

GROUNDWATER MONITORING REPORT: FEBRUARY 2016

Former Jim's BP/Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington
VCP Site SW1423

March 9, 2016
Project No. 81157108

Prepared for:
CLMG Corporation
Plano, Texas

Prepared by:
Terracon Consultants, Inc.
Mountlake Terrace, Washington

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

March 9, 2016

CLMG Corporation
7195 Dallas Parkway
Plano, Texas 75024

Attn: Mr. Todd Cansler
P: (469) 467-5558
E: tcansler@clmgcorp.com

Re: **Groundwater Monitoring Report – February 2016**
Former Jim's BP/Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington
VCP Site SW1423
Project Number: 81157108

Dear Mr. Cansler:

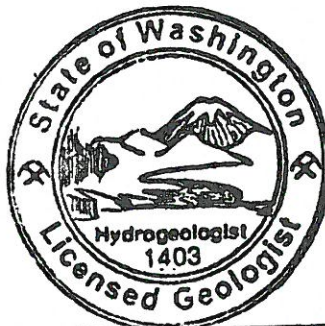
Terracon Consultants, Inc. (Terracon) is pleased to submit this Groundwater Monitoring Report for the above referenced site. This work was performed in general accordance with Terracon Proposal No. P81150196 dated July 7, 2015, and the terms, conditions and limitations in the Master Services Agreement between Terracon Consultants, Inc. and CLMG Corporation, dated July 1, 2013.

We appreciate the opportunity to perform these services for CMLG Corporation. In addition to sampling services, our professionals provide geotechnical, environmental, construction materials, and facilities services on a wide variety of projects locally, regionally and nationally. For more detailed information on all of Terracon's services please visit our website at www.terracon.com. Please contact either of the undersigned at 425-771-3304 if you have questions regarding the information provided in the report.


Sincerely,
Terracon Consultants, Inc.



S. Kyle Long
Environmental Technician



MICHAEL D. NOLL



Michael D. Noll, L.G., L.H.G.
Senior Project Manager

Terracon Consultants, Inc. 21905 64th Avenue West, Suite 100 Mountlake Terrace, WA 98043

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GROUNDWATER MONITORING REPORT – FEBRUARY 2016
Former Jim’s BP/Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington
VCP Site SW1423

Terracon Project No. 81157108
March 9, 2016

1.0 SITE DESCRIPTION

This groundwater sampling report documents groundwater sampling activities that were conducted at the Former Jim’s BP/Union 76 Mini Mart site located on the southeast corner of East Main Street and South Parkway Avenue in Battle Ground, Clark County, Washington. The subject site is an approximate 0.23-acre tract of land (Clark County tax parcel 91101110) that was developed as a gas station and convenience store in the early 1980s. Remedial activities and groundwater sampling were performed in August and September 2015. A Topographic Map is included as Figure 1 and shows the site in relation to the surrounding area. Figure 2 presents the locations of the monitoring wells, injection borings, and former features at the site. Figure 3 depicts the groundwater migration direction inferred from water level measurements taken in February 2016.

1.1 Scope of Work

Terracon Consultants, Inc. (Terracon) conducted groundwater monitoring at select wells, in general accordance with Terracon Proposal No. P81150196 dated July 7, 2015, and the terms, conditions and limitations in the Master Services Agreement between Terracon Consultants, Inc. and CLMG Corporation, dated July 1, 2013.

This report includes a description of the groundwater sample collection activities, tables showing current and historical depth to groundwater measurements and analytical results, and a copy of the analytical laboratory report with chain-of-custody documentation.

1.2 Standard of Care

Terracon’s services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Please note that Terracon does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These groundwater monitoring services were performed in

accordance with the scope of work agreed with you, our client, as reflected in our proposal.

1.3 Additional Scope Limitations

This report was intended to reduce, but not eliminate, uncertainty regarding the existence of recognized environmental conditions in connection with the subject site. Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this groundwater sampling event. Subsurface conditions may vary from those encountered at the time of construction or at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services. If, during future site development, different subsurface conditions from those encountered during our explorations are observed or appear to be present, we must be advised promptly so that we can review these conditions and reconsider or modify our conclusions and recommendations where necessary.

1.4 Reliance

This report has been prepared for the exclusive use and reliance of CMLG Corporation. Use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the written authorization of CMLG Corporation and Terracon.

Reliance on this report by the client and all authorized parties will be subject to the terms, conditions and limitations stated in this report and Terracon's agreement for services. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to the client and all relying parties unless otherwise agreed in writing.

2.0 SITE HISTORY AND PREVIOUS SAMPLING EVENTS

The subject site was developed as a gasoline station in the early 1980s. Most recently the site operated as a Union 76-branded gasoline station/convenience store with a fueling island, dispenser canopy, asphalt paved parking areas, and landscaped areas. Three underground storage tanks (USTs) are located at the site, consisting of a single wall steel 6,000-gallon gasoline tank, a single wall steel 4,000-gallon diesel tank, and a fiberglass reinforced plastic (FRP) double wall 8,000-gallon gasoline tank. The tanks were permanently closed-in-place in June 2014 and the dispenser island and canopy were demolished. The associated convenience store is currently occupied by a retail liquor store tenant. The attached Figure 2 Site Diagram shows the approximate locations of former site features.

A confirmed release of petroleum hydrocarbons to site soil and groundwater was discovered during the installation of the 8,000-gallon FRP UST in 1991 (Washington State Department of Ecology (Ecology), *Feasibility Studies and Remedial Activities Conducted at Jim's BP*, June 30, 2000). The site owner/operator entered into a Consent Decree with Ecology, and Ecology conducted a site characterization and remedial action at the site between 1992 and 1999. Ecology oversaw the installation of four groundwater monitoring wells (MW-1, MW-3, MW-5, and MW-6) on the site (Figure 2). Ecology directed soil sampling at several locations on the site (see borings SP-7 and SP-8 on Figure 2), and selected injections of an oxygen release compound (ORC) as the remedial alternative at the site. Those injections of ORC were performed by Ecology's contractor in 1999. After those injections were performed, and although soil and groundwater impacts still exceeded the Washington State Model Toxics Control Act (MTCA) Method A cleanup levels for petroleum hydrocarbons in 1999, Ecology issued a No Further Action (NFA) determination for the site in 2000, presumably basing its determination on the limited extent of remaining soil contamination at the site, the unpotable nature of the perched groundwater, and the lack of potential for direct contact with soils because of the paved nature of the site.

Terracon conducted a Limited Site Investigation (LSI) at the site on behalf of CLMG in 2011 (*Limited Site Investigation, Union 76 Mini Mart*, October 4, 2011). Soil and groundwater samples were collected from direct-push soil borings B-1 through B-4 in the vicinity of the USTs and fuel dispensers (Figure 2). With the exception of one location, all soil and groundwater analytical results were below the laboratory reporting limit and/or respective MTCA Method A cleanup levels for benzene, toluene, ethylbenzene, and xylenes (BTEX) and for diesel- and oil-range total petroleum hydrocarbons (TPH). Elevated concentrations of gasoline-range TPH exceeding the MTCA Method A cleanup levels were identified in site soil and groundwater at the location of boring B-3. Based on the similarity with the concentrations observed by Ecology in 1999, the lack of BTEX compounds, and the weathered nature of the

chromatograms for this location, these impacts appeared to be associated with the previous documented release that Ecology was aware of and had issued an NFA letter for, dated April 6, 2000. Based on this information, additional investigation did not appear to be warranted.

Terracon and 3 Kings Environmental, on behalf of CLMG, permanently closed the USTs in place between April and June 2014 (*UST Decommissioning Report, Union 76 Mini Mart*, July 9, 2014). Terracon collected soil samples from the north, east, south, and west sides of the tank basin (THN-6, THE-6.5, THS-6, and THW-5, respectively; Figure 2) at 5 to 6.5 feet below the ground surface (bgs), just above the top of the groundwater table. Groundwater samples were also collected at this time from site monitoring wells MW-1, MW-3, MW-5, and MW-6 to evaluate groundwater quality for the UST closure investigation. Three soil samples were collected from beneath the west, central, and east fuel dispensers (DIW-2.5, DIC-2.5, and DIE-2.5) at approximately 2.5 feet bgs. All soil and groundwater sample analytical results were below the laboratory reporting limit and/or respective MTCA Method A cleanup levels for gasoline-range TPH, BTEX, and diesel- and oil-range TPH.

After reviewing the initial soil sample locations and laboratory results, Ecology requested that additional soil samples be collected from the UST area as part of the UST system closure evaluation. Terracon collected additional compliance soil samples from borings B-5 through B-8 in May 2014 (Figure 2). The borings were advanced to 8 feet bgs and compliance soil samples were collected from the borings at 6 to 7 feet bgs (top of the groundwater table). All soil sample results were below the laboratory reporting limit and/or respective MTCA Method A cleanup levels for gasoline-range TPH, BTEX, and diesel- and oil-range TPH.

During the tank closure process, Ecology expressed concern regarding the limited soil and groundwater impacts at boring B-3 identified by Terracon as part of the 2011 LSI. After a series of conversations with Ecology, CLMG made the decision to perform additional soil and groundwater sampling in the vicinity of B-3 to confirm that the soil impacts in that area were associated with the earlier, known releases at the site that were the subject of Ecology's April 6, 2000 NFA determination.

Terracon completed a Supplemental LSI for the site in November 2014. Five soil borings (B-9 through B-12 and MW-7) were advanced in the area of former boring B-3. Upon completion of the boring at MW-7, a permanent groundwater monitoring well was installed. Two to three soil samples were collected from each boring, and groundwater samples were collected from monitoring wells MW-5 and MW-7. Gasoline-range TPH and benzene were detected above the MTCA Method A cleanup levels for soil collected from the MW-7 boring at approximately 7.5 feet bgs, below the top of the groundwater table (encountered at approximately 5 feet bgs). Gasoline-range TPH was detected at a

concentration of 990 micrograms per liter ($\mu\text{g/L}$) in the groundwater sample collected from monitoring well MW-7, slightly above the MTCA Method A cleanup level (800 $\mu\text{g/L}$ when benzene is present). Diesel-range TPH was detected at concentrations slightly above the MTCA Method A cleanup level (500 $\mu\text{g/L}$) for the groundwater samples collected from monitoring wells MW-5 and MW-7 (560 $\mu\text{g/L}$ and 980 $\mu\text{g/L}$, respectively). The dissolved oxygen (DO) readings in the purge water from wells MW-5 and MW-7 in November 2014 were 1.44 milligrams per liter (mg/L) and 2.67 mg/L, respectively

In August 2015, Terracon and Cascade Drilling, L.P., completed injections of in situ chemical oxidation (ISCO) compounds (ORC-A and RegenOx® Part A) into five direct push borings (IP-01 through IP-05, Figure 2) in the vicinity of monitoring wells MW-5 and MW-7. According to the manufacturer, the ORC-A product is designed to release oxygen to the subsurface over a period of up to one year.

Following the completion of the injections, Terracon collected groundwater samples from wells MW-5 and MW-7 in September 2015. Diesel-range TPH was detected at a concentration of 770 $\mu\text{g/L}$ in the groundwater sample collected from monitoring well MW-7, slightly above the MTCA Method A cleanup level, but below the sample concentration reported in November 2014. The dissolved oxygen (DO) readings in the purge water from wells MW-5 and MW-7 in September 2015 were 18.25 milligrams per liter (mg/L) and greater than 20 mg/L, respectively.

Monitoring wells MW-5 and MW-7 were sampled again in December 2015, approximately four months following the ISCO injections. The gasoline-range TPH concentration in the groundwater samples collected from monitoring well MW-7 increased from below the laboratory reporting limit in September 2015 to 1,900 $\mu\text{g/L}$ in December 2015. During the period of August to December 2015, the shallow perched groundwater table rose 2 to 3 feet, which may have caused remnant, highly weathered gasoline in the shallow soil to come into contact with the groundwater. The DO readings in the purge water from wells MW-5 and MW-7 in December 2015 were 10.58 mg/L and 14.31 mg/L, respectively.

3.0 GROUNDWATER SAMPLING

3.1 Groundwater Sampling

During the February 2016 groundwater sampling event, Terracon collected groundwater samples from wells MW-5 and MW-7 on February 4, 2016. Depth to groundwater was measured in the site monitoring wells (MW-1, MW-3, MW-5, MW-6 and MW-7) prior to the sample collection activities. The water level probe was cleaned using an Alconox® wash and distilled water rinse before use in each well. Measured depth to water ranged from 3.88 feet below the top of the well casing (TOC) at well MW-6 to 20.68 feet below TOC at well MW-3 (Table 1).

Measured depth to groundwater and TOC elevation data were used to determine the groundwater elevation at each well. Groundwater elevations ranged from approximately 272 feet above mean sea level (MSL) at well MW-3, to approximately 288 feet MSL at well MW-6. Based on the February 2016 groundwater elevation data, groundwater appears to be mounded in the vicinity of wells MW-5 and MW-6 and is migrating preferentially toward the southeast (Figure 3).

Prior to sample collection, the wells were purged using a peristaltic pump equipped with clean tubing. Low-flow groundwater discharge rates were maintained during purging in order to minimize the drawdown of the water level in the wells. Groundwater parameters (pH, temperature, specific conductance, and dissolved oxygen) were measured during well purging using a multifunction meter and a flow-through cell. Groundwater samples were collected when all parameters were within 10% for at least two consecutive readings.

Stabilized DO readings for the groundwater purged from wells MW-5 and MW-7 were recorded at 8.20 mg/L and 25.94 mg/L, respectively. These post-remedial treatment DO readings are substantially higher than the pre-remedial treatment DO values of 1.44 mg/L for MW-5 and 2.67 mg/L for MW-7 recorded during the November 2014 sampling event.

Purge volumes were approximately 0.25 to 0.5 gallons from each well. The purge water from monitoring well MW-5 was clear with orange flaky debris within the first approximately 250 milliliters of purge water. The purge water from monitoring well MW-7 was observed to be free of turbidity. No hydrocarbon-like odor or sheen was observed in the purge water from either of the wells. The purge water was stored onsite in a labeled 55-gallon drum located in the dumpster enclosure at the southeast corner of the property, pending receipt of laboratory analytical results.

Following the stabilization of measured groundwater parameters, samples were collected utilizing a peristaltic pump. Discharge from the peristaltic pump was directed into laboratory provided glassware. Each sample container was labeled with the site name, date, time, and well/sample number.

During the December 2015 groundwater sampling event, Terracon observed that the MW-3 monument lid was missing. The MW-3 well cap was exposed to traffic and the well monument had collected dirt and debris around the well casing. On February 4, 2016, the MW-3 well monument and monument lid were replaced by Stratus Corporation, under the supervision of Terracon.

3.2 Analytical Laboratory Testing

Groundwater samples were delivered to ALS Environmental (ALS), a Washington accredited analytical laboratory located in Everett, Washington, for laboratory analysis for the following:

- Diesel- and oil-range TPH using Northwest Method NWTPH-Dx,
- Gasoline-range TPH using Northwest Method NWTPH-Gx,
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) using EPA Method 8260,
- Methyl Tertiary Butyl Ether (MTBE) using EPA Method 8260,
- 1,2-Dibromoethane (EDB) using EPA Method 8260, and
- 1,2-Dichloroethane (EDC) using EPA Method 8260.

As recommended by Ecology, MTBE, EDB, and EDC were added to the February 2016 groundwater sample analysis. Other Ecology recommendations included total lead, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and naphthalenes; however, these compounds were analyzed in prior Terracon soil and groundwater samples taken from boring B-3 in May 2011, according to Terracon's *Union 76 Mini Mart LSI report, October 4, 2011, Terracon Project number 81117067*. All results were found to be well below respective MTCA Method A or MTCA Method B cleanup levels for these compounds.

The executed chain-of-custody form and laboratory analytical certificate are provided in Appendix A. All analyses were completed using standard turnaround times.

3.3 Quality Assurance/Quality Control Results

The analytical results for the current investigation were checked for completeness immediately upon receipt from the laboratory to ensure that data and QA/QC information requested were present. Data quality was assessed by considering hold times, surrogate recovery, method blanks, matrix spike and matrix spike duplicate (MS/MSD)

recovery, and detection limits. QA/QC review was completed using guidance described in *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (Draft Final, USEPA, 2005). Our evaluation assumes that the QA/QC is correct as reported by the laboratory, and merely provides an interpretation of the QA/QC results.

- Hold Times: All analyses were completed within specified hold times.
- Surrogate Recoveries: All surrogate recoveries were within laboratory limits.
- Method Blanks: Analytes were not detected in any of the laboratory method blanks.
- MS/MSD Results: MS and MSD recoveries were all within laboratory limits, and Relative Percent Differences (RPDs) between MS and MSD recoveries were all within laboratory limits.
- Laboratory Reporting Limits: Reporting limits were below relevant MTCA cleanup levels.

Based upon our interpretation of quality control information provided by the laboratory, it is our opinion that the overall dataset is useable as qualified for the purposes of this report and groundwater sampling event.

4.0 LABORATORY ANALYTICAL RESULTS

A summary of analytical results for groundwater quality from the February 2016 sampling event is presented in Table 2. The results are tabulated with the state cleanup levels included for comparison. The complete laboratory report and chain-of-custody form for analytical results from this sampling event are included in Appendix A.

Diesel- and Oil-Range Organics

Diesel-range TPH was identified above the analytical laboratory method reporting limit (MRL) in the groundwater sample collected from well MW-7 at a concentration of 510 µg/L, which is above the MTCA Method A cleanup level of 500 µg/L. All other diesel- and oil-range TPH groundwater sampling results were below their analytical laboratory MRLs.

According to the laboratory analytical report (Appendix A), the chromatogram for the MW-7 groundwater sample indicates that it is likely that the sample contains weathered diesel.

Gasoline-Range Organics and BTEX

Gasoline-range TPH was identified in the groundwater sample collected from well MW-7 at a concentration of 1,300 µg/L, which is above the MTCA Method A cleanup level of 800 µg/L for gasoline-range TPH when benzene is present.

Gasoline-range TPH was identified above the analytical laboratory reporting limit in the groundwater sample collected from well MW-5 at a concentration of 75 µg/L, which is well below the MTCA Method A cleanup level of 800 µg/L.

According to the laboratory analytical report (Appendix A), the chromatograms for the MW-5 and MW-7 groundwater samples indicate that it is likely that the samples contain highly weathered gasoline.

Ethylbenzene was detected above the analytical laboratory MRL in the groundwater sample collected from well MW-7 at a concentration of 18 µg/L, which is well below the MTCA Method A cleanup level of 700 µg/L. No other samples contained detections of BTEX above the analytical laboratory MRLs.

Methyl Tertiary Butyl Ether (MTBE)

MTBE was not identified above the analytical laboratory MRL in the samples collected.

Ethyl Dibromide (EDB) and Ethyl Dichloride (EDC)

EDB and EDC were not identified above the analytical laboratory MRLs in the samples collected.

5.0 FINDINGS AND CONCLUSIONS

Monitoring wells MW-5 and MW-7 were sampled in February 2016, approximately six months following the August 2015 ISCO injections. Based on the results of the February 2016 groundwater sampling event, the findings and conclusions of this report are as follows:

- Gasoline-range TPH was identified in the groundwater sample collected from monitoring well MW-7 at a concentration of 1,300 µg/L, exceeding the MTCA Method A cleanup level of 800 µg/L. According to the analytical laboratory, the sample likely contains highly weathered gasoline, consistent with the release discovered at the site in 1991, which was previously treated and documented by Ecology. The detected concentration is below the December 2015 result of 1,900 µg/L.
- Diesel-range TPH in the groundwater sample collected from monitoring well MW-7 was identified at a concentration of 510 µg/L, slightly exceeding the MTCA Method A cleanup level of 500 µg/L.

- Gasoline-range TPH was identified in the groundwater sample collected from monitoring well MW-5 at a concentration above the analytical laboratory MRL, but below the MTCA Method A cleanup level.
- Ethylbenzene was detected in the groundwater sample collected from monitoring well MW-7 at a concentration above the analytical laboratory MRL, but below the MTCA Method A cleanup level.
- Groundwater is generally mounded in the vicinity of monitoring MW-6, and appears to migrate preferentially toward the southeast.

Based on the elevated DO readings of approximately 8 to 26 mg/L at wells MW-5 and MW-7 approximately 6 months after the ISCO treatment injection, the ORC-A product is continuing to release oxygen to the subsurface. Additional improvement to the site groundwater quality is expected to occur as the effects of the injected ISCO products continue to degrade the residual petroleum hydrocarbons remaining in shallow soil and groundwater at the site.

6.0 RECOMMENDATIONS

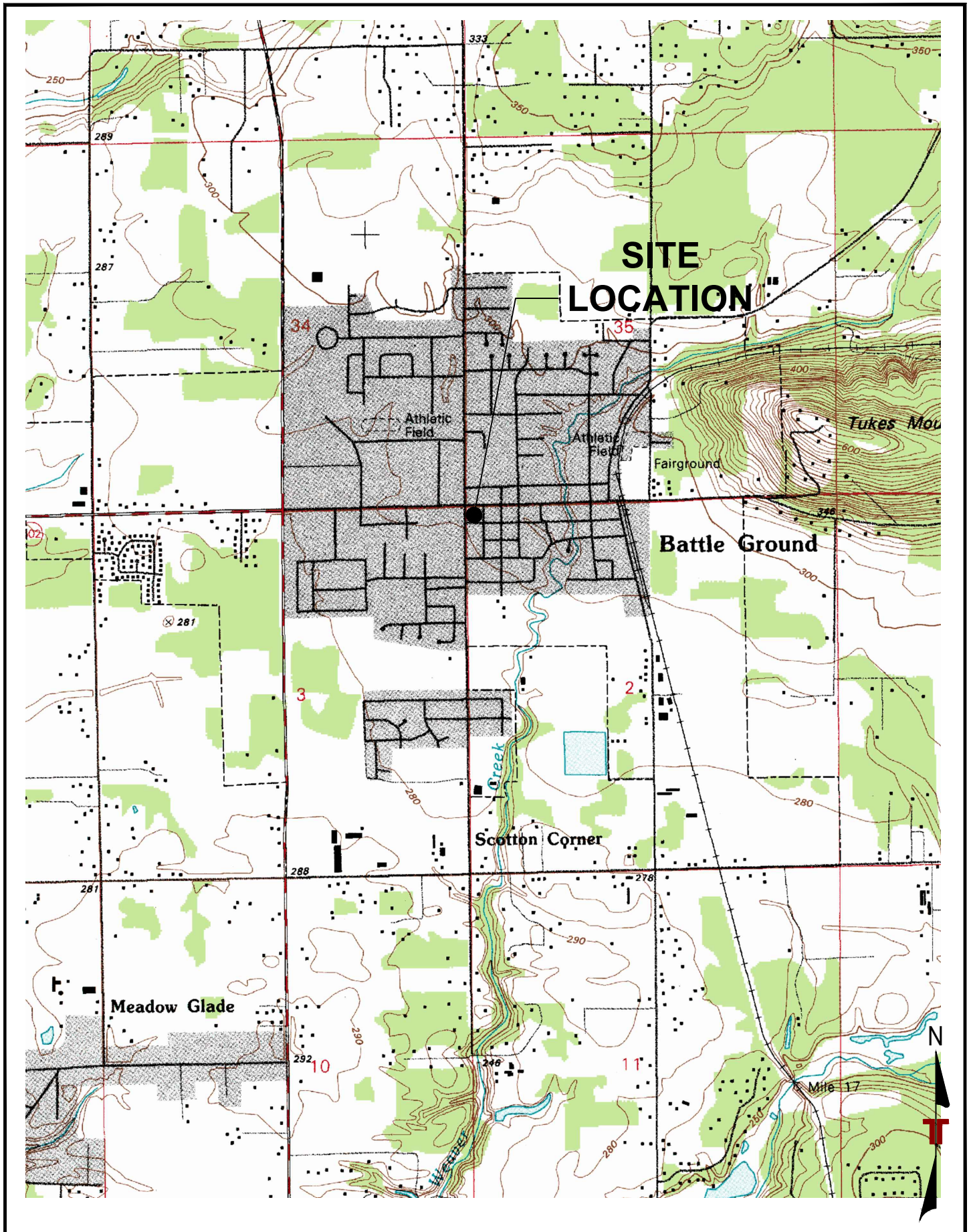
Groundwater in the vicinity of monitoring well MW-7 currently remains impacted with gasoline- and diesel-range TPH at concentrations exceeding the MTCA Method A cleanup level. Based on the results of the most recent groundwater sampling event conducted at the site, Terracon recommends that groundwater sampling be continued at the site for at least one additional quarter.

FIGURES

Figure 1 – Topographic Map

Figure 2 – Site Diagram

Figure 3 – Groundwater Contour Map – February 4, 2016



Project Mngr:	MDN
Drawn By:	AWS
Checked By:	MDN
Approved By:	MYW

Project No.	81157108
Scale:	NOT TO SCALE
File No.	FIGURE 1
Date:	February 2016

Terracon
 Consulting Engineers and Scientists

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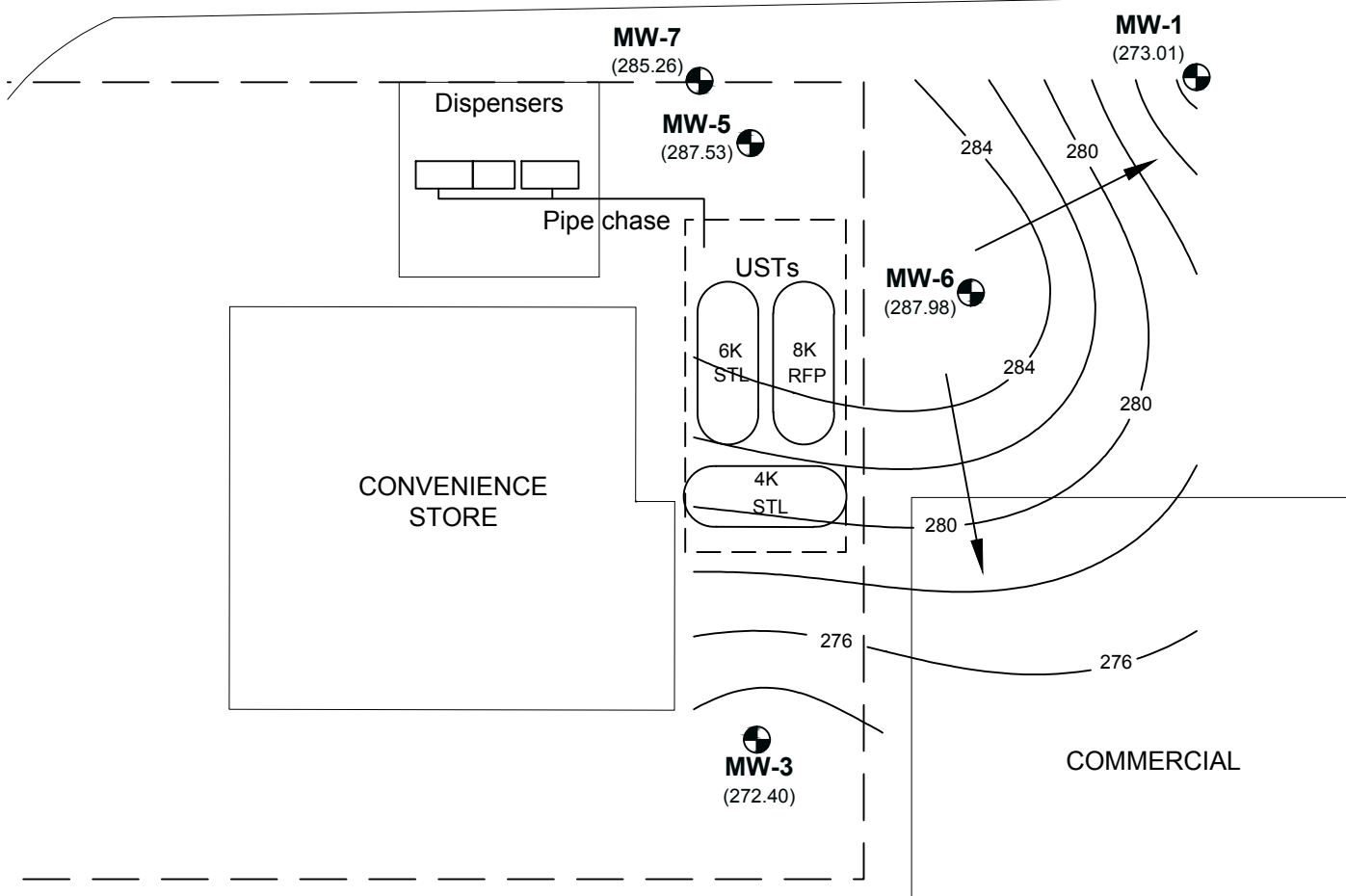
TOPOGRAPHIC MAP

Union 76 Mini Mart
 13 East Main Street
 Battle Ground, Clark County, Washington


FIG. NO.	1
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W MAIN STREET

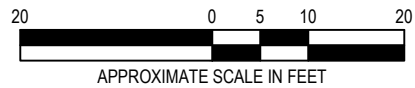


LEGEND:

 **MW-3** (272.40) Groundwater monitoring well number (Groundwater elevation) February 2016

 280 Groundwater Contour (feet)

 Inferred Groundwater Flow Direction



Project Mngnr:	MDN
Drawn By:	SKL
Checked By:	MDN
Approved By:	MYW

Project No.	81157108
Scale:	AS SHOWN
File No.	021416.dwg
Date:	February 2016

Terracon
Consulting Engineers and Scientists

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GROUNDWATER CONTOUR MAP

Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington

FIG. No.	3
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TABLES

Table 1 – Summary of Depth to Groundwater Measurements

Table 2 – Summary of Groundwater Analytical Results

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS

**Union 76 Mini Mart
13 East Main Street
Battle Ground, Washington**

Well Number	Sample Date	TOC Elevation" (Feet)	Depth to Water (Feet)	Relative Groundwater Elevation (Feet)
MW-1 (Depth to Bottom = 20.5 feet; Well Screen = 10 to 20 feet)	2/4/16	291.83	18.82	273.01
	12/3/15	291.83	20.23	271.60
	9/11/15	291.83	Dry	--
	8/13/15	291.83	Dry	--
	11/10/14	291.83	19.45	272.38
	5/22/14	291.83	18.50	273.33
	4/29/14	291.83	18.10	273.73
	Dec-99	291.83	19.2	272.63
	Sep-98	291.83	Dry	--
	Nov-95	291.83	19.3	272.53
	May-95	291.83	19.1	272.73
	Nov-94	291.83	18.8	273.03
	Apr-94	291.83	19.6	272.23
	Apr-93	291.83	19.2	272.63
	Jan-93	291.83	19.3	272.53
	Oct-92	291.83	Dry	--
	May-92	291.83	17.7	274.13
	Apr-92	291.83	15.6	276.23
Mar-92	291.83	13.0	278.83	

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS

**Union 76 Mini Mart
13 East Main Street
Battle Ground, Washington**

Well Number	Sample Date	TOC Elevation" (Feet)	Depth to Water (Feet)	Relative Groundwater Elevation (Feet)
MW-3 (Depth to Bottom = 24.0 feet; Well Screen = 13 to 23 feet)	2/4/16	293.08	20.68	272.40
	12/3/15	293.08	21.35	271.73
	9/11/15	293.08	22.55	270.53
	8/13/15	293.08	22.61	270.47
	11/10/14	293.08	21.32	271.76
	5/22/14	293.08	20.89	272.19
	4/29/14	293.08	20.16	272.92
	Dec-99	293.08	21.0	272.08
	Sep-98	293.08	22.3	270.78
	Nov-95	293.08	20.8	272.28
	May-95	293.08	21.1	271.98
	Nov-94	293.08	20.0	273.08
	Apr-94	293.08	21.3	271.78
	Apr-93	293.08	21.2	271.88
	Jan-93	293.08	21.0	272.08
	Oct-92	293.08	22.7	270.38
	May-92	293.08	20.7	272.38
Apr-92	293.08	20.4	272.68	
Mar-92	293.08	14.0	279.08	

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS

**Union 76 Mini Mart
13 East Main Street
Battle Ground, Washington**

Well Number	Sample Date	TOC Elevation" (Feet)	Depth to Water (Feet)	Relative Groundwater Elevation (Feet)
MW-5 (Depth to Bottom = 20.5 feet; Well Screen = 10 to 20 feet)	2/4/16	292.25	4.72	287.53
	12/3/15	292.25	5.55	286.70
	9/11/15	292.25	7.43	284.82
	8/13/15	292.25	7.65	284.60
	11/10/14	292.25	4.34	287.91
	5/22/14	292.25	5.56	286.69
	4/29/14	292.25	4.63	287.62
	Dec-99	292.25	7.3	284.95
	Sep-98	292.25	15.6	276.65
	Nov-95	292.25	9.46	282.79
	May-95	292.25	11.4	280.85
	Nov-94	292.25	13.9	278.35
	Apr-94	292.25	13.5	278.75
	Apr-93	292.25	11.8	280.45
	Jan-93	292.25	12.6	279.65
	Oct-92	292.25	17.6	274.65
	May-92	292.25	8.6	283.65
	Apr-92	292.25	8.3	283.95
Mar-92	292.25	9.5	282.75	

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS

**Union 76 Mini Mart
13 East Main Street
Battle Ground, Washington**

Well Number	Sample Date	TOC Elevation" (Feet)	Depth to Water (Feet)	Relative Groundwater Elevation (Feet)
MW-6 (Depth to Bottom = 20.0 feet; Well Screen = 10 to 20 feet)	2/4/16	291.86	3.88	287.98
	12/3/15	291.86	4.24	287.62
	9/11/15	291.86	7.35	284.51
	8/13/15	291.86	6.33	285.53
	11/10/14	291.86	3.78	288.08
	5/22/14	291.86	4.65	287.21
	4/29/14	291.86	4.09	287.77
	Dec-99	291.86	4.7	287.16
	Sep-98	291.86	7.6	284.26
	Nov-95	291.86	4.5	287.36
	May-95	291.86	4.8	287.06
	Nov-94	291.86	5.5	286.36
	Apr-94	291.86	6.1	285.76
	Apr-93	291.86	5.0	286.86
	Jan-93	291.86	5.8	286.06
	Oct-92	291.86	8.1	283.76
	May-92	291.86	9.1	282.76
	Apr-92	291.86	5.8	286.06
Mar-92	291.86	9.0	282.86	

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS

**Union 76 Mini Mart
13 East Main Street
Battle Ground, Washington**

Well Number	Sample Date	TOC Elevation" (Feet)	Depth to Water (Feet)	Relative Groundwater Elevation (Feet)
MW-7 (Depth to Bottom = 20.0 feet; Well Screen = 10 to 20 feet)	2/4/16	292.21	6.95	285.26
	12/3/15	292.21	6.04	286.17
	9/11/15	292.21	14.21	278.00
	8/13/15	292.21	9.62	282.59
	11/10/14	292.21	5.41	286.80

*TOC = Top of casing elevations for wells MW-1, MW-3, MW-5, and MW-6 from *Feasibility Studies and Remedial Activities Conducted at Jim's BP*, Department of Ecology, June 30, 2000, Figure 5 - Stratigraphic Cross Sections.

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Former Jim's BP/Union 76 Mini Mart

13 East Main Street

Battle Ground, Clark County, Washington

all concentrations are in µg/l (micrograms per liter)

Well Location	Sample Number	Sample Date	Groundwater Depth (ft)	TPH			BTEX				MTBE	EDB	EDC	Metals
				Gasoline-Range	Diesel-Range	Oil-Range	Benzene	Toluene	Ethylbenzene	Xylenes	Methyl Tertiary Butyl Ether	1,2-Dibromoethane	1,2-Dichloroethane	Lead
MW-1	MW-1	4/29/2014	18.10	ND (<100)	ND (<100)	ND (<250)	ND (<0.50)	ND (<5.0)	ND (<0.50)	ND (<1.5)	--	--	--	--
MW-3	MW-S	9/2/2011	23	ND (<100)	41 J	ND (<250)	ND (<1.0)	ND (<5.0)	ND (<1.0)	ND (<3.0)	--	--	--	--
	MW-3	4/28/2014	20.03	ND (<100)	ND (<100)	ND (<250)	ND (<0.50)	ND (<5.0)	ND (<0.50)	ND (<1.5)	--	--	--	--
MW-5	MW-N	9/2/2011	9	150	270	ND (<250)	ND (<1.0)	ND (<5.0)	ND (<1.0)	ND (<3.0)	--	--	--	--
	MW-5	4/28/2014	4.40	ND (<100)	200	ND (<250)	0.73	ND (<5.0)	0.51	2.0	--	--	--	ND (<5.0)
	MW-5	11/10/2014	4.34	ND (<100)	560	ND (<250)	ND (<0.50)	ND (<5.0)	ND (<0.50)	ND (<1.5)	--	--	--	--
	MW-5*	9/11/2015	7.43	ND (<250)	450	ND (<250)	ND (<0.50)	ND (<0.50)	ND (<0.50)	1.1**	--	--	--	--
	MW-5	12/3/2015	5.55	100	240	ND (<250)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)	--	--	--	--
	MW-5	2/4/2016	4.72	75	ND (<130)	ND (<250)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<6.0)	ND (<2.0)	ND (<0.010)	ND (<2.0)	--
MW-6	MW-6	4/29/2014	4.09	ND (<100)	ND (<100)	ND (<250)	ND (<0.50)	ND (<5.0)	ND (<0.50)	ND (<1.5)	--	--	--	--
MW-7	MW-7	11/10/2014	5.41	990	980	280	1.3	ND (<5.0)	41	2.1	--	--	--	--
	MW-7*	9/11/2015	14.21	ND (<250)	770	480	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<1.0)	--	--	--	--
	MW-7	12/3/2015	6.04	1,900	ND (<500)	ND (<250)	ND (<1.0)	ND (<1.0)	18	ND (<3.0)	--	--	--	--
	MW-7	2/4/2016	6.95	1,300	510	ND (<250)	ND (<2.0)	ND (<2.0)	18	ND (<6.0)	ND (<2.0)	ND (<0.010)	ND (<2.0)	--
MTCA Method A and Method B Cleanup Levels				800	500	500	5	1,000	700	1,000	20	0.01	5	15

Note: Concentrations detected are in **BOLD** type. Shaded and bold concentrations are above MTCA cleanup levels.

ND - Not detected above laboratory reporting limit.

TPH - total petroleum hydrocarbons

** Xylenes were detected in the field blank during the 9/11/2015 sampling event.

MTCA - Model Toxics Control Act

J: Estimated value below the lowest calibration point. Confidence correlates with concentration.

-- - not sampled

* TPH results were reported in mg/L in the laboratory report and converted to µg/L for this table.

Appendix A

Analytical Report and Chain-of-Custody Documentation



February 10, 2016

Mr. Mike Noll
Terracon
21905 - 64th Ave W, Suite 100
Mountlake Terrace, WA 98043

Dear Mr. Noll,

On February 5th, 2 samples were received by our laboratory and assigned our laboratory project number EV16020045. The project was identified as your 81157108. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	2/10/2016
CLIENT CONTACT:	Mike Noll	ALS JOB#:	EV16020045
CLIENT PROJECT:	81157108	ALS SAMPLE#:	EV16020045-01
CLIENT SAMPLE ID	MW-5	DATE RECEIVED:	02/05/2016
		COLLECTION DATE:	2/4/2016 11:07:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	75	50	1	UG/L	02/08/2016	PAB
TPH-Diesel Range	NWTPH-DX	U	130	1	UG/L	02/08/2016	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	02/08/2016	EBS
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/05/2016	DLC
Ethylbenzene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	02/05/2016	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	97.1	02/08/2016	PAB
C25	NWTPH-DX	86.9	02/08/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	96.6	02/05/2016	DLC
Toluene-d8	EPA-8260	100	02/05/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	2/10/2016
CLIENT CONTACT:	Mike Noll	ALS JOB#:	EV16020045
CLIENT PROJECT:	81157108	ALS SAMPLE#:	EV16020045-02
CLIENT SAMPLE ID	MW-7	DATE RECEIVED:	02/05/2016
		COLLECTION DATE:	2/4/2016 11:41:00 AM
		WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	1300	50	1	UG/L	02/08/2016	PAB
TPH-Diesel Range	NWTPH-DX	510	130	1	UG/L	02/08/2016	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	02/08/2016	EBS
Methyl T-Butyl Ether	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
Benzene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
Toluene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/05/2016	DLC
Ethylbenzene	EPA-8260	18	2.0	1	UG/L	02/05/2016	DLC
m,p-Xylene	EPA-8260	U	4.0	1	UG/L	02/05/2016	DLC
o-Xylene	EPA-8260	U	2.0	1	UG/L	02/05/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	106	02/08/2016	PAB
C25	NWTPH-DX	82.1	02/08/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	98.2	02/05/2016	DLC
Toluene-d8	EPA-8260	98.7	02/05/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
 Chromatogram indicates that it is likely that sample contains highly weathered gasoline and weathered diesel.
 Diesel range product results biased high due to gasoline range product overlap.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	2/10/2016
CLIENT CONTACT:	Mike Noll	ALS SDG#:	EV16020045
CLIENT PROJECT:	81157108	WDOE ACCREDITATION:	C601

LABORATORY BLANK RESULTS

MBG-020816W - Batch 101276 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	02/08/2016	PAB

U - Analyte analyzed for but not detected at level above reporting limit.

MB-020416W - Batch 101258 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	02/04/2016	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	02/04/2016	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

MB-020416W - Batch 101212 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	02/04/2016	DLC
Methyl T-Butyl Ether	EPA-8260	U	UG/L	2.0	02/04/2016	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	02/04/2016	DLC
Benzene	EPA-8260	U	UG/L	2.0	02/04/2016	DLC
Toluene	EPA-8260	U	UG/L	2.0	02/04/2016	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	02/04/2016	DLC
Ethylbenzene	EPA-8260	U	UG/L	2.0	02/04/2016	DLC
m,p-Xylene	EPA-8260	U	UG/L	4.0	02/04/2016	DLC
o-Xylene	EPA-8260	U	UG/L	2.0	02/04/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.



CERTIFICATE OF ANALYSIS

CLIENT:	Terracon 21905 - 64th Ave W, Suite 100 Mountlake Terrace, WA 98043	DATE:	2/10/2016
CLIENT CONTACT:	Mike Noll	ALS SDG#:	EV16020045
CLIENT PROJECT:	81157108	WDOE ACCREDITATION:	C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 101276 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	81.5			02/08/2016	PAB
TPH-Volatile Range - BSD	NWTPH-GX	82.8	2		02/08/2016	PAB

ALS Test Batch ID: 101258 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	80.8			02/05/2016	EBS
TPH-Diesel Range - BSD	NWTPH-DX	87.6	8		02/05/2016	EBS

ALS Test Batch ID: 101212 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	108			02/04/2016	DLC
1,1-Dichloroethene - BS	EPA-8260	113			02/04/2016	DLC
Benzene - BS	EPA-8260	107			02/04/2016	DLC
Benzene - BS	EPA-8260	111			02/04/2016	DLC
Toluene - BS	EPA-8260	106			02/04/2016	DLC
Toluene - BS	EPA-8260	111			02/04/2016	DLC

APPROVED BY

Laboratory Director

