24.5-foot-deep sample from MW-1B, was submitted to Friedman & Bruya, Inc. (F&B) in Seattle, Washington, for analysis. Soil boring logs that present the field screening results are presented in Appendix B. Perched groundwater was not encountered in any of the borings. Immediately after drilling, all of the borings were abandoned by filling with hydrated bentonite pellets.

June 2010 Well Installation Activities

To ensure that the borings could be advanced to groundwater, air rotary drilling methods were used to install four perched groundwater monitoring wells (designated MW-1, MW-2, MW-3, and MW-4) at the subject property on June 7, 8, 9, 10, and 11, 2010. Tacoma Pump and Drilling, Inc. (Tacoma Pump), of Spanaway, Washington, conducted the drilling and well installation activities under the direction of an SLR geologist. Well MW-1 was installed near the likely source of the impacted perched groundwater (the northern former gasoline UST area), and MW-2, MW-3, and MW-4 were installed at

locations to delineate the western/southwestern, southern, and northern extents of the impacted perched groundwater. The locations of the wells are shown on Figure 2. Each of the borings was advanced below the perched groundwater table, to depths ranging from approximately 46 to 60 feet bgs. The soil cuttings are stored on the property in properly labeled 55-gallon drums, pending off-site disposal at an Ecology-approved facility.

Since soil samples had already been collected near well MW-1 to a depth of approximately 35 feet and the other wells were not located near a potential contaminant source area, the sampling plan included the collection of soil samples from each boring at depths below 40 feet bgs. However, due to encountering perched groundwater at shallower depths than anticipated (as discussed below), soil samples were collected at depths below 30 feet in the borings to install MW-3 and MW-4. SLR screened each soil sample, as well as the drill cuttings, for evidence of petroleum hydrocarbons such as sheen, staining, odor, and detectable PID readings. There was limited field evidence of petroleum hydrocarbons (PID readings of up to 18.4 parts per million) in any of the borings. Soil boring logs that present the field screening results are presented in Appendix B. To assess the soil conditions near the perched groundwater table, a soil sample collected from each boring, at a depth near the estimated perched groundwater table, was submitted to F&B for analysis. To delineate the vertical extent of the impacted perched groundwater, a soil sample collected from near the bottom of each boring was also submitted to F&B for analysis.

Each groundwater monitoring well was constructed with 2-inch-diameter schedule 40 PVC casing and screen. The screen (0.010-inch slots) for each well was installed at a depth that intersected the estimated perched groundwater table. Due to difficulty determining the perched groundwater table at several borings, the screen lengths ranged from 10 to 20 feet long to try to ensure that the screen intersected the water table. Hydrated bentonite chips were placed from the bottom of each boring to the bottom of the well. A filter pack of 10x20 Colorado^{TM} silica sand was installed from the bottom of the well to approximately 1.5 to 3 feet above the uppermost screen slot. Hydrated bentonite chips were placed above the sand pack to approximately 2 feet bgs. A flush-grade, traffic-rated, steel monument was installed in concrete to protect each well. After installation, Tacoma Pump developed the wells by using surging and bailing methods. The development water is stored on the property in properly labeled, 55-gallon drums, pending off-site disposal at an Ecology-approved facility. Soil boring logs that describe the well construction details are presented in Appendix B.

After installing the wells, Signature Surveying & Mapping, PLLC (Signature) of Shoreline, Washington, surveyed the location, and the ground surface and top of casing elevations of each well relative to the NAVD 88 datum. The top of casing elevations are presented in Table 1.

Conduct Groundwater Sampling Events

To assess the perched groundwater conditions and evaluate potential seasonal variations in groundwater elevations and water quality, SLR personnel conducted groundwater sampling events on June 14 and October 20, 2010. Immediately prior to sampling, the depths to groundwater were measured in all of the groundwater monitoring wells by using an electronic water level probe. The depth to groundwater measurements were converted to groundwater elevations by using the results of the well elevation survey.

Before the sample collection in June, SLR purged at least three pore volumes from each well by using a disposable PVC bailer. The bailers were also used to collect the samples. In October, a submersible Grundfos RediFlo 2 pump was used to purge and sample the wells by low flow (0.3 liters per minute) pumping methods. The pump intake was set at a depth of approximately 3 feet below the water table in each well. During purging, field parameters of temperature, conductivity, pH, dissolved oxygen, and oxidation-reduction potential were measured. Each groundwater sample was collected following the stabilization of the field parameter measurements. The groundwater samples were submitted to F&B for analysis. The purge water is stored on the property in properly labeled, 55-gallon drums, pending off-site disposal at an Ecology-approved facility.

SAMPLE ANALYTCAL RESULTS

Soil

In April 2010, F&B analyzed the soil sample from boring MW-1B that was collected at a depth of approximately 24.5 feet bgs. The sample was analyzed for GRO by Ecology Method NWTPH-Gx, for BTEX, methyl tertiary butyl ether (MTBE), 1,2-dibromoethane (EDB), 1,2-dichlorooethane (EDC), and naphthalene by EPA Method 8260C, and for lead by EPA Method 200.8. The soil sample analytical results showed that the sample contained GRO and benzene concentrations (140 and 0.49 mg/kg, respectively) that exceeded the MTCA Method A soil cleanup levels (30 and 0.03 mg/kg, respectively). Toluene, ethylbenzene, total xylenes, naphthalene, and lead were detected at concentrations (5.70, 1.20, 6.70, 0.58, and 1.11 mg/kg, respectively) that were below the Method A cleanup levels (7, 6, 9, 5, and 250 mg/kg, respectively). The other analytes were not detected at concentrations above the MRLs. To obtain the additional data necessary to calculate a site-specific MTCA Method B soil cleanup level, if appropriate, the sample from MW-1B was also analyzed for volatile petroleum hydrocarbons (VPH) by Ecology Method NWVPH and hexane by EPA Method 8260C. The soil sample analytical results [GRO, BTEX, naphthalene, and lead only] are presented in Table 1, and copies of the laboratory reports are presented in Appendix C.

In June 2010, F&B analyzed soil samples from borings MW-1 (collected at depths of approximately 40 and 55 feet bgs), MW-2 (collected at depths of approximately 40 and 55.5 feet bgs), MW-3 (collected at depths of approximately 30.5 and 45.5 feet bgs), and MW-4 (collected at depths of approximately 30.5 and 55 feet) for GRO, BTEX, and naphthalene. The soil sample analytical results showed that both samples from MW-2 and the deep sample from MW-3 contained benzene concentrations (0.036 to 0.21 mg/kg) that exceeded the MTCA Method A soil cleanup level. The samples from MW-1 and MW-4 and the 30.5-foot-deep sample from MW-3 did not contain analyte concentrations that exceeded the MRLs. The soil sample analytical results are presented in Table 1, and copies of the laboratory reports are presented in Appendix C.

Groundwater

F&B analyzed the June 2010 groundwater samples for GRO by Ecology Method NWTPH-Gx, for BTEX, MTBE, EDC, and naphthalene by EPA Method 8260C, for EDB by EPA Method 8011 Modified, and for total lead by EPA Method 200.8. The analytical results showed that the sample from well MW-2 contained GRO, benzene, and ethylbenzene concentrations (8,400, 2,100, and 960 µg/L, respectively) that exceeded the MTCA Method A groundwater cleanup levels (800, 5, and 700 µg/L, respectively). The sample from MW-1 also contained GRO and benzene concentrations (990 and 110 µg/L, respectively) that exceeded the Method A cleanup levels. The samples from MW-3 and MW-4 contained analyte concentrations that were either below the Method A cleanup levels or below the MRLs.

F&B analyzed the October 2010 groundwater samples for GRO, BTEX, and naphthalene. The analytical results showed that the samples from MW-1 and MW-2 contained GRO concentrations (1,900 and 3,900 µg/L, respectively) and benzene concentrations (520 and 1,300 µg/L, respectively) that exceeded the MTCA Method A groundwater cleanup levels. The samples from MW-3 and MW-4 did not contain analyte concentrations that exceeded the MRLs. All of the groundwater sample analytical results are presented in Table 2, and the GRO and benzene concentrations are also shown on Figures 3 and 4. Copies of the laboratory reports are presented in Appendix C.

GEOLOGY AND HYDROGEOLOGY

The soils beneath the subject property consist of dense glacial advance outwash (sand, gravel, and silt units) with interbedded lacustrine silts to the maximum depth drilled (approximately 60 feet bgs). Specifically, thin surficial gravel fill is underlain by a sand (silty to gravelly) to gravel unit that is approximately 29 to 43 feet thick. Beneath the central and southern parts of the property, a 5- to 10-foot-thick sandy silt to silt is interbedded within the sand to gravel unit. The sand to gravel unit is underlain by clayey

to gravelly silt that is 15 to at least 23 feet thick. At MW-2, MW-3, and MW-4, a gravelly sand to sand and gravel that is approximately 5 to 7.5 feet thick is interbedded within the silt unit. At MW-1, the silt unit is underlain by a silty sand that extends beyond the bottom of the boring. A cross-sectional view of the shallow geology (to approximately 60 feet bgs) beneath the property (Section A-A') is shown on Figure 6. The location of the cross section is shown on Figure 5.

According to the driller's log for the water supply well (Well #2) located in the northern part of the property, a thick sequence of clay and cemented sand occurs from approximately 49 to 215 feet bgs. The deep water-bearing units at Well #2 occur at depths between 215 and 245 feet bgs. The well log is presented in Appendix D.

On June 14 and October 20, 2010, the groundwater table beneath the property occurred within the sand to gravel unit, and appeared to be perched on top of the underlying silt unit. On June 14th, the depths to the perched groundwater in the wells ranged from 23.92 to 41.33 feet below the tops of the well casings, and the groundwater elevations ranged from 252.69 to 271.41 feet above the NAVD 88 datum. On October 20th, the depths to the perched groundwater in the wells ranged from 26.67 to 40.71 feet below the tops of the well casings, and the groundwater elevations ranged from 253.08 to 268.66 feet above the NAVD 88 datum.

Groundwater flow appears to be controlled by the geometry of the clayey to gravelly silt, with flow converging into the low point of the top of the silt unit. The elevation of the silt is about 10 feet lower at monitoring wells MW-1 and MW-2 than at wells MW-3 and MW-4 (see Figure 6). From June to October, the perched groundwater elevations beneath the property decreased 2.75 feet at MW-4 and 3.51 feet at MW-3, while groundwater levels in wells located at the low point of the clayey to gravelly silt unit showed substantially less decline (1.08 feet at MW-2) or an increase (1.03 foot rise at MW-1). These water level changes are consistent with groundwater migrating from the higher parts of the silt unit and collecting in the lower parts of the silt. This interpretation is consistent with the greatest hydrocarbon impacts occurring at wells MW-1 and MW-2. Based on the known clayey to gravelly silt geometry and the area of petroleum hydrocarbon-impacted groundwater, there appears to be a flow component to the south-southwest. The groundwater monitoring data from both sampling events are presented in Table 3.

GROUNDWATER RECEPTOR SURVEY

SLR conducted a survey to identify the potential groundwater and surface water receptors in the vicinity of the subject property. The receptor survey included a review of Ecology and OWSI records of water supply wells located within a ½-mile radius of the property, a

review of a topographic map of the property area, and a survey of the elevations of the bottom of the gulley in the western part of the property.

Well Records

Ecology and OWSI well records identified 12 water supply wells located within a ½-mile radius of the property. Based on the well records, the locations of the wells are accurate to at least the quarter-quarter of a section. As shown on Figure 7, the wells are located to the north, northwest, and west of the area of impacted perched groundwater at the property. All of the available water supply well completion logs and a table that presents the well completion details are presented in Appendix D.

According to the well records, the groundwater from each of the supply wells in the property area is used for domestic purposes. There is one public water supply well (Well #2) located at the northern end of the property. The well is screened at depths ranging from 214 to 245 feet bgs. All of the identified water supply wells in the vicinity of the property are completed (screened or open casing) at depths between 157 and 377 feet. The soil descriptions on the well logs consistently note that a thick sequence of clay units occur above the deep groundwater-bearing zones. Groundwater flow directions in the deeper regional aquifer have been inferred to flow from the upland areas toward Port Ludlow (Economic and Engineering Services, Inc., 1994), indicating that the water supply wells are located hydraulically upgradient or cross-gradient of the impacted perched groundwater. Based on the presence of the clay and the inferred deep groundwater flow direction, it is unlikely that the impacted perched groundwater beneath the property could affect water quality in the deep groundwater-bearing zones. The lack of detectable petroleum hydrocarbons in the 1990, 2009, and 2010 water samples from Well #2 provides evidence to that assertion.

Topographic Map and Gulley Elevation Survey

Based on a review of a 1991 topographic map of the property area, there are two surface water bodies located within ½ mile of the property. Puget Sound (Port Ludlow Bay) is located approximately 2,900 feet to the south of the property, and an unnamed pond is located approximately 650 feet to the north of the property (see Figure 4). The pond is located at a ground surface elevation approximately 40 feet higher than the property, and it is unlikely that the perched groundwater beneath the property discharges into the pond.

The gulley located in the western part of the property extends south, beyond Oak Bay Road, to a low lying marshy area near Puget Sound. The topographic map does not indicate that surface water is present in the gulley, and on October 20, 2010, SLR personnel inspected the eastern slope and bottom of the gulley (within the property

boundaries) for the presence of perched groundwater seeps. There was no observed evidence of groundwater seepage and there was no surface water in the gulley at that time. The north end of the gulley (near Walker Way) is approximately 6 feet deep, and next to the southern boundary of the OWSI facility, the gulley is over 20 feet deep. To compare the perched groundwater elevations to the elevations of the bottom of the gulley, Signature surveyed the ground surface elevations at 17 locations on the bottom of the gulley relative to the NAVD 88 datum. The elevations of the bottom of the gulley range from 285.6 feet at the northern end of the gulley to 254.0 feet at the southern property line (see Figure 4). In October 2010, the groundwater elevation near the southern end of the OWSI facility (260.67 feet at MW-3) was 6.67 feet higher than the gulley floor approximately 155 feet to the southwest. Since groundwater seeps were not observed in the gulley, it appears that the perched groundwater elevations, at the time of the observations, were below the gulley floor.

The OWSI property is located near the top of a steep slope down to Puget Sound (see Figure 1). Since the topography slopes to the south and the gulley is oriented north-south and is over 2,500 feet long, the perched groundwater beneath the property may seep into the gulley at a location to the south of the property.

CONCLUSIONS

From April through October 2010, SLR conducted a subsurface investigation at the OWSI property to: 1) assess the gasoline concentrations in the soil at the area of the northern former gasoline USTs, 2) delineate the lateral and vertical extents of the gasoline-impacted perched groundwater, and 3) characterize seasonal effects on the perched groundwater elevations and water quality. Based on the investigation results, SLR presents the following conclusions related to the environmental conditions at the property.

Based on the soil sample analytical results from this investigation and from the UST removal activities, it appears that the former northern gasoline UST area is the source of the hydrocarbon-impacted perched groundwater. The field screening results and the soil and groundwater sample analytical results indicate that the gasoline did not migrate straight down to the groundwater zone. The area of remaining impacted soil within the vadose zone has not been fully delineated.

Low benzene concentrations (0.036 to 0.21 mg/kg), marginally above the MTCA Method A soil cleanup level, were detected at depths of up to 15 to 20 feet below the perched groundwater table. The benzene detected in the saturated soil samples likely reflects benzene dissolved in the pore water, rather than adsorbed to the soil. Since the low benzene concentrations in saturated soil likely reflect dissolved benzene in pore water,

SLR does not believe that further assessment of the vertical extent of impacts to soil is warranted.

Based on the groundwater sample analytical results from this investigation and from the 2009 drilling of Well #17, petroleum hydrocarbon concentrations greater than the MTCA Method A groundwater cleanup levels occur near the source area (former northern gasoline UST area) and extend to the south and southwest. The estimated area of the impacted groundwater is shown on Figure 8. The impacted groundwater likely extends beyond the western fenceline of the OWSI facility; however, that area of the OWSI property is not accessible for investigation. The southern and northern extents of the impacted groundwater have been delineated. Although the eastern extent of the impacted groundwater has not been delineated, the current distribution of groundwater concentrations suggest that eastward migration of the impacted groundwater is unlikely.

The vertical extent of the hydrocarbon-impacted perched groundwater was not fully delineated at all areas; however, due to the presence of a thick sequence of clay units beneath the property area, the potential for migration of the impacted groundwater to a deeper water-bearing unit is considered very low. SLR does not believe that further assessment of the vertical extent of the impacted groundwater is necessary.

If you have any questions, please call Mike Staton at (425) 471-0479.

Sincerely,

SLR International Corp

Kim A. Saganski, L.G.
Senior Geologist

Michael D. Staton, L.G.
Principal Geologist

Attachments: Limitations
References
Tables 1, 2, and 3
Figures 1 through 8
Appendix A – Laboratory Report for Well #2 Sample Collected in 2010
Appendix B – Soil Boring Logs
Appendix C – Laboratory Reports
Appendix D – Water Supply Well Logs

cc: Sue Schroader, Olympic Property Group
Diana Smeland, Port Ludlow Associates
Joe Rehberger, Cascadia Law Group
Chip Goodhue, Aspect Consulting Group
Tom Kilbane, Short Cressman & Burgess, PLLC

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.

REFERENCES

Applied Geotechnology, Inc. 1991. *Hydrocarbon Contamination Assessment and Underground Storage Tank Removal, Port Ludlow Water District, Port Ludlow, Washington*. March 4.

Economic and Engineering Services, Inc. (in association with Pacific Groundwater Group). 1994. *Eastern Jefferson County Groundwater Characterization Study.* May.

Robinson Noble & Saltbush, Inc. 2009. *Well 17 Site Contamination, Initial Findings, and Recommendations*. April 26.

TABLES

Table 1
Soil Sample Analytical Results - BTEX, Naphthalene, GRO, and Lead
Olympic Water and Sewer Property
Port Ludlow, Washington

Soil Boring Number	Sample Name	Date Collected	Approximate Sample Depth (feet)	Analytical Results (mg/kg)						
				Benzene[a]	Toluene[a]	Ethylbenzene[a]	Total Xylenes[a]	Naphthalene[a]	GRO[b]	Lead[c]
MTCA Method A Cleanup Levels[d]				**0.03**	**7**	**6**	**9**	**5[e]**	**30**	**250**
MW-1B	MW1-24.5-25	4/14/2010	24.5 to 25	**0.49**	5.70	1.20	6.70	0.58	**140**	1.11
MW-1	MW1-40'	6/8/2010	40 to 40.3	<0.03	<0.05	<0.05	<0.15	<0.05	<2	NA
MW-1	MW1-55'	6/8/2010	55 to 55.5	<0.03	<0.05	<0.05	<0.15	<0.05	<2	NA
MW-2	MW2-40'	6/9/2010	40 to 40.3	**0.21[f]**	0.062	0.11	0.066	<0.05	2.90	NA
MW-2	MW2-55.5'	6/9/2010	55.5 to 55.8	**0.21[f]**	<0.05	<0.05	<0.15	<0.05	<2	NA
MW-3	MW3-30.5'	6/9/2010	30.5 to 30.9	<0.03	<0.05	<0.05	<0.15	<0.05	<2	NA
MW-3	MW3-45.5	6/10/2010	45.5 to 45.9	**0.036[f]**	<0.05	<0.05	<0.15	<0.05	<2	NA
MW-4	MW4-31	6/10/2010	30.5 to 31	<0.03	<0.05	<0.05	<0.15	<0.05	<2	NA
MW-4	MW4-55	6/11/2010	55 to 55.5	<0.03	<0.05	<0.05	<0.15	<0.05	<2	NA

NOTES:

mg/kg = milligrams per kilogram (ppm).

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

NA = Not analyzed.

[a]Benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naphthalene by EPA Method 8260C.

[b]Gasoline-range organics (GRO) by Ecology Method NWTPH-Gx.

[c]Lead by EPA Method 200.8.

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

[e]The cleanup level is the total value for naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene.

[f]The benzene concentration in this sample likely reflects dissolved benzene in pore water rather than benzene adsorbed to the soil.

Table 2
Groundwater Sample Analytical Results
Olympic Water and Sewer Property
Port Ludlow, Washington

Well Number	Date Collected	Analytical Results (µg/L)									
		Benzene[a]	Toluene[a]	Ethylbenzene[a]	Total Xylenes[a]	Naphthalene[a]	MTBE[a]	EDC[a]	EDB[b]	GRO[c]	Total Lead[d]
MTCA Method A Cleanup Levels[e]		**5**	**1,000**	**700**	**1,000**	**160[f]**	**20**	**5**	**0.01**	**800**	**15**
MW-1	6/14/2010	**110**	45	1.10	186	<1	<1	<1	<0.01	**990**	<1
	10/20/2010	**520**	140	110	221	15	NA	NA	NA	**1,900**	NA
MW-2	6/14/2010	**2,100**	620	**960**	650	100	<1	<1	<0.01	**8,400**	<1
	10/20/2010	**1,300**	290	430	530	35	NA	NA	NA	**3,900**	NA
MW-3	6/14/2010	0.36	<1	<1	<3	<1	<1	<1	<0.01	<100	<1
	10/20/2010	<0.35	<1	<1	<3	<1	NA	NA	NA	<100	NA
MW-4	6/14/2010	<0.35	<1	<1	<3	<1	<1	<1	<0.01	<100	<1
	10/20/2010	<0.35	<1	<1	<3	<1	NA	NA	NA	<100	NA

NOTES:

µg/L = micrograms per liter (ppb).

Values shaded and in **bold** exceed the groundwater cleanup levels.

NA = Not analyzed.

[a]Benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, methyl tertiary butyl ether (MTBE), and 1,2-dichloroethane (EDC) by EPA Method 8260C.

[b]1,2-dibromoethane (EDB) by EPA Method 8011 Modified.

[c]Gasoline-range organics (GRO) by Ecology Method NWTPH-Gx.

[d]Total lead by EPA Method 200.8.

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

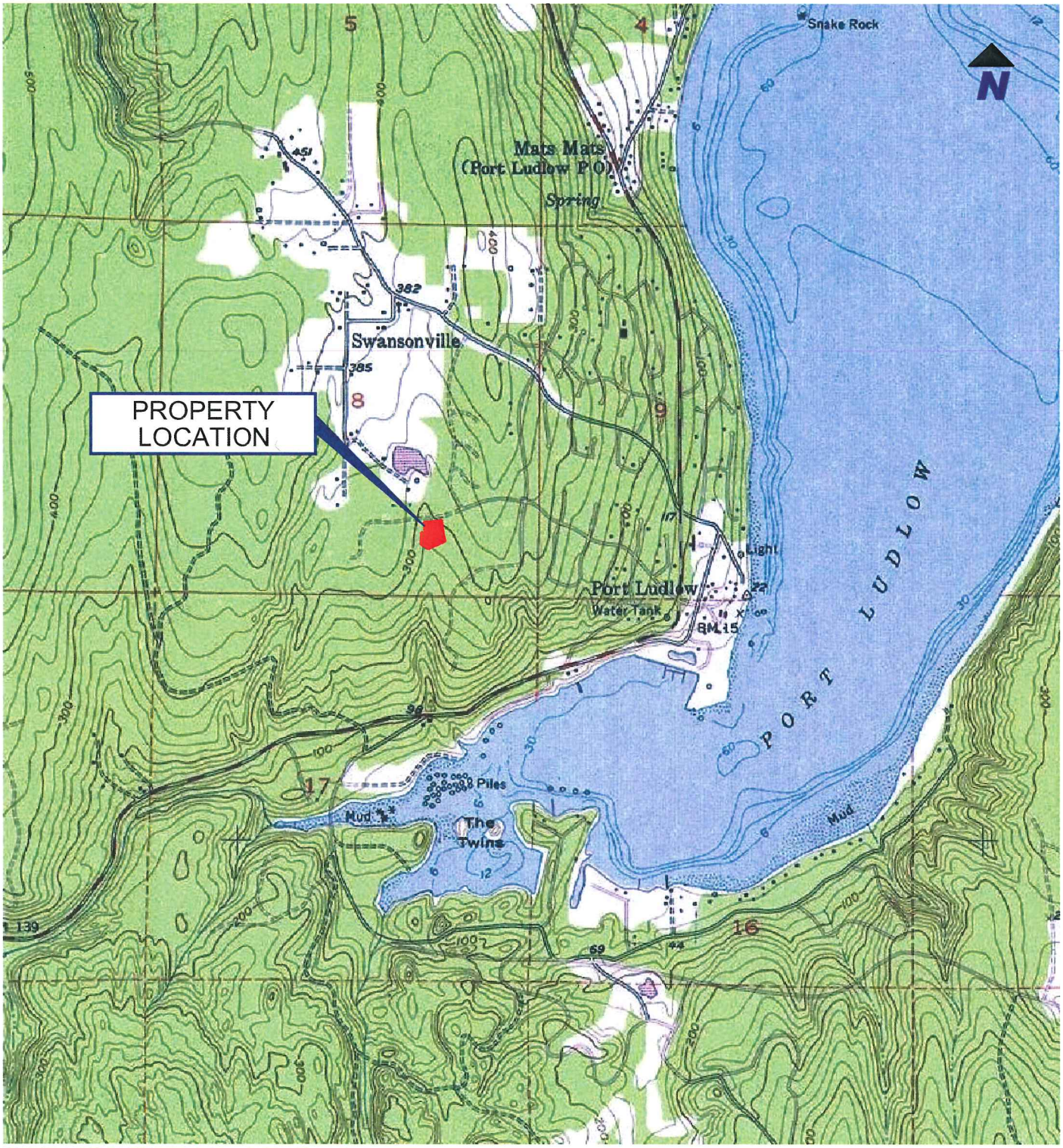
[f]The cleanup level is the total value for naphthalene, 1-methyl naphthalene, and 2-methyl naphthalene.

Table 3
Groundwater Monitoring Data
Olympic Water and Sewer Property
Port Ludlow, Washington

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Groundwater Elevation (feet)
MW-1	294.02	6/14/2010	41.33	252.69
		10/20/2010	40.30	253.72
MW-2	293.79	6/14/2010	39.63	254.16
		10/20/2010	40.71	253.08
MW-3	289.37	6/14/2010	25.19	264.18
		10/20/2010	28.70	260.67
MW-4	295.33	6/14/2010	23.92	271.41
		10/20/2010	26.67	268.66

Notes:
[a]Top of casing elevations were surveyed relative to the NAVD 88 datum.
[b]Depth to groundwater measured in feet below top of PVC casing.

FIGURES



SOURCE: USGS 7.5 MINUTE QUADRANGLE PORT LUDLOW, WA 1991; CONTOUR INTERVAL, 20 FEET.

SCALE 1" = 2,000'
WHEN PLOTTED ON 8 1/2 x 11

0 500 2000' 4000'

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SLR

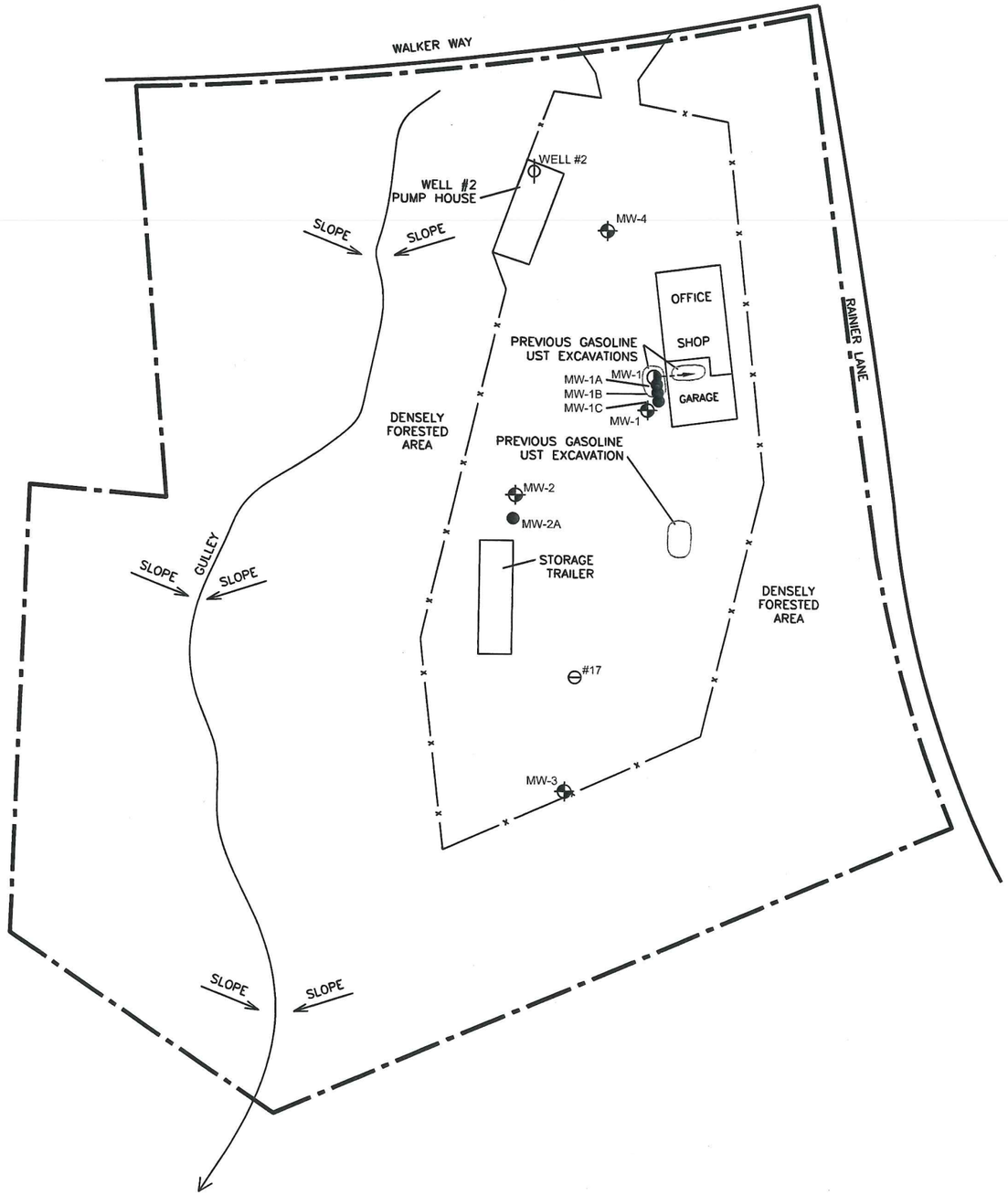
OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

Report
SITE CHARACTERIZATION REPORT

Drawing
PROPERTY LOCATION MAP

Date	JULY 6, 2010	Scale	1"=2000'	Fig. No.	1
File Name	01-01.DWG	Project No.	101.00433.00001		

C:\DRIVE_E\Clients\SLR\101\101.00433.00001\01-01.dwg, SITE LOCATION - 1, 7/6/2010 7:52:58 PM, BDT



N

NOTES

LEGEND

	PROPERTY BOUNDARY
MW-1	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
MW-2A	APPROXIMATE SOIL BORING LOCATION AND DESIGNATION
#17	EXISTING CASING LOCATION AND DESIGNATION
WELL #2	EXISTING WATER SUPPLY WELL LOCATION AND DESIGNATION
MW-1	PREVIOUS ANGLE BORING LOCATION, DESIGNATION, AND DIRECTION FROM VERTICAL
	FENCE

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SCALE: 1" = 50'
WHEN PLOTTED AT 11" x 17" PAGE SIZE
0 50 100 150'

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

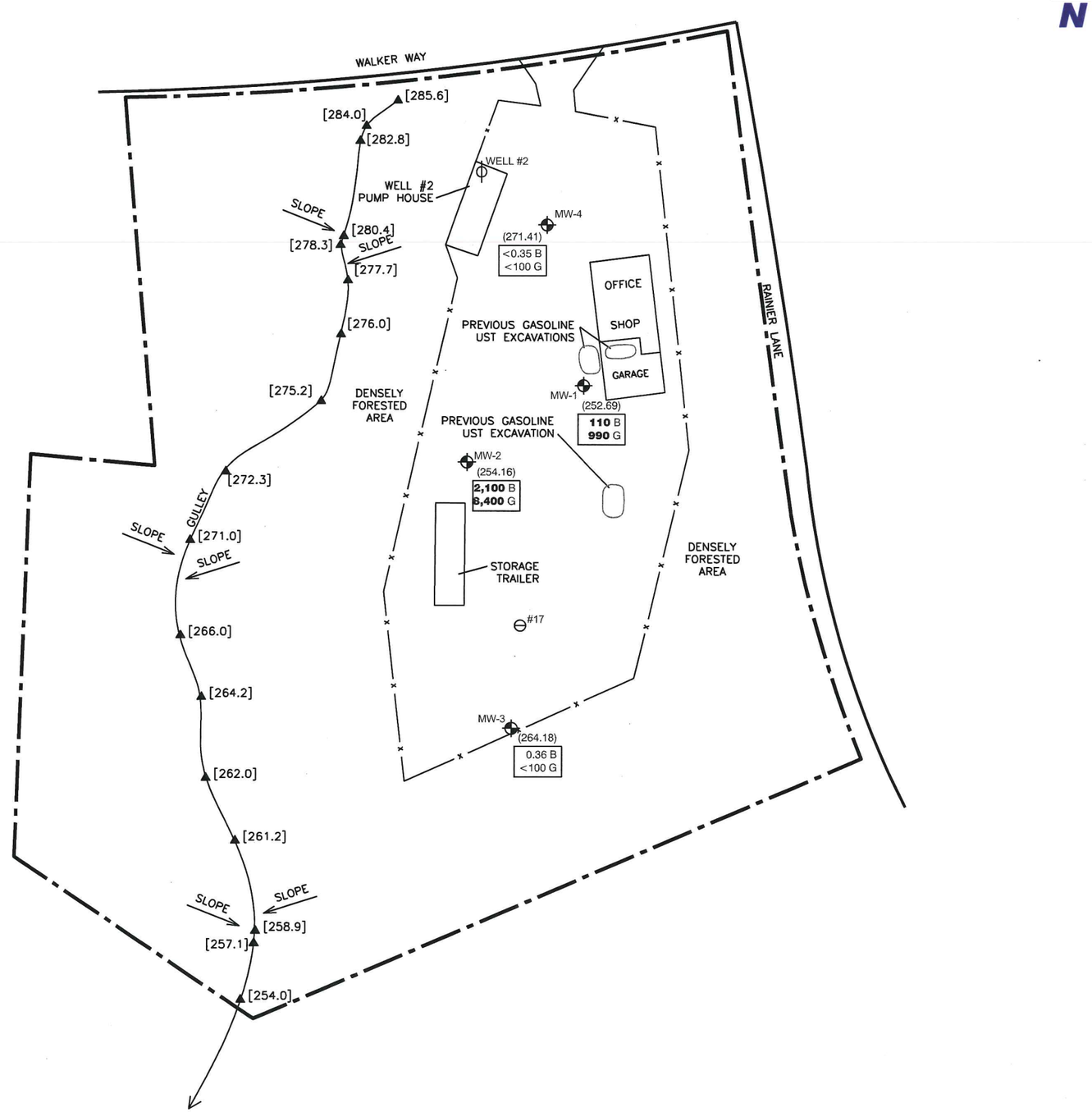
Report: SITE CHARACTERIZATION REPORT

Drawing: GROUNDWATER MONITORING WELL LOCATIONS

Date: July 12, 2010	Scale: AS SHOWN	Fig. No. 2
File Name: 101.00433.00001\101-02.DWG	Project No. 101.00433.00001	

SLR

Last Saved: Monday, November 15, 2010 5:11:49 PM by egoodwin Drawing path: R:\Figures\Bothell\Olympic Water and Sewer\2\02-02.dwg



NOTES

LEGEND

	PROPERTY BOUNDARY
MW-1	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
(271.41)	PERCHED GROUNDWATER ELEVATION (IN FEET ABOVE NAVD 88 DATUM)
110 B **990** G	B=BENZENE CONCENTRATION IN GROUNDWATER SAMPLE (IN μg/L) G=GRO CONCENTRATION IN GROUNDWATER SAMPLE (IN μg/L)
#17	EXISTING CASING LOCATION AND DESIGNATION
WELL #2	EXISTING WATER SUPPLY WELL LOCATION AND DESIGNATION
	FENCE
[285.6]	BOTTOM OF GULLEY ELEVATION (IN FEET ABOVE NAVD 88 DATUM)

NOTE: CONCENTRATIONS IN BOLD EXCEED THE MTCA METHOD A GROUNDWATER CLEANUP LEVELS

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SCALE: 1" = 50'
WHEN PLOTTED AT 11" x 17" PAGE SIZE
0 50 100 150'

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

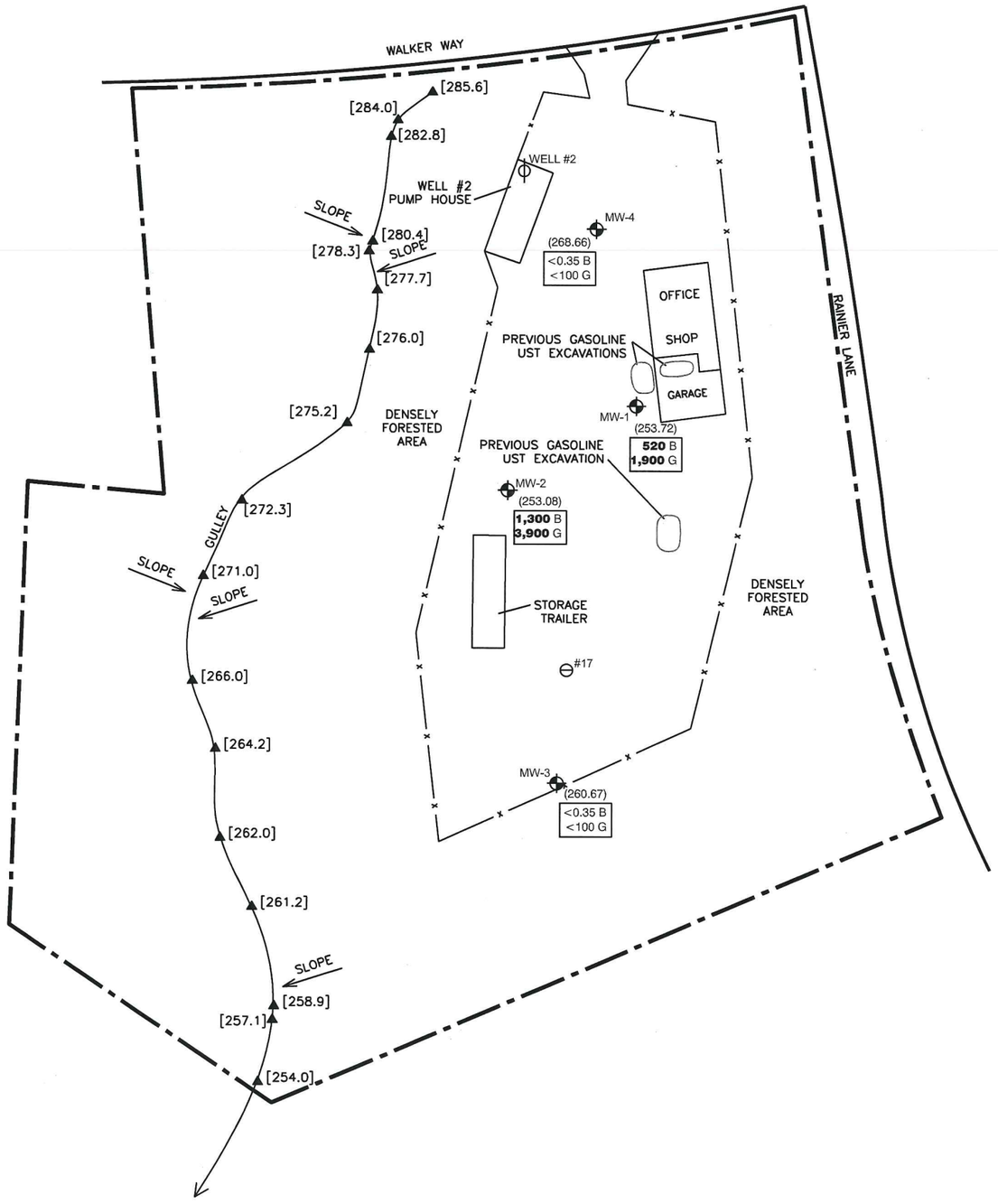
Report
SITE CHARACTERIZATION REPORT

Drawing
PERCHED GROUNDWATER SAMPLING RESULTS - JUNE 2010

Date July 12, 2010	Scale AS SHOWN	Fig. No. 3
File Name 101.00433.00001\101-02.DWG	Project No. 101.00433.00001	

SLR

Last Saved: Monday, November 15, 2010 2:45:01 PM by egoodwin Drawing path: R:\Figures\Bothell\Olympic Water and Sewer\2\02-03.dwg



N

NOTES

LEGEND

	PROPERTY BOUNDARY
MW-1	GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
(253.72)	PERCHED GROUNDWATER ELEVATION (IN FEET ABOVE NAVD 88 DATUM)
520 B **1,900** G	B=BENZENE CONCENTRATION IN GROUNDWATER SAMPLE (IN $\mu g/L$) G=GRO CONCENTRATION IN GROUNDWATER SAMPLE (IN $\mu g/L$)
#17	EXISTING CASING LOCATION AND DESIGNATION
WELL #2	EXISTING WATER SUPPLY WELL LOCATION AND DESIGNATION
— x — x —	FENCE
[285.6]	BOTTOM OF GULLEY ELEVATION (IN FEET ABOVE NAVD 88 DATUM)

NOTE: CONCENTRATIONS IN BOLD EXCEED THE MTCA METHOD A GROUNDWATER CLEANUP LEVELS

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SCALE: 1" = 50'
WHEN PLOTTED AT 11" x 17" PAGE SIZE
0 50 100 150'

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

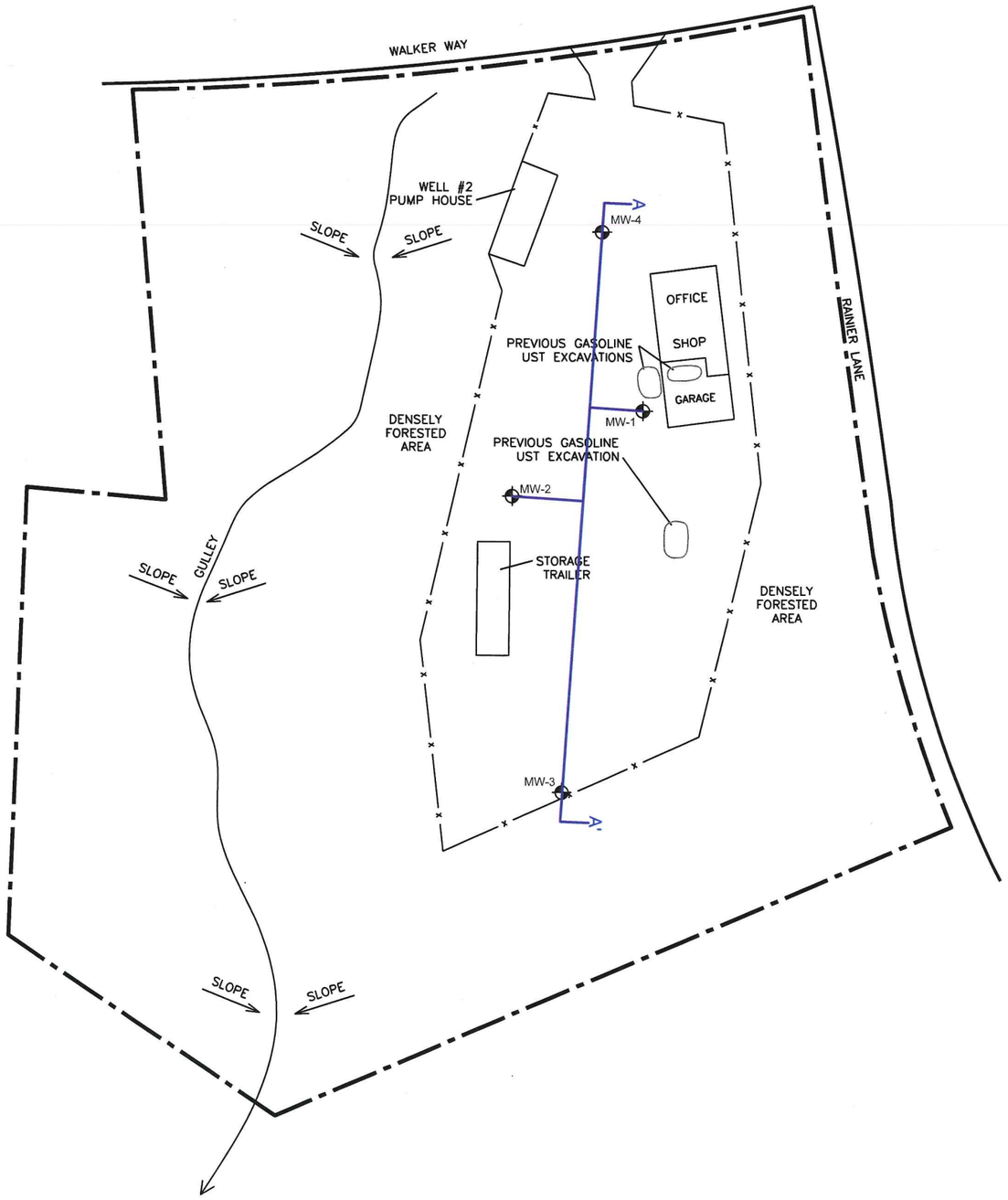
Report: SITE CHARACTERIZATION REPORT

Drawing: PERCHED GROUNDWATER SAMPLING RESULTS - OCTOBER 2010

Date: July 12, 2010	Scale: AS SHOWN	Fig. No. 4
File Name: 101.00433.00001101-02.DWG	Project No.: 101.00433.00001	

SLR

Last Saved: Monday, November 15, 2010 5:14:32 PM by egoodwin Drawing path: R:\Figures\Bothell\Olympic Water and Sewer\2102-04.dwg



N

NOTES

LEGEND

PROPERTY BOUNDARY

MW-1 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

FENCE

A A' CROSS SECTION PLAN VIEW

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SCALE: 1" = 50'
WHEN PLOTTED AT 11" x 17" PAGE SIZE
0 50 100 150'

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

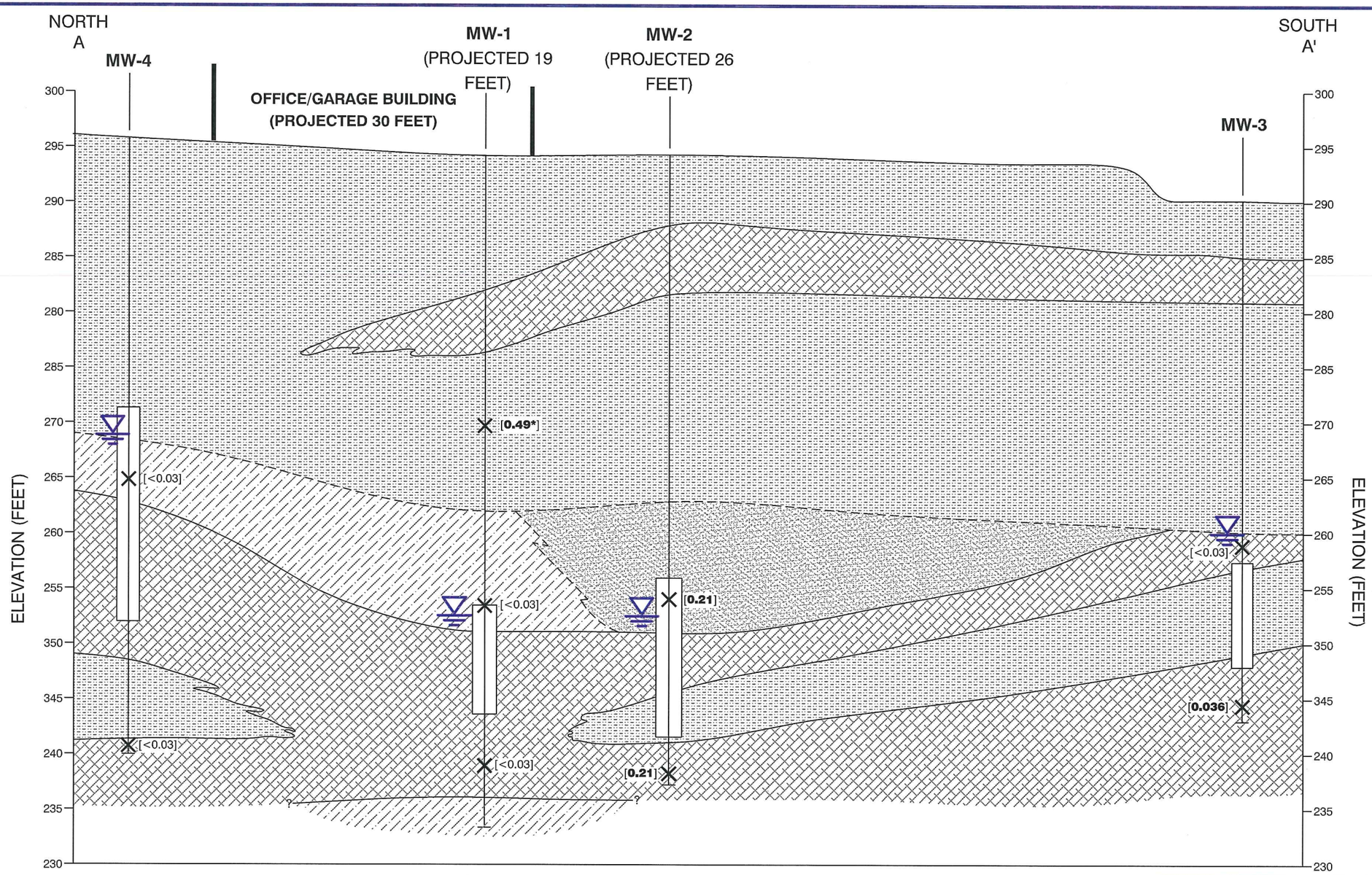
Report
SITE CHARACTERIZATION REPORT

Drawing
LOCATION OF GEOLOGIC CROSS SECTION A-A'

Date July 12, 2010	Scale AS SHOWN	Fig. No. 5
File Name 101.00433.00001101-02.DWG	Project No. 101.00433.00001	

SLR

Last Saved: Monday, November 15, 2010 2:44:55 PM by egoodwin Drawing path: R:\Figures\Bothell\Olympic Water and Sewer\2\02-05.dwg



LEGEND

- INFERRED LITHOLOGIC CONTACT
- MW-4 — EXPLORATION LOCATION AND DESIGNATION
- SCREEN LOCATION
- INFERRED GROUNDWATER TABLE SURFACE IN 2010
- [0.21] — BENZENE CONCENTRATIONS IN SOIL SAMPLE (IN MG/KG)
- GRAVEL AND SANDY GRAVEL (GP)
- SAND, GRAVELLY SAND, AND SAND AND GRAVEL (SP)
- SILTY SAND (SM) AND SILTY GRAVEL (GM)
- SILT, CLAYEY SILT, SAND SILT, AND GRAVELLY SILT (ML)

NOTES

1) CROSS SECTION LOCATION IS SHOWN ON FIGURE 5
2.) ELEVATIONS ARE RELATIVE TO NAVD 88 DATUM
3.) CONCENTRATIONS IN BOLD EXCEED THE MTCA METHOD A SOIL CLEANUP LEVEL.
4.) *= SAMPLE COLLECTED FROM ADJACENT BORING MW-1B.

HORIZONTAL SCALE (FEET): 0 20 40 60'

VERTICAL SCALE (FEET): 0 10 20 30'

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

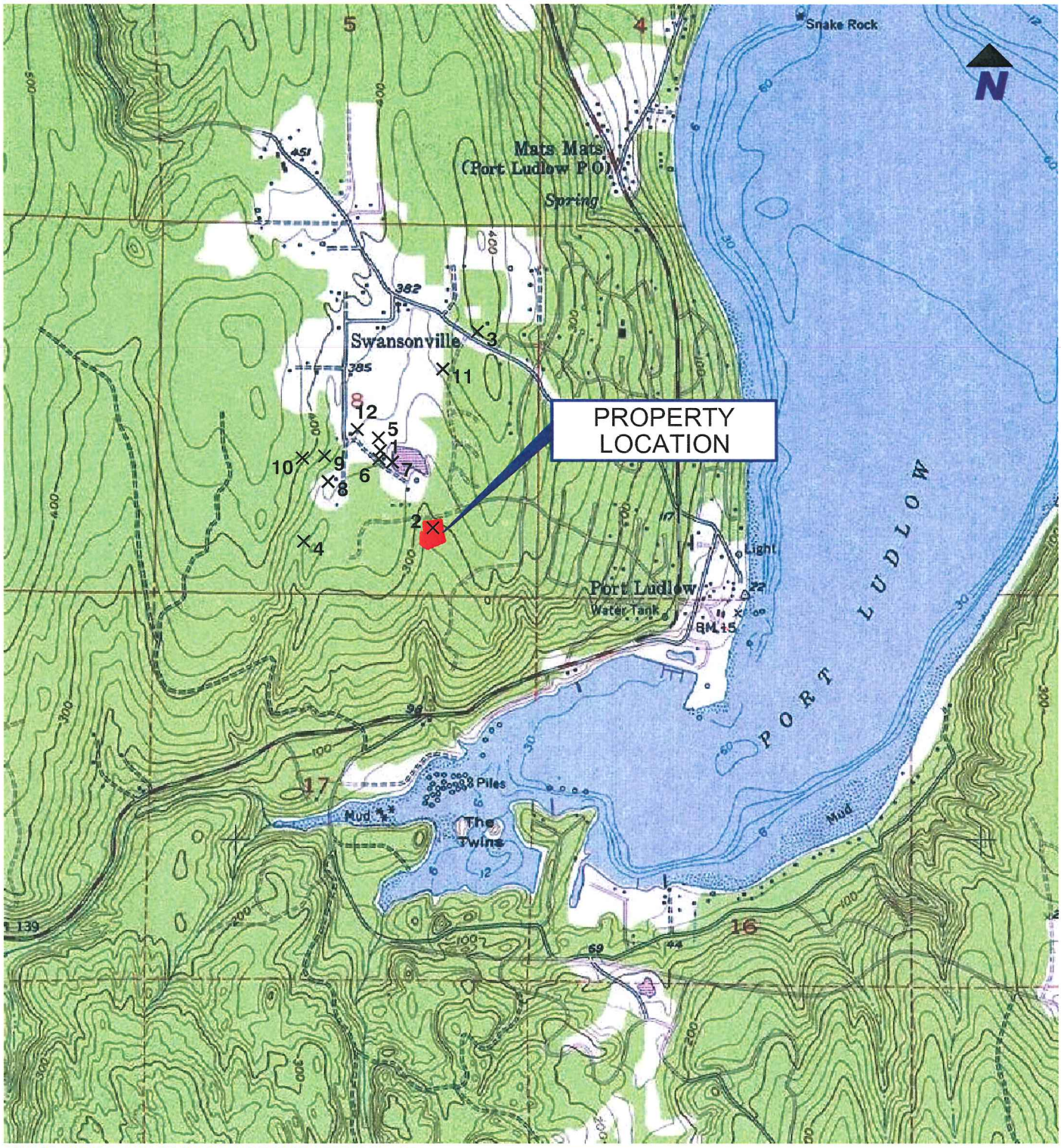
Report: SITE CHARACTERIZATION REPORT

Drawing: GEOLOGIC CROSS SECTION A-A'

Date: July 12, 2010 | Scale: AS SHOWN | Fig. No. 6

File Name: 101.00433.00001\101-02.DWG | Project No. 101.00433.00001

Last Saved: Tuesday, December 14, 2010 4:35:07 PM by egoodwin Drawing path: Z:\Figures\Bothell\Olympic Water and Sewer\2102-06.dwg



SOURCE: USGS 7.5 MINUTE QUADRANGLE PORT LUDLOW, WA 1991;
CONTOUR INTERVAL, 20 FEET.

LEGEND

6 X APPROXIMATE WATER SUPPLY WELL LOCATION AND SLR DESIGNATED NUMBER

SCALE 1" = 2,000'
WHEN PLOTTED ON 8 1/2 x 11

0 1000 2000 4000

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SLR

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

Report
SITE CHARACTERIZATION REPORT

Drawing
WATER SUPPLY WELL LOCATION MAP

Date JULY 12, 2010	Scale 1"=2000'	Fig. No. 7
File Name 01-03.DWG	Project No. 101.00433.00001	

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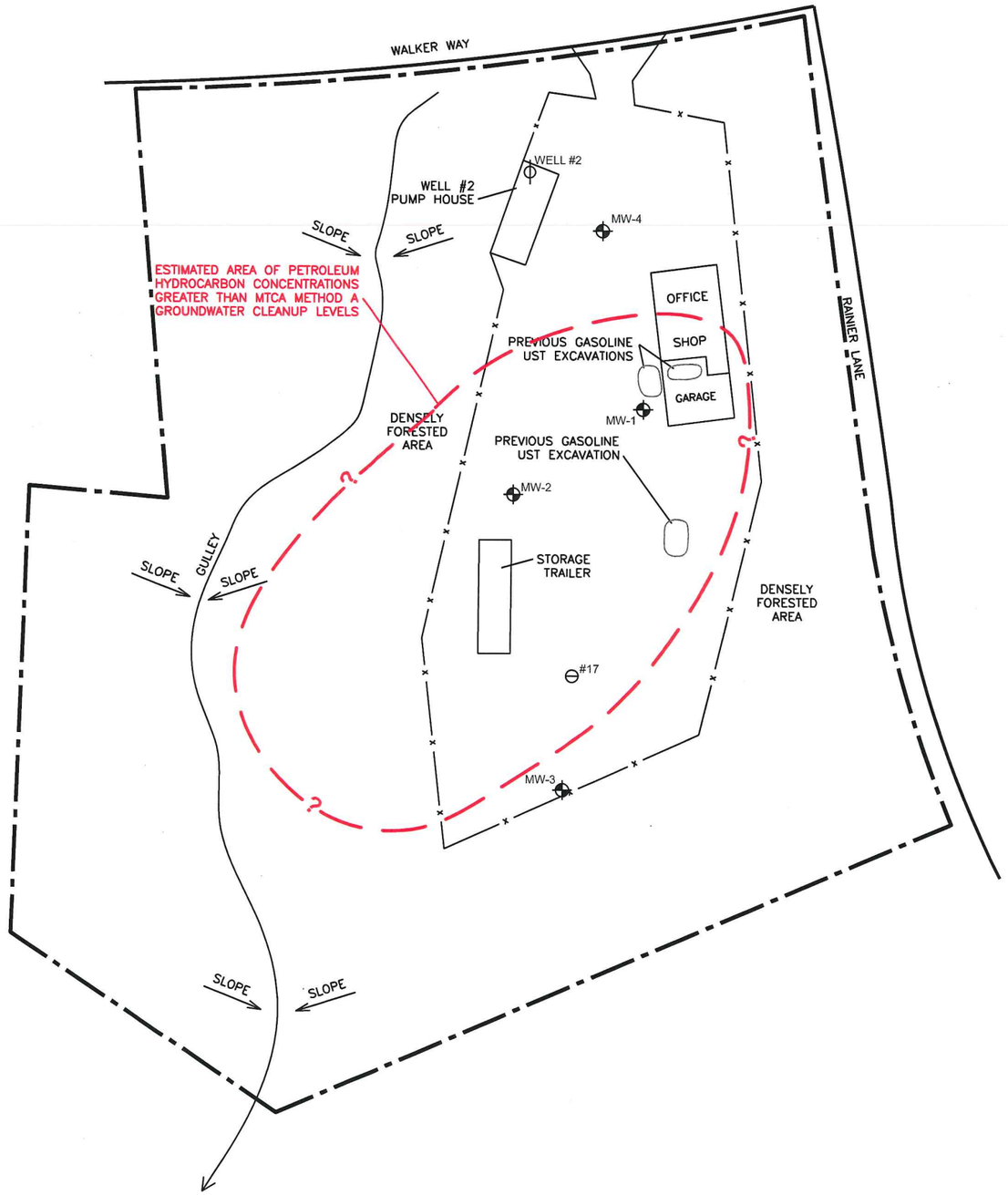

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SCALE: 1" = 50'
WHEN PLOTTED AT 11" x 17" PAGE SIZE
0 50 100 150'

N

NOTES

LEGEND

- PROPERTY BOUNDARY
- MW-1 — GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- #17 — EXISTING CASING LOCATION AND DESIGNATION
- WELL #2 — EXISTING WATER SUPPLY WELL LOCATION AND DESIGNATION
- FENCE

OLYMPIC WATER & SEWER, INC. PROPERTY
781 WALKER WAY
PORT LUDLOW, WASHINGTON

Report
SITE CHARACTERIZATION REPORT

Drawing
ESTIMATED AREA OF PETROLEUM HYDROCARBON-IMPACTED PERCHED GROUNDWATER

Date July 12, 2010	Scale AS SHOWN	Fig. No. 8
File Name 101.00433.00001101-02.DWG	Project No. 101.00433.00001	

SLR

Last Saved: Monday, November 15, 2010 5:20:32 PM by egoodwin Drawing path: R:\Figures\Bothell\Olympic Water and Sewer\2102-08.dwg

APPENDIX A

LABORATORY REPORT FOR WELL #2 SAMPLE COLLECTED IN 2010

TWISS ANALYTICAL LABORATORIES, INC.

26276 Twelve Trees Lane, Suite C Poulsbo, WA 98370 Telephone (360) 779-5141 FAX (360) 779-5150

VOC - VOC1

VOC - VOC1 by Various EPA Approved Methods

Source / Point of Entry - Report of Analysis

Date Collected:	4/15/2010	Group:	A
System ID No:	68700L	System Name:	Olympic Water And Sewer
Lab - Sample #:	01055901	County:	Jefferson
Sample Location:	Well #2 Sink	DOH Source No:	S01
Sample Purpose:	I	Date Received:	4/15/2010
Sample Composition:	S	Date Analyzed:	4/22/2010
Send Report To:	Olympic Water And Sewer 781 Walker Way Port Ludlow, WA 98365	Date Reported:	4/23/2010
		Sample Type:	Post-treatment/Finished
		Collected By:	Greg Rae
		Phone Number:	360-437-7898
		Bill To:	Olympic Water And Sewer 781 Walker Way Port Ludlow, WA 98365

DOH#	Analyte	Results	Units	SRL	Trigger	MCL*	MCL Exceeded	Method (Analyst Init.)
EPA/State Regulated								
103	1,2-Dibromo-3-Chloropropane	ND	µg/L	0.5	0.5	0.2		EPA 524.2 (TM)
160	Total Xylenes	ND	µg/L	0.5	0.5	10000		EPA 524.2 (TM)
57	T-1,2-Dichloroethene	ND	µg/L	0.5	0.5	100		EPA 524.2 (TM)
60	Cis-1,2-Dichloroethene	ND	µg/L	0.5	0.5	70		EPA 524.2 (TM)
47	1,1,1-Trichloroethane	ND	µg/L	0.5	0.5	200		EPA 524.2 (TM)
48	Carbon Tetrachloride	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
49	Benzene	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
50	1,2-Dichloroethane	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
51	Trichloroethene	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
63	1,2-Dichloropropane	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
66	Toluene	ND	µg/L	0.5	0.5	1000		EPA 524.2 (TM)
67	1,1,2-Trichloroethane	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
68	Tetrachloroethene	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)
71	Chlorobenzene	ND	µg/L	0.5	0.5	100		EPA 524.2 (TM)
73	Ethyl Benzene	ND	µg/L	0.5	0.5	700		EPA 524.2 (TM)
74	M/P Xylene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
45	Vinyl Chloride	ND	µg/L	0.5	0.5	2		EPA 524.2 (TM)
75	O-Xylene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
76	Styrene	ND	µg/L	0.5	0.5	100		EPA 524.2 (TM)
52	P-Dichlorobenzene	ND	µg/L	0.5	0.5	75		EPA 524.2 (TM)
84	O-Dichlorobenzene	ND	µg/L	0.5	0.5	600		EPA 524.2 (TM)
95	1,2,4-Trichlorobenzene	ND	µg/L	0.5	0.5	70		EPA 524.2 (TM)
46	1,1-Dichloroethylene	ND	µg/L	0.5	0.5	7		EPA 524.2 (TM)
56	Methylene Chloride	ND	µg/L	0.5	0.5	5		EPA 524.2 (TM)

TWISS ANALYTICAL LABORATORIES, INC.

26276 Twelve Trees Lane, Suite C Poulsbo, WA 98370 Telephone (360) 779-5141 FAX (360) 779-5150

VOC - VOC1

VOC - VOC1 by Various EPA Approved Methods

Source / Point of Entry - Report of Analysis

Date Collected:	4/15/2010	Group:	A
System ID No:	68700L	System Name:	Olympic Water And Sewer
Lab - Sample #:	01055901	County:	Jefferson
Sample Location:	Well #2 Sink	DOH Source No:	S01
Sample Purpose:	I	Date Received:	4/15/2010
Sample Composition:	S	Date Analyzed:	4/22/2010
Send Report To:	Olympic Water And Sewer 781 Walker Way Port Ludlow, WA 98365	Date Reported:	4/23/2010
		Sample Type:	Post-treatment/Finished
		Collected By:	Greg Rae
		Phone Number:	360-437-7898
		Bill To:	Olympic Water And Sewer 781 Walker Way Port Ludlow, WA 98365

DOH#	Analyte	Results	Units	SRL	Trigger	MCL*	MCL Exceeded	Method (Analyst Init.)
EPA Unregulated								
58	1,1-Dichloroethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
59	2,2-Dichloropropane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
86	Bromochloromethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
62	1,1-Dichloropropene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
104	Dichlorodifluoromethane	ND	µg/L	0.5	0.5	530		EPA 524.2 (TM)
64	Dibromoethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
65	Cis-1,3-Dichloropropene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
69	Trans-1,3-Dichloropropene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
53	Chloromethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
70	1,3-Dichloropropane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
72	1,1,1,2-Tetrachloroethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
87	Isopropylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
79	1,2,3-Trichloropropane	ND	µg/L	0.5	0.5	21		EPA 524.2 (TM)
78	Bromobenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
80	1,1,2,2-Tetrachloroethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
81	O-Chlorotoluene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
88	N-Propylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
89	1,3,5-Trimethylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
54	Bromomethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
82	P-Chlorotoluene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
90	Tert-Butylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
91	1,2,4-Trimethylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
92	Sec-Butylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
83	M-Dichlorobenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
93	P-Isopropyltoluene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
94	N-Butylbenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
55	Chloroethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
97	Hexachlorobutadiene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
96	Naphthalene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
98	1,2,3-Trichlorobenzene	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
85	Trichlorofluoromethane	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
EPA Regulated - Trihalomethanes Program								
31	Total Trihalomethanes	ND	µg/L		60	80		EPA 524.2 (TM)
27	Chloroform	ND	µg/L	0.5	0.5			EPA 524.2 (TM)
28	Bromodichloromethane	ND	µg/L	0.5				EPA 524.2 (TM)
29	Dibromochloromethane	ND	µg/L	1.5				EPA 524.2 (TM)
30	Bromoform	ND	µg/L	0.6				EPA 524.2 (TM)

TWISS ANALYTICAL LABORATORIES, INC.

26276 Twelve Trees Lane, Suite C Poulsbo, WA 98370 Telephone (360) 779-5141 FAX (360) 779-5150

VOC - VOC1

VOC - VOC1 by Various EPA Approved Methods

Source / Point of Entry - Report of Analysis

Date Collected:	4/15/2010	Group:	A
System ID No:	68700L	System Name:	Olympic Water And Sewer
Lab - Sample #:	01055901	County:	Jefferson
Sample Location:	Well #2 Sink	DOH Source No:	S01
Sample Purpose:	I	Date Received:	4/15/2010
Sample Composition:	S	Date Analyzed:	4/22/2010
Send Report To:	Olympic Water And Sewer 781 Walker Way Port Ludlow, WA 98365	Date Reported:	4/23/2010
		Sample Type:	Post-treatment/Finished
		Collected By:	Greg Rae
		Phone Number:	360-437-7898
		Bill To:	Olympic Water And Sewer 781 Walker Way Port Ludlow, WA 98365

DOH#	Analyte	Results	Units	SRL	Trigger	MCL*	MCL Exceeded	Method (Analyst Init.)

SRL: (State Reporting Level), indicates the minimum reporting level required by the Washington Department of Health (DOH).
Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
MCL: (Maximum Contaminant Level), If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
NA: (Not Analyzed), in the results column indicates this compound was not included in the current analysis.
ND: (Not Detected), in the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL
< (0.00x): indicates the compound was not detected in the sample at or above the concentration indicated.
* The 0.010 mg/L MCL for Arsenic is for Group A NTNC systems. All other systems should check with their county Health District to determine what level is applicable.

APPENDIX B

SOIL BORING LOGS

SLR
22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
SLR International Corp Fax: 425.402.8488

BORING NUMBER MW-1A

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 4/14/10 **COMPLETED** 4/14/10
GROUND ELEVATION _____ **HOLE SIZE** 8.25-inch-diameter
DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY C Lee **CHECKED BY** _____
AT END OF ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0						GP		**GRAVEL**, crushed rock parking lot surface.	
								0.5	
								SAND, brown, fine-grained, few fine gravel, very loose, moist, no hydrocarbon-like odors or staining.	
2.5						SP			
5.0		D&M		50	3				0.1
								6.5	
								SILTY SAND, brown, fine-grained, little silt, few fine gravel, very dense, moist to wet, slight hydrocarbon-like odor.	
7.5								@ 7.5 feet: Becomes wet, gray.	
		D&M		100	50	SM			5.5
10.0								@ 9.5 feet: Gravel becomes fine to coarse, paper debris in sampler.	
								12.0	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

SLR
SLR International Corp
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Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER MW-1A

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
12.5								**SILT**, gray, few fine-grained sand, hard, moist, moderate hydrocarbon-like odor.	
	X	D&M		100	50/6"	ML			4.9
15.0									
								16.5	
								SAND, gray, very fine-grained, few fine gravel, few cobbles, very dense, damp, strong hydrocarbon-like odor.	
17.5						SP			
	X	D&M		100	50/6"			19.5	43.9
								Refusal at 19.5 feet; abandoned boring with hydrated bentonite and drilled three feet south (MW-1B).	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

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BORING NUMBER MW-1B

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 4/14/10 **COMPLETED** 4/14/10
GROUND ELEVATION _____ **HOLE SIZE** 8.25-inch-diameter
DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY C Lee **CHECKED BY** _____
AT END OF ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0						GP		**GRAVEL**, crushed rock parking lot surface.	
								0.5	
								SAND, brown, fine-grained, few fine gravel, moist, no hydrocarbon-like odors or staining.	
2.5						SP			
5.0									
								6.5	
								SILTY SAND, brown, fine-grained, little silt, few fine gravel, moist to wet, slight hydrocarbon-like odor.	
7.5						SM			
10.0									
								12.0	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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BORING NUMBER MW-1B

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
12.5						ML		**SILT**, gray, few fine-grained sand, moist, moderate hydrocarbon-like odor.	
15.0									
								16.5	
								SAND, gray, very fine-grained, few fine gravel, few cobbles, very dense, damp, strong hydrocarbon-like odor.	
17.5									
20.0						SP			
22.5								@ 22.0 feet: Becomes brownish gray.	
25.0		D&M	MW1-24.5-25'*	100	50/6"			@ 24.0 feet: Very strong hydrocarbon-like odor.	2,948

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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BORING NUMBER MW-1B

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
27.5						SP		**SAND**, gray, very fine-grained, few fine gravel, few cobbles, very dense, damp, strong hydrocarbon-like odor. *(continued)*	
		D&M		100	50			@ 29.0 feet: Strong hydrocarbon-like odor.	43.9
30.0									
								31.5	
32.5						SM		**SILTY SAND**, brownish gray, very fine-grained, little silt, trace fine gravel, few cobbles, very dense, moist to very moist, slight hydrocarbon-like odor.	
		D&M		100	70/9"				7.8
35.0									
37.5								39.0	
								Refusal at 39.0 feet; abandoned boring with hydrated bentonite and drilled three feet south (MW-1C).	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

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BORING NUMBER MW-1C

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 4/14/10 **COMPLETED** 4/14/10
GROUND ELEVATION _____ **HOLE SIZE** 8.25-inch-diameter
DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY C Lee **CHECKED BY** _____
AT END OF ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0				GP		**GRAVEL**, crushed rock parking lot surface.
						0.5
						SAND, brown, fine-grained, few fine gravel, moist, no odors or staining.
2.5				SP		
5.0						
						6.5
						SILTY SAND, brown, fine-grained, little silt, few fine gravel, moist to wet, slight hydrocarbon-like odor.
7.5				SM		
10.0						
						12.0

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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BORING NUMBER MW-1C

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
12.5				ML		**SILT**, gray, few fine-grained sand, moist, moderate hydrocarbon-like odor.
15.0						
						16.5
				SP		**SAND**, gray, very fine-grained, few fine gravel, few cobbles, damp, strong hydrocarbon-like odor.
17.5						
20.0						
22.5						
25.0						

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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BORING NUMBER MW-1C

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
27.5				SP		**SAND**, gray, very fine-grained, few fine gravel, few cobbles, damp, strong hydrocarbon-like odor. *(continued)*
30.0						
31.5						
32.5				SM		**SILTY SAND**, brownish gray, very fine-grained, little silt, trace fine gravel, few cobbles, moist to very moist, slight hydrocarbon-like odor.
35.0						
36.5						Refusal at 36.5 feet; abandoned boring with hydrated bentonite.

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

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BORING NUMBER MW-2A

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 4/14/10 **COMPLETED** 4/14/10
GROUND ELEVATION _____ **HOLE SIZE** 8.25-inch-diameter
DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY C Lee **CHECKED BY** _____
AT END OF ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0								**GRAVELLY SAND**, brownish gray, fine-grained, little fine to medium gravel, moist, no hydrocarbon-like odors or staining.	
2.5						SP			
		D&M		0				@ 5.0 feet: No sample recovery.	
5.0									
								6.5	
7.5								**SANDY SILT**, brownish gray, little very fine-grained sand, few fine to medium gravel, hard, moist to very moist, no hydrocarbon-like odors or staining.	
		D&M		75	70/9"	ML			0
10.0									

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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BORING NUMBER MW-2A

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
12.5						ML		**SAND**, gray, very fine-grained, few fine to coarse gravel, few cobbles, few fines, very dense, damp, no hydrocarbon-like odors or staining.	
		D&M		100	50/2"				0
15.0									
								@ 16.5 feet: Becomes very fine- to fine-grained, no medium or coarse gravel, moist.	
17.5									
		D&M		100	50/6"	SP			0
20.0									
22.5									
25.0		D&M		50	79				0

REMARKS

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(Continued Next Page)

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BORING NUMBER MW-2A

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
27.5						SP		**SAND**, gray, very fine-grained, few fine to coarse gravel, few cobbles, few fines, very dense, damp, no hydrocarbon-like odors or staining. *(continued)*	
	X	D&M		100	50/6"			29.5	0
								Refusal at 29.5 feet; abandoned boring with hydrated bentonite.	

REMARKS

D&M = Samples collected by using an 18-inch-long, 3.0-inch outside diameter Dames & Moore split-barrel sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

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WELL NUMBER MW-1

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 6/7/10 **COMPLETED** 6/8/10
GROUND ELEVATION 290.76 ft **HOLE SIZE** 8-inch-diameter
DRILLING CONTRACTOR Tacoma Pump & Drilling
GROUND WATER LEVELS:
DRILLING METHOD Air Rotary
AT TIME OF DRILLING ---
LOGGED BY C Lee **CHECKED BY**
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0.0						GP		0.2 **GRAVEL**, crushed rock parking lot surface. 290.6		CONCRETE SURFACE SEAL
								SAND, brown, fine-grained, damp, no hydrocarbon-like odors or staining.		
2.5										
5.0									0	HYDRATED BENTONITE CHIPS
						SP				
7.5										
										BLANK PVC RISER
10.0									0	
								12.0 278.8		

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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WELL NUMBER MW-1

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
12.5								**SILT**, gray, few fine-grained sand, moist, no hydrocarbon-like odors or staining.		
15.0						ML			0	
17.5								18.0 272.8		
								SAND, gray, very fine-grained, few fine gravel, few cobbles, damp.		
20.0								@ 20.0 feet: Few fine gravel.	0	
22.5						SP		@ 22.0 feet: Moderate hydrocarbon-like odor in cuttings.		
25.0									0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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WELL NUMBER MW-1

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
27.5						SP		**SAND**, gray, very fine-grained, few fine gravel, few cobbles, damp. *(continued)*	0	
30.0										
								31.5 259.3		
32.5						SM		**SILTY SAND**, grayish brown, very fine- to fine-grained, little silt, few fine to medium gravel, few cobbles, very dense, moist, no hydrocarbon-like odors or staining.	0	
35.0										
37.5										
40.0										

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

(Continued Next Page)

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WELL NUMBER MW-1

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
40.0										
		SS	MW1-40'*	100	50/4"	SM		**SILTY SAND**, grayish brown, very fine- to fine-grained, little silt, few fine to medium gravel, few cobbles, very dense, moist, no hydrocarbon-like odors or staining. *(continued)*	0	10x20 SILICA SAND PACK
42.5								42.5 — 248.3		
								SILT, grayish brown, hard, moist, no hydrocarbon-like odors or staining.		
45.0						ML				
		SS		75	44				0	0.010"-SLOTTED PVC SCREEN
47.5										
								48.0 — 242.8		
								CLAYEY SILT, brown, little clay, few fine gravel, hard, damp, no hydrocarbon-like odors or staining.		
50.0										
		SS		100	100	ML			0	PVC END CAP
52.5								52.5 — 238.3		
						ML		**SANDY SILT**, grayish brown, little very fine-grained sand, few fine gravel, hard, damp, no hydrocarbon-like odors or staining.		

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

SLR GENERAL OWSI.GPJ GINT US.GDT 7/13/10

(Continued Next Page)

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WELL NUMBER MW-1

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
55.0						ML		**SANDY SILT**, grayish brown, little very fine-grained sand, few fine gravel, hard, damp, no hydrocarbon-like odors or staining. *(continued)*		
	X	SS	MW1-55'*	100	100/6"				0	HYDRATED BENTONITE CHIPS
57.5										
								58.0 232.8		
						SM		**SILTY SAND**, brownish gray, very fine- to fine-grained, little silt, trace fine gravel, very dense, damp, no hydrocarbon-like odors or staining.		
60.0										
	X	SS		90	50/2"				0	
								60.7 230.1		

Boring completed at 60.7 feet.

WELL COMPLETION DETAILS

0.0 to 40.2 feet: Flush-threaded, 2.0-inch-diameter PVC blank riser pipe
40.2 to 50.0 feet: Flush-threaded, 2.0-inch-diameter 0.010"-machine slotted PVC well screen
50.0 to 50.3 feet: Flush-threaded, 2.0-inch-diameter PVC end cap

0.0 to 2.0 feet: Concrete surface seal
2.0 to 37.0 feet: Hydrated medium bentonite chips
37.0 to 50.5 feet: Carmeuse Industrial Sands 10x20 Colorado silica sand pack
50.5 to 60.7 feet: Hydrated medium bentonite chips

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

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WELL NUMBER MW-2

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 6/8/10 **COMPLETED** 6/9/10
GROUND ELEVATION 290.56 ft **HOLE SIZE** 8-inch-diameter
DRILLING CONTRACTOR Tacoma Pump & Drilling
GROUND WATER LEVELS:
DRILLING METHOD Air Rotary
▽ **AT TIME OF DRILLING** 48.0 ft / Elev 242.6 ft
LOGGED BY C Lee **CHECKED BY**
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0.0						GP		0.3 **GRAVEL**, crushed rock parking lot surface. 290.3		CONCRETE SURFACE SEAL
								GRAVELLY SAND, brown, fine-grained, little fine to medium gravel, damp, no hydrocarbon-like odors or staining.		
2.5						SP				
5.0									0	HYDRATED BENTONITE CHIPS
								6.5 284.1		
7.5								**SANDY SILT**, brownish gray, little very fine-grained sand, few fine to medium gravel, hard, moist to very moist, no hydrocarbon-like odors or staining.		BLANK PVC RISER
						ML				
10.0									0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-2

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
12.5						ML		12.5 — 278.1 **SAND**, gray, very fine-grained, few fine to coarse gravel, few cobbles, few fines, very dense, damp, no hydrocarbon-like odors or staining.	0	
15.0										
17.5										
20.0						SP			0	
22.5										
25.0									0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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Fax: 425.402.8488

WELL NUMBER MW-2

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
27.5						SP		**SAND**, gray, very fine-grained, few fine to coarse gravel, few cobbles, few fines, very dense, damp, no hydrocarbon-like odors or staining. *(continued)*		
30.0									0	
								31.0 259.6 **GRAVEL**, brown, fine to medium, some cobbles, few fine-grained sand, trace fines, very dense, damp, no hydrocarbon-like odors or staining.		
32.5								@33.0 feet: Few silt, trace fine-grained sand.		
35.0						GP			0	
37.5								@37.0 feet: Becomes moist.		
40.0										

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

SLR
SLR International Corp
22122 20th Avenue SE
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

WELL NUMBER MW-2

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
40.0										
		SS*	MW2-40'*	100	50	GP		**GRAVEL**, brown, fine to medium, some cobbles, few fine-grained sand, trace fines, very dense, damp, no hydrocarbon-like odors or staining. *(continued)* @ 40.0 feet: Cobble fragments in split-spoon sampler. Slight hydrocarbon-like odor.	14.9	10x20 SILICA SAND PACK
42.5								43.0 247.6		
								GRAVELLY SILT, grayish brown, little fine to coarse gravel, hard, moist, no hydrocarbon-like odors or staining.		0.010"-SLOTTED PVC SCREEN
45.0		SS		100	50/5"	ML			16.4	
47.5								48.0 ▽ 242.6		
								GRAVELLY SAND, brown, fine- to coarse-grained, some fine to coarse gravel and cobbles, trace fines, dense, wet, slight hydrocarbon-like odor.		
50.0		SS		100	50	SW			18.4	
52.5								53.0 237.6		PVC END CAP
						ML		**GRAVELLY SILT**, brown, some fine- to coarse gravel and cobbles, trace clay, hard, moist, no hydrocarbon-like odors or staining.		

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-2

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
55.0						ML		**GRAVELLY SILT**, brown, some fine- to coarse gravel and cobbles, trace clay, hard, moist, no hydrocarbon-like odors or staining. *(continued)*		HYDRATED BENTONITE CHIPS
	X	SS	MW2-55.5'*	50	80/10"				0	
								56.3 234.3		

Boring completed at 56.3 feet.

WELL COMPLETION DETAILS

0.0 to 37.9 feet: Flush-threaded, 2.0-inch-diameter PVC blank riser pipe
37.9 to 52.5 feet: Flush-threaded, 2.0-inch-diameter 0.010"-machine slotted PVC well screen
52.5 to 52.7 feet: Flush-threaded, 2.0-inch-diameter PVC end cap

0.0 to 2.0 feet: Concrete surface seal
2.0 to 36.5 feet: Hydrated medium bentonite chips
36.5 to 53.0 feet: Carmeuse Industrial Sands 10x20 Colorado silica sand pack
53.0 to 56.3 feet: Hydrated medium bentonite chips

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

SLR
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WELL NUMBER MW-3

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 6/9/10 **COMPLETED** 6/10/10
GROUND ELEVATION 286.23 ft **HOLE SIZE** 8-inch-diameter
DRILLING CONTRACTOR Tacoma Pump & Drilling
GROUND WATER LEVELS:
DRILLING METHOD Air Rotary
▽ **AT TIME OF DRILLING** 33.0 ft / Elev 253.2 ft
LOGGED BY C Lee **CHECKED BY**
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0.0								**GRAVELLY SAND**, brown, fine-grained, little fine to medium gravel and cobbles, damp, no hydrocarbon-like odors or staining.		CONCRETE SURFACE SEAL
2.5						SP				
5.0								5.0 281.2	0	HYDRATED BENTONITE CHIPS
								SANDY SILT, brownish gray, little very fine-grained sand, few fine to medium gravel, moist to very moist, no hydrocarbon-like odors or staining.		
7.5						ML				
								9.0 277.2		BLANK PVC RISER
								SAND, gray, very fine-grained, few fine to coarse gravel and cobbles, few fines, damp, no hydrocarbon-like odors or staining.		
10.0						SP			0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-3

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
12.5								**SAND**, gray, very fine-grained, few fine to coarse gravel and cobbles, few fines, damp, no hydrocarbon-like odors or staining. *(continued)*		
15.0									0	
17.5										
						SP				
20.0									0	
22.5										
25.0									0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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Telephone: 425.402.8800
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WELL NUMBER MW-3

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
27.5						SP		**SAND**, gray, very fine-grained, few fine to coarse gravel and cobbles, few fines, damp, no hydrocarbon-like odors or staining. *(continued)*		
30.0								29.5 256.7 **SILT**, light brown, hard, moist, no hydrocarbon-like odors or staining.		
		SS	MW3-30.5'*	60	80/11"	ML			1.2	
32.5								33.0 ▽ 253.2 **SAND AND GRAVEL**, brown, very fine- to fine-grained sand, fine to medium gravel, some cobbles, very dense, wet, no hydrocarbon-like odors or staining.		10x20 SILICA SAND PACK
35.0										0.010"-SLOTTED PVC SCREEN
		SS		100	100	SP			1.0	
37.5										
40.0										

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

SLR
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Telephone: 425.402.8800
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WELL NUMBER MW-3

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
40.0						SP		40.5		
		SS		100	77			**SILT**, brown, hard, very moist to moist, slight hydrocarbon-like odor. 245.7	6.4	PVC END CAP
42.5						ML				HYDRATED BENTONITE CHIPS
45.0		SS	MW3-45.5'*	70	100/11"				3.4	
								46.4 239.8		

Boring completed at 46.4 feet.

WELL COMPLETION DETAILS

0.0 to 32.0 feet: Flush-threaded, 2.0-inch-diameter PVC blank riser pipe
32.0 to 41.6 feet: Flush-threaded, 2.0-inch-diameter 0.010"-machine slotted PVC well screen
41.6 to 41.9 feet: Flush-threaded, 2.0-inch-diameter PVC end cap

0.0 to 2.0 feet: Concrete surface seal
2.0 to 30.0 feet: Hydrated medium bentonite chips
30.0 to 42.0 feet: Carmeuse Industrial Sands 10x20 Colorado silica sand pack
42.0 to 46.4 feet: Hydrated medium bentonite chips

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

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WELL NUMBER MW-4

CLIENT Olympic Water and Sewer, Inc.
PROJECT NAME Olympic Water and Sewer, Inc. Property
PROJECT NUMBER 101.00433.00001
PROJECT LOCATION 701 Walker Way, Port Ludlow, WA
DATE STARTED 6/10/10 **COMPLETED** 6/11/10
GROUND ELEVATION 292.07 ft **HOLE SIZE** 8-inch-diameter
DRILLING CONTRACTOR Tacoma Pump & Drilling
GROUND WATER LEVELS:
DRILLING METHOD Air Rotary
▽ **AT TIME OF DRILLING** 27.0 ft / Elev 265.1 ft
LOGGED BY C Lee **CHECKED BY**
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0.0								0.3 **ASPHALT.** 291.8		CONCRETE SURFACE SEAL
2.5						SP		**SAND**, brown, fine-grained, few fine gravel, damp, no hydrocarbon-like odors or staining.		
								4.0 288.1		
5.0								**GRAVELLY SAND**, brown, fine-grained, some fine to medium gravel and cobbles, trace fines, damp, no hydrocarbon-like odors or staining.	0	HYDRATED BENTONITE CHIPS
7.5						SP				BLANK PVC RISER
10.0									0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-4

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
12.5								**GRAVELLY SAND**, brown, fine-grained, some fine to medium gravel and cobbles, trace fines, damp, no hydrocarbon-like odors or staining. *(continued)*		
15.0									0	
17.5						SP				
20.0									0	
22.5										
25.0									0	

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-4

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
27.5						SP		27.0 ▽ 265.1 **SILTY SAND**, grayish brown, fine-grained, little silt, trace fine gravel, wet, no hydrocarbon-like odors or staining.		10x20 SILICA SAND PACK
30.0						SM				
		SS	MW4-31'*	70	97/9"				0	
32.5								33.0 259.1 **SILT**, brown, few fine to medium gravel, hard, damp, no hydrocarbon-like odors or staining.		0.010"-SLOTTED PVC SCREEN
35.0										
		SS		100	50/3"	ML			0	
37.5								37.5 254.6 **GRAVELLY SILT**, gray, some fine to medium gravel & cobbles, hard, very moist, no hydrocarbon-like odors or staining.		
40.0						ML				

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-4

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
40.0										
		SS		100	100/7"			**GRAVELLY SILT**, gray, some fine to medium gravel & cobbles, hard, very moist, no hydrocarbon-like odors or staining. *(continued)*	0	
42.5								@ 42.0 feet: Becomes moist.		
						ML				
45.0										PVC END CAP
		SS		100	100/6"				0	
								47.0 245.1		
47.5								**SAND AND GRAVEL**, grayish brown, fine- to medium-grained sand, fine to coarse gravel and cobbles, very dense, very moist to wet, no hydrocarbon-like odors or staining.		
50.0										
		SS		70	50/3"				0	
						SP/GW				HYDRATED BENTONITE CHIPS
52.5										

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

(Continued Next Page)

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WELL NUMBER MW-4

CLIENT Olympic Water and Sewer, Inc. **PROJECT NAME** Olympic Water and Sewer, Inc. Property

PROJECT NUMBER 101.00433.00001 **PROJECT LOCATION** 701 Walker Way, Port Ludlow, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
						SP/GW		54.5 237.6		
55.0						ML		**GRAVELLY SILT**, gray, little fine to coarse gravel, hard, damp, no hydrocarbon-like odors or staining.		
	X	SS	MW4-55'*	70	50/6"			55.5 236.6	0	

Boring completed at 55.5 feet.

WELL COMPLETION DETAILS

0.0 to 25.0 feet: Flush-threaded,
2.0-inch-diameter PVC blank riser pipe
25.0 to 44.6 feet: Flush-threaded,
2.0-inch-diameter 0.010"-machine slotted PVC well screen
44.6 to 44.9 feet: Flush-threaded,
2.0-inch-diameter PVC end cap

0.0 to 2.0 feet: Concrete surface seal
2.0 to 22.0 feet: Hydrated medium bentonite chips
22.0 to 46.0 feet: Carmeuse Industrial Sands 10x20 Colorado silica sand pack
46.0 to 55.5 feet: Hydrated medium bentonite chips

REMARKS

SS = Samples collected by using an 18-inch-long, 3.0-inch outside diameter split-spoon sampler driven by a 300 lb. wireline hammer.
PID = Photoionization detector.
* = Sample submitted for laboratory analysis.

▽ Water level at time of drilling.

APPENDIX C

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.
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3012 16th Avenue West
Seattle, WA 98119-2029
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April 28, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE. G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on April 15, 2010 from the Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160 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
SLR0428R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 15, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
004160-01	MW1-24.5-25
004160-02	MW1-35-35.5

Sample MW1-24.5-25 was sent to Fremont Analytical for VPH analysis. The report generated by AR will be forwarded to your office upon receipt.

All quality control requirements were acceptable.

Date of Report: 04/28/10
Date Received: 04/15/10
Project: Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160
Date Extracted: 04/20/10
Date Analyzed: 04/20/10

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

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW1-24.5-25 004160-01 1/10	140	ip
Method Blank O0-0572 MB	<2	115

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW1-24.5-25	Client:	SLR International Corp.
Date Received:	04/15/10	Project:	101.00433.00001, F&BI 004160
Date Extracted:	04/21/10	Lab ID:	004160-01
Date Analyzed:	04/22/10	Data File:	004160-01.019
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	1.11

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	101.00433.00001, F&BI 004160
Date Extracted:	04/21/10	Lab ID:	I0-200 mb
Date Analyzed:	04/22/10	Data File:	I0-200 mb.017
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260C Direct Sparge

Client Sample ID:	MW1-24.5-25	Client:	SLR International Corp.
Date Received:	04/15/10	Project:	101.00433.00001, F&BI 004160
Date Extracted:	04/21/10	Lab ID:	004160-01
Date Analyzed:	04/21/10	Data File:	042116.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	52	50	150
Toluene-d8	52	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260C Direct Sparge

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	101.00433.00001, F&BI 004160
Date Extracted:	04/21/10	Lab ID:	00552 mb
Date Analyzed:	04/21/10	Data File:	042114.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	122	50	150

Compounds:	Concentration mg/kg (ppm)
1,2-Dibromoethane (EDB)	<0.005

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-24.5-25	Client:	SLR International Corp.
Date Received:	04/15/10	Project:	101.00433.00001, F&BI 004160
Date Extracted:	04/19/10	Lab ID:	004160-01
Date Analyzed:	04/21/10	Data File:	042107.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	0.96
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dibromoethane (EDB)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	0.49
Toluene	5.7
Ethylbenzene	1.2
m,p-Xylene	4.8
o-Xylene	1.9
Naphthalene	0.58

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	101.00433.00001, F&BI 004160
Date Extracted:	04/19/10	Lab ID:	00544 mb
Date Analyzed:	04/19/10	Data File:	041905.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	MB

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	88	62	142
Toluene-d8	88	55	145
4-Bromofluorobenzene	93	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dibromoethane (EDB)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Date of Report: 04/28/10
Date Received: 04/15/10
Project: Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160

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

Laboratory Code: 004141-02 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	95	61-153

Date of Report: 04/28/10
Date Received: 04/15/10
Project: Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160

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

Laboratory Code: 004199-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	20	9.43	100 b	94 b	65-126	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	20	95	81-120

Date of Report: 04/28/10
Date Received: 04/15/10
Project: Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,2-Dibromoethane (EDB)	mg/kg (ppm)	0.05	92	92	70-130	0

Date of Report: 04/28/10
Date Received: 04/15/10
Project: Olympic Water and Sewer, Inc. 101.00433.00001, F&BI 004160

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

Laboratory Code: 004182-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Hexane	mg/kg (ppm)	2.5	<0.25	99	10-137
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	127	36-145
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	144	28-154
Benzene	mg/kg (ppm)	2.5	<0.03	93	43-130
Toluene	mg/kg (ppm)	2.5	<0.05	92	36-143
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	106	41-134
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	105	39-141
m,p-Xylene	mg/kg (ppm)	5	<0.1	101	37-143
o-Xylene	mg/kg (ppm)	2.5	<0.05	102	47-124
Naphthalene	mg/kg (ppm)	2.5	<0.05	121	32-134

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Hexane	mg/kg (ppm)	2.5	90	84	43-142	7
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	111	114	63-121	3
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	108	110	74-122	2
Benzene	mg/kg (ppm)	2.5	92	89	72-121	3
Toluene	mg/kg (ppm)	2.5	94	90	66-126	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	101	103	74-132	2
Ethylbenzene	mg/kg (ppm)	2.5	99	96	64-123	3
m,p-Xylene	mg/kg (ppm)	5	96	93	78-122	3
o-Xylene	mg/kg (ppm)	2.5	97	94	77-124	3
Naphthalene	mg/kg (ppm)	2.5	114	116	60-125	2

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

004160

SAMPLE CHAIN OF CUSTODY

ME 04-15-10 1 VSI/CP1

Send Report To MIKE STATON
Company SLR INTERNATIONAL CORP
Address 22118 20TH AVE SE, G202
City, State, ZIP BOTHELL, WA 98021
Phone # (425) 402-8800 Fax # (425) 402-8488

SAMPLERS (signature)

PROJECT NAME/NO.: Olympic Water & Sewer, Inc ~~ect~~ 101.00433.00001 (OWSI)

PO #: 101.00433.00001

REMARKS: ~~PLEASE HOLD SAMPLES FOR POSSIBLE ANALYSIS~~ analyzed per MS 4/19/10 MS

Page # ____ of ____

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	BTEX, EDC, MTBE, Naphthalene by 8260	EDB by Direct Spray	Lead	VPH			Notes
MW1-24.5-25	01 A-F	4/14/10	1155	SOIL	6		X					X	X	X	✓			X-per MS
MW1-35-35.5	02 A-F	↓	1220	↓	↓		~~X~~	~~X~~						~~X~~				4/19/10 MS
																		~~X~~ cancelled per MS 4/20/10 MS
																		✓-per MS 4/23/10 MS
																		Samples received at 3 °C

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

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chris Lee	SLR	4-15-10	1417
Received by:	Kortland Orr	FBI	4-15-10	1417
Relinquished by:	Kortland Orr	FBI	4-15-10	1522
Received by:	Khan Pham	FBI	4/15/10	1522

2930 Westlake Ave N Suite 100
Seattle, WA 98109
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman and Bruya, Inc.
Attn: Michael Erdahl
3012 16th Ave W.
Seattle, WA 98119

RE: 004160
Fremont Project No: CHM100426-4
Friedman and Bruya Project No: A-390

May 3rd, 2010

Michael:

Enclosed are the analytical results for the ***004160*** soil sample (Sample ID: MW1-24.5-25) submitted to Fremont Analytical on April 26th, 2010.

Examination of this sample was conducted for the presence of the following:

- ***Volatile Petroleum Hydrocarbons (VPH) in Soil by NWVPH***

This application was performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control method parameters have been applied.

Laboratory Notations: The *relative percent difference (RPD%)* between the sample and sample duplicate exceeded control limits for the following: *Naphthalene* and *C12-C13 (PID) Aromatics*. All other RPD% values were in control.

Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical!

Sincerely,

Michael Dee
Sr. Chemist / Principal
mikedee@fremontanalytical.com

Fremont Analytical

2930 Westlake Ave. N., Suite 100
Seattle, WA 98109

T: 206.352.3790
F: 206.352.7178
email: info@fremontanalytical.com

Analysis of Volatile Petroleum Hydrocarbons in Soil by NWVPH

Project: 004160
Client: Friedman and Bruya, Inc.
Client Project #: A-390
Lab Project #: CHM100426-4

NWVPH (mg/kg)	MRL	Method Blank	LCS	LCD	MW1-24.5-25	Duplicate MW1-24.5-25	RPD %
Date Preserved					4/26/10	4/26/10	
Date Analyzed		5/2/10	5/2/10	5/2/10	5/2/10	5/2/10	
Matrix					Soil	Soil	
Targeted Analytes							
methyl *tert*-butyl ether (MTBE)	0.05	nd	98%	101%	nd	nd	
Benzene	0.05	nd	101%	104%	**0.34**	**0.38**	10%
Toluene	0.05	nd	101%	103%	**1.4**	**1.6**	10%
Ethylbenzene	0.05	nd	105%	103%	**0.12**	**0.12**	4%
m,p-Xylenes	0.05	nd	102%	107%	**0.50**	**0.52**	4%
o-Xylenes	0.05	nd	101%	104%	**0.24**	**0.22**	9%
Naphthalene	0.05	nd	96%	119%	**0.34**	**0.14**	86%
Hydrocarbon Parameters							
C5-C6 (FID) *Aliphatics**	0.05	nd			nd	nd	
C6-C8 (FID) *Aliphatics**	0.05	nd			**2.4**	**2.6**	8%
C8-C10 (FID) *Aliphatics**	0.05	nd			**3.1**	**3.3**	6%
C10-C12 (FID) *Aliphatics**	0.05	nd			**1.9**	**1.7**	11%
C8-C10 (PID) *Aromatics*	0.05	nd			**1.4**	**1.4**	0%
C10-C12 (PID) *Aromatics*	0.05	nd			**0.60**	**0.60**	0%
C12-C13 (PID) *Aromatics*	0.05	nd			**0.43**	**0.85**	66%
Surrogate Recovery							
Triflourotoluene		101%	114%	116%	110%	116%	
Bromoflourobenzene		95%	103%	101%	95%	94%	

"nd" Indicates not detected at listed reporting limits
"int" Indicates that interference prevents determination
"*" Excludes MTBE and BTEX Compounds
"J" Indicates estimated value
"MRL" Indicates Method Reporting Limit
"LCS" Indicates Laboratory Control Sample
"RPD" Indicates Relative Percent Difference

Acceptable RPD is determined to be less than 30%
Acceptable Recovery Limits:
Surrogate = 65% to 135%
LCS, LCSD = 65% to 135%
Surrogate Concentration = 0.25 mg/kg
Spike Concentration = 5.0 mg/kg

CHM100426-4

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Page # 1 of 1

Send Report To: Michael Erdahl
Company: Friedman and Bruya, Inc.
Address: 3012 16th Ave W
City, State, ZIP: Seattle, WA 98119
Phone #: (206) 285-8282 Fax #: (206) 283-5044

SUBCONTRACTER: ~~4/20~~ Frontier

PROJECT NAME/NO.: 004160

PO #: A-390

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: Oil and Grease	EPH	VPH	Nitrate	Sulfate	Alkalinity					Notes
MW1-24.5-25		4/14/10	11:55	S	2			✓								

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	4/20/10	10 a.m.
Received by:		Troy Zehr	F.B.	4/20/10	12:18
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

June 28, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE. G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on June 9, 2010 from the Olympic Water & Sewer, Inc. PO101.00433.00001, F&BI 006107 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
SLR0628R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 9, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. Olympic Water & Sewer, Inc. PO101.00433.00001, F&BI 006107 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
006107-01	MW1-40'
006107-02	MW1-55'
006107-03	MW1-60'

All quality control requirements were acceptable.

Date of Report: 06/28/10
Date Received: 06/09/10
Project: Olympic Water & Sewer, Inc. PO101.00433.00001, F&BI 006107
Date Extracted: 06/09/10
Date Analyzed: 06/09/10

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

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW1-40' 006107-01	<2	96
MW1-55' 006107-02	<2	84
Method Blank 00-0848 MB2	<2	110

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-40'	Client:	SLR International Corp.
Date Received:	06/09/10	Project:	Olympic Water & Sewer, Inc. F&BI 006107
Date Extracted:	06/10/10	Lab ID:	006107-01
Date Analyzed:	06/11/10	Data File:	061029.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	117	42	152
Toluene-d8	123	36	149
4-Bromofluorobenzene	130	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-55'	Client:	SLR International Corp.
Date Received:	06/09/10	Project:	Olympic Water & Sewer, Inc. F&BI 006107
Date Extracted:	06/10/10	Lab ID:	006107-02
Date Analyzed:	06/11/10	Data File:	061030.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	108	42	152
Toluene-d8	120	36	149
4-Bromofluorobenzene	129	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	Olympic Water & Sewer, Inc. F&BI 006107
Date Extracted:	06/10/10	Lab ID:	00731 mb
Date Analyzed:	06/10/10	Data File:	061019.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	42	152
Toluene-d8	112	36	149
4-Bromofluorobenzene	122	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Date of Report: 06/28/10
Date Received: 06/09/10
Project: Olympic Water & Sewer, Inc. PO101.00433.00001, F&BI 006107

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

Laboratory Code: 006092-02 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	10	110	61-153

Date of Report: 06/28/10
Date Received: 06/09/10
Project: Olympic Water & Sewer, Inc. PO101.00433.00001, F&BI 006107

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

Laboratory Code: 006092-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	mg/kg (ppm)	2.5	<0.03	84	58-129
Toluene	mg/kg (ppm)	2.5	<0.05	86	56-136
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	84	62-129
m,p-Xylene	mg/kg (ppm)	5	<0.1	85	60-132
o-Xylene	mg/kg (ppm)	2.5	<0.05	83	56-139
Naphthalene	mg/kg (ppm)	2.5	<0.05	71	35-174

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	2.5	97	99	73-115	2
Toluene	mg/kg (ppm)	2.5	99	99	75-117	0
Ethylbenzene	mg/kg (ppm)	2.5	97	99	74-122	2
m,p-Xylene	mg/kg (ppm)	5	100	102	78-114	2
o-Xylene	mg/kg (ppm)	2.5	97	98	81-116	1
Naphthalene	mg/kg (ppm)	2.5	97	98	70-122	1

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

006107

SAMPLE CHAIN OF CUSTODY ME 06/09/10

VSI / CI2

Page # ____ of ____

Send Report To Mike Slaton

Company SLR

Address 22118 20th Ave SE G-202

City, State, ZIP Bothell WA 98021

Phone # (425) 402-8800 Fax # (425) 402 8858

SAMPLERS (signature)

PROJECT NAME/NO.: Olympic Water & Sewer, Inc 101 004 33 00001

PO #: 101 00433 00001

REMARKS: Please hold all samples for possible follow up analyses.

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH ____
- Rush charges authorized by: ____

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [x] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B/8260C	VOCs by 8260	SVOCs by 8270	HFS	Naphthalene						Notes
~~MW1~~ 0715																		
MW1 - ~~40~~ 40'	01 AE	6/8/10	~~0830~~	Soil	5		X	X				✓						✓ - per MS
MW1 - 55'	02 AE	↓	1010	↓	↓		X	X				/						6/22/10 MS
MW1 60'	03 AE	↓	1120	↓	↓													
												Samples received at						0 °C

ANALYSES REQUESTED

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 Lee	SLR	6/9/10	
Received by:	Karen Kristekurt	Karen Kristekurt	Champion	6/9/10	
Relinquished by:					
Received by:	Nhan Phan	Nhan Phan	FEBT	6/9/10	1245

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

June 29, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE. G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on June 10, 2010 from the Olympic Water and Sewer, Inc (OWSI) 101.00433.00001, F&BI 006126 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
SLR0629R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 10, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. Olympic Water and Sewer, Inc (OWSI) 101.00433.00001, F&BI 006126 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
006126-01	MW2-40'
006126-02	MW2-55.5'
006126-03	MW3-30.5'

All quality control requirements were acceptable.

Date of Report: 06/29/10
Date Received: 06/10/10
Project: Olympic Water and Sewer, Inc (OWSI) 101.00433.00001, F&BI 006126
Date Extracted: 06/11/10
Date Analyzed: 06/11/10

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

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW2-40' 006126-01	2.9	81
MW2-55.5' 006126-02	<2	82
MW3-30.5' 006126-03	<2	74
Method Blank 00-0851 MB	<2	84

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-40'	Client:	SLR International Corp.
Date Received:	06/10/10	Project:	Olympic Water and Sewer
Date Extracted:	06/15/10	Lab ID:	006126-01
Date Analyzed:	06/15/10	Data File:	061510.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	42	152
Toluene-d8	108	36	149
4-Bromofluorobenzene	114	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	0.21
Toluene	0.062
Ethylbenzene	0.11
m,p-Xylene	<0.1
o-Xylene	0.066
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-55.5'	Client:	SLR International Corp.
Date Received:	06/10/10	Project:	Olympic Water and Sewer
Date Extracted:	06/15/10	Lab ID:	006126-02
Date Analyzed:	06/15/10	Data File:	061511.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	114	42	152
Toluene-d8	117	36	149
4-Bromofluorobenzene	124	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	0.21
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-30.5'	Client:	SLR International Corp.
Date Received:	06/10/10	Project:	Olympic Water and Sewer
Date Extracted:	06/15/10	Lab ID:	006126-03
Date Analyzed:	06/15/10	Data File:	061512.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	42	152
Toluene-d8	96	36	149
4-Bromofluorobenzene	105	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Olympic Water and Sewer
Date Extracted:	06/15/10	Lab ID:	00734 mb
Date Analyzed:	06/15/10	Data File:	061509.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	42	152
Toluene-d8	114	36	149
4-Bromofluorobenzene	116	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Date of Report: 06/29/10
Date Received: 06/10/10
Project: Olympic Water and Sewer, Inc (OWSI) 101.00433.00001, F&BI 006126

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

Laboratory Code: 006126-03 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	118	124	71-131	5

Date of Report: 06/29/10
Date Received: 06/10/10
Project: Olympic Water and Sewer, Inc (OWSI) 101.00433.00001, F&BI 006126

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

Laboratory Code: 006122-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	mg/kg (ppm)	2.5	<0.03	72	58-129
Toluene	mg/kg (ppm)	2.5	<0.05	75	56-136
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	77	62-129
m,p-Xylene	mg/kg (ppm)	5	<0.1	79	60-132
o-Xylene	mg/kg (ppm)	2.5	<0.05	78	56-139
Naphthalene	mg/kg (ppm)	2.5	<0.05	79	35-174

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	2.5	100	105	73-115	5
Toluene	mg/kg (ppm)	2.5	101	105	75-117	4
Ethylbenzene	mg/kg (ppm)	2.5	98	102	74-122	4
m,p-Xylene	mg/kg (ppm)	5	102	107	78-114	5
o-Xylene	mg/kg (ppm)	2.5	99	102	81-116	3
Naphthalene	mg/kg (ppm)	2.5	102	104	70-122	2

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

006126

SAMPLE CHAIN OF CUSTODY

ME 06/10/10

VSI / CI 2

Page # 1 of 1

Send Report To G Mike Staton

Company SLR

Address 22118 20th Ave SE, G-202

City, State, ZIP Bothell, WA 98021

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

SAMPLERS (signature)

PROJECT NAME/NO.: Olympic Water & Sewer, Inc (OWSI) 101.00433 00001

PO #: 101-00433.00001

REMARKS: Please hold samples for possible follow-up analyses.

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [x] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8260	VOCs by 8260	SVOCs by 8270	HFS	[redacted], Naphthalene						
MW2-40'	01 AE	6/9/10	0810	Soil	5		X	X				✓						
MW2-55.5'	02 AE		1045		5		X	X				✓						
MW3-30.5	03 AE		1830		5		X	X				✓						

ANALYSES REQUESTED

✓-pc MS 6/22/10 Notes MC.

[redacted]

Samples received at 1 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chris Lee	SLR	6/10/10	
Received by:	J. Williams	Champion Tx	6/10/10	1626
Relinquished by:				
Received by:	Nhan Phan	FEBI	6/10/10	1320

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

June 29, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE. G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on June 11, 2010 from the Olympic Water and Sewer 101.00433.00001, F&BI 006145 project. There are 11 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
SLR0629R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 11, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. Olympic Water and Sewer 101.00433.00001, F&BI 006145 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
006145-01	MW3-45.5
006145-02	MW4-31
006145-03	MW4-35

All quality control requirements were acceptable.

Date of Report: 06/29/10
Date Received: 06/11/10
Project: Olympic Water and Sewer 101.00433.00001, F&BI 006145
Date Extracted: 06/15/10 and 06/17/10
Date Analyzed: 06/15/10 and 06/17/10

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

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW3-45.5 006145-01	<2	77
MW4-31 006145-02	<2	61
Method Blank 00-0852 MB	<2	90
Method Blank 00-0856 MB	<2	90

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-45.5	Client:	SLR International Corp.
Date Received:	06/11/10	Project:	Olympic Water and Sewer 101.00433.00001
Date Extracted:	06/15/10	Lab ID:	006145-01
Date Analyzed:	06/15/10	Data File:	061513.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	42	152
Toluene-d8	95	36	149
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	0.036
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-31	Client:	SLR International Corp.
Date Received:	06/11/10	Project:	Olympic Water and Sewer 101.00433.00001
Date Extracted:	06/17/10	Lab ID:	006145-02
Date Analyzed:	06/17/10	Data File:	061717.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	88	62	142
Toluene-d8	84	55	145
4-Bromofluorobenzene	88	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Olympic Water and Sewer 101.00433.00001
Date Extracted:	06/15/10	Lab ID:	00734 mb
Date Analyzed:	06/15/10	Data File:	061509.D
Matrix:	Soil	Instrument:	GCMS5
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	42	152
Toluene-d8	114	36	149
4-Bromofluorobenzene	116	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Olympic Water and Sewer 101.00433.00001
Date Extracted:	06/17/10	Lab ID:	00899 mb
Date Analyzed:	06/17/10	Data File:	061711.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Date of Report: 06/29/10
Date Received: 06/11/10
Project: Olympic Water and Sewer 101.00433.00001, F&BI 006145

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

Laboratory Code: 006145-01 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	10	110	61-153

Date of Report: 06/29/10
Date Received: 06/11/10
Project: Olympic Water and Sewer 101.00433.00001, F&BI 006145

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

Laboratory Code: 006145-02 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	10	110	115	61-153	3

Date of Report: 06/29/10
Date Received: 06/11/10
Project: Olympic Water and Sewer 101.00433.00001, F&BI 006145

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

Laboratory Code: 006122-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	mg/kg (ppm)	2.5	<0.03	72	58-129
Toluene	mg/kg (ppm)	2.5	<0.05	75	56-136
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	77	62-129
m,p-Xylene	mg/kg (ppm)	5	<0.1	79	60-132
o-Xylene	mg/kg (ppm)	2.5	<0.05	78	56-139
Naphthalene	mg/kg (ppm)	2.5	<0.05	79	35-174

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	2.5	100	105	73-115	5
Toluene	mg/kg (ppm)	2.5	101	105	75-117	4
Ethylbenzene	mg/kg (ppm)	2.5	98	102	74-122	4
m,p-Xylene	mg/kg (ppm)	5	102	107	78-114	5
o-Xylene	mg/kg (ppm)	2.5	99	102	81-116	3
Naphthalene	mg/kg (ppm)	2.5	102	104	70-122	2

Date of Report: 06/29/10
Date Received: 06/11/10
Project: Olympic Water and Sewer 101.00433.00001, F&BI 006145

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

Laboratory Code: 006192-18 FS and 1/10 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	mg/kg (ppm)	<0.03	<0.03	nm
Toluene	mg/kg (ppm)	0.83	0.82	1
Ethylbenzene	mg/kg (ppm)	4.5	4.5	0
m,p-Xylene	mg/kg (ppm)	28	31	10
o-Xylene	mg/kg (ppm)	7.4	7.2	3
Naphthalene	mg/kg (ppm)	2.3	2.2	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	2.5	93	93	72-121	0
Toluene	mg/kg (ppm)	2.5	96	94	66-126	2
Ethylbenzene	mg/kg (ppm)	2.5	99	97	64-123	2
m,p-Xylene	mg/kg (ppm)	5	101	100	78-122	1
o-Xylene	mg/kg (ppm)	2.5	100	98	77-124	2
Naphthalene	mg/kg (ppm)	2.5	103	99	60-125	4

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

006145

SAMPLE CHAIN OF CUSTODY

ME 06/11/10 VS2/BJI3

Page # 1 of 2

Send Report To Mike Staton
Company SLR International Corp
Address 22118 20th Ave SE, G-202
City, State, ZIP Bothell, WA 98021
Phone #(425) 402-8800 Fax #(425) 402-8488

SAMPLERS (signature)

PROJECT NAME/NO.: Olympic Water & Sewer, Inc (OWSI) 101.00433.00001
PO #: 101.00433.00001

REMARKS: Please hold samples for possible follow-up

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [x] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8260	VOCs by 8260	SVOCs by 8270	HFS	Notes
MW3-45.5	01 AE	6/10/10	0930	Soil	5		X	X				
MW4-31	02 AE	"	1720	"	"		✓	✓				~~Hold~~ ✓ per MS 6/16/10 MS
MW4-35	03 AE	↓	1755	↓	↓							Hold
												Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chris Lee	SLR	6/11/10	
Received by:	Joel Zurich	Champion	"	12:48
Relinquished by:				
Received by:	Phan	FedEx	6/11/10	1400

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

June 30, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE. G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the soil results from the testing of material submitted on June 15, 2010 from the OWSI, 101.00433.00001, F&BI 006178 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
SLR0630R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 15, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. OWSI, 101.00433.00001, F&BI 006178 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
006178-01	MW4-55

All quality control requirements were acceptable.

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178
Date Extracted: 06/16/10
Date Analyzed: 06/16/10 and 06/17/10

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

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW4-55 006178-01	<2	87
Method Blank 00-0852 MB2	<2	91

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-55	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/17/10	Lab ID:	006178-01
Date Analyzed:	06/17/10	Data File:	061705.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/17/10	Lab ID:	00736 mb2
Date Analyzed:	06/17/10	Data File:	061704.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: 006145-01 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	10	110	61-153

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	mg/kg (ppm)	2.5	93	95	72-121	2
Toluene	mg/kg (ppm)	2.5	96	91	66-126	5
Ethylbenzene	mg/kg (ppm)	2.5	99	100	64-123	1
m,p-Xylene	mg/kg (ppm)	5	102	102	78-122	0
o-Xylene	mg/kg (ppm)	2.5	100	100	77-124	0
Naphthalene	mg/kg (ppm)	2.5	99	100	60-125	1

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

006178

SAMPLE CHAIN OF CUSTODY ME 06-15-10

VS1/1 V3/1 AIG/1

Page # _____ of _____

Send Report To MIKE STATON

Company SLR

Address 22118 20TH AVE SE, G-202

City, State, ZIP BOTHELL, WA 98021

Phone # (425) 402-~~8000~~ 8800 Fax # (425) 402-8488

SAMPLERS *(signature)*

PROJECT NAME/NO. Olympic Water & Sewer, Inc (OWSI) 101.00433.00001

PO # 101.00433.00001

REMARKS Sample MW4-55 was frozen 5 hours after collection

TURNAROUND TIME
- [X] Standard (2 Weeks)
- [ ] RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline 8260	BTEX by ~~8021B~~ 8260	VOCs by 8260	SVOCs by 8270	HFS	BTEX, EDC, MTBE, Naphthalene by 8260	EDB by 8011	Total & Dissolved Lead by 200.8				Notes
MW4-55	01 AE	6/11/10	1010	SOIL	5		X	X										Sample frozen after collection
MW4-0610	02 A-K	6/14/10	1150	WATER	11		X					X	X	X				
MW3-0610	03 AK	↓	1259	↓	↓		X					X	X	X				
MW2-0610	04 AK		1355				X					X	X	X				
MW1-0610	05 AK		1451				X					X	X	X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	CHRIS LEE	SLR	6/15/10	14:15
Received by:				
Relinquished by:				
Received by:		Samples received at 2 °C		

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Kurt Johnson, B.S.

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

June 30, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE. G-202
Bothell, WA 98021

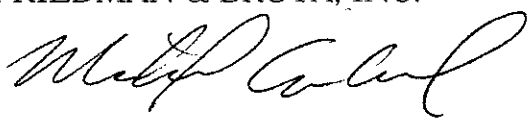
Dear Mr. Staton:

Included are the water results from the testing of material submitted on June 15, 2010 from the OWSI, 101.00433.00001, F&BI 006178 project. There are 23 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
SLR0630R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 15, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. OWSI, 101.00433.00001, F&BI 006178 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
006178-02	MW4-0610
006178-03	MW3-0610
006178-04	MW2-0610
006178-05	MW1-0610

All quality control requirements were acceptable.

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178
Date Extracted: 06/16/10
Date Analyzed: 06/16/10

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW4-0610 006178-02	<100	112
MW3-0610 006178-03	<100	112
MW2-0610 006178-04	8,400	ip
MW1-0610 006178-05	990	123
Method Blank 00-0854 MB2	<100	108

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW4-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/23/10	Lab ID:	006178-02
Date Analyzed:	06/23/10	Data File:	006178-02.063
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	104	60	125

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW3-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/23/10	Lab ID:	006178-03
Date Analyzed:	06/23/10	Data File:	006178-03.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW2-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/23/10	Lab ID:	006178-04
Date Analyzed:	06/23/10	Data File:	006178-04.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

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

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	MW1-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/23/10	Lab ID:	006178-05
Date Analyzed:	06/23/10	Data File:	006178-05.068
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/23/10	Lab ID:	I0-319 mb
Date Analyzed:	06/23/10	Data File:	I0-319 mb.061
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	92	60	125

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/18/10	Lab ID:	006178-02
Date Analyzed:	06/19/10	Data File:	061832.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	63	127
Toluene-d8	100	65	127
4-Bromofluorobenzene	108	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/18/10	Lab ID:	006178-03
Date Analyzed:	06/19/10	Data File:	061833.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	63	127
Toluene-d8	98	65	127
4-Bromofluorobenzene	106	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	0.36
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/18/10	Lab ID:	006178-04
Date Analyzed:	06/19/10	Data File:	061834.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	88	63	127
Toluene-d8	98	65	127
4-Bromofluorobenzene	99	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	820 ve
Toluene	510 ve
Ethylbenzene	430 ve
m,p-Xylene	450 ve
o-Xylene	380 ve
Naphthalene	100 ca

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/22/10	Lab ID:	006178-04 1/100
Date Analyzed:	06/22/10	Data File:	062210.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	63	127
Toluene-d8	103	65	127
4-Bromofluorobenzene	108	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<100
1,2-Dichloroethane (EDC)	<100
1,2-Dibromoethane (EDB)	<100
Benzene	2,100
Toluene	620
Ethylbenzene	960
m,p-Xylene	400
o-Xylene	250
Naphthalene	100

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-0610	Client:	SLR International Corp.
Date Received:	06/15/10	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/21/10	Lab ID:	006178-05
Date Analyzed:	06/21/10	Data File:	062109.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	63	127
Toluene-d8	101	65	127
4-Bromofluorobenzene	102	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	110
Toluene	45
Ethylbenzene	1.1
m,p-Xylene	56
o-Xylene	130
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/18/10	Lab ID:	00901 mb
Date Analyzed:	06/18/10	Data File:	061819.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	63	127
Toluene-d8	101	65	127
4-Bromofluorobenzene	107	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/21/10	Lab ID:	00904 mb
Date Analyzed:	06/21/10	Data File:	062107.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	63	127
Toluene-d8	101	65	127
4-Bromofluorobenzene	108	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	OWSI, 101.00433.00001, F&BI 006178
Date Extracted:	06/22/10	Lab ID:	00905 mb
Date Analyzed:	06/22/10	Data File:	062207.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	63	127
Toluene-d8	103	65	127
4-Bromofluorobenzene	109	69	127

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
1,2-Dibromoethane (EDB)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178
Date Extracted: 06/23/10
Date Analyzed: 06/23/10

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED

Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
MW4-0610 006178-02	<0.01
MW3-0610 006178-03	<0.01
MW2-0610 006178-04	<0.01
MW1-0610 006178-05	<0.01
Method Blank	<0.01

EDB 1,2-Dibromoethane

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: 006157-04 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	95	70-119

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: 006178-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	111	107	76-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	110	67-135

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: 006214-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	100	56-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	96	68-132
Benzene	ug/L (ppb)	50	<0.35	105	71-120
Toluene	ug/L (ppb)	50	<1	100	68-131
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	100	77-127
Ethylbenzene	ug/L (ppb)	50	<1	103	69-129
m,p-Xylene	ug/L (ppb)	100	<2	105	72-128
o-Xylene	ug/L (ppb)	50	<1	111	67-133
Naphthalene	ug/L (ppb)	50	<1	112	40-166

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	107	105	54-156	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	101	77-118	2
Benzene	ug/L (ppb)	50	107	106	77-121	1
Toluene	ug/L (ppb)	50	103	101	81-117	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	107	104	88-122	3
Ethylbenzene	ug/L (ppb)	50	105	103	83-116	2
m,p-Xylene	ug/L (ppb)	100	108	106	84-120	2
o-Xylene	ug/L (ppb)	50	113	112	83-120	1
Naphthalene	ug/L (ppb)	50	122	121	66-135	1

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: 006228-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	96	56-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	101	68-132
Benzene	ug/L (ppb)	50	<0.35	107	71-120
Toluene	ug/L (ppb)	50	<1	102	68-131
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	103	77-127
Ethylbenzene	ug/L (ppb)	50	<1	106	69-129
m,p-Xylene	ug/L (ppb)	100	<2	109	72-128
o-Xylene	ug/L (ppb)	50	<1	113	67-133
Naphthalene	ug/L (ppb)	50	<1	117	40-166

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	111	108	54-156	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	103	100	77-118	3
Benzene	ug/L (ppb)	50	107	104	77-121	3
Toluene	ug/L (ppb)	50	103	100	81-117	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	108	103	88-122	5
Ethylbenzene	ug/L (ppb)	50	104	101	83-116	3
m,p-Xylene	ug/L (ppb)	100	108	104	84-120	4
o-Xylene	ug/L (ppb)	50	114	110	83-120	4
Naphthalene	ug/L (ppb)	50	127	119	66-135	7

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	104	104	54-156	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	100	77-118	1
Benzene	ug/L (ppb)	50	104	105	77-121	1
Toluene	ug/L (ppb)	50	99	101	81-117	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	103	105	88-122	2
Ethylbenzene	ug/L (ppb)	50	101	103	83-116	2
m,p-Xylene	ug/L (ppb)	100	105	106	84-120	1
o-Xylene	ug/L (ppb)	50	110	112	83-120	2
Naphthalene	ug/L (ppb)	50	117	116	66-135	1

Date of Report: 06/30/10
Date Received: 06/15/10
Project: OWSI, 101.00433.00001, F&BI 006178

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	96	93	70-130	3

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

006178

SAMPLE CHAIN OF CUSTODY ME 06-15-10

VS1/V3/AIG

Page # 1 of 1

Send Report To MIKE STATON

Company SLR

Address 22114 20TH AVE SE, G-202

City, State, ZIP BOTHELL, WA 98021

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

SAMPLERS (signature)

PROJECT NAME/NO. Olympic Water & Sewer, Inc (OWSI) 101.00433.00001

PO # 101.00433.00001

REMARKS Sample MW4-55 was frozen 5 hours after collection

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by ~~8021B~~ 8260	VOCs by 8260	SVOCs by 8270	HFS	BTEX, EDC, MTBE, Naphthalene by 8260	EDB by 8011	Total & Dissolved Lead by 200.8				Notes
MW4-55	01 AE	6/11/10	1010	SOIL	5		X	X										Sample frozen after collection
MW4-0610	02 A-K	6/14/10	1150	WATER	11		X					X	X	X				
MW3-0610	03 AIC	↓	1259	↓	↓		X					X	X	X				
MW2-0610	04 AIC		1355				X					X	X	X				
MW1-0610	05 AK		1451				X					X	X	X				

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

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		CHRIS LEE	SLR	6/15/10	14:15
Received by:					
Relinquished by:					
Received by:			Samples received at 2 °C		

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 3, 2010

Mike Staton, Project Manager
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on October 21, 2010 from the Olympic Water & Sewer, Inc. 101.00433.00001, F&BI 010249 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
SLR1103R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 21, 2010 by Friedman & Bruya, Inc. from the SLR International Corp. Olympic Water & Sewer, Inc. 101.00433.00001, F&BI 010249 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
010249-01	MW1-1010
010249-02	MW2-1010
010249-03	MW3-1010
010249-04	MW4-1010

All quality control requirements were acceptable.

Date of Report: 11/03/10
Date Received: 10/21/10
Project: Olympic Water & Sewer, Inc. 101.00433.00001, F&BI 010249
Date Extracted: 10/25/10
Date Analyzed: 10/25/10

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW1-1010 010249-01	1,900	ip
MW2-1010 010249-02	3,900	ip
MW3-1010 010249-03	<100	118
MW4-1010 010249-04	<100	118
Method Blank 00-1728 MB	<100	118

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW1-1010	Client:	SLR International Corp.
Date Received:	10/21/10	Project:	Olympic Water & Sewer, Inc
Date Extracted:	10/28/10	Lab ID:	010249-01 1/10
Date Analyzed:	10/29/10	Data File:	102824.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	63	127
Toluene-d8	97	65	127
4-Bromofluorobenzene	95	69	127

Compounds:	Concentration ug/L (ppb)
Benzene	520
Toluene	140
Ethylbenzene	110
m,p-Xylene	71
o-Xylene	150
Naphthalene	15

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW2-1010	Client:	SLR International Corp.
Date Received:	10/21/10	Project:	Olympic Water & Sewer, Inc
Date Extracted:	10/29/10	Lab ID:	010249-02 1/10
Date Analyzed:	10/30/10	Data File:	102929.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	63	127
Toluene-d8	97	65	127
4-Bromofluorobenzene	96	69	127

Compounds:	Concentration ug/L (ppb)
Benzene	1,300
Toluene	290
Ethylbenzene	430
m,p-Xylene	240
o-Xylene	290
Naphthalene	35

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW3-1010	Client:	SLR International Corp.
Date Received:	10/21/10	Project:	Olympic Water & Sewer, Inc
Date Extracted:	10/29/10	Lab ID:	010249-03
Date Analyzed:	10/30/10	Data File:	102928.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	63	127
Toluene-d8	92	65	127
4-Bromofluorobenzene	92	69	127

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW4-1010	Client:	SLR International Corp.
Date Received:	10/21/10	Project:	Olympic Water & Sewer, Inc
Date Extracted:	10/28/10	Lab ID:	010249-04
Date Analyzed:	10/29/10	Data File:	102827.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	63	127
Toluene-d8	94	65	127
4-Bromofluorobenzene	94	69	127

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Olympic Water & Sewer, Inc
Date Extracted:	10/29/10	Lab ID:	001709 mb
Date Analyzed:	10/30/10	Data File:	102927.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	63	127
Toluene-d8	94	65	127
4-Bromofluorobenzene	95	69	127

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Olympic Water & Sewer, Inc
Date Extracted:	10/28/10	Lab ID:	001708 mb
Date Analyzed:	10/28/10	Data File:	102817.D
Matrix:	Water	Instrument:	GCMS5
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	63	127
Toluene-d8	94	65	127
4-Bromofluorobenzene	94	69	127

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Date of Report: 11/03/10
Date Received: 10/21/10
Project: Olympic Water & Sewer, Inc. 101.00433.00001, F&BI 010249

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

Laboratory Code: 010271-16 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recover y LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	99	70-119

Date of Report: 11/03/10
Date Received: 10/21/10
Project: Olympic Water & Sewer, Inc. 101.00433.00001, F&BI 010249

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

Laboratory Code: 010249-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	50	660 ve	0 b	62-144
Toluene	ug/L (ppb)	50	210 ve	91 b	68-131
Ethylbenzene	ug/L (ppb)	50	240 ve	2 b	51-150
m,p-Xylene	ug/L (ppb)	100	190	120 b	72-137
o-Xylene	ug/L (ppb)	50	220 ve	102 b	67-133
Naphthalene	ug/L (ppb)	50	37	97 b	40-166

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	107	107	77-121	0
Toluene	ug/L (ppb)	50	108	107	81-113	1
Ethylbenzene	ug/L (ppb)	50	110	108	83-116	2
m,p-Xylene	ug/L (ppb)	100	110	110	84-120	0
o-Xylene	ug/L (ppb)	50	120	120	83-120	0
Naphthalene	ug/L (ppb)	50	114	114	66-135	0

Date of Report: 11/03/10
Date Received: 10/21/10
Project: Olympic Water & Sewer, Inc. 101.00433.00001, F&BI 010249

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

Laboratory Code: 010275-10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	50	<0.35	101	62-144
Toluene	ug/L (ppb)	50	<1	102	68-131
Ethylbenzene	ug/L (ppb)	50	<1	104	51-150
m,p-Xylene	ug/L (ppb)	100	<2	104	72-137
o-Xylene	ug/L (ppb)	50	<1	112	67-133
Naphthalene	ug/L (ppb)	50	<1	111	40-166

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	103	106	77-121	3
Toluene	ug/L (ppb)	50	105	109	81-113	4
Ethylbenzene	ug/L (ppb)	50	102	105	83-116	3
m,p-Xylene	ug/L (ppb)	100	105	108	84-120	3
o-Xylene	ug/L (ppb)	50	114	118	83-120	3
Naphthalene	ug/L (ppb)	50	111	115	66-135	4

Data Qualifiers & Definitions

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

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 - Analyte present in the blank and the sample.

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 - Analysis performed outside the method or client-specified holding time requirement.

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 - 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.

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

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

010249

SAMPLE CHAIN OF CUSTODY

ME 10-21-10

V4

Page # 1 of 1

Send Report To MIKE STATON

Company SLR INT'L CORP

Address 22118 20TH AVE SE, G-202

City, State, ZIP BOTHELL, WA 98021

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

SAMPLERS (signature)

PROJECT NAME/NO.: Olympic Water & Sewer, Inc ; 101.00433.00001

PO #: 101.00433.00001

REMARKS

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	BTEX & naphthalene by 8260B						Notes
MW1-1010	01A-F	10/20/10	1511	WATER	6		X					X						
MW2-1010	02A-F		1616 ~~1549~~		6		X					X						
MW3-1010	03A-F		1227		6		X					X						
MW4-1010	04A-F		1359		6		X					X						

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	CHRIS LEE	SLR	10/21/10	1:42 pm
Received by:	Jill Laymon	Champion	10-21-10	1:42 pm
Relinquished by:	Jill Laymon	Champion	10-21-10	15:19
Received by:	Nhan Phan	FEBI	10/21/10	V

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

APPENDIX D

WATER SUPPLY WELL LOGS

Table D-1
Water Well Supply Well Construction Details
Olympic Water and Sewer, Inc. Property
Port Ludlow, Washington

SLR Designated Number	Quarter	Quarter	Section	Township	Range	Well Owner's Name (at time of installation)	Well Use	Total Depth (ft. bgs)	Casing Depth (ft. bgs)	Screen Depth (ft. bgs)	Open (ft. bgs)	StaticWater Level (ft. bgs)	Producing Formation
1	NW	SE	8	28N	1E	Blaine Shaffer	Domestic	208	0-203	203-208	NA	108	Sand and Gravel
2	SW	SE	8	28N	1E	Pope & Talbot Development, Inc.	Domestic	245	0-214; 224-240	214-224; 240-245	-	69.5	Sand and Gravel
3	SE	NE	8	28N	1E	Pope & Talbot Development, Inc.	Domestic	257	241-257	0-241	-	144.5	Sand and Gravel
4	SE	SW	8	28N	1E	Pope & Talbot Development, Inc.	Domestic	546	0-315.5; 329.7-361.3	315.5-329.7; 361.3-377.1	-	158.9	Sand and Gravel; Pebble Conglomerate
5	NW	SE	8	28N	1E	Richard Werner	Domestic	157	0-157	None	157	118	Gravel
6	NW	SE	8	28N	1E	Ross Witter	Domestic	176	0-176	None	176	136	Sand and Gravel
7	NW	SE	8	28N	1E	Ross Witter	Domestic	178	0-178	None	178	133	Sand and Gravel
8	NE	SW	8	28N	1E	Ruth Altis	Domestic	211.5	0-211.5	None	211.5	191	Sandy Clay and Gravel
9	NE	SW	8	28N	1E	Chris Baschab	Domestic	276	0-270	270-276	-	226.5	Sand and Gravel
10	NE	SW	8	28N	1E	Frank Woodruff	Domestic	193	0-193	None	193	114	Gravel
11	S 1/2	NE	8	28N	1E	R.T. Moran	Domestic	290	0-285	285-290	-	201	Sand and Gravel
12	NW	SE	8	28N	1E	John Werner	Domestic	205	NA	NA	NA	142.65	NA

Notes:
The well construction details in this table are based on Washington Department of Ecology or Olympic Water & Sewer, Inc. records.
NA= Information not available.

File original and first copy with Department of Ecology

Second Copy - Owner's Copy
Third Copy - Driller's Copy 176868

WATER WELL REPORT

STATE OF WASHINGTON

(1) Start Card No. WE03667
UNIQUE WELL I.D. # AGS283
Water Rights Permit No.

(1) OWNER: Name: BLAINE SHAFFER **Address:** 425 SHINE RD., PORT LUDLOW, WA 98365

(2) LOCATION OF WELL: County: JEFFERSON NW 1/4 of the SE 1/4, Sec. 8, Twnsp 28 N, R. 1 E W.M.

(2a)STREET ADDRESS OF WELL (or nearest address 804 WALKER WAY, PORT LUDLOW, WA 98365

(3) PROPOSED USE: ☒ Domestic ☐ Test well ☐ Irrigation ☐ Municipal ☐ Industrial ☐ Dewater ☐ Other

(4) TYPE OF WORK: Owner's number of well(if more than one): 1
☐ Abandoned ☒ New well **Method:** ☐ Dug ☐ Bored ☐ Deepened ☒ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted

(5) DIMENSIONS: Diameter of well: 6 inches
Drilled 208 feet Depth of completed well 208 feet

(6) CONSTRUCTION DETAILS:
Casing Installed: 6 in. diam. from 0 ft. to 203 ft.
☒ Welded in. diam. from ft. to ft.
☐ Liner installed in. diam. from ft. to ft.
☐ Threaded in. diam. from ft. to ft.

Perforations: Were perforations made?: ☐ Yes
Perforator type:
Size of perforation: in. by: in.
Perforations from: ft. to ft.
Perforations from: ft. to ft.

Screens: ☒ Screens installed
Manufacturer's name: Johnson
Type: Telescoping
Diam. 6 in. slot size .016 from 203 ft. to 208 ft.
Diam. in. slot size from ft. to ft.

Gravel: ☐ Yes Size of gravel: in.
Gravel Placed from: ft. to ft.

Surface seal: ☒ Yes To what depth?: 18 ft.
Material used in seal: Bentonite
Did any strata contain unusable water ☐ Yes
Type of water: Depth of strata: ft.
Method of sealing strata:

(7) PUMP: Manufacturer's name: Goulds
Type: Submersible HP: 1

(8) WATER LEVELS Land-surface elevation above mean sea-level: 310 ft.
Static level: 108 ft. below top of well Date: 6/21/2005
Artesian pressure: PSI Date:
Artesian water is controlled by:

(9) WELL TESTS Drawdown is amount water level is lowered below static level.
Was a pump test made? ☒ Yes, by: Don Lofall
Yield: 15 GPM with 15 ft. drawdown after 1.5 hrs
Yield: GPM with ft. drawdown after hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water level	Time	Water level	Time	Water level
10 min.	108'				

Date of test: 6/21/2005
Bailer test: 20 GPM with 28 ft. drawdown after hrs.
Air test: GPM with stem set at ft. for hrs.
Artesian flow: GPM Date:
Temp. of water: deg. Was a chemical analysis made? ☒ Yes

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least on entry for each change of formation.

MATERIAL	FROM	TO
BROWN HARDPAN	0'	67'
BROWN SAND & GRAVEL	67'	102'
GRAY HARDPAN	102'	108'
BROWN CLAY	108'	125'
BLUE CLAY	125'	144'
BROWN CLAY	144'	189'
GRAY SAND W/B	189'	192'
BROWN CLAY	192'	199'
GRAY SAND & GRAVEL W/B	199'	?

RECEIVED
AUG 05 2005
DEPT OF ECOLOGY

Work started: 6/13/2005 Work completed: 6/20/2005

WELL CONSTRUCTOR CERTIFICATION:
I constructed and / or accept responsibility for construction of this well, and to the compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Contractor: LOFALL WELL DRILLING

Address: 180 NW Lofall Rd, Poulsbo, WA 98370

Signed: Raymond L Bowers (Well Driller) License # 1463

Contractor's Registration No: LOFALWD124C5 Date: 7/12/2005

(2)

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL SCHEDULE No. 28/1E-8Q1

Date 8-21, 1975

Record by A. Williamson

Source

1. Location: State of WASHINGTON
County Jefferson
Area
Map
SW¼SE¼ sec. 8 T. 28 N., R. 1 (E.) W.

DIAGRAM OF SECTION

Details
#2

2. Owner or Tenant: Port Ludlow Devel. (His No.)
Address Popt. Talbot

3. Driller Address

4. Land-surface datum: 300 ft. above below msl
Topography:

5. Type: Dug (Drilled) Driven Depth: Repr. feet
Bored Jetted Meas. feet
Date , 19

6. Casing: Diam. 8" to in. ft. Type
Depth ft. Finish

7. Chief aquifer(s): from ft. to ft.

8. Water levels: Repr. Meas. 195 ft. 7-21, 1975 above (below) L.S.
169.72 which is 5 ft. (above) below datum

9. Pump: Type Sub Capacity gal. min.
Size
Driven by 20 horsepower

10. Yields: Flow gal. min. Pump 160 gal. min. Meas. (Repr.) Est.
Drawdown 42.5 ft. after hours pumping gal. min.
Adequacy, permanence

11. Use: Dom. Stock. PS. Ind. Irr. Obs.

12. Quality: Sample No. , 19 Temp. °F.
Taste, color, hardness, sanitation, etc.

13. Other data: Log Water levels Draft Pump test Analyses

Turn up

POPE AND TALBOT DEVELOPMENT INC.

PORT LUDLOW REGION

(2)

Well Data Summary

REFERENCE NO. 10

LOCATION: T 28 R 1E Sec. 8 1/4 1/4 KQ | B VER. CODE

LAND SURFACE ELEVATION 300 | B VER. CODE DEPTH 245 DATE DRILLED 1968

WELL OWNER: POPE TALBOT DEVELOPMENT, INC.

OWNER'S DESIGNATION (WELL 2, N) USE

INFORMATION SOURCE R+N 01-82 DRILLING METHOD CABLE

DRILLED BY STOICAN CASING SIZE (S) 10 Sec.

COMPLETION MODE SCREEN COMPLETION ZONE (S) 214-224 240-245

YIELD 15.8 | A VER. CODE SPECIFIC CAPACITY 3.0 | A VER. CODE

SWL 67.2 | B VER. CODE DATE 11/1968

AQUIFER TRANSMISSIVITY 15,000 | B VER. CODE

STORAGE COEFFICIENT | VER. CODE

1/4 1/4 KQ

OTHER WATER BEARING ZONES PENETRATED

MAJOR AQUICLUDES PENETRATED

POST CONSTRUCTION SWL MEASUREMENTS WITH DATES 67.0 | B VER. CODE 11/71

69.2 | B VER. CODE 8/21/75 | VER. CODE | VER. CODE

DETAILED SUPPLEMENTARY FILES

PUMP TEST DATA FILE

GEOLOGIC LOG SEE BACK

WATER CHEMISTRY

REMARKS 11/71 Q/s = 4.0 @ 1 HRS AND 160 gpm.

11/71 TEMP 49½, pH = 7.4, HARD = 70, Fe = 0.3, H_2S = SLIGHT.

Mn = .16

781 Walker Way

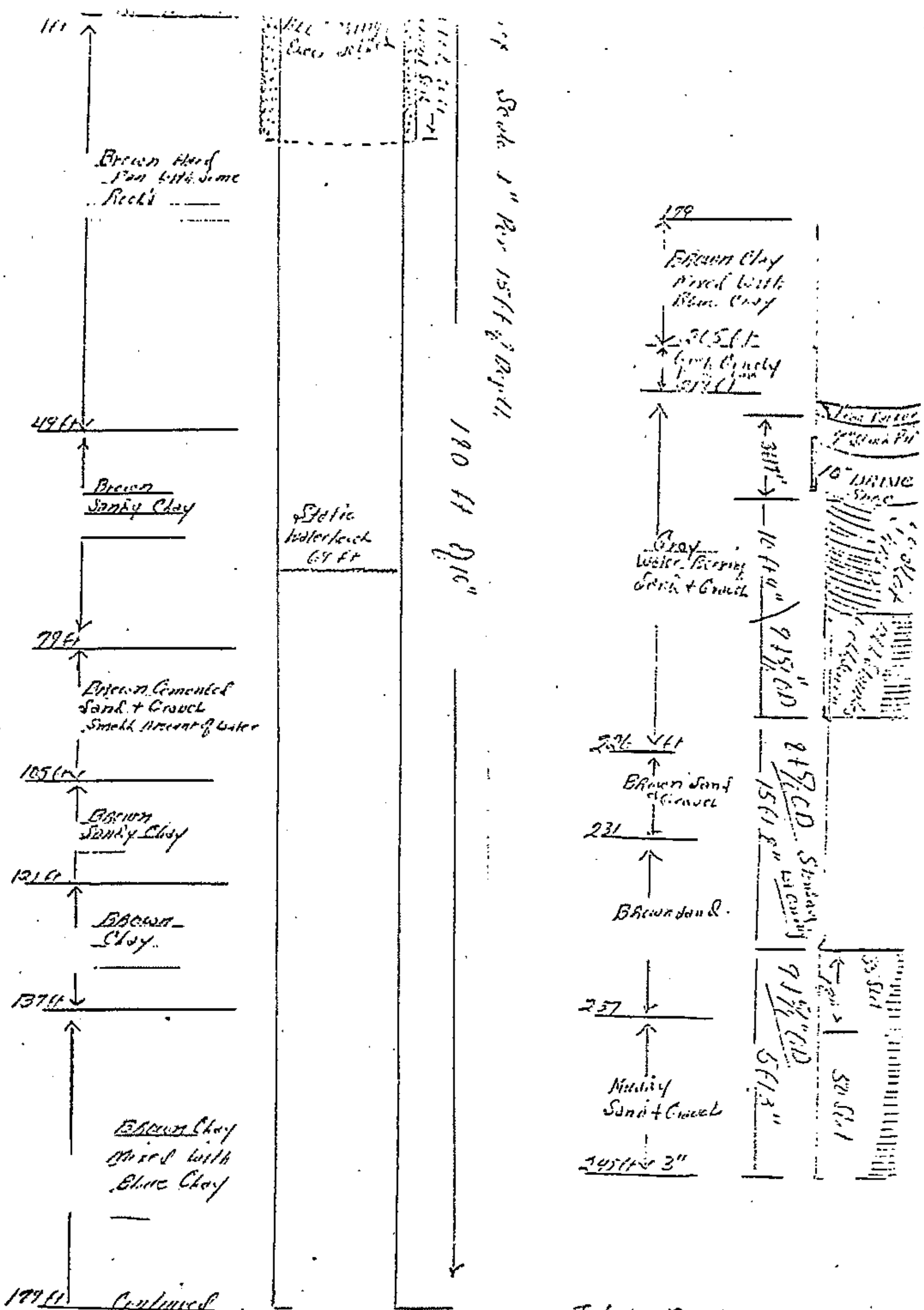
☐ REVIEW

☐ FIELD SCHEDULE

RECORD BY MCS

ROBINSON & NOBLE, INC.

2



Total Depth Top of Ca
Total Depth top of Gra
Date Completed
Signed

WELL #2

(3)

Appl. 10445
Per. 9874

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL LOG

Record by Driller
Source Driller's record

Location: State of WASHINGTON
County Jefferson
Area
Map

NW¼SE¼ NE¼ sec. 8 T. 28N., R. 1 E. W.M.

Diagram of Section

Drilling Co. L.R. Gaudio
Address Tacoma, Washington
Method of Drilling Date 19
Owner Pope & Talbot Development Inc.
Address 113 Dexter Ave. MN Seattle, WA 98109
Land surface, datum ft. above / below
SWL: 144.5 Date Nov. 18, 19 68 Dims.: 8" x 257'

CORRELATION	MATERIAL	From (feet)	To (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Community domestic supply		
	hardpan	0	34
	clay, sand, gravel	34	39
	hardpan	39	48
	clay, sand	48	57
	hardpan	57	80
	sand, gravel, some clay binder small amount of water 80-82	80	128
	clay, silt & sandy wet peat	128	142
	clay, silt	142	162
	clay, gravel some sand	162	186
	clay, some gravel & peat	186	214
	sand, gravel & water	214	223
	sand, some gravel, clay layer	223	235
	sand, gravel, cemented layer	235	245
	water		

Turn up

Sheet of sheets

3

WELL LOG.—Continued No...../.....

Correlation	Material	From (feet)	To (feet)
	Depth forward	———	
	sand, gravel water	245	255
	clay, blue grey	255	257
	Casing: 8" from 0' to 241'		
	Screen: cook strainless		
	8" slot size 10 from 241' to 246'		
	8" slot size 80 from 246' to 257'		
	Surface Seal: concrete 1'		
	Pump test: 88 gpm with 39' DD after 1 hrs		
	Pump: Gould, submersible 20 HP		

S. F. No. 7449—OS—12-65.

PORT LUDLOW REGION

(3)

Well Data Summary

REFERENCE NO. 9

LOCATION: T 28 R 1E Sec. 8 1/4 1/4 H1 | B VER. CODE

LAND SURFACE ELEVATION 380 | B VER. CODE DEPTH 257 DATE DRILLED 1968

WELL OWNER: POPE AND TALBOT DEVELOPMENT INC

OWNER'S DESIGNATION WELL 3, N USE

INFORMATION SOURCE R+N 01-82 DRILLING METHOD CABLE

DRILLED BY GAUDIO CASING SIZE (S) 8 Sec.

COMPLETION MODE SCREEN COMPLETION ZONE (S) 241-257

YIELD 88 | A VER. CODE SPECIFIC CAPACITY 2.3 | A VER. CODE

SWL 144.5 | B VER. CODE DATE 11/18/68

AQUIFER TRANSMISSIVITY 6000 | B VER.CODE 11/1971

STORAGE COEFFICIENT | VER.CODE

1/4 1/4 H

OTHER WATER BEARING ZONES PENETRATED

MAJOR AQUICLUDES PENETRATED

POST CONSTRUCTION SWL MEASUREMENTS WITH DATES 152 | B VER. CODE, 11/71

156.5 | B VER. CODE 8/21/75 | VER. CODE | VER. CODE

DETAILED SUPPLEMENTARY FILES

PUMP TEST DATA FILE R+N FILE

GEOLOGIC LOG SEE BACK

WATER CHEMISTRY TEMP = 51°F, pH = 7.5, HARD = 102, Cl = 6 Fe = 0.4, H_2S ODOR STRONG

REMARKS 11/71 Q/s = 2.0 @ 107 gpm @ 1 HR.

11/71 Fe = 0.1, H_2S = SLIGHT, Mn = .13

11/68 Cl = 6

Talbot Way

☐ REVIEW

☐ FIELD SCHEDULE

RECORD BY: MBS

ROBINSON & NOBLE, INC.

WELL No. 3 PORT LUDLOW

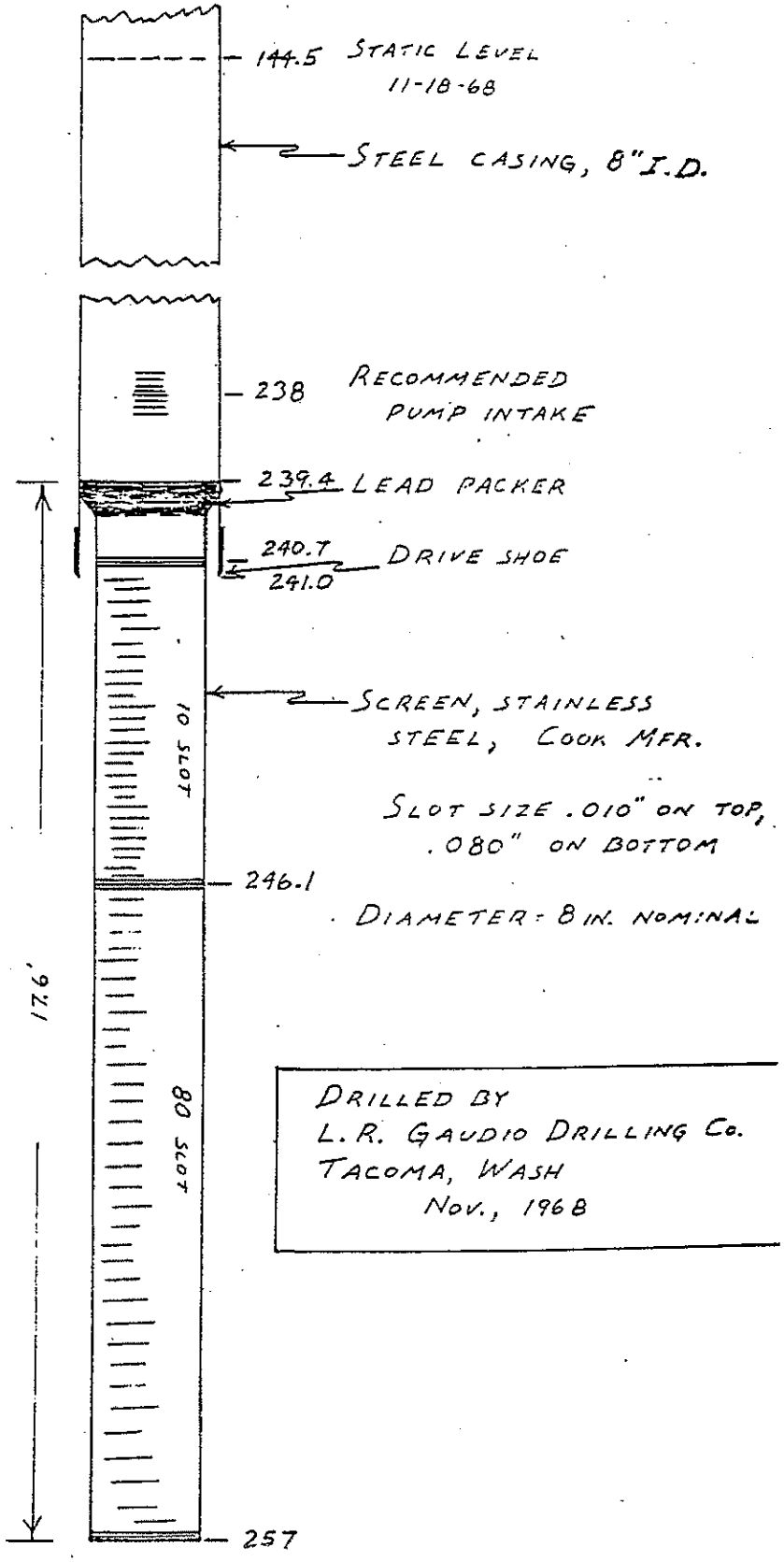
3

DRILLER'S LOG 1"=30'

0	HARDPAN
34	CLAY, SAND, GRAVEL
39	HARDPAN
48	CLAY, SAND
57	HARDPAN
80	SAND, GRAVEL, SOME CLAY BINDER. SMALL AMT. WATER NOTED 80-82
128	CLAY, SILTY & SANDY PEATY 138-142
142	CLAY, SILTY, BROWN-GREEN
162	CLAY, GRAY - SOME SAND
186	CLAY, SOME GRAVEL & PEAT. BROWN-GREEN
214	SAND & GRAVEL - WATER
223	SAND, SOME GRAVEL, CLAY LAYERS
235	SAND, GRAVEL, WATER - CEMENTED LAYERS
245	SAND, GRAVEL, WATER
255	
257	CLAY, BLUE-GRAY

CONSTRUCTION DETAILS 1"=3'

DEPTHS ARE FEET BELOW LAND SURFACE



DRILLED BY
L. R. GAUDIO DRILLING CO.
TACOMA, WASH
NOV., 1968

POPE & TALBOT, INC
SEATTLE, WASH.

ROBINSON, ROBERTS, & ASSOC.
GROUND WATER GEOLOGISTS
TACOMA, WASHINGTON

NOV. 21, 1968
J. B. Noble

POPE AND TALBOT DEVELOPMENT INC.
PORT LUDLOW REGION

(4)

Well Data Summary

REFERENCE NO. 8

LOCATION: T 28 R 1E Sec. 8 1/4 1/4 P VER. CODE B

LAND SURFACE ELEVATION 340 TOPO VER. CODE D DEPTH 546 DATE DRILLED 1980

WELL OWNER: POPE AND TALBOT DEVELOPMENT, INC.

OWNER'S DESIGNATION WELL 4N USE

INFORMATION SOURCE R+N 79-81 DRILLING METHOD CABLE

DRILLED BY STORY + ARMSTRONG CASING SIZE (S) 12 X 315.6 Sec. 8

COMPLETION MODE SCREEN COMPLETION ZONE (S) 315.6 - 329.7 100 + 80 SLOT
361.3 - 377.1 10 + 30 SLOT

YIELD 94 VER. CODE A SPECIFIC CAPACITY 1.7 VER. CODE A

SWL 158.9 REC. VER. CODE B DATE 4/28/80

AQUIFER TRANSMISSIVITY 3030 + 4280 VER. CODE A

STORAGE COEFFICIENT VER. CODE

1/4 1/4 P

OTHER WATER BEARING ZONES PENETRATED

MAJOR AQUICLUDES PENETRATED

POST CONSTRUCTION SWL MEASUREMENTS WITH DATES 154 VER. CODE A 5/8/80

VER. CODE VER. CODE VER. CODE

DETAILED SUPPLEMENTARY FILES

PUMP TEST DATA FILE R+N 79-81 W/ RECOVERY HYDROGRAPH

GEOLOGIC LOG SEE BACK

WATER CHEMISTRY R-N 79-81, OK

REMARKS Walden Lane (westerly "extension" of Walden Way

☐ REVIEW

☐ FIELD SCHEDULE

RECORD BY: MCS

ROBINSON & NOBLE, INC.

epartment of Ecology
econd Copy — Owner's Copy
hird Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. _____
Permit No. .... _____

(4)

1) OWNER: Name Pope & Talbot Development, Inc. Address P.O. Box 75, Port Ludlow, WA 98365

LOCATION OF WELL: County Jefferson SE ¼ SW ¼ Sec. 8 T 28 N, R 1E WM.
ng and distance from section or subdivision corner

3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

4) TYPE OF WORK: Owner's number of well (if more than one).... 4N
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

5) DIMENSIONS: Diameter of well 12 inches.
Drilled 546 ft. Depth of completed well 388½ ft.

6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from 0 ft. to 315½ ft.
Threaded ☐ 10 " Diam. from 329½ ft. to 361 ft.
Welded ☒ 10 " Diam. from 378 ft. to 388½ ft.

Perforations: Yes ☐ No ☒
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name WOP Johnson
Type Pipe Size 100 Model No. 304SS
Diam. 10" Slot size .080 from 315 ft. to 329½ ft.
Diam. 10" Slot size .080 from 361 ft. to 378 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level.... 372 ft.
Static level 158.9 ft. below top of well Date 4/28/80
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Robinson, Noble, Carr
Yield: 94 gal./min. with 50.6 ft. drawdown after 17.67 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
10 min.	172.6	50	168.35	155	164.8
20 "	170.95	80	166.85	220	163.5
30 "	169.8	100	166.1		

Date of test 4/28/80 - 4/29/80
er test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
brown to gray till	0	52
brown, sandy, pebbly silt	52	131
sand and gravel	131	151
brown silty sand and gravel	151	157
gray sandy silt	157	171
gray pebbly silt	171	267
gray poorly sorted silty sand and gravel	267	269
gray pebbly silt	269	314
brown, poorly sorted medium to coarse sand and gravel	314	332
gray pebbly silt	332	360
gray sand and gravel	360	366
gray silty sand with some gravel	366	380
gray clayey silt	380	536
weathered pebble conglomerate	536	544
gray pebble conglomerate (bedrock)	544	546

RECEIVED
JUN 09 1980
DEPARTMENT OF ECOLOGY
SOUTHWEST REGIONAL OFFICE JUN 9 1980
DEPT. OF ECOLOGY

Water Rights 6/27/80

Work started 3/18 19 80 Completed 4/29 19 80

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Story/Armstrong Drilling
(Person, firm, or corporation) (Type or print)
Address 10711-10715 66th Ave. E.
Puyallup, WA 98371

[Signed] _____ (Well Driller)

License No. 0012 Date May 30 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

5

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name Richard Werner Address 660 Werner Rd Port Ludlow

(2) LOCATION OF WELL: County Jefferson — NW¼ SE¼ Sec 8 T 28 N., R 1 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☑ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☑ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 157 ft. Depth of completed well 157 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 157 ft.
Threaded ☐ " Diam. from ..... ft. to ..... ft.
Welded ☑ " Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☑
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☑
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☐ No ☑ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☑ No ☐ To what depth? 20 ft.
Material used in seal Bentonite Clay Grout
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level .... 430 ft.
Static level 118 ft. below top of well Date 2-21-85
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test 12 gal./min. with 10 ft. drawdown after 1½ hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brn sandy Clay	0	8
Brn sandy hardpan	8	20
Brn sandy Clay	20	25
Gray sandy Clay	25	35
Gray sandy Clay w/ some H2O	35	45
Gray sandy Clay	45	55
Brn sandy Clay	55	100
gray sandy Clay	100	135
Lt Brn Gray sandy Clay	135	155
Clean Gravel	155	157

RECEIVED
MAR 26 1985
DEPT. OF ECOLOGY

Work started 2-13 19 85 Completed 2-21 19 85

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richard Bekkevar (Person, firm, or corporation) (Type or print)

Address 2722 Hwy 101 E Sequim Wa.

[Signed] Richard Bekkevar (Well Driller)

License No. 779 Date 2-21, 1985

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 021985

Water Right Permit No. _____

(1) OWNER: Name Ross Witter Address 71 Embody RD. Port Ludlow, WA.

(2) LOCATION OF WELL: County JEFFERSON NW ¼ SE ¼ Sec. 6 T. 28 N., R. 1E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) _____

(3) PROPOSED USE: ☑ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____

Abandoned ☐ New well ☑ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☑ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well Six inches. Drilled 176 feet. Depth of completed well 176 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: Six " Diam. from +1 ft. to 176 ft. Welded ☑ Liner installed ☐ Threaded ☐ _____ " Diam. from _____ ft. to _____ ft. _____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☑

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☑

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☐ Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☑ No ☐ To what depth? 18 ft.

Material used in seal Bentonite + clay DRillings

Did any strata contain unusable water? Yes ☐ No ☑

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level 300+ ft.

Static level 136 ft. below top of well Date 1-16-90

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☐ No ☑ If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test 15 gal./min. with 15 ft. drawdown after 3½ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water 49 Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
clay, Sandy, Gravely	0	10
Hardpan	10	30
clay, Sandy, Gravely	30	60
clay, Sandy	60	130
clay, Sandy, Gravely	130	165
Sand Gravel + H2O	165	176

Work started 1-5 19 90 Completed 1-16 19 90

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Maberry Well DRilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address Po Box 255 Quilcene, WA. 98376

(Signed) William David Maberry (WELL DRILLER) License No. 1217

Contractor's Registration No. MABERWD121PS Date 1-16 19 90

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

(7)

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name Ross Witter Address Rt 1 Box 342 Chimacum 9832

(2) LOCATION OF WELL: County Jefferson NW ¼ SE ¼ Sec. 8 T. 28 N., R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☑ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☑ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☑ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 178 ft. Depth of completed well 178 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 178 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☑ ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☑
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☑
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☐ No ☑ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☑ No ☐ To what depth? 20 ft.
Material used in seal Puddle Clay & Bentonite
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level .... 430 ft.
Static level 133 ft. below top of well Date 1-29-85
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 1-29-85
Bailer test 27 gal./min. with 3 ft. drawdown after 1 hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brn sandy Clay	0	8
gray sandy Clay hardpan	8	25
gray sandy Clay	25	33
Brn sandy Clay	33	80
gray sandy Clay	80	130
Coarse gray sand & Clay	130	135
gray gravelly hardpan	135	137
gray sandy Clay	137	150
gray hard sandy Clay	150	170
Lt B. gray sandy Clay	170	178
Clean sand & gravel	178	

RECEIVED
APR 26 1985
DEPT. OF ECOLOGY

Work started 1-22 19 85 Completed 1-29 19 85

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richard Bekkevar (Person, firm, or corporation) (Type or print)

Address 2722 Hwy 101 Sequim

[Signed] Richard Bekkevar (Well Driller)

License No. 779 Date 1-29- 19 85

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

8

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ....

Permit No. ....

(1) OWNER: Name Ruth Ortiz Address Rt 1 Box 594A Pt Ludlow WA

(2) LOCATION OF WELL: County Jefferson S.E. - NE. ¼ SW. ¼ Sec. 8 T. 28 N., R. 1 E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☑ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well ☑ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☑ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 211½ ft. Depth of completed well 211½ ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 211½ ft.
Threaded ☐ ....." Diam. from ..... ft. to ..... ft.
Welded ☑ ....." Diam. from ..... ft. to ..... ft.

Perforations: Yes ☐ No ☑
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☐ No ☑
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☐ No ☑ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☑ No ☐ To what depth? 20 ft.
Material used in seal Bentonite & sandy Clay
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level 480 ft.
Static level 191 ft. below top of well Date 12-6-84
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test 37 gal./min. with 15 ft. drawdown after 1½ hrs.
Artesian flow ..... g.p.m. Date 12-6-84
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Brn sandy Clay	0	25
lite gray sandy Clay	25	40
W.B. fine Brn sandy Clay	40	50
fine Brn sandy Clay	50	105
Coarse Brn sandy Clay	105	135
Brn sandy Clay + gravel	135	145
Brn sandy Clay	145	158
Brn sandy hardpan	158	170
Brn sandy Clay	170	200
W.B. Brn sandy Clay + gravel	200	211½

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'84 DEC 10 AM 10:17
DEPARTMENT OF ECOLOGY
S.W. REGIONAL OFFICE

Work started 11-21 19 84 Completed 12-6 19 84

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richard Bekkevar (Person, firm, or corporation) (Type or print)

Address 2722 Hwy 101 E Sequim WA

[Signed] Richard Bekkevar (Well Driller)

License No. 779 Date 12-7-1984

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

107757

(9)

WATER WELL REPORT

STATE OF WASHINGTON

START CARD NO W129124

UNIQUE WELL I D # AFC 960

WATER RIGHT PERMIT NO

(1) OWNER: Name Chris Baschab Address P.O. Box 65056 Port Ludlow, Wa. 98365

(2) LOCATION OF WELL: County Jefferson NE 1/4 SW 1/4 Sect 8 T 28N R 1E WM

(2a) STREET ADDRESS OF WELL (or nearest address) 231 Coursey Lane Port Ludlow

(3) PROPOSED USE: ☒ Domestic ☐ Irrigation ☐ Other ☐ Industrial ☐ DeWater ☐ Municipal ☐ Test Well

(4) TYPE OF WORK: Owner's number of well (If more than one) 1

☒ New Well ☐ Abandoned ☐ Deepened ☐ Reconditioned

Method ☐ Dug ☐ Bored ☒ Cable ☐ Driven ☐ Rotary ☐ Jetted

(5) DIMENSIONS: Diameter of well 6" inches

Drilled 275 feet Depth of completed well 276 feet

(6) CONSTRUCTION DETAILS:

Casing installed 6" diam From 0 ft To 271-10 ft

☒ Welded ☐ Liner ☐ Threaded 5" diam From 269-1 ft To 270-10 ft

diam From ft To ft

Perforations ☐ Yes ☒ No

Type perforator used

Size of perforations in by in

perforations From ft To ft

perforations From ft To ft

perforations From ft To ft

Screens ☒ Yes ☐ No

Manufacture's Name Johnson

Type Stainless V-Slot Model No

Diam 5" Slot size 010 From 270-10 ft To 276 ft

Diam Slot size From ft To ft

Diam Slot size From ft To ft

Gravel packed ☐ Yes ☒ No Size of gravel

Gravel placed from ft To ft

Surface seal ☒ Yes ☐ No To what depth? 25 ft

Material used in seal Med Chip Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water Depth of strata ft

Method of sealing strata off

(7) PUMP: Manufacture's Name

Type H P

(8) WATER LEVELS: Land surface elevation above sea level 430 ft

Static level 226-5 ft below top of well Date May 15, 2001

Artesian pressure lbs per square inch Date

Artesian water is controled by (Cap, valve, etc)

(9) WELL TEST: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield gal /min with ft drawdown after hrs

Yield gal /min with ft drawdown after hrs

Yield gal /min with ft drawdown after hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test 3 gal /min with 44-7 ft drawdown after 2 hrs

Airtest gal /min with stem set at ft for hrs

Artesian flow gal /min Date May 11, 2001

Temp of water Was a chemical analysis made? ☐ Yes ☒ No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information

MATERIAL	FROM	TO
Brown hard clay, gravel	0	35
Gray cemented gravel	35	45
Brown packed sand & clay	45	56
Brown very fine sand, packed, dry	56	69
Brown sandy clay	69	75
Brown silty clay	75	102
Brown very fine sand, loose, dry	102	137
Brown packed sand & small gravel	137	151
Brown tight sand, small gravel, seepage	151	162
Brown sandy clay, dry	162	177
Light gray sandy clay, firm	177	189
Brown sandy clay, firm	189	201
Blue clay	201	212
Blue sandy clay	212	217
Blue sandy firm clay, stratified, seepage	217	224
Blue sandy clay	224	230
Blue silty clay	230	246
Blue fine sand, stratified, dirty	246	250
Light brown sandy clay	250	260
Light brown sandy, gravely clay	260	266
Brown med & coarse sand, W/B	266	271
Brown med & coarse sand, pea gravel, W/B	271	275
Brown tight gravel, clay, no flow	275	
Well Yield Note Well has intermittent yields down to 3 gpm from a average yield of 10 plus gpm do to high pumping rate of Pope Resource well located aprox. 900 feet from this well.		

RECEIVED

DEC 14 2001

Washington State Department of Ecology

Worked started Mar 28, 2001 Completed May 15, 2001

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

NAME Charlie's Drilling (Person, Firm, or Corporation)

Address P.O. Box 127 Port Hadlock, WA. 98339

(Signed) Charlie Shirk (Well Driller) License No. 0458

Contractor's Registration No. CHARLD*066 OO

Date May 16, 2001

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

(10)

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name FRANK L WOODRUFF Address 1213 S.E. WILLOW, LACEY, WA 98503

(2) LOCATION OF WELL: County JEFF. — NE ¼ SE ¼ Sec. 8 T. 28 N., R. 1E W.M.

Bearing and distance from section or subdivision corner SL

(3) PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [ ] Driven [ ]
Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 4 inches.
Drilled 193 ft. Depth of completed well 193 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 4 " Diam. from +1 ft. to 193 ft.
Threaded [ ] ..... " Diam. from ..... ft. to ..... ft.
Welded [X] ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes [ ] No [X]
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes [ ] No [X]
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes [ ] No [X] Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal BENTONITE + DRILLINGS
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level .... 300 ft.
Static level 114 ft. below top of well Date JAN 6-1975
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test 20 gal./min. with 0 ft. drawdown after 3 hrs.
Artesian flow ..... g.p.m. Date JAN 6-1975
Temperature of water 50 Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Rocky H.P.	0	19
Sandy H.P.	19	50
Brown Sandy Clay	50	98
Gray Gravel H.P.	98	110
Large Extra Hard Rock	110	115
Gray Sandy Clay	115	182
Brown Sand - H2O	182	187
Fine Gravel H2O	187	193
H.P.	193	?

Work started ....., 19..... Completed ....., 19.....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Hood Canal Drilling Co.
(Person, firm, or corporation) (Type or print)

Address RT 2, Box 693A Quilcene Wash

[Signed] M. W. Mahoney
(Well Driller)

License No. 0285 Date JAN 16, 1975

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

(11)

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name R. T. Moran Address Rt. 1, Box 604-D port Ludlow, Wa. 9

(2) LOCATION OF WELL: County Jefferson Tax lot NE ¼ Sec. 6 T. 28 N., R. 1E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 290' 10" ft. Depth of completed well 290' 10" ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 288 ft.
Threaded ☐ 5 " Diam. from 285 ft. to 285' 8" ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type Stainless Steel Model No. .....
Diam. 5 5/8 Slot size .020 from 285' 8" ft. to 290' 10" ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite & clay
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ..... H.P. .....

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 20.1 ft. below top of well Date 6/30/78
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? .....
Yield: ..... gal./min. with ..... ft. drawdown after ..... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test 5 gal./min. with 69 ft. drawdown after 5 hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water 49 Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Brown top soil	0	1
Brown sandy clay	1	11
Brown sandy gravely clay & large rocks	11	25
Brown clay	25	83
Brown gritty clay	83	128
Brown sandy clay	128	138
Brown sand & gravel	138	142
Brown dry gravel	142	169
Brown sandy clay	169	182
Brown fine dry sand	182	197
Brown dry large gravel & coarse sand	197	199
Greenish brown clay & wood particles	199	218
Gray clay	218	241
Greenish silty clay	241	256
Greenish brown silty sandy clay (some seepage)	256	270
Greenish brown sandy clay	270	287
Blue coarse sand & large gravel W/B Static approx. 215'	287	289
Greenish brown clay	289	291

RECEIVED
DEC - 7 1978
DEPARTMENT OF ECOLOGY
SOUTHWEST REGIONAL OFFICE

Work started 6/19 19 78 Completed 6/30 19 78

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Stoican Drilling Co., Inc.
(Person, firm, or corporation) (Type or print)

Address P.O. Box 161 Sequim, Wash. 98382

[Signed] Valeri Stoican President 0473
(Well Driller)

License No. Charlie Sherk 0458 Date 7/10 19 78

Sub Contractor-Bill Weber 0535
Webers Well Drilling

(USE ADDITIONAL SHEETS IF NECESSARY)

(12)

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL SCHEDULE No. 28/1E-8K1

Date 8-21, 1975

Record by A. Williamson

Source

1. Location: State of WASHINGTON
County Jefferson
Area
Map
NW¼ SE¼ sec. 8 T. 28 N., R. 1 E.

DIAGRAM OF SECTION

Details

2. Owner or Tenant (File No.)
Address
3. Driller Address
4. Land-surface datum 3 ft. above/below msl
Topography
5. Type: Dug Drilled Driven Bored Jetted Depth Rept. feet Meas. feet
Date 1975
6. Casing: Diam. 6" to in./ft. Type
Depth ft. Finish
7. Chief aquifer(s) from ft. to ft.
8. Water level: Rept./(Meas.) ft. 8-21 1975 above/below
which is ft. above/below datum
9. Pump: Type Capacity/Size gal. min.
Driven by Horsepower
10. Yield: Flow gal. min., Pump gal. min. Meas. Rept. Est.
Drawdown ft. after hours pumping gal. min.
Adequacy, permanence
11. Use: (Dom.) Stock PS Ind. Irr. Obs.
12. Quality: Sample No. 19 Temp. °F.
Taste, color, hardness, sanitation, etc.

13. Other data: Log Water levels Draft Pump test Analyses
Turn up