Limited Site Investigation

Union 76 Mini Mart
13 East Main Street
Battle Ground, Washington
October 4, 2011
Project No. 81117067

Prepared for:
CLMG Corporation
Plano, Texas

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

Terracon

October 4, 2011

CLMG Corporation
7195 Dallas Parkway
Plano, Texas 75024

Attn: Mr. Bob Bowen

Re: Limited Site Investigation
Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington
Terracon Project No. 81117067

Dear Mr. Bowen:

Terracon is pleased to submit this Limited Site Investigation (LSI) for the above referenced site. This assessment was performed in accordance with Terracon's Proposal No. P81110247, dated August 22, 2011.

We appreciate the opportunity to perform these services for CLMG Corporation. Please contact either of the undersigned at (425) 771-3304 if you have questions regarding the information provided in the report.

Sincerely,

Terracon

Eric A. Dubcak
Senior Staff Scientist

Jon Einarsen, PhD, L.G.
Senior Project Manager

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APPENDICES

1.0 INTRODUCTION

1.1 Site Description

Site Location/Address	13 East Main Street Battle Ground, Clark County, Washington 98604
General Site Description	The site consists of Clark County Tax parcel 9110110. The subject site is an approximately 0.23 acre tract of land improved with a gasoline station/convenience store, a fuel island and associated asphalt paved parked areas and landscaped areas.

A topographic map indicating the approximate location of the site is included as Figure 1, a site plan is included as Figure 2, and a detailed site plan is included as Figure 3 of Appendix A.

1.2 Previous Investigations

A Phase I Environmental Site Assessment (ESA), dated June 29, 2010, was prepared by Terracon Consultants, Inc. (Terracon) for the site (Project No. 81107758). Based on the findings of the ESA, Terracon identified the following recognized environmental conditions (RECs):

- The site has been developed with a gasoline station since at least the early 1980s;
- An unknown fill port was observed in the southeastern portion of the site, which may be associated with a potentially undocumented waste or heating oil underground storage tank (UST);
- Petroleum impacted groundwater has been identified onsite as late as 1999. Although Ecology has granted regulatory closure to the site regarding the petroleum impacts, confirmation sampling indicating that the petroleum concentrations in groundwater are below Model Toxics Control Act (MTCA) Method A cleanup levels had not been completed.

Terracon recommended that a subsurface investigation be performed in order to assess the site soil and/or groundwater associated with the identified RECs.

1.3 Scope of Work

Terracon's scope of work was conducted in accordance with our proposal (P81110247) dated August 22, 2011, as authorized by Mr. Bob Bowen on August 23, 2011. Our scope of services included completion of the following tasks:

Task 1 Prepared a work plan and a site specific health and safety plan.

Task 2 Completed four borings and collected a maximum of two soil samples from each boring. Installed a temporary well in boring B-3.

Task 3 Collected one groundwater sample from boring B-3 and from the onsite groundwater monitoring wells.

Task 4. Completed laboratory analyses of soil and groundwater samples.

Task 5. Prepared this Limited Site Investigation summarizing the results of our findings.

The site contained three permanent monitor wells which were identified in the previous Phase I and are associated with the documented assessments conducted onsite. The monitor wells were additionally sampled as part of this investigation and are further discussed in Section 2.1.

1.4 Project Objectives

The objectives of this project were to complete an evaluation of soil and groundwater conditions in the vicinity of the UST tank hold, dispenser islands, and pipe chases in an attempt to assess the potential for surficial and/or subsurface petroleum hydrocarbon impacts to soil and/or groundwater as a result of an undocumented release or to identify the contaminant concentrations previously documented for the site.

1.5 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. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. 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 LSI services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-97.

1.6 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 LSI. 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.

1.7 Reliance

This Limited Site Investigation is certified to, can be relied upon by, and has been prepared for the exclusive use of the following entities: CLMG Corporation and their respective successors, assigns, affiliates, and subsidiaries.

Use or reliance by any other party is prohibited without the written authorization of CLMG Corporation and Terracon.

Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal and this report. 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 METHODOLOGY

Methods used to complete this report were developed based on information derived via review of our previously completed Phase I Environmental Site Assessments and our experience on similar projects.

A conceptual model of hydrogeologic and environmental conditions was developed based on results of the previously completed assessment. The conceptual model included the following key elements:

- Probable subsurface conditions would consist of loam and native alluvial soils;
- The probable location of potential onsite impaired media would be in the area of the UST tank hold, dispenser islands, and pipe chases at the site.

- Potential contaminants would consist of gasoline-, diesel- and oil-range total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes (BTEX), metals, and polycyclic aromatic hydrocarbons (PAHs).

Based on these conceptual subsurface conditions, direct-push drilling methods were selected for completion of subsurface exploration activities. Subsurface investigation activities included the following tasks:

1. Advancing four direct-push borings and installing one temporary well;
2. Limited soil and groundwater sampling;
3. Collection of groundwater samples from the three onsite monitor wells; and
4. Analytical laboratory testing.

Each of these investigation activities is summarized below.

2.1 Subsurface Exploration

Figure 1 presents the general site location and topography of the site on portions of the Battle Ground, WA USGS topographic quadrangle map (Appendix A). Figure 2 is an aerial photograph of the site and adjoining properties. Figure 3 is a Site Plan Detail that indicates the approximate locations of the subsurface explorations in relation to general site boundaries (Appendix A).

A private utility locator was contracted to locate onsite utilities and conduct ground penetrating radar (GPR) survey to verify if the identified fill port located in the southeast corner of the site was associated with a UST. The fill port was identified as a groundwater monitoring well monument which did not contain a monument lid and was partially filled with soil and vegetative growth. The monument was cleared and a 4 inch groundwater monitoring well cap was identified. The groundwater monitor well is further discussed in Section 2.4.

Soil borings (B-1 through B-4), were advanced on the site on September 2, 2011, using a direct-push limited access portable rig operated by Environmental Services Network Northwest (ESN). The device utilized a direct-push sampler equipped with disposable acetate sample sleeves. Throughout the drilling operation, soil samples were obtained continuously (to the extent practical) from four-foot long pushes. The steel sampling tube was extracted from the hole and the liners were removed and split open for soil sample recovery.

Direct-push explorations were advanced to depths ranging from approximately 12 feet to 13 feet below the ground surface (bgs). A field log of each exploration was maintained, including the approximate thickness and depth of each soil unit encountered and the approximate depth to the uppermost water table. Soil samples were observed to document soil lithology, color, and moisture content. Soils were logged in general accordance with American Society for Testing

and Materials (ASTM) Practice Designation D-2488, *Standard Practice for Description of Soils (Visual-Manual Procedure)*. Exploration logs are included in Appendix B of this report.

Sampling equipment was cleaned using an Alconox® wash and potable water prior to the beginning of the project and before collecting each soil sample.

2.2 Soil Sampling

A total of eight soil samples were submitted for laboratory analysis. The borings were advanced to evaluate soil quality near the UST tank hold and dispenser islands. Soil samples from borings B-1 through B-4 retained for chemical analysis were collected at depths ranging from approximately 4 to 8 feet bgs and 8 to 10 feet bgs. The samples were collected in an effort to identify potential impacts to site soil associated with the areas of concern discussed above.

Soil samples were extracted by hand from the disposable sampler using disposable gloves and placed directly into laboratory supplied glassware. Soil samples collected for volatile constituents were collected in general accordance with EPA Method 5035.

Each sample container was labeled with the site name, date, time, exploration number, and sample number. Sample containers were placed in a chilled cooler immediately after sampling, and subsequently transported to the analytical laboratory by Terracon under strict chain-of-custody procedures.

2.3 Groundwater Sampling

A temporary groundwater monitoring well was installed in boring B-3. Groundwater was sampled from B-3 (east of the dispenser islands and north of the UST tank hold) to access the potential for onsite migration of contamination from the dispensers, UST tankhold, and/or to identify the previously documented onsite concentrations. Groundwater was collected from the temporary well and was submitted for laboratory analysis. Groundwater samples collected were very turbid and contained sediment which could create high biased results. Water production associated with the temporary well was relatively slow. Groundwater samples were collected from the sample point using a peristaltic pump and dedicated tubing and placed in laboratory-supplied glassware.

2.4 Groundwater Monitoring Well sampling

Terracon collected groundwater samples from the onsite monitor wells which were identified and documented in previous assessment reports for the site. In addition to the monitor well discussed above, two additional groundwater monitor wells were located onsite in the vicinity of the UST tankhold. One groundwater monitoring well was located to the north of the UST tankhold (MW-N), the second to the south of the UST tankhold (UST-S), and the third along the

adjacent northeast side of the UST tankhold (UST-T). The monitor well identification names (MW-N, MW-T and MW-S) used for the onsite monitor wells were to assist in site position in relation to pertinent site features. The three monitor wells were identified with 4" well casings and were measured to identify total depth of the well casing and depth to the static water level. The total depth of MW-N was 19 feet to the top of casing (TOC) with a static water level at 9 feet. MW-S had a total depth of 24 feet with a static water level at 23 feet. MW-T had a total depth of 10 feet with a static water level at 8 feet.

The monitor wells were identified in previous assessment reports provided by the Department of Ecology (Ecology) as the following: MW-N is reportedly documented as MW-6, MW-S is documented as MW-3, and MW-T was not identified in previous site maps; therefore, is likely to be a tankhold observation monitor well.

One groundwater sample was collected and analyzed from each of the onsite active monitoring wells MW-N, MW-T, and MW-S on September 2, 2011. Prior to sample collection, the monitoring wells were purged of approximately two to three gallons of water. Groundwater was collected with a portable peristaltic pump and dedicated polyethylene tubing. Discharge from the peristaltic pump was directed into laboratory supplied glassware and preserved as required for the individual testing methods.

Each sample container was labeled with the site name, date, time, exploration number, sample number, and sampling personnel. Sample containers were placed in a chilled cooler immediately after sampling, and subsequently transported to the analytical laboratory by courier under strict chain-of-custody procedures.

2.5 Analytical Laboratory Testing

Eight soil samples (two from each soil boring) and a total of four groundwater samples (one each from boring B-3, MW-N, MW-S, and MW-T) were submitted for chemical analysis. All samples were analyzed by ESC Lab Sciences, a Washington State-accredited laboratory. All soil and groundwater samples were analyzed for the following:

- Gasoline-range TPH using Northwest Method NWTPH-Gx;
- Diesel- and heavier than diesel-range (oil-range) TPH using Northwest Method NWTPH-Dx;
- BTEX using EPA Method 8260B

In addition, three soil samples from borings B-1, B-2, and B-3, and one groundwater sample from MW-N were additionally analyzed for one or more of the following:

- PAHs using EPA Method 8270SIM
- Metals (cadmium, chromium, and lead) using EPA Method 6000 and 7000 series.

The executed chain-of-custody forms and laboratory analytical certificates are provided in Appendix C. All analyses were completed using standard turnaround times.

Data packages 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 holding times, surrogate recovery, method blanks, matrix spike and matrix spike duplicate recovery, and detection limits.

3.0 LIMITED SITE INVESTIGATION RESULTS

3.1 Subsurface Conditions

Detailed lithologic descriptions are presented on the soil boring logs included in Appendix B. In general, subsurface soil conditions varied slightly between borings and generally consisted of a surface fill material from the surface to depths of 1 to 2 feet bgs followed by a silty sand grading to a silty clay at (11 to 12 feet bgs) to the maximum depths explored in the borings. The uppermost water table was encountered at depths of approximately 10 feet bgs.

3.2 Analytical Laboratory Results

Soil quality summary results are presented in Table 1 and Table 2. Groundwater results are presented in Table 3 and Table 4. The complete laboratory report and chain-of-custody are included in Appendix C. Additional discussion and interpretation of analytical results relative to applicable cleanup levels is included in Section 4.

Soil Quality

Gasoline-range TPH was detected in concentrations above the laboratory reporting limits in three of the eight soil samples. Sample B-3 collected at depths from 6 to 8 feet bgs contained concentrations of gasoline-range TPH at 200 mg/kg, which is above the MTCA Method A cleanup level of 100 mg/kg. The additional two samples collected from B-1 (6 to 8 feet bgs) and B-3 (8 to 10 feet bgs) contained concentrations at 2.4 mg/kg and 12 mg/kg, respectively, which are below the MTCA Method A cleanup level.

Diesel-range and/or oil-range TPH concentrations were detected in concentrations above laboratory reporting limits in three of the soil samples. Diesel-range TPH was reported at concentrations of 1.7 mg/kg to 4.9 mg/kg in sample B-3 collected from 6 to 8 feet bgs and 8 to 10 feet bgs, respectively. Oil-range TPH was reported at concentrations of 7.4 mg/kg in sample B-3 collected from 8 to 10 feet bgs. Oil-range TPH was reported at concentrations of 37 mg/kg and 210 mg/kg in sample B-4 collected from 4 to 6 feet bgs and 8 to 10 feet bgs, respectively. These concentrations are below the respective current cleanup MTCA Method A cleanup level of 2,000 mg/kg for both diesel-range and oil-range TPH.

BTEX constituents were not detected above the laboratory reporting limits in soil samples collected from B-1, B-2 and B-4 (4 to 6 feet bgs). Concentrations of BTEX were detected in soil samples B-3 and B-4 (8 to 10 feet bgs); however, these concentrations were below Method A clean up levels.

Select samples were additionally analyzed for the metals chromium, cadmium and lead. These include three samples from borings B-1, B-2 and B-3 collected at 6 to 8 feet bgs. Cadmium was reported at concentrations below the laboratory reporting limit and lead was reported in concentrations ranging from 9.7 mg/kg to 14 mg/kg. These concentrations are below the MTCA Method A cleanup level for cadmium (2mg/kg) and lead (250 mg/kg). Total chromium was reported in concentrations ranging from 20 mg/kg to 21 mg/kg. A cleanup level has not been established for total chromium. The MTCA Method A cleanup level for hexavalent chromium is 19 mg/kg. This concentration was exceeded in all three of the soil samples analyzed for total chromium. However, none of the reported concentrations exceeded the state-wide background levels for total chromium (42 mg/kg) described in the Natural Background Soil Metals Concentrations in Washington State (Washington State Department of Ecology, 1994).

PAHs analysis was additionally selected for sample B-3 collected from 6 to 8 feet bgs. PAH concentrations were detected at very low concentrations of anthracene, acenaphthene, acenaphthylene, benzo(a)anthracene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, 1-methylnaphthalene, and 2-methylnaphthalene. The reported concentrations are below their respective MTCA clean up levels (anthracene, acenaphthene, benzo(a)anthracene, fluoranthene, fluorene, naphthalene, pyrene, 1-methylnaphthalene, and 2-methylnaphthalene) or a cleanup level has not been established (acenaphthylene and phenanthrene).

Laboratory sample results are summarized in Table 1 and Table 2 below.

Table 1. Summarized Soil Analytical Results

Sample Number	Sample Depth (ft)	Total Petroleum Hydrocarbons (mg/kg)			BTEX (mg/kg)				Metals (mg/kg)		
		Gasoline-Range	Diesel-Range	Oil-Range	Benzene	Toluene	Ethylbenzene	Xylenes	Cadmium	Chromium	Lead
B-1	6 to 8	2.4	<5.2	<13	<0.0013	<0.0064	<0.0013	<0.0039	<0.32	21	9.7
	8 to 10	<0.13	<5.3	<13	<0.0013	<0.0066	<0.0013	<0.0040	NA	NA	NA
B-2	6 to 8	<0.13	<5.2	<13	<0.0013	<0.0065	<0.0013	<0.0039	<0.32	21	13
	8 to 10	<0.13	<5.2	<13	<0.0013	<0.0065	<0.0013	<0.0039	NA	NA	NA
B-3	6 to 8	**200**	1.7 J	<13	0.022 J	<0.25	3.0	0.036 J	<0.33	20	14
	8 to 10	12	4.9 J	7.4 J	0.016	<0.0066	0.094	0.028	NA	NA	NA
B-4	4 to 6	<0.13	<5.3	37 J6	<0.0013	<0.0066	<0.0013	<0.0040	NA	NA	NA
	8 to 10	<0.13	<52	210	<0.0013	0.0018 J	0.0023	0.016	NA	NA	NA
MTCA Method A Cleanup Level		**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**2**	**42[1]**	**250**

mg/kg: milligrams per kilogram (parts-per-million)
Shaded values exceed MTCA Method A cleanup levels. Please refer to Appendix C for the complete set of analytes and analytical results.
NA: sample was not selected to be analyzed for this parameter.
BTEX: benzene, toluene, ethylbenzene, xylenes
1: Value established by the Natural Background Soil Metals Concentrations in Washington State.
J: Estimated value below the lowest calibration point. Confidence correlates with concentration.
J6: The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Table 2. PAHs Soil Analytical Results

Analyte		Sample B-3 6-8' (Units (mg/kg))	MTCA Method A Cleanup Level	MTCA Method B* Cleanup Level
PAHs	Anthracene	0.0070 J	**NE**	**24,000**
	Acenaphthene	0.0067 J	**NE**	**4,800**
	Acenaphthylene	0.0021 J	**NE**	**NE**
	Benzo(a)anthracene	0.0013 J	**NE**	**1.4**
	Fluoranthene	0.0045 J	**NE**	**3,200**
	Fluorene	0.0099	**NE**	**3,200**
	Naphthalene	0.34	**5**	**1,600**
	Phenanthrene	0.014	**NE**	**NE**
	Pyrene	0.0042 J	**NE**	**2,400**
	1-Methylnaphthalene	0.34	**NE**	**35**
	2-Methylnaphthalene	0.90 E	**NE**	**320**

Note: Only those PAHs detected in at least one of the samples are included on the table.
mg/kg: milligrams per kilogram (parts-per-million); NE: Not established; Shaded values exceed MTCA Method A cleanup levels. Please refer to Appendix C for the complete set of analytes and analytical results.
*In the event that Method A cleanup levels have not been established by Ecology for a specific compound, default Method B concentrations can be used as a reference for direct exposure pathways.
J: Estimated value below the lowest calibration point. Confidence correlates with concentration.
E: GTL (EPA) Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.

Groundwater Quality

Groundwater samples collected from monitor well MW-N, MW-S, and MW-T were not detected with gasoline-range TPH concentrations above laboratory reporting limits and/or respective MTCA Method A cleanup levels. Groundwater collected from temporary well B-3 contained concentrations of gasoline-range TPH at 2,900 ug/L, which is above the MTCA Method A cleanup level of 800 ug/L.

Diesel-range TPH was reported at concentrations collected from B-3 at 270 ug/L, MW-N at 270 ug/L, MW-T at 87 ug/L, and MW-S at 41 ug/L, which are all below MTCA Method A cleanup levels for diesel-range TPH at 500 ug/L. Oil-range TPH was not detected above laboratory reporting limits in any of the samples.

BTEX was not detected above laboratory reporting limits in groundwater samples collected from monitor wells MW-N, MW-T and MW-S. Groundwater collected from B-3 contained concentrations of benzene at 4.4 ug/L, toluene at 0.66 ug/L, ethylbenzene at 50 ug/L and xylenes at 0.96 ug/L. These concentrations are below the MTCA Method A cleanup levels of 5 ug/L for benzene, 1,000 ug/L for toluene and xylenes, and 700 ug/L for ethylbenzene.

PAHs analysis was additionally selected for groundwater samples collected from MW-N. PAH concentrations were detected at very low concentrations of anthracene, acenaphthene, acenaphthylene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, 1-methylnaphthalene, and 2-methylnaphthalene. The reported concentrations are below their respective MTCA clean up levels (anthracene, acenaphthene, fluoranthene, fluorene, naphthalene, pyrene, 1-methylnaphthalene, and 2-methylnaphthalene) or a cleanup level has not been established (acenaphthylene and phenanthrene).

It should be noted that geoprobe sampling of groundwater described above was utilized in an effort to decrease the overall cost of the project. The lack of permanent well installations and well development at exploration B-3 may result in the collection of groundwater samples with relatively high concentrations of suspended solids (e.g., turbid samples). Under certain conditions, chemical analysis of turbid groundwater may over-report the actual dissolved concentration of organic contaminants, because these contaminants tend to adsorb to suspended solids.

Laboratory sample results are summarized in Table 3 and Table 4 below.

Table 3. Summarized Groundwater Analytical Results

Sample Number	Total Petroleum Hydrocarbons (ug/L)			Volatile Organic Compounds (ug/L)			
	Gasoline-Range	Diesel-Range	Oil-Range	Benzene	Toluene	Ethylbenzene	Xylenes
B-3	**2,900**	270	<250	4.4	0.66 J	50	0.96 J
MW-N	150	270	<250	<1.0	<5.0	<1.0	<3.0
MW-T	<100	87 J	<250	<1.0	<5.0	<1.0	<3.0
MW-S	<100	41 J	<250	<1.0	<5.0	<1.0	<3.0
MTCA Method A Cleanup Level	**800**	**500**	**500**	**5**	**1,000**	**700**	**1,000**

ug/L: micrograms per liter (parts-per-billion). Shaded values exceed MTCA Method A cleanup levels. Please refer to Appendix C for the complete set of analytes and analytical results.
J: Estimated value below the lowest calibration point. Confidence correlates with concentration.

Table 4. PAHs Groundwater Analytical Results

Analyte		Sample MW-N (Units (µg/L))	MTCA Method A Cleanup Level	MTCA Method B* Cleanup Level
PAHs	Anthracene	0.043 J	**NE**	**4,800**
	Acenaphthene	0.11	**NE**	**960**
	Acenaphthylene	0.023 J	**NE**	**NE**
	Fluorene	0.11	**NE**	**640**
	Naphthalene	0.30	**160**	**160**
	Phenanthrene	0.010 J	**NE**	**NE**
	Pyrene	0.022 J	**NE**	**480**
	1-Methylnaphthalene	0.31	**NE**	**1.5**
	2-Methylnaphthalene	0.034 J	**NE**	**32**

Note: Only those PAHs detected in at least one of the samples are included on the table.
ug/L: micrograms per liter (parts-per-billion); NE: Not established. Please refer to Appendix C for the complete set of analytes and analytical results.
*In the event that Method A cleanup levels have not been established by Ecology for a specific compound, default Method B concentrations can be used as a reference for direct exposure pathways.
J: Estimated value below the lowest calibration point. Confidence correlates with concentration.

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. The laboratory reported the analytical results with respect to both the method detection limit (MDL) and the reporting detection limit (RDL). The MDL is defined as the lowest concentration that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The presence of the analyte is confirmed, but the precise concentration cannot be reliably measured. The RDL is the lowest concentration that can be reliably measured within specified limits of precision and accuracy. Analytical results reported between the MDL and the RDL are flagged with a "J".

The analytical results for several soil and groundwater samples were J-flagged, and thus the reported concentrations are estimated values that lie between the MDL and the RDL. This flag has no effect on our interpretation of the data, because the RDLs are below the applicable MTCA cleanup levels, except as noted below for a single sample.

The soil sample collected from B-3 had to be diluted due to interferences from organic compounds, and the RDL for benzene was reported at 0.051 mg/kg, which is above the applicable MTCA Method A cleanup level of 0.03 mg/kg. The benzene concentration was reported at 0.022 mg/kg, which is below the MTCA Method A cleanup level for benzene; however, it was J-flagged by the lab as an estimate. Given the overall low concentrations of measured TPH and BTEX in soil and groundwater at the locations tested as reported by the laboratory, the uncertainty associated with the true value of benzene does not affect our interpretation of the analytical results.

Based upon our interpretation of quality control information provided by the laboratories, it is our opinion that the overall dataset is useable as qualified for the purposes of this Limited Site Investigation.

4.0 FINDINGS AND DISCUSSION

Terracon completed a LSI for the above-referenced site. A total of four soil borings were advanced near the onsite UST tankhold and dispenser islands. Two soil samples were collected from each boring. One groundwater sample was also collected from one boring, as well as from the existing onsite monitoring wells. All soil and groundwater samples collected were submitted for laboratory analyses. The findings of this report are as follows:

- Eight soil samples and four water samples associated with the borings advanced onsite and the existing onsite monitor wells were submitted for laboratory analyses.
- All soil and groundwater analytical results were below the laboratory reporting limit and/or respective MTCA Method A cleanup levels for BTEX and diesel- and oil-range TPH.
- Gasoline-range TPH was detected above MTCA Method A cleanup levels for soil and water collected from B-3. As discussed in the Phase I prepared for this site, dated June 29, 2010, the site had previous assessment and remediation conducted onsite, which Ecology relyed on as the basis to issue a no further-action (NFA) letter, dated April 6, 2000. The concentrations identified in sample point B-3 for both soil and groundwater appear to reflect similar concentrations which were identified onsite in 2000, when the NFA was issued. Based on the results of this investigation, it does not appear that the site soil or groundwater contains contaminant concentrations above MTCA cleanup levels which have not already been documented and addressed by Ecology. Based on the analytical results for soil and groundwater in the areas explored for this investigation, a significant release associated with the UST equipment does not appear to have occurred since the NFA was issued in 2000.
- Soils selected for metal analysis were not detected at concentrations above the MTCA Method A clean up level and/or identified by the Natural Background Soil Metals Concentrations in Washington State.
- PAHs analysis for select soil and groundwater samples was not detected above their respective the MTCA Method A clean up levels and/or laboratory reporting limits.

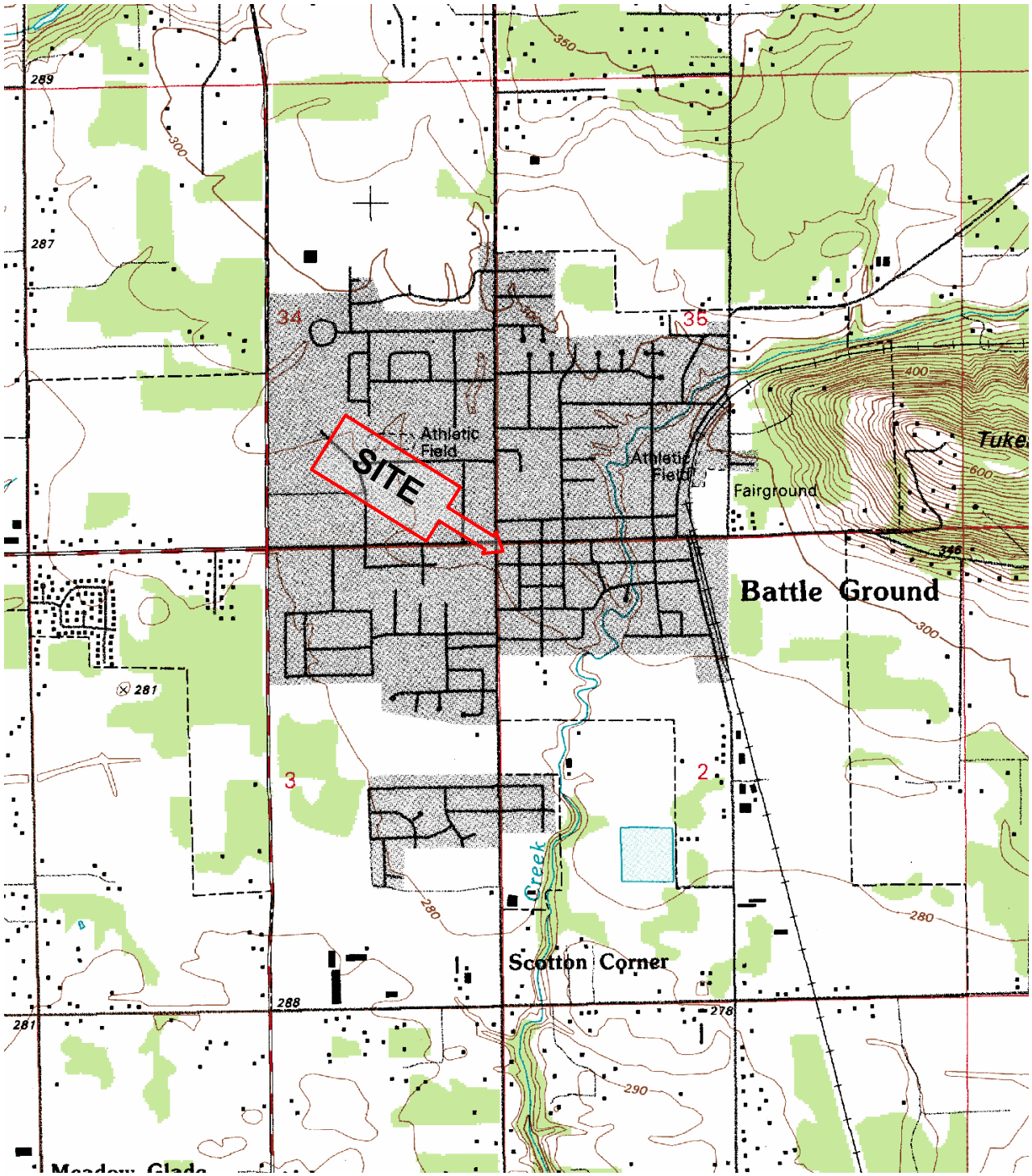
5.0 RECOMMENDATIONS

Based on the information discussed above and in this report, Terracon recommends that no further investigation be conducted at this time.

Groundwater monitoring wells were observed onsite during the LSI and in the event that these monitor wells are not part of planned groundwater sampling events, they should be decommissioned in accordance with Washington State regulations. In the event that the monitor wells are to remain onsite, the monitor well located south of the tankhold should have the monument repaired/replaced to prevent damage to the monitor well casing and/or well cap.

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3 – Site Plan Detail



Battle Ground , Washington
USGS 7.5-minute Quadrangle 1990

Not to Scale

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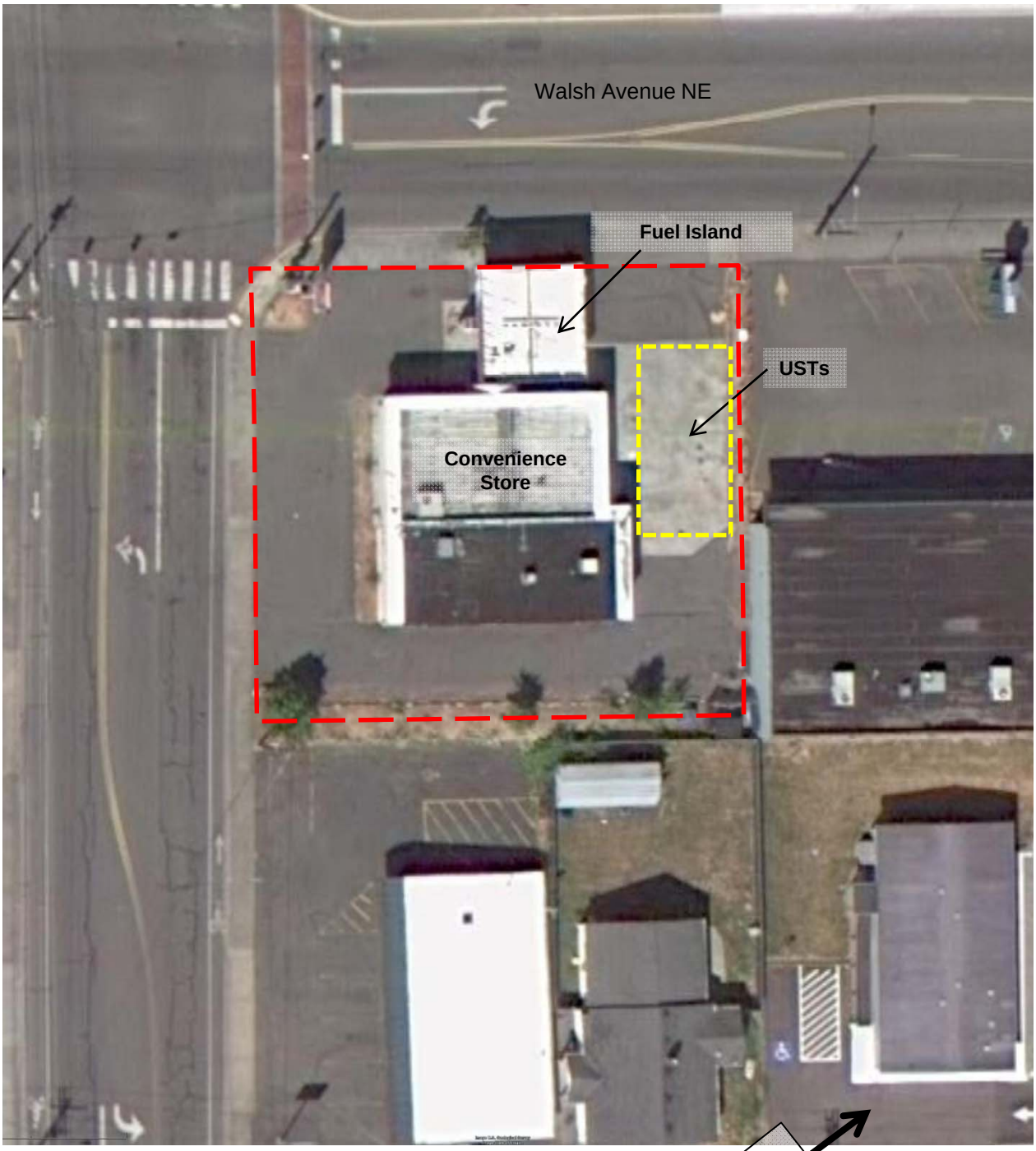
TERRACON PROJECT NO.: 81117067

1984 TOPOGRAPHIC MAP
Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington

September 2011

Figure 1



Not to Scale

N

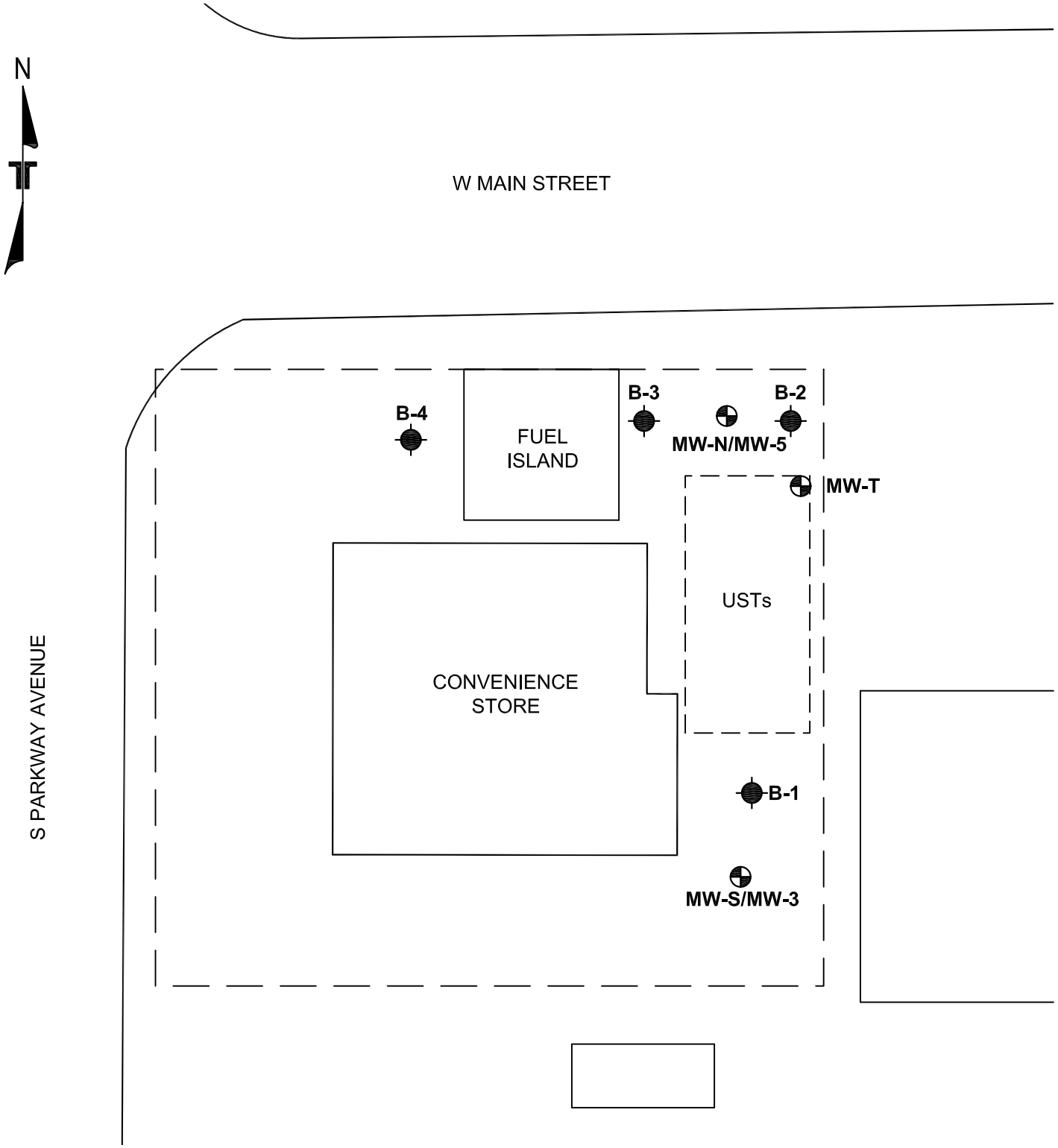
TERRACON PROJECT NO.: 81117067

SITE PLAN

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

September 2011

Figure 2



LEGEND:

MW-1 MONITORING WELL NUMBER AND APPROXIMATE LOCATION

B-1 BORING NUMBER AND APPROXIMATE LOCATION

Project Mngr: JME	Project No. 81117067	Terracon Consulting Engineers and Scientists	**SITE PLAN DETAIL**	FIG. No.
Drawn By: RMS	Scale: Not to Scale	21905 64th Avenue W., Ste 100 Mountlake Terrace, WA 98043	Union 76 Mini Mart	3
Checked By: EAD	File No. Figure3.dwg	PH. (425) 771-3304 FAX. (425) 771-3549	13 East Main Street	
Approved By: JME	Date: September 2011		Battle Ground, Clark County, Washington	

APPENDIX B

Exploration Logs

BORING LOG NO. B-1

CLIENT **CLMG Corporation**

SITE **13 East Main Street, Battle Ground, Washington**

PROJECT **Union 76 Mini Mart**

Approx. Boring Location: South of UST tankhold

Approx. Surface Elev.: NA

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT-N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS UNCONFINED STRENGTH, psf	TESTS FIELD VAPOR TEST (PPM)*	TESTS SAMPLE SENT TO LAB	
	FILL: gravel, silty sand, black, moist, loose			UNDIST						<1		
	2 0											
	SILTY SAND: gray, moist, soft, fines, no odor									<1		
	grades to brown, medium stiff			UNDIST						<1		
		5										B-1 (6-8')
	soft									<1		
				UNDIST						<1		B-1 (8-10')
	saturated ▽	10								<1		
	12 0											
	SILTY CLAY: brown, moist, stiff, plastic			UNDIST						<1		
	13 0											
	Boring terminated at 13 feet bgs.											
	Notice of Intent to Construct an Environmental Investigation Well Notification No. EE03569											

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft		
WL	▽ 10	▼
WL	▼	▼
WL		

Terracon

T: F:

BORING STARTED	9-2-11		
BORING COMPLETED	9-2-11		
RIG	DPT	CO.	
	EAD	JOB #	81117067

TC_BOREHOLE BORING LOGS.GPJ TERRACON.GDT 9/22/11

BORING LOG NO. B-2

CLIENT **CLMG Corporation**

SITE **13 East Main Street, Battle Ground, Washington**

PROJECT **Union 76 Mini Mart**

Approx. Boring Location: Northeast of UST tankhold

Approx. Surface Elev.: NA

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, in.	SAMPLES: SPT-N BLOWS / ft.	TESTS: WATER CONTENT, %	TESTS: UNCONFINED STRENGTH, psf	TESTS: FIELD VAPOR TEST (PPM)*	TESTS: SAMPLE SENT TO LAB	
	FILL: gravel, silty sand, black, moist, loose	0		UNDIST						<1		
	1											
	SILTY SAND: gray, moist, soft, fines, no odor									<1		
		5		UNDIST						<1		
										<1		B-2 (6-8')
	saturated ▽	10		UNDIST						<1		B-2 (8-10')
										<1		
	11.5	0										
	12 SILTY CLAY: gray, moist, stiff, plastic	0								<1		

Boring terminated at 12 feet bgs.

Notice of Intent to Construct an Environmental Investigation Well Notification No. EE03569

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft		
WL	▽ 10	▼
WL	▼	▼
WL		

Terracon

T: F:

BORING STARTED	9-2-11		
BORING COMPLETED	9-2-11		
RIG	DPT	CO.	
	EAD	JOB #	81117067

TC_BOREHOLE BORING LOGS.GPJ TERRACON.GDT 9/22/11

BORING LOG NO. B-3

CLIENT **CLMG Corporation**

SITE **13 East Main Street, Battle Ground, Washington**

PROJECT **Union 76 Mini Mart**

Approx. Boring Location: Northwest of UST tankhold, west of dispenser islands

temporary sample point
Borehole Diameter: **2" in**
Well Diameter: **3/4" in**
Approx. Casing Elev.: **NA ft**
Protector Pipe Elev.: **NA ft**
Approx. Surface Elev.: **NA**

GRAPHIC LOG	DESCRIPTION	WELL DETAIL	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT-N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS UNCONFINED STRENGTH, psf	TESTS FIELD VAPOR TEST (PPM)*	
	FILL: gravel, silty sand, gray, moist, loose				UNDIST						<1	
2	0											
	SILTY SAND: gray, moist, soft, fines, no odor										<1	
					UNDIST						<1	
	hydrocarbon odor		5								65	B-3 (6-8')
					UNDIST						8	B-3 (8-10')
	saturated brown, stiff, no odor		10								<1	
11.5	0											
12	SILTY CLAY: brown, moist, stiff, plastic 0										<1	

Boring terminated at 12 feet bgs.

Notice of Intent to Construct an Environmental Investigation Well Notification No. EE03569

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft		
WL	▽ 10	▼
WL	▼	▼
WL	Water very turbid	

Terracon

T: F:

BORING STARTED	9-2-11
BORING COMPLETED	9-2-11
RIG DPT	CO.
EAD	JOB # 81117067

TC_WELL BORING LOGS.GPJ TERRACON.GDT 9/22/11

BORING LOG NO. B-4

CLIENT **CLMG Corporation**

SITE **13 East Main Street**
Battle Ground, Washington

PROJECT **Union 76 Mini Mart**

Approx. Boring Location: West of dispenser islands

Approx. Surface Elev.: NA

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT-N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS UNCONFINED STRENGTH, psf	TESTS FIELD VAPOR TEST (PPM)*	TESTS SAMPLE SENT TO LAB	
	FILL: gravel, silty sand, gray, moist, loose			UNDIST						<1		
	2 0											
	SILTY SAND: brown, moist, soft, fines, no odor									<1		
		5		UNDIST						<1		B-4 (4-6')
										<1		
				UNDIST						4		B-4 (8-10')
	saturated ▽	10								<1		
	11.5 0											
	12 SILTY CLAY: brown, moist, stiff, plastic 0											

Boring terminated at 12 feet bgs.

Notice of Intent to Construct an Environmental Investigation Well Notification No. EE03569

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

* ND indicates a reading of less than the field detection limit (FDL) of one (1) part per million isobutylene equivalents (ppmi).

WATER LEVEL OBSERVATIONS, ft		
WL	▽ 10	▼
WL	▼	▼
WL		

Terracon

T: F:

BORING STARTED	9-2-11		
BORING COMPLETED	9-2-11		
RIG	DPT	CO.	
	EAD	JOB #	81117067

TC_BOREHOLE BORING LOGS.GPJ TERRACON.GDT 9/22/11

APPENDIX C

Analytical Results

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

Report Summary

Friday September 16, 2011

Report Number: L534397
Samples Received: 09/03/11
Client Project: 81117067

Description: Union 76 Mini Mart

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

ESC LAB SCIENCES
YOUR LAB OF CHOICE

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-01

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-1 6-8 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 08:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	77.			%		2540G	09/12/11	1
Cadmium	U	0.040	0.32	mg/kg		6010B	09/08/11	1
Chromium	21.	0.085	0.64	mg/kg		6010B	09/08/11	1
Lead	9.7	0.090	0.32	mg/kg		6010B	09/08/11	1
Gasoline Range Organics-NWTPH	2.4	0.033	0.13	mg/kg		NWTPHGX	09/08/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	91.5			% Rec.		NWTPHGX	09/08/11	1
Benzene	U	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	U	0.00031	0.0064	mg/kg		8260B	09/05/11	1
Ethylbenzene	U	0.00037	0.0013	mg/kg		8260B	09/05/11	1
Total Xylenes	U	0.00046	0.0039	mg/kg		8260B	09/06/11	1
Surrogate Recovery								
Toluene-d8	97.6			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	90.9			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	107.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	112.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	U	1.3	5.2	mg/kg		NWTPHDX	09/13/11	1
Residual Range Organics (RRO)	U	3.3	13.	mg/kg		NWTPHDX	09/13/11	1
Surrogate Recovery								
o-Terphenyl	55.5			% Rec.		NWTPHDX	09/13/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 09/14/11 16:23 Revised: 09/16/11 11:16

ESC LAB SCIENCES
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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-02

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-1 8-10 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 08:40

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	76.			%		2540G	09/12/11	1
Gasoline Range Organics-NWTPH	U	0.033	0.13	mg/kg		NWTPHGX	09/06/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	98.5			% Rec.		NWTPHGX	09/06/11	1
Benzene	U	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	U	0.00031	0.0066	mg/kg		8260B	09/05/11	1
Ethylbenzene	U	0.00037	0.0013	mg/kg		8260B	09/05/11	1
Total Xylenes	U	0.00046	0.0040	mg/kg		8260B	09/06/11	1
Surrogate Recovery								
Toluene-d8	98.5			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	92.0			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	111.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	U	1.3	5.3	mg/kg		NWTPHDX	09/13/11	1
Residual Range Organics (RRO)	U	3.3	13.	mg/kg		NWTPHDX	09/13/11	1
Surrogate Recovery								
o-Terphenyl	50.8			% Rec.		NWTPHDX	09/13/11	1

Results listed are dry weight basis.
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MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

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Reported: 09/14/11 16:23 Revised: 09/16/11 11:16

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-03

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-2 6-8 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 10:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	77.			%		2540G	09/12/11	1
Cadmium	U	0.040	0.32	mg/kg		6010B	09/08/11	1
Chromium	21.	0.085	0.65	mg/kg		6010B	09/08/11	1
Lead	13.	0.090	0.32	mg/kg		6010B	09/08/11	1
Gasoline Range Organics-NWTPH	U	0.033	0.13	mg/kg		NWTPHGX	09/06/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	96.4			% Rec.		NWTPHGX	09/06/11	1
Benzene	U	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	U	0.00031	0.0065	mg/kg		8260B	09/05/11	1
Ethylbenzene	U	0.00037	0.0013	mg/kg		8260B	09/05/11	1
Total Xylenes	U	0.00046	0.0039	mg/kg		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	95.3			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	93.0			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	102.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	108.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	U	1.3	5.2	mg/kg		NWTPHDX	09/10/11	1
Residual Range Organics (RRO)	U	3.3	13.	mg/kg		NWTPHDX	09/10/11	1
Surrogate Recovery								
o-Terphenyl	66.2			% Rec.		NWTPHDX	09/10/11	1

Results listed are dry weight basis.
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MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 09/14/11 16:23 Revised: 09/16/11 11:16

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-04

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-2 8-10 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 10:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	77.			%		2540G	09/12/11	1
Gasoline Range Organics-NWTPH	U	0.033	0.13	mg/kg		NWTPHGX	09/06/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	95.9			% Rec.		NWTPHGX	09/06/11	1
Benzene	U	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	U	0.00031	0.0065	mg/kg		8260B	09/05/11	1
Ethylbenzene	U	0.00037	0.0013	mg/kg		8260B	09/05/11	1
Total Xylenes	U	0.00046	0.0039	mg/kg		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	96.8			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	94.3			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	102.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	107.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	U	1.3	5.2	mg/kg		NWTPHDX	09/10/11	1
Residual Range Organics (RRO)	U	3.3	13.	mg/kg		NWTPHDX	09/10/11	1
Surrogate Recovery								
o-Terphenyl	66.6			% Rec.		NWTPHDX	09/10/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 09/14/11 16:23 Revised: 09/16/11 11:16

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Est. 1970

REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-05

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-3 6-8 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 10:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	76.			%		2540G	09/12/11	1
Cadmium	U	0.040	0.33	mg/kg		6010B	09/08/11	1
Chromium	20.	0.085	0.66	mg/kg		6010B	09/08/11	1
Lead	14.	0.090	0.33	mg/kg		6010B	09/08/11	1
Gasoline Range Organics-NWTPH	200	2.5	10.	mg/kg		NWTPHGX	09/06/11	77
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	99.1			% Rec.		NWTPHGX	09/06/11	77
Benzene	0.022	0.013	0.051	mg/kg	J	8260B	09/06/11	38.5
Toluene	U	0.012	0.25	mg/kg		8260B	09/06/11	38.5
Ethylbenzene	3.0	0.014	0.051	mg/kg		8260B	09/06/11	38.5
Total Xylenes	0.036	0.018	0.15	mg/kg	J	8260B	09/06/11	38.5
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	09/06/11	38.5
Dibromofluoromethane	80.0			% Rec.		8260B	09/06/11	38.5
a,a,a-Trifluorotoluene	112.			% Rec.		8260B	09/06/11	38.5
4-Bromofluorobenzene	120.			% Rec.		8260B	09/06/11	38.5
Diesel Range Organics (DRO)	1.7	1.3	5.3	mg/kg	J	NWTPHDX	09/10/11	1
Residual Range Organics (RRO)	U	3.3	13.	mg/kg		NWTPHDX	09/10/11	1
Surrogate Recovery								
o-Terphenyl	63.3			% Rec.		NWTPHDX	09/10/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0070	0.00076	0.0079	mg/kg	J	8270C-SI	09/13/11	1
Acenaphthene	0.0067	0.00071	0.0079	mg/kg	J	8270C-SI	09/13/11	1
Acenaphthylene	0.0021	0.00057	0.0079	mg/kg	J	8270C-SI	09/13/11	1
Benzo(a)anthracene	0.0013	0.00092	0.0079	mg/kg	J	8270C-SI	09/13/11	1
Benzo(a)pyrene	U	0.00062	0.0079	mg/kg		8270C-SI	09/13/11	1
Benzo(b)fluoranthene	U	0.00082	0.0079	mg/kg		8270C-SI	09/13/11	1
Benzo(g,h,i)perylene	U	0.0012	0.0079	mg/kg	J3	8270C-SI	09/13/11	1
Benzo(k)fluoranthene	U	0.0013	0.0079	mg/kg		8270C-SI	09/13/11	1
Chrysene	U	0.0011	0.0079	mg/kg		8270C-SI	09/13/11	1
Dibenz(a,h)anthracene	U	0.0011	0.0079	mg/kg	J3	8270C-SI	09/13/11	1
Fluoranthene	0.0045	0.0010	0.0079	mg/kg	J	8270C-SI	09/13/11	1
Fluorene	0.0099	0.00055	0.0079	mg/kg		8270C-SI	09/13/11	1
Indeno(1,2,3-cd)pyrene	U	0.0012	0.0079	mg/kg		8270C-SI	09/13/11	1
Naphthalene	0.34	0.00065	0.0079	mg/kg		8270C-SI	09/13/11	1
Phenanthrene	0.014	0.00074	0.0079	mg/kg		8270C-SI	09/13/11	1
Pyrene	0.0042	0.00059	0.0079	mg/kg	J	8270C-SI	09/13/11	1
1-Methylnaphthalene	0.34	0.00079	0.0079	mg/kg		8270C-SI	09/13/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 09/14/11 16:23 Revised: 09/16/11 11:16

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-05

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-3 6-8 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 10:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2-Methylnaphthalene	0.90	0.00059	0.0079	mg/kg	E	8270C-SI	09/13/11	1
2-Chloronaphthalene	U	0.00060	0.0079	mg/kg		8270C-SI	09/13/11	1
Surrogate Recovery								
Nitrobenzene-d5	58.3			% Rec.		8270C-SI	09/13/11	1
2-Fluorobiphenyl	70.7			% Rec.		8270C-SI	09/13/11	1
p-Terphenyl-d14	59.7			% Rec.		8270C-SI	09/13/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
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Note:

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 16,2011

ESC Sample # : L534397-06

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-3 8-10 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 11:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	76.			%		2540G	09/12/11	1
Gasoline Range Organics-NWTPH	12.	1.3	5.1	mg/kg		NWTPHGX	09/08/11	39
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	91.1			% Rec.		NWTPHGX	09/08/11	39
Benzene	0.016	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	U	0.00031	0.0066	mg/kg		8260B	09/05/11	1
Ethylbenzene	0.094	0.014	0.051	mg/kg		8260B	09/06/11	39
Total Xylenes	0.028	0.00046	0.0040	mg/kg		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	78.4			% Rec.	J2	8260B	09/05/11	1
Dibromofluoromethane	89.7			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	80.4			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	146.			% Rec.	J1	8260B	09/05/11	1
Diesel Range Organics (DRO)	4.9	1.3	5.3	mg/kg	J	NWTPHDX	09/10/11	1
Residual Range Organics (RRO)	7.4	3.3	13.	mg/kg	J	NWTPHDX	09/10/11	1
Surrogate Recovery								
o-Terphenyl	65.9			% Rec.		NWTPHDX	09/10/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

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Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
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September 16,2011

ESC Sample # : L534397-07

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-4 4-6 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 11:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	76.			%		2540G	09/12/11	1
Gasoline Range Organics-NWTPH	U	0.033	0.13	mg/kg		NWTPHGX	09/06/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	96.5			% Rec.		NWTPHGX	09/06/11	1
Benzene	U	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	U	0.00031	0.0066	mg/kg		8260B	09/05/11	1
Ethylbenzene	U	0.00037	0.0013	mg/kg		8260B	09/06/11	1
Total Xylenes	U	0.00046	0.0040	mg/kg		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	97.0			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	94.0			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	106.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	U	1.3	5.3	mg/kg		NWTPHDX	09/10/11	1
Residual Range Organics (RRO)	37.	3.3	13.	mg/kg	J6	NWTPHDX	09/10/11	1
Surrogate Recovery								
o-Terphenyl	58.3			% Rec.		NWTPHDX	09/10/11	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
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September 16,2011

ESC Sample # : L534397-08

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-4 8-10 FT

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 11:25

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	77.			%		2540G	09/12/11	1
Gasoline Range Organics-NWTPH	U	0.033	0.13	mg/kg		NWTPHGX	09/08/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	90.9			% Rec.		NWTPHGX	09/08/11	1
Benzene	U	0.00034	0.0013	mg/kg		8260B	09/05/11	1
Toluene	0.0018	0.00031	0.0064	mg/kg	J	8260B	09/05/11	1
Ethylbenzene	0.0023	0.00037	0.0013	mg/kg		8260B	09/05/11	1
Total Xylenes	0.016	0.00046	0.0039	mg/kg		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	111.			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	101.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	U	13.	52.	mg/kg		NWTPHDX	09/10/11	10
Residual Range Organics (RRO)	210	33.	130	mg/kg		NWTPHDX	09/10/11	10
Surrogate Recovery								
o-Terphenyl	70.7			% Rec.		NWTPHDX	09/10/11	10

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD
RDL = Reported Detection Limit = LOQ = PQL = EQL
Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L534397-05	WG554592	SAMP	Anthracene	R1857873	J
	WG554592	SAMP	Acenaphthene	R1857873	J
	WG554592	SAMP	Acenaphthylene	R1857873	J
	WG554592	SAMP	Benzo(a)anthracene	R1857873	J
	WG554592	SAMP	Benzo(g,h,i)perylene	R1857873	J3
	WG554592	SAMP	Dibenz(a,h)anthracene	R1857873	J3
	WG554592	SAMP	Fluoranthene	R1857873	J
	WG554592	SAMP	Pyrene	R1857873	J
	WG554592	SAMP	2-Methylnaphthalene	R1857873	E
	WG553890	SAMP	Benzene	R1846772	J
	WG553890	SAMP	Total Xylenes	R1846772	J
	WG554218	SAMP	Diesel Range Organics (DRO)	R1853313	J
L534397-06	WG553648	SAMP	Toluene-d8	R1845872	J2
	WG553648	SAMP	4-Bromofluorobenzene	R1845872	J1
	WG554218	SAMP	Diesel Range Organics (DRO)	R1853313	J
	WG554218	SAMP	Residual Range Organics (RRO)	R1853313	J
L534397-07	WG554218	SAMP	Residual Range Organics (RRO)	R1853313	J6
L534397-08	WG553647	SAMP	Toluene	R1845193	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534397

September 16, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Benzene	< .001	mg/kg			WG553647	09/04/11 20:21
Ethylbenzene	< .001	mg/kg			WG553647	09/04/11 20:21
Toluene	< .005	mg/kg			WG553647	09/04/11 20:21
Total Xylenes	< .003	mg/kg			WG553647	09/04/11 20:21
4-Bromofluorobenzene		% Rec.	104.8	59-140	WG553647	09/04/11 20:21
Dibromofluoromethane		% Rec.	102.7	63-139	WG553647	09/04/11 20:21
Toluene-d8		% Rec.	104.2	84-116	WG553647	09/04/11 20:21
a,a,a-Trifluorotoluene		% Rec.	104.4	80-118	WG553647	09/04/11 20:21
Benzene	< .001	mg/kg			WG553648	09/04/11 23:15
Ethylbenzene	< .001	mg/kg			WG553648	09/04/11 23:15
Toluene	< .005	mg/kg			WG553648	09/04/11 23:15
Total Xylenes	< .003	mg/kg			WG553648	09/04/11 23:15
4-Bromofluorobenzene		% Rec.	111.7	59-140	WG553648	09/04/11 23:15
Dibromofluoromethane		% Rec.	90.19	63-139	WG553648	09/04/11 23:15
Toluene-d8		% Rec.	96.40	84-116	WG553648	09/04/11 23:15
a,a,a-Trifluorotoluene		% Rec.	103.3	80-118	WG553648	09/04/11 23:15
Benzene	< .001	mg/kg			WG553890	09/06/11 15:27
Ethylbenzene	< .001	mg/kg			WG553890	09/06/11 15:27
Toluene	< .005	mg/kg			WG553890	09/06/11 15:27
Total Xylenes	< .003	mg/kg			WG553890	09/06/11 15:27
4-Bromofluorobenzene		% Rec.	113.5	59-140	WG553890	09/06/11 15:27
Dibromofluoromethane		% Rec.	88.00	63-139	WG553890	09/06/11 15:27
Toluene-d8		% Rec.	99.70	84-116	WG553890	09/06/11 15:27
a,a,a-Trifluorotoluene		% Rec.	107.7	80-118	WG553890	09/06/11 15:27
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG553733	09/06/11 05:23
a,a,a-Trifluorotoluene(FID)		% Rec.	97.55	59-128	WG553733	09/06/11 05:23
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG554091	09/08/11 08:41
a,a,a-Trifluorotoluene(FID)		% Rec.	91.34	59-128	WG554091	09/08/11 08:41
Cadmium	< .25	mg/kg			WG553893	09/08/11 10:24
Chromium	< .5	mg/kg			WG553893	09/08/11 10:24
Lead	< .25	mg/kg			WG553893	09/08/11 10:24
Diesel Range Organics (DRO)	< 4	ppm			WG554218	09/10/11 00:38
Residual Range Organics (RRO)	< 10	ppm			WG554218	09/10/11 00:38
o-Terphenyl		% Rec.	66.98	50-150	WG554218	09/10/11 00:38
Total Solids	< .1	%			WG554328	09/12/11 14:30
Diesel Range Organics (DRO)	< 4	ppm			WG554015	09/12/11 23:51
Residual Range Organics (RRO)	< 10	ppm			WG554015	09/12/11 23:51
o-Terphenyl		% Rec.	65.80	50-150	WG554015	09/12/11 23:51
1-Methylnaphthalene	< .006	mg/kg			WG554592	09/13/11 16:32
2-Chloronaphthalene	< .006	mg/kg			WG554592	09/13/11 16:32
2-Methylnaphthalene	< .006	mg/kg			WG554592	09/13/11 16:32

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L534397

September 16, 2011

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Acenaphthene	< .006	mg/kg			WG554592	09/13/11 16:32
Acenaphthylene	< .006	mg/kg			WG554592	09/13/11 16:32
Anthracene	< .006	mg/kg			WG554592	09/13/11 16:32
Benzo(a)anthracene	< .006	mg/kg			WG554592	09/13/11 16:32
Benzo(a)pyrene	< .006	mg/kg			WG554592	09/13/11 16:32
Benzo(b)fluoranthene	< .006	mg/kg			WG554592	09/13/11 16:32
Benzo(g,h,i)perylene	< .006	mg/kg			WG554592	09/13/11 16:32
Benzo(k)fluoranthene	< .006	mg/kg			WG554592	09/13/11 16:32
Chrysene	< .006	mg/kg			WG554592	09/13/11 16:32
Dibenz(a,h)anthracene	< .006	mg/kg			WG554592	09/13/11 16:32
Fluoranthene	< .006	mg/kg			WG554592	09/13/11 16:32
Fluorene	< .006	mg/kg			WG554592	09/13/11 16:32
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG554592	09/13/11 16:32
Naphthalene	< .006	mg/kg			WG554592	09/13/11 16:32
Phenanthrene	< .006	mg/kg			WG554592	09/13/11 16:32
Pyrene	< .006	mg/kg			WG554592	09/13/11 16:32
2-Fluorobiphenyl		% Rec.	92.50	34-129	WG554592	09/13/11 16:32
Nitrobenzene-d5		% Rec.	82.91	14-141	WG554592	09/13/11 16:32
p-Terphenyl-d14		% Rec.	83.79	25-139	WG554592	09/13/11 16:32

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cadmium	mg/kg	37.0	25.0	38.7*	20	L534258-20	WG553893
Chromium	mg/kg	10.0	10.8	2.82	20	L534258-20	WG553893
Lead	mg/kg	940.	870.	7.31	20	L534258-20	WG553893
Total Solids	%	76.0	77.4	1.67	5	L534397-08	WG554328

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Benzene	mg/kg	.025	0.0283	113.	65-128	WG553647
Ethylbenzene	mg/kg	.025	0.0272	109.	74-128	WG553647
Toluene	mg/kg	.025	0.0281	113.	70-120	WG553647
Total Xylenes	mg/kg	.075	0.0799	107.	74-127	WG553647
4-Bromofluorobenzene				97.15	59-140	WG553647
Dibromofluoromethane				107.1	63-139	WG553647
Toluene-d8				106.0	84-116	WG553647
a,a,a-Trifluorotoluene				104.2	80-118	WG553647
Benzene	mg/kg	.025	0.0247	98.9	65-128	WG553648
Ethylbenzene	mg/kg	.025	0.0271	109.	74-128	WG553648
Toluene	mg/kg	.025	0.0236	94.3	70-120	WG553648
Total Xylenes	mg/kg	.075	0.0814	109.	74-127	WG553648
4-Bromofluorobenzene				110.6	59-140	WG553648
Dibromofluoromethane				96.61	63-139	WG553648
Toluene-d8				98.34	84-116	WG553648
a,a,a-Trifluorotoluene				108.4	80-118	WG553648
Benzene	mg/kg	.025	0.0181	72.2	65-128	WG553890
Ethylbenzene	mg/kg	.025	0.0214	85.6	74-128	WG553890
Toluene	mg/kg	.025	0.0189	75.5	70-120	WG553890
Total Xylenes	mg/kg	.075	0.0643	85.7	74-127	WG553890
4-Bromofluorobenzene				100.1	59-140	WG553890
Dibromofluoromethane				91.22	63-139	WG553890

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Toluene-d8				100.0	84-116	
a,a,a-Trifluorotoluene				113.0	80-118	
Gasoline Range Organics-NWTPH	mg/kg	5.5	5.65	103.	67-135	WG553733
a,a,a-Trifluorotoluene(FID)				112.2	59-128	WG553733
Gasoline Range Organics-NWTPH	mg/kg	5.5	6.49	118.	67-135	WG554091
a,a,a-Trifluorotoluene(FID)				97.18	59-128	WG554091
Cadmium	mg/kg	61.8	56.1	90.8	83.3-117	WG553893
Chromium	mg/kg	71.3	66.9	93.8	81.8-118	WG553893
Lead	mg/kg	92.4	84.6	91.6	83.3-117	WG553893
Diesel Range Organics (DRO)	mg/kg	30	19.0	63.3	50-150	WG554218
Residual Range Organics (RRO)	mg/kg	30	19.4	64.6	50-150	WG554218
o-Terphenyl				60.69	50-150	WG554218
Total Solids	%	50	50.0	100.	85-155	WG554328
Diesel Range Organics (DRO)	mg/kg	30	18.7	62.3	50-150	WG554015
Residual Range Organics (RRO)	mg/kg	30	18.4	61.3	50-150	WG554015
o-Terphenyl				64.78	50-150	WG554015
1-Methylnaphthalene	mg/kg	.033	0.0348	106.	48-113	WG554592
2-Chloronaphthalene	mg/kg	.033	0.0341	103.	51-114	WG554592
2-Methylnaphthalene	mg/kg	.033	0.0355	108.	44-109	WG554592
Acenaphthene	mg/kg	.033	0.0326	98.7	52-108	WG554592
Acenaphthylene	mg/kg	.033	0.0336	102.	51-110	WG554592
Anthracene	mg/kg	.033	0.0334	101.	58-120	WG554592
Benzo(a)anthracene	mg/kg	.033	0.0345	105.	54-110	WG554592
Benzo(a)pyrene	mg/kg	.033	0.0340	103.	56-118	WG554592
Benzo(b)fluoranthene	mg/kg	.033	0.0351	106.	55-114	WG554592
Benzo(g,h,i)perylene	mg/kg	.033	0.0329	99.6	48-130	WG554592
Benzo(k)fluoranthene	mg/kg	.033	0.0333	101.	55-122	WG554592
Chrysene	mg/kg	.033	0.0340	103.	57-118	WG554592
Dibenz(a,h)anthracene	mg/kg	.033	0.0324	98.2	53-122	WG554592
Fluoranthene	mg/kg	.033	0.0335	101.	58-118	WG554592
Fluorene	mg/kg	.033	0.0340	103.	54-109	WG554592
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0324	98.2	51-125	WG554592
Naphthalene	mg/kg	.033	0.0324	98.1	45-105	WG554592
Phenanthrene	mg/kg	.033	0.0340	103.	53-114	WG554592
Pyrene	mg/kg	.033	0.0346	105.	53-121	WG554592
2-Fluorobiphenyl				99.82	34-129	WG554592
Nitrobenzene-d5				93.71	14-141	WG554592
p-Terphenyl-d14				96.40	25-139	WG554592

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Benzene	mg/kg	0.0273	0.0283	109.	65-128	3.37	20	WG553647
Ethylbenzene	mg/kg	0.0268	0.0272	107.	74-128	1.53	20	WG553647
Toluene	mg/kg	0.0273	0.0281	109.	70-120	3.05	20	WG553647
Total Xylenes	mg/kg	0.0781	0.0799	104.	74-127	2.33	20	WG553647
4-Bromofluorobenzene				99.05	59-140			WG553647

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Quality Assurance Report
Level II

L534397

September 16, 2011

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Sample Duplicate RPD	Limit	Batch
Dibromofluoromethane				107.4	63-139			
Toluene-d8				105.0	84-116			
a,a,a-Trifluorotoluene				102.9	80-118			
Benzene	mg/kg	0.0273	0.0247	109.	65-128	10.0	20	WG553648
Ethylbenzene	mg/kg	0.0280	0.0271	112.	74-128	3.17	20	WG553648
Toluene	mg/kg	0.0256	0.0236	102.	70-120	8.22	20	WG553648
Total Xylenes	mg/kg	0.0841	0.0814	112.	74-127	3.19	20	WG553648
4-Bromofluorobenzene				104.2	59-140			WG553648
Dibromofluoromethane				98.95	63-139			WG553648
Toluene-d8				99.27	84-116			WG553648
a,a,a-Trifluorotoluene				102.7	80-118			WG553648
Benzene	mg/kg	0.0189	0.0181	76.0	65-128	4.59	20	WG553890
Ethylbenzene	mg/kg	0.0222	0.0214	89.0	74-128	3.76	20	WG553890
Toluene	mg/kg	0.0189	0.0189	76.0	70-120	0.340	20	WG553890
Total Xylenes	mg/kg	0.0671	0.0643	89.0	74-127	4.26	20	WG553890
4-Bromofluorobenzene				101.7	59-140			WG553890
Dibromofluoromethane				91.84	63-139			WG553890
Toluene-d8				98.63	84-116			WG553890
a,a,a-Trifluorotoluene				108.0	80-118			WG553890
Gasoline Range Organics-NWTPH	mg/kg	5.48	5.65	100.	67-135	2.97	20	WG553733
a,a,a-Trifluorotoluene(FID)				112.5	59-128			WG553733
Gasoline Range Organics-NWTPH	mg/kg	6.54	6.49	119.	67-135	0.770	20	WG554091
a,a,a-Trifluorotoluene(FID)				97.31	59-128			WG554091
Diesel Range Organics (DRO)	mg/kg	20.9	19.0	70.0	50-150	9.43	20	WG554218
Residual Range Organics (RRO)	mg/kg	20.7	19.4	69.0	50-150	6.50	20	WG554218
o-Terphenyl				64.64	50-150			WG554218
Diesel Range Organics (DRO)	mg/kg	18.3	18.7	61.0	50-150	1.99	20	WG554015
Residual Range Organics (RRO)	mg/kg	17.5	18.4	58.0	50-150	4.89	20	WG554015
o-Terphenyl				61.37	50-150			WG554015
1-Methylnaphthalene	mg/kg	0.0301	0.0348	91.0	48-113	14.5	24	WG554592
2-Chloronaphthalene	mg/kg	0.0312	0.0341	94.0	51-114	8.91	24	WG554592
2-Methylnaphthalene	mg/kg	0.0305	0.0355	92.0	44-109	15.2	24	WG554592
Acenaphthene	mg/kg	0.0282	0.0326	86.0	52-108	14.2	22	WG554592
Acenaphthylene	mg/kg	0.0285	0.0336	86.0	51-110	16.4	21	WG554592
Anthracene	mg/kg	0.0290	0.0334	88.0	58-120	14.2	20	WG554592
Benzo(a)anthracene	mg/kg	0.0289	0.0345	88.0	54-110	17.7	22	WG554592
Benzo(a)pyrene	mg/kg	0.0279	0.0340	85.0	56-118	19.8	21	WG554592
Benzo(b)fluoranthene	mg/kg	0.0292	0.0351	88.0	55-114	18.6	20	WG554592
Benzo(g,h,i)perylene	mg/kg	0.0266	0.0329	81.0	48-130	21.0*	20	WG554592
Benzo(k)fluoranthene	mg/kg	0.0276	0.0333	84.0	55-122	18.9	25	WG554592
Chrysene	mg/kg	0.0292	0.0340	89.0	57-118	15.1	20	WG554592
Dibenz(a,h)anthracene	mg/kg	0.0261	0.0324	79.0	53-122	21.5*	20	WG554592
Fluoranthene	mg/kg	0.0292	0.0335	88.0	58-118	13.6	20	WG554592
Fluorene	mg/kg	0.0296	0.0340	90.0	54-109	13.7	20	WG554592
Indeno(1,2,3-cd)pyrene	mg/kg	0.0264	0.0324	80.0	51-125	20.4	21	WG554592
Naphthalene	mg/kg	0.0276	0.0324	84.0	45-105	15.7	24	WG554592
Phenanthrene	mg/kg	0.0288	0.0340	87.0	53-114	16.4	20	WG554592

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Level II

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Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Pyrene	mg/kg	0.0293	0.0346	89.0	53-121	16.6	20	WG554592
2-Fluorobiphenyl				78.23	34-129			WG554592
Nitrobenzene-d5				79.56	14-141			WG554592
p-Terphenyl-d14				80.99	25-139			WG554592

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/kg	0.115	0	.025	92.2	16-143	L534239-50	WG553647
Ethylbenzene	mg/kg	0.119	0	.025	95.0	12-137	L534239-50	WG553647
Toluene	mg/kg	0.120	0	.025	96.3	12-136	L534239-50	WG553647
Total Xylenes	mg/kg	0.352	0	.075	93.8	10-138	L534239-50	WG553647
4-Bromofluorobenzene					94.85	59-140		WG553647
Dibromofluoromethane					105.5	63-139		WG553647
Toluene-d8					105.3	84-116		WG553647
a,a,a-Trifluorotoluene					104.3	80-118		WG553647
Benzene	mg/kg	0.114	0	.025	91.5	16-143	L534392-05	WG553648
Ethylbenzene	mg/kg	0.123	0.0130	.025	87.8	12-137	L534392-05	WG553648
Toluene	mg/kg	0.107	0	.025	86.0	12-136	L534392-05	WG553648
Total Xylenes	mg/kg	0.401	0.0840	.075	84.4	10-138	L534392-05	WG553648
4-Bromofluorobenzene					90.90	59-140		WG553648
Dibromofluoromethane					104.9	63-139		WG553648
Toluene-d8					94.15	84-116		WG553648
a,a,a-Trifluorotoluene					97.71	80-118		WG553648
Benzene	mg/kg	0.0152	0	.025	60.7	16-143	L534087-10	WG553890
Ethylbenzene	mg/kg	0.0123	0	.025	49.1	12-137	L534087-10	WG553890
Toluene	mg/kg	0.0123	0	.025	49.2	12-136	L534087-10	WG553890
Total Xylenes	mg/kg	0.0372	0	.075	49.6	10-138	L534087-10	WG553890
4-Bromofluorobenzene					44.37*	59-140		WG553890
Dibromofluoromethane					97.20	63-139		WG553890
Toluene-d8					85.33	84-116		WG553890
a,a,a-Trifluorotoluene					97.24	80-118		WG553890
Gasoline Range Organics-NWTPH	mg/kg	297.	1.06	5.5	92.7	55-109	L534378-01	WG553733
a,a,a-Trifluorotoluene(FID)					111.4	59-128		WG553733
Gasoline Range Organics-NWTPH	mg/kg	25.3	0	5.5	92.0	55-109	L534625-03	WG554091
a,a,a-Trifluorotoluene(FID)					95.22	59-128		WG554091
Cadmium	mg/kg	79.4	25.0	50	109.	75-125	L534258-20	WG553893
Chromium	mg/kg	59.1	10.8	50	96.6	75-125	L534258-20	WG553893
Lead	mg/kg	955.	870.	50	170.*	75-125	L534258-20	WG553893
Diesel Range Organics (DRO)	mg/kg	18.0	0	30	60.0	50-150	L534397-07	WG554218
Residual Range Organics (RRO)	mg/kg	18.8	28.0	30	0*	50-150	L534397-07	WG554218
o-Terphenyl					54.63	50-150		WG554218
Diesel Range Organics (DRO)	mg/kg	19.7	0	30	65.8	50-150	L534397-01	WG554015
Residual Range Organics (RRO)	mg/kg	17.6	0	30	58.7	50-150	L534397-01	WG554015
o-Terphenyl					62.30	50-150		WG554015

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Quality Assurance Report
Level II

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1-Methylnaphthalene	mg/kg	0.0249	0	.033	75.5	25-155	L535167-01	WG554592
2-Chloronaphthalene	mg/kg	0.0259	0	.033	78.4	31-153	L535167-01	WG554592
2-Methylnaphthalene	mg/kg	0.0251	0	.033	76.0	22-172	L535167-01	WG554592
Acenaphthene	mg/kg	0.0253	0	.033	76.8	43-133	L535167-01	WG554592
Acenaphthylene	mg/kg	0.0256	0	.033	77.5	42-146	L535167-01	WG554592
Anthracene	mg/kg	0.0252	0	.033	76.3	38-153	L535167-01	WG554592
Benzo(a)anthracene	mg/kg	0.0210	0	.033	63.8	31-142	L535167-01	WG554592
Benzo(a)pyrene	mg/kg	0.0177	0	.033	53.6	26-152	L535167-01	WG554592
Benzo(b)fluoranthene	mg/kg	0.0184	0	.033	55.7	10-188	L535167-01	WG554592
Benzo(g,h,i)perylene	mg/kg	0.0136	0	.033	41.4	10-176	L535167-01	WG554592
Benzo(k)fluoranthene	mg/kg	0.0178	0	.033	53.8	22-163	L535167-01	WG554592
Chrysene	mg/kg	0.0215	0	.033	65.0	26-146	L535167-01	WG554592
Dibenz(a,h)anthracene	mg/kg	0.0139	0	.033	42.0	10-160	L535167-01	WG554592
Fluoranthene	mg/kg	0.0245	0	.033	74.3	23-160	L535167-01	WG554592
Fluorene	mg/kg	0.0257	0	.033	77.9	44-143	L535167-01	WG554592
Indeno(1,2,3-cd)pyrene	mg/kg	0.0138	0	.033	41.7	10-157	L535167-01	WG554592
Naphthalene	mg/kg	0.0247	0	.033	75.0	22-156	L535167-01	WG554592
Phenanthrene	mg/kg	0.0258	0	.033	78.1	23-164	L535167-01	WG554592
Pyrene	mg/kg	0.0220	0	.033	66.5	12-170	L535167-01	WG554592
2-Fluorobiphenyl					72.72	34-129		WG554592
Nitrobenzene-d5					69.66	14-141		WG554592
p-Terphenyl-d14					53.96	25-139		WG554592

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/kg	0.101	0.115	80.6	16-143	13.5	31	L534239-50	WG553647
Ethylbenzene	mg/kg	0.109	0.119	87.0	12-137	8.80	36	L534239-50	WG553647
Toluene	mg/kg	0.113	0.120	90.0	12-136	6.72	32	L534239-50	WG553647
Total Xylenes	mg/kg	0.325	0.352	86.8	10-138	7.85	36	L534239-50	WG553647
4-Bromofluorobenzene				97.89	59-140				WG553647
Dibromofluoromethane				102.6	63-139				WG553647
Toluene-d8				104.7	84-116				WG553647
a,a,a-Trifluorotoluene				105.0	80-118				WG553647
Benzene	mg/kg	0.118	0.114	94.1	16-143	2.80	31	L534392-05	WG553648
Ethylbenzene	mg/kg	0.122	0.123	87.1	12-137	0.720	36	L534392-05	WG553648
Toluene	mg/kg	0.111	0.107	88.6	12-136	3.03	32	L534392-05	WG553648
Total Xylenes	mg/kg	0.403	0.401	84.9	10-138	0.470	36	L534392-05	WG553648
4-Bromofluorobenzene				89.47	59-140				WG553648
Dibromofluoromethane				100.4	63-139				WG553648
Toluene-d8				92.60	84-116				WG553648
a,a,a-Trifluorotoluene				92.59	80-118				WG553648
Benzene	mg/kg	0.0176	0.0152	70.5	16-143	15.0	31	L534087-10	WG553890
Ethylbenzene	mg/kg	0.0158	0.0123	63.3	12-137	25.2	36	L534087-10	WG553890
Toluene	mg/kg	0.0153	0.0123	61.2	12-136	21.7	32	L534087-10	WG553890
Total Xylenes	mg/kg	0.0469	0.0372	62.5	10-138	23.1	36	L534087-10	WG553890
4-Bromofluorobenzene				47.76*	59-140				WG553890
Dibromofluoromethane				90.74	63-139				WG553890
Toluene-d8				87.40	84-116				WG553890
a,a,a-Trifluorotoluene				101.4	80-118				WG553890
Gasoline Range Organics-NWTPH	mg/kg	283.	297.	88.4	55-109	4.75	20	L534378-01	WG553733
a,a,a-Trifluorotoluene(FID)				110.7	59-128				WG553733

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Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	27.2	25.3	99.0	55-109	7.27	20	L534625-03	WG554091
a,a,a-Trifluorotoluene(FID)				95.63	59-128				WG554091
Cadmium	mg/kg	89.9	79.4	130.*	75-125	12.4	20	L534258-20	WG553893
Chromium	mg/kg	58.0	59.1	94.4	75-125	1.88	20	L534258-20	WG553893
Lead	mg/kg	942.	955.	144.*	75-125	1.37	20	L534258-20	WG553893
Diesel Range Organics (DRO)	mg/kg	20.2	18.0	67.2	50-150	11.5	20	L534397-07	WG554218
Residual Range Organics (RRO)	mg/kg	21.5	18.8	0*	50-150	13.2	20	L534397-07	WG554218
o-Terphenyl				61.73	50-150				WG554218
Diesel Range Organics (DRO)	mg/kg	21.3	19.7	71.0	50-150	7.66	20	L534397-01	WG554015
Residual Range Organics (RRO)	mg/kg	19.0	17.6	63.2	50-150	7.39	20	L534397-01	WG554015
o-Terphenyl				65.47	50-150				WG554015
1-Methylnaphthalene	mg/kg	0.0301	0.0249	91.3	25-155	18.9	27	L535167-01	WG554592
2-Chloronaphthalene	mg/kg	0.0323	0.0259	97.9	31-153	22.1*	22	L535167-01	WG554592
2-Methylnaphthalene	mg/kg	0.0307	0.0251	92.9	22-172	20.0	29	L535167-01	WG554592
Acenaphthene	mg/kg	0.0286	0.0253	86.6	43-133	12.1	26	L535167-01	WG554592
Acenaphthylene	mg/kg	0.0291	0.0256	88.2	42-146	12.9	22	L535167-01	WG554592
Anthracene	mg/kg	0.0294	0.0252	89.1	38-153	15.6	27	L535167-01	WG554592
Benzo(a)anthracene	mg/kg	0.0262	0.0210	79.5	31-142	22.0	31	L535167-01	WG554592
Benzo(a)pyrene	mg/kg	0.0233	0.0177	70.4	26-152	27.1	32	L535167-01	WG554592
Benzo(b)fluoranthene	mg/kg	0.0244	0.0184	74.0	10-188	28.1	33	L535167-01	WG554592
Benzo(g,h,i)perylene	mg/kg	0.0178	0.0136	53.8	10-176	26.2	30	L535167-01	WG554592
Benzo(k)fluoranthene	mg/kg	0.0233	0.0178	70.7	22-163	27.2	29	L535167-01	WG554592
Chrysene	mg/kg	0.0271	0.0215	82.1	26-146	23.2	30	L535167-01	WG554592
Dibenz(a,h)anthracene	mg/kg	0.0183	0.0139	55.3	10-160	27.4	39	L535167-01	WG554592
Fluoranthene	mg/kg	0.0306	0.0245	92.8	23-160	22.1*	22	L535167-01	WG554592
Fluorene	mg/kg	0.0263	0.0257	79.8	44-143	2.44	23	L535167-01	WG554592
Indeno(1,2,3-cd)pyrene	mg/kg	0.0183	0.0138	55.4	10-157	28.3	40	L535167-01	WG554592
Naphthalene	mg/kg	0.0287	0.0247	87.0	22-156	14.8	27	L535167-01	WG554592
Phenanthrene	mg/kg	0.0299	0.0258	90.7	23-164	15.0	25	L535167-01	WG554592
Pyrene	mg/kg	0.0260	0.0220	78.8	12-170	16.9	24	L535167-01	WG554592
2-Fluorobiphenyl				79.20	34-129				WG554592
Nitrobenzene-d5				77.24	14-141				WG554592
p-Terphenyl-d14				71.22	25-139				WG554592

Batch number /Run number / Sample number cross reference

WG553647: R1845193: L534397-08
WG553648: R1845872: L534397-01 02 03 04 06 07
WG553890: R1846772: L534397-01 02 05 06 07
WG553733: R1848292: L534397-02 03 04 05 07
WG554091: R1849774: L534397-01 06 08
WG553893: R1850552: L534397-01 03 05
WG554218: R1853313: L534397-03 04 05 06 07 08
WG554328: R1854095: L534397-01 02 03 04 05 06 07 08
WG554015: R1855292: L534397-01 02
WG554592: R1857873: L534397-05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Terracon- Lynnwood, WA
Eric Dubcak
21905 64th Ave W Ste 100

Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534397

September 16, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

Report Summary

Tuesday September 13, 2011

Report Number: L534405
Samples Received: 09/03/11
Client Project: 81117067

Description: Union 76 Mini Mart

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002,NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 13, 2011

ESC Sample # : L534405-01

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : MW-S

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 09:40

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	33.	100	ug/l		NWTPHGX	09/04/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	99.0			% Rec.		NWTPHGX	09/04/11	1
Benzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
Toluene	U	0.16	5.0	ug/l		8260B	09/05/11	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	09/05/11	1
Total Xylenes	U	0.86	3.0	ug/l		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	96.8			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	98.0			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	103.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	102.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	41.	33.	100	ug/l	J	NWTPHDX	09/07/11	1
Residual Range Organics (RRO)	U	82.	250	ug/l		NWTPHDX	09/07/11	1
Surrogate Recovery								
o-Terphenyl	95.6			% Rec.		NWTPHDX	09/07/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 13, 2011

ESC Sample # : L534405-02

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : MW-N

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 11:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Gasoline Range Organics-NWTPH	150	33.	100	ug/l		NWTPHGX	09/04/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	99.5			% Rec.		NWTPHGX	09/04/11	1
Benzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
Toluene	U	0.16	5.0	ug/l		8260B	09/05/11	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	09/05/11	1
Total Xylenes	U	0.86	3.0	ug/l		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	97.6			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	95.8			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	105.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	110.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	270	33.	100	ug/l		NWTPHDX	09/07/11	1
Residual Range Organics (RRO)	U	82.	250	ug/l		NWTPHDX	09/07/11	1
Surrogate Recovery								
o-Terphenyl	111.			% Rec.		NWTPHDX	09/07/11	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.043	0.0076	0.050	ug/l	J	8270C-S	09/09/11	1
Acenaphthene	0.11	0.0082	0.050	ug/l		8270C-S	09/09/11	1
Acenaphthylene	0.023	0.0068	0.050	ug/l	J	8270C-S	09/09/11	1
Benzo(a)anthracene	U	0.012	0.050	ug/l		8270C-S	09/09/11	1
Benzo(a)pyrene	U	0.012	0.050	ug/l		8270C-S	09/09/11	1
Benzo(b)fluoranthene	U	0.014	0.050	ug/l		8270C-S	09/09/11	1
Benzo(g,h,i)perylene	U	0.011	0.050	ug/l		8270C-S	09/09/11	1
Benzo(k)fluoranthene	U	0.014	0.050	ug/l		8270C-S	09/09/11	1
Chrysene	U	0.011	0.050	ug/l		8270C-S	09/09/11	1
Dibenz(a,h)anthracene	U	0.0040	0.050	ug/l		8270C-S	09/09/11	1
Fluoranthene	U	0.016	0.050	ug/l		8270C-S	09/09/11	1
Fluorene	0.11	0.0085	0.050	ug/l		8270C-S	09/09/11	1
Indeno(1,2,3-cd)pyrene	U	0.015	0.050	ug/l		8270C-S	09/09/11	1
Naphthalene	0.30	0.020	0.25	ug/l		8270C-S	09/09/11	1
Phenanthrene	0.010	0.0082	0.050	ug/l	J	8270C-S	09/09/11	1
Pyrene	0.022	0.012	0.050	ug/l	J	8270C-S	09/09/11	1
1-Methylnaphthalene	0.31	0.0082	0.25	ug/l		8270C-S	09/09/11	1
2-Methylnaphthalene	0.034	0.0090	0.25	ug/l	J	8270C-S	09/09/11	1
2-Chloronaphthalene	U	0.0065	0.25	ug/l		8270C-S	09/09/11	1
Surrogate Recovery								
Nitrobenzene-d5	89.2			% Rec.		8270C-S	09/09/11	1
2-Fluorobiphenyl	88.8			% Rec.		8270C-S	09/09/11	1
p-Terphenyl-d14	88.4			% Rec.		8270C-S	09/09/11	1

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 13, 2011

ESC Sample # : L534405-03

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : MW-T

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 12:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Gasoline Range Organics-NWTPH	U	33.	100	ug/l		NWTPHGX	09/04/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	98.2			% Rec.		NWTPHGX	09/04/11	1
Benzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
Toluene	U	0.16	5.0	ug/l		8260B	09/05/11	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	09/05/11	1
Total Xylenes	U	0.86	3.0	ug/l		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	97.2			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	96.1			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	104.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	105.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	87.	33.	100	ug/l	J	NWTPHDX	09/07/11	1
Residual Range Organics (RRO)	U	82.	250	ug/l		NWTPHDX	09/07/11	1
Surrogate Recovery								
o-Terphenyl	94.7			% Rec.		NWTPHDX	09/07/11	1

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
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September 13, 2011

ESC Sample # : L534405-04

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : B-3

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 12:20

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Gasoline Range Organics-NWTPH	2900	33.	100	ug/l		NWTPHGX	09/05/11	1
Surrogate Recovery								
a,a,a-Trifluorotoluene(FID)	99.7			% Rec.		NWTPHGX	09/05/11	1
Benzene	4.4	0.18	1.0	ug/l		8260B	09/05/11	1
Toluene	0.66	0.16	5.0	ug/l	J	8260B	09/05/11	1
Ethylbenzene	50.	0.27	1.0	ug/l		8260B	09/05/11	1
Total Xylenes	0.96	0.86	3.0	ug/l	J	8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	96.9			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	97.9			% Rec.		8260B	09/05/11	1
a,a,a-Trifluorotoluene	102.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	105.			% Rec.		8260B	09/05/11	1
Diesel Range Organics (DRO)	270	33.	100	ug/l		NWTPHDX	09/07/11	1
Residual Range Organics (RRO)	U	82.	250	ug/l		NWTPHDX	09/07/11	1
Surrogate Recovery								
o-Terphenyl	87.9			% Rec.		NWTPHDX	09/07/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
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Mountlake Terrace, WA 98043

September 13, 2011

ESC Sample # : L534405-05

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : TRIPBLANK

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 00:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Acetone	U	11.	50.	ug/l		8260B	09/05/11	1
Acrolein	U	31.	50.	ug/l		8260B	09/05/11	1
Acrylonitrile	U	1.7	10.	ug/l		8260B	09/05/11	1
Benzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
Bromobenzene	U	0.25	1.0	ug/l		8260B	09/05/11	1
Bromodichloromethane	U	0.21	1.0	ug/l		8260B	09/05/11	1
Bromoform	U	0.46	1.0	ug/l		8260B	09/05/11	1
Bromomethane	U	0.57	5.0	ug/l		8260B	09/05/11	1
n-Butylbenzene	U	0.20	1.0	ug/l		8260B	09/05/11	1
sec-Butylbenzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
tert-Butylbenzene	U	0.21	1.0	ug/l		8260B	09/05/11	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/05/11	1
Chlorobenzene	U	0.25	1.0	ug/l		8260B	09/05/11	1
Chlorodibromomethane	U	0.29	1.0	ug/l		8260B	09/05/11	1
Chloroethane	U	1.4	5.0	ug/l		8260B	09/05/11	1
2-Chloroethyl vinyl ether	U	2.7	50.	ug/l		8260B	09/05/11	1
Chloroform	U	0.22	5.0	ug/l		8260B	09/05/11	1
Chloromethane	U	0.46	2.5	ug/l		8260B	09/05/11	1
2-Chlorotoluene	U	0.17	1.0	ug/l		8260B	09/05/11	1
4-Chlorotoluene	U	0.20	1.0	ug/l		8260B	09/05/11	1
1,2-Dibromo-3-Chloropropane	U	1.1	5.0	ug/l		8260B	09/05/11	1
1,2-Dibromoethane	U	0.44	1.0	ug/l		8260B	09/05/11	1
Dibromomethane	U	0.51	1.0	ug/l		8260B	09/05/11	1
1,2-Dichlorobenzene	U	0.26	1.0	ug/l		8260B	09/05/11	1
1,3-Dichlorobenzene	U	0.25	1.0	ug/l		8260B	09/05/11	1
1,4-Dichlorobenzene	U	0.19	1.0	ug/l		8260B	09/05/11	1
Dichlorodifluoromethane	U	0.57	5.0	ug/l		8260B	09/05/11	1
1,1-Dichloroethane	U	0.29	1.0	ug/l		8260B	09/05/11	1
1,2-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/05/11	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/05/11	1
cis-1,2-Dichloroethene	U	0.27	1.0	ug/l		8260B	09/05/11	1
trans-1,2-Dichloroethene	U	0.29	1.0	ug/l		8260B	09/05/11	1
1,2-Dichloropropane	U	0.47	1.0	ug/l		8260B	09/05/11	1
1,1-Dichloropropene	U	0.27	1.0	ug/l		8260B	09/05/11	1
1,3-Dichloropropane	U	0.37	1.0	ug/l		8260B	09/05/11	1
cis-1,3-Dichloropropene	U	0.23	1.0	ug/l		8260B	09/05/11	1
trans-1,3-Dichloropropene	U	0.39	1.0	ug/l		8260B	09/05/11	1
2,2-Dichloropropane	U	0.35	1.0	ug/l		8260B	09/05/11	1
Di-isopropyl ether	U	0.24	1.0	ug/l		8260B	09/05/11	1
Ethylbenzene	U	0.27	1.0	ug/l		8260B	09/05/11	1
Hexachloro-1,3-butadiene	U	0.38	1.0	ug/l		8260B	09/05/11	1
Isopropylbenzene	U	0.18	1.0	ug/l		8260B	09/05/11	1

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REPORT OF ANALYSIS

Eric Dubcak
Terracon- Lynnwood, WA
21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

September 13, 2011

ESC Sample # : L534405-05

Date Received : September 03, 2011
Description : Union 76 Mini Mart

Site ID : BATTLE GROUND, CLARK C

Sample ID : TRIPBLANK

Project # : 81117067

Collected By : Eric A. Dubcake
Collection Date : 09/02/11 00:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
p-Isopropyltoluene	U	0.17	1.0	ug/l		8260B	09/05/11	1
2-Butanone (MEK)	U	3.0	10.	ug/l		8260B	09/05/11	1
Methylene Chloride	U	0.79	5.0	ug/l		8260B	09/05/11	1
4-Methyl-2-pentanone (MIBK)	U	0.80	10.	ug/l		8260B	09/05/11	1
Methyl tert-butyl ether	U	0.27	1.0	ug/l		8260B	09/05/11	1
Naphthalene	U	0.69	5.0	ug/l		8260B	09/05/11	1
n-Propylbenzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
Styrene	U	0.30	1.0	ug/l		8260B	09/05/11	1
1,1,1,2-Tetrachloroethane	U	0.31	1.0	ug/l		8260B	09/05/11	1
1,1,2,2-Tetrachloroethane	U	0.29	1.0	ug/l		8260B	09/05/11	1
1,1,2-Trichloro-1,2,2-trifluoro	U	0.38	1.0	ug/l		8260B	09/05/11	1
Tetrachloroethene	U	0.24	1.0	ug/l		8260B	09/05/11	1
Toluene	U	0.16	5.0	ug/l		8260B	09/05/11	1
1,2,3-Trichlorobenzene	U	0.30	1.0	ug/l		8260B	09/05/11	1
1,2,4-Trichlorobenzene	U	0.21	1.0	ug/l		8260B	09/05/11	1
1,1,1-Trichloroethane	U	0.24	1.0	ug/l		8260B	09/05/11	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/05/11	1
Trichloroethene	U	0.29	1.0	ug/l		8260B	09/05/11	1
Trichlorofluoromethane	U	0.49	5.0	ug/l		8260B	09/05/11	1
1,2,3-Trichloropropane	U	0.52	2.5	ug/l		8260B	09/05/11	1
1,2,4-Trimethylbenzene	U	0.20	1.0	ug/l		8260B	09/05/11	1
1,2,3-Trimethylbenzene	U	0.17	1.0	ug/l		8260B	09/05/11	1
1,3,5-Trimethylbenzene	U	0.18	1.0	ug/l		8260B	09/05/11	1
Vinyl chloride	U	0.28	1.0	ug/l		8260B	09/05/11	1
Xylenes, Total	U	0.86	3.0	ug/l		8260B	09/05/11	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	09/05/11	1
Dibromofluoromethane	101.			% Rec.		8260B	09/05/11	1
4-Bromofluorobenzene	105.			% Rec.		8260B	09/05/11	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL
MDL = Minimum Detection Limit = LOD = SQL(TRRP)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 09/13/11 10:32 Printed: 09/13/11 10:32

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L534405-01	WG553689	SAMP	Diesel Range Organics (DRO)	R1849053	J
L534405-02	WG553681	SAMP	Anthracene	R1851832	J
	WG553681	SAMP	Acenaphthylene	R1851832	J
	WG553681	SAMP	Phenanthrene	R1851832	J
	WG553681	SAMP	Pyrene	R1851832	J
	WG553681	SAMP	2-Methylnaphthalene	R1851832	J
L534405-03	WG553689	SAMP	Diesel Range Organics (DRO)	R1849053	J
L534405-04	WG553665	SAMP	Toluene	R1849777	J
	WG553665	SAMP	Total Xylenes	R1849777	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/13/11 at 10:32:41

TSR Signing Reports: 358
R5 - Desired TAT

Report in MDL/RDL format. Log ALL arsenic water samples by 6020. Take ASICP out of RCRA8 and add ASG at $0.

Sample: L534405-01 Account: TERRLWA Received: 09/03/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/13/11 10:32

Sample: L534405-02 Account: TERRLWA Received: 09/03/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/13/11 10:32

Sample: L534405-03 Account: TERRLWA Received: 09/03/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/13/11 10:32

Sample: L534405-04 Account: TERRLWA Received: 09/03/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/13/11 10:32

Sample: L534405-05 Account: TERRLWA Received: 09/03/11 09:00 Due Date: 09/12/11 00:00 RPT Date: 09/13/11 10:32

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Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534405

September 13, 2011

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Gasoline Range Organics-NWTPH	< .1	mg/l			WG553659	09/04/11 15:30
a,a,a-Trifluorotoluene(FID)		% Rec.	99.43	62-128	WG553659	09/04/11 15:30
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,1,1-Trichloroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,1,2-Trichloroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,1-Dichloroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,1-Dichloroethene	< .001	mg/l			WG553651	09/05/11 11:21
1,1-Dichloropropene	< .001	mg/l			WG553651	09/05/11 11:21
1,2,3-Trichlorobenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,2,3-Trichloropropane	< .001	mg/l			WG553651	09/05/11 11:21
1,2,3-Trimethylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,2,4-Trichlorobenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,2,4-Trimethylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG553651	09/05/11 11:21
1,2-Dibromoethane	< .001	mg/l			WG553651	09/05/11 11:21
1,2-Dichlorobenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,2-Dichloroethane	< .001	mg/l			WG553651	09/05/11 11:21
1,2-Dichloropropane	< .001	mg/l			WG553651	09/05/11 11:21
1,3,5-Trimethylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,3-Dichlorobenzene	< .001	mg/l			WG553651	09/05/11 11:21
1,3-Dichloropropane	< .001	mg/l			WG553651	09/05/11 11:21
1,4-Dichlorobenzene	< .001	mg/l			WG553651	09/05/11 11:21
2,2-Dichloropropane	< .001	mg/l			WG553651	09/05/11 11:21
2-Butanone (MEK)	< .01	mg/l			WG553651	09/05/11 11:21
2-Chloroethyl vinyl ether	< .05	mg/l			WG553651	09/05/11 11:21
2-Chlorotoluene	< .001	mg/l			WG553651	09/05/11 11:21
4-Chlorotoluene	< .001	mg/l			WG553651	09/05/11 11:21
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG553651	09/05/11 11:21
Acetone	< .05	mg/l			WG553651	09/05/11 11:21
Acrolein	< .025	mg/l			WG553651	09/05/11 11:21
Acrylonitrile	< .01	mg/l			WG553651	09/05/11 11:21
Benzene	< .001	mg/l			WG553651	09/05/11 11:21
Bromobenzene	< .001	mg/l			WG553651	09/05/11 11:21
Bromodichloromethane	< .001	mg/l			WG553651	09/05/11 11:21
Bromoform	< .001	mg/l			WG553651	09/05/11 11:21
Bromomethane	< .005	mg/l			WG553651	09/05/11 11:21
Carbon tetrachloride	< .001	mg/l			WG553651	09/05/11 11:21
Chlorobenzene	< .001	mg/l			WG553651	09/05/11 11:21
Chlorodibromomethane	< .001	mg/l			WG553651	09/05/11 11:21
Chloroethane	< .005	mg/l			WG553651	09/05/11 11:21
Chloroform	< .005	mg/l			WG553651	09/05/11 11:21
Chloromethane	< .0025	mg/l			WG553651	09/05/11 11:21
cis-1,2-Dichloroethene	< .001	mg/l			WG553651	09/05/11 11:21
cis-1,3-Dichloropropene	< .001	mg/l			WG553651	09/05/11 11:21
Di-isopropyl ether	< .001	mg/l			WG553651	09/05/11 11:21
Dibromomethane	< .001	mg/l			WG553651	09/05/11 11:21
Dichlorodifluoromethane	< .005	mg/l			WG553651	09/05/11 11:21
Ethylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
Hexachloro-1,3-butadiene	< .001	mg/l			WG553651	09/05/11 11:21
Isopropylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
Methyl tert-butyl ether	< .001	mg/l			WG553651	09/05/11 11:21
Methylene Chloride	< .005	mg/l			WG553651	09/05/11 11:21
n-Butylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
n-Propylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
Naphthalene	< .005	mg/l			WG553651	09/05/11 11:21

* Performance of this Analyte is outside of established criteria.
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Eric Dubcak
21905 64th Ave W Ste 100

Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534405

September 13, 2011

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Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
p-Isopropyltoluene	< .001	mg/l			WG553651	09/05/11 11:21
sec-Butylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
Styrene	< .001	mg/l			WG553651	09/05/11 11:21
tert-Butylbenzene	< .001	mg/l			WG553651	09/05/11 11:21
Tetrachloroethene	< .001	mg/l			WG553651	09/05/11 11:21
Toluene	< .005	mg/l			WG553651	09/05/11 11:21
trans-1,2-Dichloroethene	< .001	mg/l			WG553651	09/05/11 11:21
trans-1,3-Dichloropropene	< .001	mg/l			WG553651	09/05/11 11:21
Trichloroethene	< .001	mg/l			WG553651	09/05/11 11:21
Trichlorofluoromethane	< .005	mg/l			WG553651	09/05/11 11:21
Vinyl chloride	< .001	mg/l			WG553651	09/05/11 11:21
Xylenes, Total	< .003	mg/l			WG553651	09/05/11 11:21
4-Bromofluorobenzene		% Rec.	108.6	75-128	WG553651	09/05/11 11:21
Dibromofluoromethane		% Rec.	99.02	79-125	WG553651	09/05/11 11:21
Toluene-d8		% Rec.	97.40	87-114	WG553651	09/05/11 11:21
Diesel Range Organics (DRO)	< .1	ppm			WG553689	09/07/11 13:51
Residual Range Organics (RRO)	< .25	ppm			WG553689	09/07/11 13:51
o-Terphenyl		% Rec.	85.60	50-150	WG553689	09/07/11 13:51
Benzene	< .001	mg/l			WG553665	09/05/11 14:54
Ethylbenzene	< .001	mg/l			WG553665	09/05/11 14:54
Toluene	< .005	mg/l			WG553665	09/05/11 14:54
Total Xylenes	< .003	mg/l			WG553665	09/05/11 14:54
4-Bromofluorobenzene		% Rec.	104.0	75-128	WG553665	09/05/11 14:54
Dibromofluoromethane		% Rec.	95.55	79-125	WG553665	09/05/11 14:54
Toluene-d8		% Rec.	97.29	87-114	WG553665	09/05/11 14:54
a,a,a-Trifluorotoluene		% Rec.	103.4	84-114	WG553665	09/05/11 14:54
1-Methylnaphthalene	< .00025	mg/l			WG553681	09/08/11 21:12
2-Chloronaphthalene	< .00025	mg/l			WG553681	09/08/11 21:12
2-Methylnaphthalene	< .00025	mg/l			WG553681	09/08/11 21:12
Acenaphthene	< .00005	mg/l			WG553681	09/08/11 21:12
Acenaphthylene	< .00005	mg/l			WG553681	09/08/11 21:12
Anthracene	< .00005	mg/l			WG553681	09/08/11 21:12
Benzo(a)anthracene	< .00005	mg/l			WG553681	09/08/11 21:12
Benzo(a)pyrene	< .00005	mg/l			WG553681	09/08/11 21:12
Benzo(b)fluoranthene	< .00005	mg/l			WG553681	09/08/11 21:12
Benzo(g,h,i)perylene	< .00005	mg/l			WG553681	09/08/11 21:12
Benzo(k)fluoranthene	< .00005	mg/l			WG553681	09/08/11 21:12
Chrysene	< .00005	mg/l			WG553681	09/08/11 21:12
Dibenz(a,h)anthracene	< .00005	mg/l			WG553681	09/08/11 21:12
Fluoranthene	< .00005	mg/l			WG553681	09/08/11 21:12
Fluorene	< .00005	mg/l			WG553681	09/08/11 21:12
Indeno(1,2,3-cd)pyrene	< .00005	mg/l			WG553681	09/08/11 21:12
Naphthalene	< .00025	mg/l			WG553681	09/08/11 21:12
Phenanthrene	< .00005	mg/l			WG553681	09/08/11 21:12
Pyrene	< .00005	mg/l			WG553681	09/08/11 21:12
2-Fluorobiphenyl		% Rec.	88.79	70-130	WG553681	09/08/11 21:12
Nitrobenzene-d5		% Rec.	84.81	70-130	WG553681	09/08/11 21:12
p-Terphenyl-d14		% Rec.	85.97	70-130	WG553681	09/08/11 21:12

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Gasoline Range Organics-NWTPH	mg/l	5.5	6.12	111.	70-124	WG553659

* Performance of this Analyte is outside of established criteria.
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Quality Assurance Report
Level II

L534405

September 13, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
a,a,a-Trifluorotoluene(FID)				107.4	62-128	
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0314	126.	75-134	WG553651
1,1,1-Trichloroethane	mg/l	.025	0.0265	106.	67-137	WG553651
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0273	109.	72-128	WG553651
1,1,2-Trichloroethane	mg/l	.025	0.0284	114.	79-123	WG553651
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0305	122.	51-149	WG553651
1,1-Dichloroethane	mg/l	.025	0.0230	92.2	67-133	WG553651
1,1-Dichloroethene	mg/l	.025	0.0310	124.	60-130	WG553651
1,1-Dichloropropene	mg/l	.025	0.0223	89.1	68-132	WG553651
1,2,3-Trichlorobenzene	mg/l	.025	0.0275	110.	63-138	WG553651
1,2,3-Trichloropropane	mg/l	.025	0.0317	127.	68-130	WG553651
1,2,3-Trimethylbenzene	mg/l	.025	0.0237	94.6	70-127	WG553651
1,2,4-Trichlorobenzene	mg/l	.025	0.0281	112.	65-137	WG553651
1,2,4-Trimethylbenzene	mg/l	.025	0.0289	115.	72-135	WG553651
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0256	102.	55-134	WG553651
1,2-Dibromoethane	mg/l	.025	0.0284	114.	75-126	WG553651
1,2-Dichlorobenzene	mg/l	.025	0.0255	102.	75-122	WG553651
1,2-Dichloroethane	mg/l	.025	0.0230	91.9	63-137	WG553651
1,2-Dichloropropane	mg/l	.025	0.0221	88.5	74-122	WG553651
1,3,5-Trimethylbenzene	mg/l	.025	0.0299	119.	73-134	WG553651
1,3-Dichlorobenzene	mg/l	.025	0.0303	121.	73-131	WG553651
1,3-Dichloropropane	mg/l	.025	0.0252	101.	77-119	WG553651
1,4-Dichlorobenzene	mg/l	.025	0.0255	102.	70-121	WG553651
2,2-Dichloropropane	mg/l	.025	0.0268	107.	46-151	WG553651
2-Butanone (MEK)	mg/l	.125	0.126	101.	53-132	WG553651
2-Chloroethyl vinyl ether	mg/l	.125	0.118	94.2	0-171	WG553651
2-Chlorotoluene	mg/l	.025	0.0273	109.	74-128	WG553651
4-Chlorotoluene	mg/l	.025	0.0275	110.	74-130	WG553651
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.136	108.	60-142	WG553651
Acetone	mg/l	.125	0.121	96.6	48-134	WG553651
Acrolein	mg/l	.125	0.0203	16.3	6-182	WG553651
Acrylonitrile	mg/l	.125	0.109	87.0	60-140	WG553651
Benzene	mg/l	.025	0.0226	90.4	67-126	WG553651
Bromobenzene	mg/l	.025	0.0260	104.	76-123	WG553651
Bromodichloromethane	mg/l	.025	0.0252	101.	68-133	WG553651
Bromoform	mg/l	.025	0.0316	126.	60-139	WG553651
Bromomethane	mg/l	.025	0.0235	93.9	45-175	WG553651
Carbon tetrachloride	mg/l	.025	0.0271	108.	64-141	WG553651
Chlorobenzene	mg/l	.025	0.0277	111.	77-125	WG553651
Chlorodibromomethane	mg/l	.025	0.0310	124.	73-138	WG553651
Chloroethane	mg/l	.025	0.0255	102.	49-155	WG553651
Chloroform	mg/l	.025	0.0247	98.7	66-126	WG553651
Chloromethane	mg/l	.025	0.0157	63.0	45-152	WG553651
cis-1,2-Dichloroethene	mg/l	.025	0.0246	98.6	72-128	WG553651
cis-1,3-Dichloropropene	mg/l	.025	0.0249	99.4	73-131	WG553651
Di-isopropyl ether	mg/l	.025	0.0208	83.2	63-139	WG553651
Dibromomethane	mg/l	.025	0.0253	101.	73-125	WG553651
Dichlorodifluoromethane	mg/l	.025	0.0207	82.8	39-189	WG553651
Ethylbenzene	mg/l	.025	0.0287	115.	76-129	WG553651
Hexachloro-1,3-butadiene	mg/l	.025	0.0274	110.	67-135	WG553651
Isopropylbenzene	mg/l	.025	0.0321	129.	73-132	WG553651
Methyl tert-butyl ether	mg/l	.025	0.0258	103.	51-142	WG553651
Methylene Chloride	mg/l	.025	0.0236	94.2	64-125	WG553651
n-Butylbenzene	mg/l	.025	0.0245	97.9	63-142	WG553651
n-Propylbenzene	mg/l	.025	0.0284	114.	71-132	WG553651
Naphthalene	mg/l	.025	0.0263	105.	56-145	WG553651
p-Isopropyltoluene	mg/l	.025	0.0313	125.	68-138	WG553651
sec-Butylbenzene	mg/l	.025	0.0306	123.	70-135	WG553651
Styrene	mg/l	.025	0.0217	86.9	78-130	WG553651

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Quality Assurance Report
Level II

L534405

September 13, 2011

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
tert-Butylbenzene	mg/l	.025	0.0311	125.	72-134	WG553651
Tetrachloroethene	mg/l	.025	0.0303	121.	67-135	WG553651
Toluene	mg/l	.025	0.0250	99.8	72-122	WG553651
trans-1,2-Dichloroethene	mg/l	.025	0.0236	94.4	67-129	WG553651
trans-1,3-Dichloropropene	mg/l	.025	0.0280	112.	66-137	WG553651
Trichloroethene	mg/l	.025	0.0262	105.	74-126	WG553651
Trichlorofluoromethane	mg/l	.025	0.0265	106.	54-156	WG553651
Vinyl chloride	mg/l	.025	0.0204	81.5	55-153	WG553651
Xylenes, Total	mg/l	.075	0.0870	116.	75-128	WG553651
4-Bromofluorobenzene				104.6	75-128	WG553651
Dibromofluoromethane				94.07	79-125	WG553651
Toluene-d8				98.29	87-114	WG553651
Diesel Range Organics (DRO)	mg/l	.75	0.820	109.	50-150	WG553689
Residual Range Organics (RRO)	mg/l	.75	0.748	99.7	50-150	WG553689
o-Terphenyl				94.50	50-150	WG553689
Benzene	mg/l	.025	0.0233	93.2	67-126	WG553665
Ethylbenzene	mg/l	.025	0.0251	100.	76-129	WG553665
Toluene	mg/l	.025	0.0235	94.2	72-122	WG553665
Total Xylenes	mg/l	.075	0.0746	99.5	75-128	WG553665
4-Bromofluorobenzene				98.29	75-128	WG553665
Dibromofluoromethane				100.4	79-125	WG553665
Toluene-d8				97.72	87-114	WG553665
a,a,a-Trifluorotoluene				104.7	84-114	WG553665
1-Methylnaphthalene	mg/l	.002	0.00173	86.6	70-130	WG553681
2-Chloronaphthalene	mg/l	.002	0.00170	85.0	70-130	WG553681
2-Methylnaphthalene	mg/l	.002	0.00172	86.0	70-130	WG553681
Acenaphthene	mg/l	.002	0.00171	85.4	70-130	WG553681
Acenaphthylene	mg/l	.002	0.00165	82.6	70-130	WG553681
Anthracene	mg/l	.002	0.00169	84.5	70-130	WG553681
Benzo(a)anthracene	mg/l	.002	0.00172	85.9	70-130	WG553681
Benzo(a)pyrene	mg/l	.002	0.00170	84.9	70-130	WG553681
Benzo(b)fluoranthene	mg/l	.002	0.00180	90.0	70-130	WG553681
Benzo(g,h,i)perylene	mg/l	.002	0.00168	83.8	70-130	WG553681
Benzo(k)fluoranthene	mg/l	.002	0.00162	80.8	70-130	WG553681
Chrysene	mg/l	.002	0.00170	84.9	70-130	WG553681
Dibenz(a,h)anthracene	mg/l	.002	0.00174	87.0	70-130	WG553681
Fluoranthene	mg/l	.002	0.00179	89.3	70-130	WG553681
Fluorene	mg/l	.002	0.00176	88.2	70-130	WG553681
Indeno(1,2,3-cd)pyrene	mg/l	.002	0.00174	86.8	70-130	WG553681
Naphthalene	mg/l	.002	0.00178	88.9	70-130	WG553681
Phenanthrene	mg/l	.002	0.00171	85.7	70-130	WG553681
Pyrene	mg/l	.002	0.00162	80.9	70-130	WG553681
2-Fluorobiphenyl				85.62	70-130	WG553681
Nitrobenzene-d5				85.54	70-130	WG553681
p-Terphenyl-d14				85.27	70-130	WG553681

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Gasoline Range Organics-NWTPH	mg/l	6.06	6.12	110.	70-124	1.01	20	WG553659
a,a,a-Trifluorotoluene(FID)				107.5	62-128			WG553659

* Performance of this Analyte is outside of established criteria.
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Quality Assurance Report
Level II

L534405

September 13, 2011

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0309	0.0314	124.	75-134	1.51	20	WG553651
1,1,1-Trichloroethane	mg/l	0.0258	0.0265	103.	67-137	2.50	20	WG553651
1,1,2,2-Tetrachloroethane	mg/l	0.0276	0.0273	110.	72-128	1.00	20	WG553651
1,1,2-Trichloroethane	mg/l	0.0279	0.0284	112.	79-123	1.87	20	WG553651
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0292	0.0305	117.	51-149	4.46	20	WG553651
1,1-Dichloroethane	mg/l	0.0230	0.0230	92.0	67-133	0.260	20	WG553651
1,1-Dichloroethene	mg/l	0.0296	0.0310	118.	60-130	4.86	20	WG553651
1,1-Dichloropropene	mg/l	0.0216	0.0223	86.0	68-132	3.24	20	WG553651
1,2,3-Trichlorobenzene	mg/l	0.0278	0.0275	111.	63-138	1.13	20	WG553651
1,2,3-Trichloropropane	mg/l	0.0321	0.0317	128.	68-130	1.25	20	WG553651
1,2,3-Trimethylbenzene	mg/l	0.0234	0.0237	93.0	70-127	1.29	20	WG553651
1,2,4-Trichlorobenzene	mg/l	0.0280	0.0281	112.	65-137	0.330	20	WG553651
1,2,4-Trimethylbenzene	mg/l	0.0280	0.0289	112.	72-135	3.05	20	WG553651
1,2-Dibromo-3-Chloropropane	mg/l	0.0264	0.0256	106.	55-134	3.26	20	WG553651
1,2-Dibromoethane	mg/l	0.0280	0.0284	112.	75-126	1.33	20	WG553651
1,2-Dichlorobenzene	mg/l	0.0255	0.0255	102.	75-122	0.260	20	WG553651
1,2-Dichloroethane	mg/l	0.0231	0.0230	92.0	63-137	0.470	20	WG553651
1,2-Dichloropropane	mg/l	0.0219	0.0221	87.0	74-122	1.15	20	WG553651
1,3,5-Trimethylbenzene	mg/l	0.0288	0.0299	115.	73-134	3.47	20	WG553651
1,3-Dichlorobenzene	mg/l	0.0295	0.0303	118.	73-131	2.64	20	WG553651
1,3-Dichloropropane	mg/l	0.0251	0.0252	100.	77-119	0.380	20	WG553651
1,4-Dichlorobenzene	mg/l	0.0253	0.0255	101.	70-121	0.690	20	WG553651
2,2-Dichloropropane	mg/l	0.0273	0.0268	109.	46-151	1.89	20	WG553651
2-Butanone (MEK)	mg/l	0.130	0.126	104.	53-132	3.37	20	WG553651
2-Chloroethyl vinyl ether	mg/l	0.122	0.118	97.0	0-171	3.41	27	WG553651
2-Chlorotoluene	mg/l	0.0266	0.0273	106.	74-128	2.41	20	WG553651
4-Chlorotoluene	mg/l	0.0267	0.0275	107.	74-130	2.85	20	WG553651
4-Methyl-2-pentanone (MIBK)	mg/l	0.140	0.136	112.	60-142	2.91	20	WG553651
Acetone	mg/l	0.125	0.121	100.	48-134	3.78	20	WG553651
Acrolein	mg/l	0.0209	0.0203	17.0	6-182	3.03	39	WG553651
Acrylonitrile	mg/l	0.113	0.109	91.0	60-140	4.14	20	WG553651
Benzene	mg/l	0.0227	0.0226	91.0	67-126	0.340	20	WG553651
Bromobenzene	mg/l	0.0252	0.0260	101.	76-123	2.83	20	WG553651
Bromodichloromethane	mg/l	0.0257	0.0252	103.	68-133	1.82	20	WG553651
Bromoform	mg/l	0.0318	0.0316	127.	60-139	0.710	20	WG553651
Bromomethane	mg/l	0.0242	0.0235	97.0	45-175	2.98	20	WG553651
Carbon tetrachloride	mg/l	0.0267	0.0271	107.	64-141	1.50	20	WG553651
Chlorobenzene	mg/l	0.0269	0.0277	108.	77-125	2.89	20	WG553651
Chlorodibromomethane	mg/l	0.0310	0.0310	124.	73-138	0.0400	20	WG553651
Chloroethane	mg/l	0.0253	0.0255	101.	49-155	0.690	20	WG553651
Chloroform	mg/l	0.0247	0.0247	99.0	66-126	0.120	20	WG553651
Chloromethane	mg/l	0.0158	0.0157	63.0	45-152	0.650	20	WG553651
cis-1,2-Dichloroethene	mg/l	0.0248	0.0246	99.0	72-128	0.760	20	WG553651
cis-1,3-Dichloropropene	mg/l	0.0250	0.0249	100.	73-131	0.390	20	WG553651
Di-isopropyl ether	mg/l	0.0211	0.0208	84.0	63-139	1.45	20	WG553651
Dibromomethane	mg/l	0.0256	0.0253	102.	73-125	1.17	20	WG553651
Dichlorodifluoromethane	mg/l	0.0199	0.0207	80.0	39-189	3.67	24	WG553651
Ethylbenzene	mg/l	0.0274	0.0287	110.	76-129	4.58	20	WG553651
Hexachloro-1,3-butadiene	mg/l	0.0265	0.0274	106.	67-135	3.29	20	WG553651
Isopropylbenzene	mg/l	0.0307	0.0321	123.	73-132	4.54	20	WG553651
Methyl tert-butyl ether	mg/l	0.0269	0.0258	108.	51-142	4.35	20	WG553651
Methylene Chloride	mg/l	0.0236	0.0236	94.0	64-125	0.370	20	WG553651
n-Butylbenzene	mg/l	0.0240	0.0245	96.0	63-142	1.74	20	WG553651
n-Propylbenzene	mg/l	0.0272	0.0284	109.	71-132	4.38	20	WG553651
Naphthalene	mg/l	0.0270	0.0263	108.	56-145	2.48	20	WG553651
p-Isopropyltoluene	mg/l	0.0302	0.0313	121.	68-138	3.58	20	WG553651
sec-Butylbenzene	mg/l	0.0291	0.0306	116.	70-135	5.15	20	WG553651
Styrene	mg/l	0.0212	0.0217	85.0	78-130	2.46	20	WG553651
tert-Butylbenzene	mg/l	0.0297	0.0311	119.	72-134	4.88	20	WG553651

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September 13, 2011

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Tetrachloroethene	mg/l	0.0285	0.0303	114.	67-135	5.91	20	WG553651
Toluene	mg/l	0.0246	0.0250	98.0	72-122	1.53	20	WG553651
trans-1,2-Dichloroethene	mg/l	0.0235	0.0236	94.0	67-129	0.500	20	WG553651
trans-1,3-Dichloropropene	mg/l	0.0283	0.0280	113.	66-137	1.20	20	WG553651
Trichloroethene	mg/l	0.0257	0.0262	103.	74-126	1.91	20	WG553651
Trichlorofluoromethane	mg/l	0.0257	0.0265	103.	54-156	3.10	20	WG553651
Vinyl chloride	mg/l	0.0202	0.0204	81.0	55-153	0.840	20	WG553651
Xylenes, Total	mg/l	0.0830	0.0870	111.	75-128	4.70	20	WG553651
4-Bromofluorobenzene				104.0	75-128			WG553651
Dibromofluoromethane				95.21	79-125			WG553651
Toluene-d8				98.52	87-114			WG553651
Diesel Range Organics (DRO)	mg/l	0.779	0.820	104.	50-150	5.15	20	WG553689
Residual Range Organics (RRO)	mg/l	0.716	0.748	95.0	50-150	4.35	20	WG553689
o-Terphenyl				92.07	50-150			WG553689
Benzene	mg/l	0.0232	0.0233	93.0	67-126	0.320	20	WG553665
Ethylbenzene	mg/l	0.0254	0.0251	101.	76-129	1.08	20	WG553665
Toluene	mg/l	0.0240	0.0235	96.0	72-122	1.75	20	WG553665
Total Xylenes	mg/l	0.0755	0.0746	101.	75-128	1.19	20	WG553665
4-Bromofluorobenzene				97.71	75-128			WG553665
Dibromofluoromethane				99.11	79-125			WG553665
Toluene-d8				99.13	87-114			WG553665
a,a,a-Trifluorotoluene				104.1	84-114			WG553665
1-Methylnaphthalene	mg/l	0.00177	0.00173	89.0	70-130	2.34	25	WG553681
2-Chloronaphthalene	mg/l	0.00185	0.00170	92.0	70-130	8.32	25	WG553681
2-Methylnaphthalene	mg/l	0.00181	0.00172	90.0	70-130	5.06	25	WG553681
Acenaphthene	mg/l	0.00182	0.00171	91.0	70-130	6.07	25	WG553681
Acenaphthylene	mg/l	0.00176	0.00165	88.0	70-130	6.18	25	WG553681
Anthracene	mg/l	0.00173	0.00169	87.0	70-130	2.53	25	WG553681
Benzo(a)anthracene	mg/l	0.00180	0.00172	90.0	70-130	4.87	25	WG553681
Benzo(a)pyrene	mg/l	0.00177	0.00170	88.0	70-130	3.94	25	WG553681
Benzo(b)fluoranthene	mg/l	0.00186	0.00180	93.0	70-130	3.42	25	WG553681
Benzo(g,h,i)perylene	mg/l	0.00176	0.00168	88.0	70-130	4.83	25	WG553681
Benzo(k)fluoranthene	mg/l	0.00166	0.00162	83.0	70-130	2.96	25	WG553681
Chrysene	mg/l	0.00177	0.00170	89.0	70-130	4.25	25	WG553681
Dibenz(a,h)anthracene	mg/l	0.00185	0.00174	92.0	70-130	6.04	25	WG553681
Fluoranthene	mg/l	0.00186	0.00179	93.0	70-130	4.04	25	WG553681
Fluorene	mg/l	0.00187	0.00176	93.0	70-130	5.68	25	WG553681
Indeno(1,2,3-cd)pyrene	mg/l	0.00182	0.00174	91.0	70-130	4.68	25	WG553681
Naphthalene	mg/l	0.00183	0.00178	92.0	70-130	3.15	25	WG553681
Phenanthrene	mg/l	0.00179	0.00171	89.0	70-130	4.18	25	WG553681
Pyrene	mg/l	0.00168	0.00162	84.0	70-130	3.73	25	WG553681
2-Fluorobiphenyl				88.57	70-130			WG553681
Nitrobenzene-d5				86.14	70-130			WG553681
p-Terphenyl-d14				86.54	70-130			WG553681

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/l	5.04	0	5.5	91.6	58-122	L534362-05	WG553659
a,a,a-Trifluorotoluene(FID)					104.8	62-128		WG553659
1,1,1,2-Tetrachloroethane	mg/l	0.0320	0	.025	128.	45-152	L534132-08	WG553651

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Quality Assurance Report
Level II

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September 13, 2011

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1-Trichloroethane	mg/l	0.0260	0	.025	104.	31-161	L534132-08	WG553651
1,1,2,2-Tetrachloroethane	mg/l	0.0302	0	.025	121.	49-149	L534132-08	WG553651
1,1,2-Trichloroethane	mg/l	0.0296	0	.025	118.	46-145	L534132-08	WG553651
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0281	0	.025	112.	14-168	L534132-08	WG553651
1,1-Dichloroethane	mg/l	0.0225	0	.025	90.0	30-159	L534132-08	WG553651
1,1-Dichloroethene	mg/l	0.0276	0	.025	110.	10-162	L534132-08	WG553651
1,1-Dichloropropene	mg/l	0.0238	0	.025	95.3	14-162	L534132-08	WG553651
1,2,3-Trichlorobenzene	mg/l	0.0264	0	.025	105.	32-143	L534132-08	WG553651
1,2,3-Trichloropropane	mg/l	0.0339	0	.025	136.	48-148	L534132-08	WG553651
1,2,3-Trimethylbenzene	mg/l	0.0251	0	.025	100.	36-141	L534132-08	WG553651
1,2,4-Trichlorobenzene	mg/l	0.0263	0	.025	105.	27-142	L534132-08	WG553651
1,2,4-Trimethylbenzene	mg/l	0.0300	0	.025	120.	29-153	L534132-08	WG553651
1,2-Dibromo-3-Chloropropane	mg/l	0.0267	0	.025	107.	37-148	L534132-08	WG553651
1,2-Dibromoethane	mg/l	0.0306	0	.025	122.	41-149	L534132-08	WG553651
1,2-Dichlorobenzene	mg/l	0.0260	0	.025	104.	40-139	L534132-08	WG553651
1,2-Dichloroethane	mg/l	0.0246	0	.025	98.4	29-167	L534132-08	WG553651
1,2-Dichloropropane	mg/l	0.0230	0	.025	92.0	39-148	L534132-08	WG553651
1,3,5-Trimethylbenzene	mg/l	0.0299	0	.025	120.	33-149	L534132-08	WG553651
1,3-Dichlorobenzene	mg/l	0.0303	0	.025	121.	32-148	L534132-08	WG553651
1,3-Dichloropropane	mg/l	0.0268	0	.025	107.	44-142	L534132-08	WG553651
1,4-Dichlorobenzene	mg/l	0.0259	0	.025	103.	32-136	L534132-08	WG553651
2,2-Dichloropropane	mg/l	0.0246	0	.025	98.3	14-158	L534132-08	WG553651
2-Butanone (MEK)	mg/l	0.130	0	.125	104.	32-151	L534132-08	WG553651
2-Chloroethyl vinyl ether	mg/l	0.0350	0	.125	28.0	0-175	L534132-08	WG553651
2-Chlorotoluene	mg/l	0.0278	0	.025	111.	35-147	L534132-08	WG553651
4-Chlorotoluene	mg/l	0.0280	0	.025	112.	33-147	L534132-08	WG553651
4-Methyl-2-pentanone (MIBK)	mg/l	0.148	0	.125	119.	40-160	L534132-08	WG553651
Acetone	mg/l	0.111	0	.125	89.0	25-157	L534132-08	WG553651
Acrolein	mg/l	0.107	0	.125	86.0	0-179	L534132-08	WG553651
Acrylonitrile	mg/l	0.117	0	.125	93.9	37-162	L534132-08	WG553651
Benzene	mg/l	0.0234	0	.025	93.6	16-158	L534132-08	WG553651
Bromobenzene	mg/l	0.0266	0	.025	106.	37-147	L534132-08	WG553651
Bromodichloromethane	mg/l	0.0275	0	.025	110.	45-147	L534132-08	WG553651
Bromoform	mg/l	0.0332	0	.025	133.	38-152	L534132-08	WG553651
Bromomethane	mg/l	0.0289	0	.025	116.	0-191	L534132-08	WG553651
Carbon tetrachloride	mg/l	0.0272	0	.025	109.	22-168	L534132-08	WG553651
Chlorobenzene	mg/l	0.0286	0	.025	114.	33-148	L534132-08	WG553651
Chlorodibromomethane	mg/l	0.0330	0	.025	132.	48-151	L534132-08	WG553651
Chloroethane	mg/l	0.0296	0	.025	118.	4-176	L534132-08	WG553651
Chloroform	mg/l	0.0243	0	.025	97.3	37-147	L534132-08	WG553651
Chloromethane	mg/l	0.0195	0	.025	78.0	10-174	L534132-08	WG553651
cis-1,2-Dichloroethene	mg/l	0.0251	0	.025	101.	29-156	L534132-08	WG553651
cis-1,3-Dichloropropene	mg/l	0.0264	0	.025	106.	35-148	L534132-08	WG553651
Di-isopropyl ether	mg/l	0.0203	0	.025	81.2	39-160	L534132-08	WG553651
Dibromomethane	mg/l	0.0281	0	.025	112.	36-152	L534132-08	WG553651
Dichlorodifluoromethane	mg/l	0.0274	0	.025	110.	0-200	L534132-08	WG553651
Ethylbenzene	mg/l	0.0291	0	.025	116.	29-150	L534132-08	WG553651
Hexachloro-1,3-butadiene	mg/l	0.0262	0	.025	105.	28-144	L534132-08	WG553651
Isopropylbenzene	mg/l	0.0294	0	.025	118.	35-147	L534132-08	WG553651
Methyl tert-butyl ether	mg/l	0.0283	0.00270	.025	102.	24-167	L534132-08	WG553651
Methylene Chloride	mg/l	0.0236	0	.025	94.4	23-151	L534132-08	WG553651
n-Butylbenzene	mg/l	0.0244	0	.025	97.5	22-151	L534132-08	WG553651
n-Propylbenzene	mg/l	0.0283	0	.025	113.	26-150	L534132-08	WG553651
Naphthalene	mg/l	0.0262	0	.025	105.	24-160	L534132-08	WG553651
p-Isopropyltoluene	mg/l	0.0305	0	.025	122.	28-151	L534132-08	WG553651
sec-Butylbenzene	mg/l	0.0295	0	.025	118.	32-149	L534132-08	WG553651
Styrene	mg/l	0.0305	0	.025	122.	38-149	L534132-08	WG553651
tert-Butylbenzene	mg/l	0.0301	0	.025	120.	36-149	L534132-08	WG553651
Tetrachloroethene	mg/l	0.0316	0	.025	126.	13-157	L534132-08	WG553651

* Performance of this Analyte is outside of established criteria.
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Tax I.D. 62-0814289

Est. 1970

Terracon- Lynnwood, WA
Eric Dubcak
21905 64th Ave W Ste 100

Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534405

September 13, 2011

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Toluene	mg/l	0.0260	0	.025	104.	22-152	L534132-08	WG553651
trans-1,2-Dichloroethene	mg/l	0.0254	0	.025	102.	11-160	L534132-08	WG553651
trans-1,3-Dichloropropene	mg/l	0.0309	0	.025	124.	33-153	L534132-08	WG553651
Trichloroethene	mg/l	0.0276	0	.025	110.	18-163	L534132-08	WG553651
Trichlorofluoromethane	mg/l	0.0299	0	.025	119.	10-177	L534132-08	WG553651
Vinyl chloride	mg/l	0.0245	0	.025	98.2	0-179	L534132-08	WG553651
Xylenes, Total	mg/l	0.0879	0	.075	117.	27-151	L534132-08	WG553651
4-Bromofluorobenzene					105.2	75-128		WG553651
Dibromofluoromethane					96.45	79-125		WG553651
Toluene-d8					98.22	87-114		WG553651
Benzene	mg/l	0.0324	0.00810	.025	97.1	16-158	L534399-11	WG553665
Ethylbenzene	mg/l	0.0328	0.00590	.025	108.	29-150	L534399-11	WG553665
Toluene	mg/l	0.0254	0.000300	.025	100.	22-152	L534399-11	WG553665
Total Xylenes	mg/l	0.0823	0.00180	.075	107.	27-151	L534399-11	WG553665
4-Bromofluorobenzene					97.93	75-128		WG553665
Dibromofluoromethane					98.01	79-125		WG553665
Toluene-d8					97.69	87-114		WG553665
a,a,a-Trifluorotoluene					105.0	84-114		WG553665

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/l	5.55	5.04	101.	58-122	9.74	20	L534362-05	WG553659
a,a,a-Trifluorotoluene(FID)				105.2	62-128				WG553659
1,1,1,2-Tetrachloroethane	mg/l	0.0294	0.0320	118.	45-152	8.37	21	L534132-08	WG553651
1,1,1-Trichloroethane	mg/l	0.0230	0.0260	92.2	31-161	12.0	23	L534132-08	WG553651
1,1,2,2-Tetrachloroethane	mg/l	0.0283	0.0302	113.	49-149	6.49	22	L534132-08	WG553651
1,1,2-Trichloroethane	mg/l	0.0279	0.0296	112.	46-145	5.80	20	L534132-08	WG553651
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0239	0.0281	95.7	14-168	15.9	24	L534132-08	WG553651
1,1-Dichloroethane	mg/l	0.0198	0.0225	79.0	30-159	12.9	21	L534132-08	WG553651
1,1-Dichloroethene	mg/l	0.0241	0.0276	96.5	10-162	13.3	23	L534132-08	WG553651
1,1-Dichloropropene	mg/l	0.0207	0.0238	82.7	14-162	14.2	23	L534132-08	WG553651
1,2,3-Trichlorobenzene	mg/l	0.0236	0.0264	94.6	32-143	10.9	33	L534132-08	WG553651
1,2,3-Trichloropropane	mg/l	0.0326	0.0339	130.	48-148	3.95	23	L534132-08	WG553651
1,2,3-Trimethylbenzene	mg/l	0.0228	0.0251	91.1	36-141	9.50	25	L534132-08	WG553651
1,2,4-Trichlorobenzene	mg/l	0.0232	0.0263	92.8	27-142	12.4	30	L534132-08	WG553651
1,2,4-Trimethylbenzene	mg/l	0.0268	0.0300	107.	29-153	11.3	27	L534132-08	WG553651
1,2-Dibromo-3-Chloropropane	mg/l	0.0259	0.0267	103.	37-148	3.02	27	L534132-08	WG553651
1,2-Dibromoethane	mg/l	0.0288	0.0306	115.	41-149	6.23	21	L534132-08	WG553651
1,2-Dichlorobenzene	mg/l	0.0234	0.0260	93.6	40-139	10.5	23	L534132-08	WG553651
1,2-Dichloroethane	mg/l	0.0229	0.0246	91.4	29-167	7.36	21	L534132-08	WG553651
1,2-Dichloropropane	mg/l	0.0209	0.0230	83.8	39-148	9.29	20	L534132-08	WG553651
1,3,5-Trimethylbenzene	mg/l	0.0272	0.0299	109.	33-149	9.56	26	L534132-08	WG553651
1,3-Dichlorobenzene	mg/l	0.0274	0.0303	109.	32-148	10.3	24	L534132-08	WG553651
1,3-Dichloropropane	mg/l	0.0254	0.0268	101.	44-142	5.49	20	L534132-08	WG553651
1,4-Dichlorobenzene	mg/l	0.0228	0.0259	91.3	32-136	12.4	23	L534132-08	WG553651
2,2-Dichloropropane	mg/l	0.0229	0.0246	91.5	14-158	7.09	23	L534132-08	WG553651
2-Butanone (MEK)	mg/l	0.124	0.130	99.0	32-151	4.53	26	L534132-08	WG553651
2-Chloroethyl vinyl ether	mg/l	0.000329	0.0350	0.263	0-175	196.*	75	L534132-08	WG553651
2-Chlorotoluene	mg/l	0.0250	0.0278	100.	35-147	10.5	24	L534132-08	WG553651
4-Chlorotoluene	mg/l	0.0252	0.0280	101.	33-147	10.6	25	L534132-08	WG553651
4-Methyl-2-pentanone (MIBK)	mg/l	0.141	0.148	113.	40-160	4.77	28	L534132-08	WG553651
Acetone	mg/l	0.107	0.111	85.2	25-157	4.35	26	L534132-08	WG553651
Acrolein	mg/l	0.103	0.107	82.6	0-179	3.95	39	L534132-08	WG553651
Acrylonitrile	mg/l	0.113	0.117	90.6	37-162	3.55	24	L534132-08	WG553651

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21905 64th Ave W Ste 100

Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534405

September 13, 2011

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	0.0210	0.0234	84.0	16-158	10.8	21	L534132-08	WG553651
Bromobenzene	mg/l	0.0243	0.0266	97.2	37-147	8.87	23	L534132-08	WG553651
Bromodichloromethane	mg/l	0.0253	0.0275	101.	45-147	8.04	20	L534132-08	WG553651
Bromoform	mg/l	0.0314	0.0332	125.	38-152	5.71	20	L534132-08	WG553651
Bromomethane	mg/l	0.0272	0.0289	109.	0-191	6.17	35	L534132-08	WG553651
Carbon tetrachloride	mg/l	0.0239	0.0272	95.8	22-168	12.9	24	L534132-08	WG553651
Chlorobenzene	mg/l	0.0260	0.0286	104.	33-148	9.59	22	L534132-08	WG553651
Chlorodibromomethane	mg/l	0.0305	0.0330	122.	48-151	7.73	21	L534132-08	WG553651
Chloroethane	mg/l	0.0265	0.0296	106.	4-176	10.8	27	L534132-08	WG553651
Chloroform	mg/l	0.0218	0.0243	87.2	37-147	11.0	21	L534132-08	WG553651
Chloromethane	mg/l	0.0175	0.0195	70.0	10-174	10.8	28	L534132-08	WG553651
cis-1,2-Dichloroethene	mg/l	0.0223	0.0251	89.2	29-156	12.0	22	L534132-08	WG553651
cis-1,3-Dichloropropene	mg/l	0.0228	0.0264	91.3	35-148	14.5	21	L534132-08	WG553651
Di-isopropyl ether	mg/l	0.0189	0.0203	75.6	39-160	7.09	21	L534132-08	WG553651
Dibromomethane	mg/l	0.0258	0.0281	103.	36-152	8.59	20	L534132-08	WG553651
Dichlorodifluoromethane	mg/l	0.0233	0.0274	93.2	0-200	16.1	26	L534132-08	WG553651
Ethylbenzene	mg/l	0.0259	0.0291	103.	29-150	11.7	24	L534132-08	WG553651
Hexachloro-1,3-butadiene	mg/l	0.0225	0.0262	90.0	28-144	15.0	33	L534132-08	WG553651
Isopropylbenzene	mg/l	0.0262	0.0294	105.	35-147	11.5	25	L534132-08	WG553651
Methyl tert-butyl ether	mg/l	0.0273	0.0283	98.5	24-167	3.63	22	L534132-08	WG553651
Methylene Chloride	mg/l	0.0212	0.0236	84.8	23-151	10.8	21	L534132-08	WG553651
n-Butylbenzene	mg/l	0.0210	0.0244	83.9	22-151	14.9	29	L534132-08	WG553651
n-Propylbenzene	mg/l	0.0249	0.0283	99.8	26-150	12.6	25	L534132-08	WG553651
Naphthalene	mg/l	0.0244	0.0262	97.7	24-160	6.99	37	L534132-08	WG553651
p-Isopropyltoluene	mg/l	0.0275	0.0305	110.	28-151	10.5	27	L534132-08	WG553651
sec-Butylbenzene	mg/l	0.0264	0.0295	106.	32-149	11.0	26	L534132-08	WG553651
Styrene	mg/l	0.0276	0.0305	110.	38-149	10.0	23	L534132-08	WG553651
tert-Butylbenzene	mg/l	0.0268	0.0301	107.	36-149	11.3	26	L534132-08	WG553651
Tetrachloroethene	mg/l	0.0275	0.0316	110.	13-157	13.9	24	L534132-08	WG553651
Toluene	mg/l	0.0231	0.0260	92.3	22-152	12.0	22	L534132-08	WG553651
trans-1,2-Dichloroethene	mg/l	0.0224	0.0254	89.5	11-160	12.8	23	L534132-08	WG553651
trans-1,3-Dichloropropene	mg/l	0.0283	0.0309	113.	33-153	8.88	22	L534132-08	WG553651
Trichloroethene	mg/l	0.0242	0.0276	97.0	18-163	12.8	21	L534132-08	WG553651
Trichlorofluoromethane	mg/l	0.0259	0.0299	104.	10-177	14.1	24	L534132-08	WG553651
Vinyl chloride	mg/l	0.0225	0.0245	90.0	0-179	8.64	26	L534132-08	WG553651
Xylenes, Total	mg/l	0.0790	0.0879	105.	27-151	10.7	23	L534132-08	WG553651
4-Bromofluorobenzene				107.8	75-128				WG553651
Dibromofluoromethane				95.16	79-125				WG553651
Toluene-d8				98.97	87-114				WG553651
Benzene	mg/l	0.0316	0.0324	93.9	16-158	2.47	21	L534399-11	WG553665
Ethylbenzene	mg/l	0.0323	0.0328	106.	29-150	1.51	24	L534399-11	WG553665
Toluene	mg/l	0.0249	0.0254	98.5	22-152	2.02	22	L534399-11	WG553665
Total Xylenes	mg/l	0.0810	0.0823	106.	27-151	1.60	23	L534399-11	WG553665
4-Bromofluorobenzene				101.5	75-128				WG553665
Dibromofluoromethane				99.47	79-125				WG553665
Toluene-d8				97.91	87-114				WG553665
a,a,a-Trifluorotoluene				105.0	84-114				WG553665

Batch number /Run number / Sample number cross reference

WG553659: R1843912: L534405-01 02 03 04
WG553651: R1848192: L534405-05
WG553689: R1849053: L534405-01 02 03 04
WG553665: R1849777: L534405-01 02 03 04
WG553681: R1851832: L534405-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Mountlake Terrace, WA 98043

Quality Assurance Report
Level II

L534405

September 13, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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Chain of Custody Page 1 of 1

Company Name/Address:
Terracon- Lynnwood, WA

21905 64th Ave W Ste 100
Mountlake Terrace.WA 98043

Billing Information:
Accounts Payable
21905 64th Ave W Ste 100

Mountlake Terrace,WA 98043

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Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Report to: Eric A. Dubcak
Email to: eadubcak@terracon.com
Project Description: Union 76 Mini Mart
City/State Collected: Battle Ground, WA
Phone: (425) 771-3304
FAX: (425) 771-3549
Client Project #: 81170067
ESC Key:
Collected by: (print) Eric A. Dubcak
Site/Facility ID#:
P.O.#:
Collected by (signature): EA Dub
Immediately Packed on Ice N ___ (Y)

Rush? (Lab MUST Be Notified)
___ Same Day..... 200%
___ Next Day..... 100%
___ Two Day..... 50%
___ Three Day..... 25%

Date Results Needed:
Email? __No__Yes
FAX? __No__Yes

CoCode **TERRLWA** (lab use only)
Template/Prelogin
Shipped Via:

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	40ml VOA 8260 BTEX / NWTPH GX	2oz clr. 8260 BTEX NWTPH GX	4oz Amb. NWTPH DX	2oz clr. Metals - Cd, Cr, Pb	4oz Amber PAH SIM / NWTPH DX			Remarks/Contaminant	Sample # (lab only)
B-1	G	SS	6-8	9-2-11	8:30	6	X	X	X	X	X	ED		No PAH	1534 39701
B-1			8-10		8:40	5	X	X	X						02
B-2			6-8		10:00	6	X	X	X	X					03
B-2			8-10		10:10	5	X	X	X						04
B-3			6-8		10:50	6	X	X	X	X	X				05
B-3			8-10		11:00	5	X	X	X						06
B-4			4-6		11:15	5	X	X	X						07
B-4			8-10		11:25	5	X	X	X						08

*Matrix: **SS** - Soil/Solid **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

pH _____ Temp _____

Remarks: 4875 5519 9582

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____	Condition: (lab use only)
EA Dub	9-2-11	12:05			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4	Bottles Received: 43
					CoC Seals Intact ___ Y ___ N ___ NA
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9-3-11	Time: 0910
			Stacy Weaver		pH Checked: NCF:

Terracon- Lynnwood, WA

21905 64th Ave W Ste 100
Mountlake Terrace, WA 98043

Billing information:

Accounts Payable
21905 64th Ave W Ste 100

Mountlake Terrace, WA 98043

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Chain of Custody

Page 1 of 1

ESC LABORATORIES
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Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Report to: Eric Dubcak

Email: eadubcak@terracon.com

Project Description: Union 76 Mini Mart

City/State Collected: Castle Rock, WA

Phone: (425) 771-3304
FAX: (425) 771-3549

Client Project #: 81117067

Lab Project #: TERRLWA-81117067

Collected by (print): Eric A. Dbcak

Site/Facility ID#: BATTLE GROUND, CLA

P.O.#:

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y (X)

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day.....100%
___ Two Day.....50%
___ Three Day.....25%

Date Results Needed

Email? __No X Yes
FAX? __No __Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	NWTPHDX 40mlAmb-HCl-BT	NWTPHGX 40mlAmb HCl	SVPAHSIMLVI 40mlAmb-NoPres-WT	V8260 40mlAmb-HCl	V8260- Trip Blank 40mlAmb-HCl-Blk	V8260BTEX 40mlAmb-HCl	Remarks/Contaminant	Sample # (lab only)
MW-S	G	GW	—	9-2-11	9:40	8	X	X				X		534405-01
MW-N	G	GW	—	9-2-11	11:30	11	X	X	X			X		02
MW-T	G	GW	—	9-2-11	12:30	8	X	X				X		03
B-3	G	GW	—	9-2-11	12:20	5	X	X	~~X~~	~~X~~		X		04
		GW				~~6~~			X	X				
		GW				~~8~~	~~X~~	~~X~~				~~X~~		
TRIP BLANK		GW				1					X			05

Acctnum: TERRLWA (lab use only)
Template/Prelogin: T73458/ P365670
Cooler #:
Shipped Via: FedEX Saver

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Flow _____ Other _____

Remarks:

4815 5519 9382

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
[signature]	9/2/11	12:50	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)
			Shey Newman

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 3.4 Bottles Received: 45 33

Condition: OK (lab use only)

COC Seal Intact: ___ Y ___ N ___ NA

Date: 9-3-11 Time: 09a

pH Checked: NCF:

APPENDIX D

Resumes

ERIC A. DUBCAK
SENIOR STAFF ENVIRONMENTAL SCIENTIST

PROFESSIONAL EXPERIENCE
Eric A. Dubcak is a Senior Staff Environmental Scientist conducting Phase I and Phase II work. With six and a half years of environmental experience Mr. Dubcak has performed Phase II work on over 50 LPST TCEQ project sites located throughout Texas. Sampling both groundwater and soil by TCEQ protacol standards and TRRP requirements. Mr. Dubcak has installed dual phase remediation systems from the ground up through planning and scheduling with subcontractors, city officials, internal technicains and permitting departments.

PROJECT EXPERIENCE
TCEQ LPST State Funded Program – Throughout Texas
Conducted work as an Environmental Scientist performing onsite and offsite monitor/recovery well installations, soil borings, water/soil sampling, well survey and remediation system installation/operation and maintenance throughout the state of Texas.

Environmental Investigations/Remediation for Real Estate Transactions – Multiple Locations, Texas
Responsible for investigation of soil and groundwater at sites used as or are adjacent to UST facilities, LPST facilities, light industrial facilities or heavy industrial facilities.

Environmental Site Assessments (ESAs)
Performed ESAs throughout Texas including and parts of California, Louisiana, and Washington on industrial, commercial and residential facilities. The ESAs required a strong understanding of facility operating systems, state and federal regulations, and fate and transport of chemicals through air, soil, surface water and groundwater.

Asbestos Consulting Services
Performed asbestos bulk sampling on buildings to satisfy state and federal regulations for asbestos in public buildings. Surveys performed were used to develop site-specific asbestos management plans and asbestos abatement plans and specifications. Licensed as an asbestos inspector through the Texas Department of Health, and is proficient in understanding of applicable rules and regulations.

Beall Concrete – Dallas, Texas
Performed onsite visits to verify compliance within SPCC regulations and wrote SPCC plans under the direction of a Professional Engineer.

Ryder – Throughout the United States
Worked under a Professional Engineer writing SPCC plans for various site locations throughout the United States.

Concorde Hotels – Webster, Texas
Performed onsite moisture mapping to determine the extent of water intrusion (for the purposes of future mold issues) at a local hotel under construction.

Education
Bachelor of Science, Environmental Management, 2005, University of Houston Clear Lake

Certifications
Asbestos Inspector: EPA Accreditation TDSHS # 60-2882

Mold Assessment Technician TDSHS # 28285-TX

40-Hour OSHA HAZWOPER

One Call Board of Texas Underground Facility Damage Prevention Course

Affiliations
Texas Association of Environmental Professionals (TAEP)

Work History
Terracon, Senior Staff Environmental Scientist, 2007 – Present

Meridian Alliance Group, LLC, Environmental Scientist, 2005 - 2007

Terracon

JON M. EINARSEN, LEG, LHG
SENIOR PROJECT MANAGER

PROFESSIONAL EXPERIENCE
Dr. Einarsen specializes in technical and regulatory assistance for the remediation of contaminated sites, and for the evaluation of human activities on slope stability and groundwater resources. His responsibilities include project management, engineering geology, environmental geology, and hydrogeology on projects including environmental site assessment, site characterization, and site remediation; geologic hazard assessment, groundwater and hydrogeologic investigations; and voluntary cleanup.

PROJECT EXPERIENCE
Remedial Investigation/Feasibility Study – Chlorinated Solvent Impacted Soil and Groundwater – Mill Creek, Washington
Investigations previously completed by others suggested that site soil and groundwater have been impacted by chlorinated dry cleaning solvents, particularly perchloroethylene (PCE), in concentrations that may exceed applicable cleanup levels. Terracon was retained to complete a remedial investigation/feasibility study (RI/FS) to further characterize the extent and concentration of chlorinated solvents, and to identify appropriate remedial actions. Jon Einarsen is managing this project, which is on-going as of 2011. Subsurface investigation has included direct-push soil explorations inside of the current and former dry cleaning units and within the adjacent alley in an effort to identify PCE source areas. Three groundwater monitoring wells were installed to further characterize soil conditions and to allow for the collection of high quality groundwater samples. The wells were screened at variable elevations to provide for vertical characterization of groundwater conditions. Preliminary analytical results suggest that the site may be a candidate for a “No Further Action” (NFA) determination with a restrictive covenant.

Remedial Investigation/Feasibility Study, Lithia Motors, Bellevue, Washington
Terracon has been retained by Lithia Motors to complete a RI/FS at this facility in Bellevue, Washington. The site has been listed on Washington State’s Leaking Underground Storage Tank (LUST) database since 1995 as a result of impacts to soil and groundwater with gasoline-range petroleum hydrocarbons, benzene, toluene, ethylbenzene, and total xylenes above applicable cleanup levels define in MTCA. Terracon’s RI included the installation of 11 groundwater monitoring wells located within the operational automotive service area and in exterior portions of the site. The locations of groundwater monitoring wells were selected in an effort to further characterize the vertical and horizontal extent of the plume. Terracon also assisted the client with re-entry into the Washington State Voluntary Cleanup Program. Initial groundwater monitoring activities indicated the presence of Light Non-Aqueous Phase Liquid (LNPL) in various monitoring wells. In an effort to reduce LNPL levels on-site, Terracon performed an interim remedial action using a vacuum truck to extract impacted groundwater. LNPL levels were successfully reduced in site monitoring wells. The results of an annual groundwater monitoring program, interim remedial action, and soil and groundwater data collected during the investigation were provided to the Washington State

Education
Ph.D, Structural Geology, University of Calgary, 1995

M.S., Geology, Western Washington University, 1987

B.S., Geology, University of Washington, 1983

Registrations
Professional Geologist, Washington (2001)

Professional Engineering Geologist, Washington (2001)

Professional Hydrogeologist, Washington (2001)

Washington State Department of Ecology Registered Site Assessor (2/95)

Certifications
40-Hour HAZWOPER

Work History
Terracon, Senior Project Manager, 2006-present

Zipper Zeman Associates, Inc., Senior Project Manager, 2004-2006

Adept GeoScience, Principal, 2001-2004

BEK Engineering, Principal, 1997-2001

W.D. Purnell & Associates, Geologist, 1992-1997

Department of Ecology for review under the VCP program in 2010. Based on the findings of the RI and site subsurface conditions, Terracon proposed the use of an innovative remedial technology, BOS 200®, a blend of activated carbon and a proprietary mixture of naturally occurring microbes as the selected remedial technology, for the in-situ treatment of petroleum hydrocarbons. Terracon is currently preparing for a pilot-scale test of BOS 200 on-site, and will submit the findings of the test to Ecology in a Feasibility Study for their approval. Terracon is currently conducting a semi-annual groundwater monitoring program until the full-scale implementation of remediation activities.

Feasibility Study, Chlorinated Solvent Impacted Groundwater – Portland, Oregon

The objectives of this Feasibility Study (FS) were to identify a range of remedial action alternatives for a proposed retail site with chlorinated solvent impacted groundwater, and to document and develop the information necessary to implement appropriate remedial action consistent with Oregon State regulations. Our scope of services for this FS included: completion of a human health risk assessment; development of remedial action objectives; development and screening of remedial action alternatives; evaluation of potentially protective and implementable alternatives; and recommendation of a preferred remedial action alternative. ZZA-Terracon successfully demonstrated that natural attenuation of chlorinated solvents, in part due to reductive dechlorination of parent compounds and oxidation of daughter products, was sufficiently protective of human health and the environment. The Oregon Department of Environmental Quality issued a Record of Decesion for the site in 2006, approving our proposed remedial action alternative, consisting of Monitored Natural Attenuation (MNA). MNA has provided an enormous cost savings to our client relative to more aggressive remedial action alternatives. A “No Further Action” determination for the site is anticipated to be issued in 2011.

Hazardous Materials Discipline Report, Residual Pesticides – Naches, Washington

Jon managed this investigation under our on-call agreement with Yakima County in 2010 as part of the due diligence required for land acquisition of 19 separate rights-of-way for the road-widening project. Terracon performed a review of historical records and regulatory files and completed a visual site reconnaissance to formulate a site-specific summary of sites of concern in the study area. Most of the land to be acquired is currently or has historically been developed with orchards extending back to at least the late 1930’s. The primary risk associated with the proposed project is encountering residual chlorinated pesticides and lead arsenate pesticides in shallow soils that must be removed to prepare the road subgrade. Terracon recommended a subsurface investigation to confirm that residual pesticides exist in the shallow subsurface in concentrations above applicable action levels. We anticipate that the residual pesticide impacted soil can be encapsulated in very large fill soil wedges that are part of the proposed road construction. Additional work regarding residual pesticides, including interaction and coordination with the Washington State Department of Ecology, is scheduled for 2011.

Site Characterization, Residual Pesticides – Auburn, Washington

Jon Einarsen managed a Phase I Environmental Site Assessment at this site in 2006. Based on past use the site for agricultural purposes, and in accordance with our client’s environmental criteria, he also designed and implemented a Limited Phase II ESA to evaluate the presence or absence of residual chlorinated pesticides, organophosphorous pesticides, and chlorinated herbicides in native soil (located under approximately 10 feet of imported soils) and groundwater on the 12 acre site. Due to an imminent real estate closing, the project had to be completed in less than five days. Using two Geoprobes, we completed 20 subsurface explorations and installed five dedicated groundwater monitoring wells. The subsurface investigation was completed 28 hours after our notification to proceed. Soil and groundwater samples were analyzed using 24-hour turnaround times. Interpretation of analytical results revealed that certain pesticides were present in detectable concentrations in both soil and groundwater, but in concentrations below applicable cleanup levels. We successfully transmitted a report to our client within the five days allotted for the project, and the real estate transaction closed on schedule.

Site Characterization, Residual Pesticides – Selah, Washington

Dr. Einarsen managed this project in 2008. Based on past use as a hops farm, Terracon completed a subsurface investigation to determine if the site was impacted by residual pesticides. Chlordane, DDE, heptachlor epoxide, and dieldrin were identified in shallow soils in concentrations exceeding MTCA cleanup levels. Approximately 600 tons of soil needed to be removed (stripped) from the site because the soils were not suitable for construction from a geotechnical standpoint. Terracon provided alternative measures in regard to how the stripped soils could be managed at the time of construction, including landfill disposal, cement-modification, mixing the impacted soil with clean imported structural fill, and deep-tilling the soil such that it is mixed with clean in-situ soil.

Site Characterization, Residual Pesticides - Cottage Grove, Oregon

Terracon conducted an assessment to evaluate if the site had been impacted by residual pesticides. The scope of work included the collection of groundwater from five groundwater monitoring wells and the collection of soil samples from 11 locations on the site. Soil samples were collected from depths of approximately 0.25 feet and 1.5 feet. The shallow soil samples were analyzed for organochlorine and organophosphate pesticides, chlorinated herbicides, and metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, antimony, beryllium, cobalt, copper, nickel, molybdenum, thallium, vanadium, and zinc). Analytical results reported by the laboratory indicated that pesticides and herbicides were not detected at concentrations above the method reporting limits. Metals were not detected, or were detected in concentrations below the EPA Region IV Preliminary Remediation Goals or below commonly accepted background levels. Based on these results, the deeper soil samples and groundwater samples were not analyzed, and it was Terracon's opinion that further investigation related to residual pesticides on the site was not warranted.

Site Characterization, Residual Pesticides – Hood River, Oregon

Terracon provided environmental services to prepare a Phase I Environmental Site Assessment for a proposed retail development in Hood River, Oregon. Our site investigation concluded that the southwest part and west-central part of the subject site had previously been used as an orchard and for row crops, respectively. These past uses of the subject site suggested that relict pesticides or herbicides might be present in soil in those areas. Terracon subsequently completed limited soil sampling and analytical laboratory analyses and prepared a Phase II Environmental Site Assessment. Analytical results revealed that relic pesticides were present in near surface soils on site in concentrations below Oregon Department of Environmental Quality (ODEQ) human health cleanup levels, but above cleanup levels for ecological receptors. Concerns arose regarding inherent liabilities associated with soil strippings containing relic pesticides, even in concentrations below ODEQ cleanup levels. Following consultation with ODEQ, Terracon provided several alternative methods whereby relic pesticide near-surface could be managed, including disposal as non-designated solid waste, landfill daily cover, or deep fill capped with clean soils.

UST Site Assessment, City Right-of-Way – Everett, Washington

Two underground storage tanks (USTs) were discovered in the City of Everett right-of-way adjacent to Colby Avenue in October 2001 during the course of a sidewalk improvement project. The USTs presented a serious problem to the contractor due to time constraints on the project, and because the UST excavation partially blocked access to several businesses. We responded to the project site on the same day the tanks were discovered. We discussed the potential environmental liabilities with the contractor and City representatives, and the City elected to remove the tanks and complete a Site Assessment prior to restoring the sidewalk. The USTs were removed four days after discovery. Subsequent soil samples collected from the floor and sidewalls of the excavation did not contain detectable concentrations of contaminants. The excavation was backfilled and the project was allowed to proceed in a timely manner.

Remedial Investigation and Regulatory Negotiations – The Dalles, Oregon

Terracon is currently providing environmental consulting services for a proposed eighteen acre retail development in The Dalles, Oregon. Jon Einarsen is managing this project, which is on-going as of May, 2009. The project site is located within the boundaries of a former Superfund site that remains listed on

multiple Oregon State and Federal contaminated sites lists. We completed an extensive review of dozens of technical, regulatory, and legal documents associated with the characterization and cleanup of the industrial site. We concluded that that shallow soils and surface water on the subject site may have been impacted by particulate fall-out from the former industrial facility, and that shallow perched groundwater may have been impacted by a landfill associated with the former industrial facility. Soil, groundwater, and surface water samples were subsequently collected and analyzed for a wide variety of potential contaminants. In general, contaminants of concern were not identified on the site, except that polycyclic aromatic hydrocarbons (PAH) were detected in shallow soil and surface water. Terracon developed a conceptual site model and risk-based cleanup levels (RBCs) were calculated for PAH at the site. RBCs were not exceeded for commercial and construction workers. However, residential RBCs were exceeded for certain PAH in shallow soil, and excavation worker RBCs were exceeded for certain PAH in surface water. Shallow soils impacted with PAH above residential RBCs are not geotechnically suitable for construction, and will need to stripped and removed from the site. Surface water impacted with PAH may need to be pumped and disposed off-site, if construction is completed during the wet season. Terracon is currently preparing a Prospective Purchaser Agreement to be reviewed and approved by the project civil engineer, owner's legal counsel, and the Oregon Department of Environmental Quality (DEQ), and is working closely with the project team to identify remedial alternatives that could be implemented at the time of construction. We anticipate that the site will be enrolled in the DEQ's Voluntary Cleanup Program and that we will be on-site at the time of construction to implement an environmental contingency plan, liaison with the general contractor, and acquire cleanup documentation for submittal to the client and the DEQ upon completion of the work and in support of a request for No Further Action status for the site.

Site Characterization & Cleanup, City Right-Of-Way– Everett, Washington

A cast iron foundry located adjacent to the City of Everett right-of-way (ROW) was operated continuously from 1923 until the spring of 2002. The adjacent ROW was used more or less continuously to store finished cast iron products since 1946. Although the cast iron foundry processes are relatively non-polluting, the specifications for finished products generally required that the products be coated with an asphaltic compound to provide a measure of weather resistance. This compound generally consists of asphalt thinned with mineral spirits. Based on past use of the adjacent property as a cast iron foundry and the specific methods utilized at the foundry, and further based on a site characterization completed in 2002, potential contaminants of concern (PCOC) within the ROW consisted of volatile and semi-volatile total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), and metals. Soil excavation and disposal was completed in 2002. A total of 966.45 tons of soil were removed and disposed at a licensed landfill during this project. The concentration of PCOC within residual soil in the ROW following the completion of the excavations were all below Method A cleanup levels. A "No Further Action" letter was granted by the Washington State Department of Ecology in March 2003.

Preliminary Cleanup and Remedial Investigation/Feasibility Study (RI/FS) – Whatcom County, Washington

Supervised the excavation of contaminated soil and designed and supervised the implementation of a subsurface hydrogeologic investigation to document impacts to ground water due to the release of gasoline from a leaking underground storage tank at the Whatcom County Annex for the Whatcom County Facilities Management Office. The project included sampling soil and ground water from over twenty sampling locations and the installation of eight ground water monitoring wells. These data were used to delineate the extent of the contaminated ground water plume, and to evaluate the environmental risk and to designate an appropriate remedial response.

RI/FS and Voluntary Site Cleanup, Lake Samish – Whatcom County, Washington

Supervised the implementation of a subsurface investigation to evaluate the impacts due to the release of heating oil from an above ground storage tank at a private residence located adjacent to Lake Samish. The fuel had migrated through the site soils into the lake, which is a local source of drinking water. This high profile project required a quick response under intense public scrutiny. Following emergency response to mitigate the further spread of fuel into the lake, supervised the excavation of contaminated soil. Implemented Ecology's Interim TPH Policy and negotiated MTCA site cleanup levels with Ecology. This project was

completed under the Voluntary Cleanup Program and achieved "No Further Action" status from the Department of Ecology.

Site Characterization & Cleanup, Former Gas Station – Okanogan County, Washington

Completed a Phase I Environmental Site Assessment and site characterization at this former gas station in the Spring of 2002. Our investigations revealed that the underground storage tanks and associated distribution piping had not leaked. However, a small area of the property had been used as dump site during the 1950's and 1960's, which resulted in significant soil contamination. The contamination was of particular concern to regulatory agencies because the property was located immediately adjacent to the Twisp River, a highly sensitive water body that contains endangered fish species. This project was also unusual in that we were retained jointly by the owner and prospective buyer. The cleanup was completed in June 2002. Following review of our report, Ecology granted a "No Further Action" letter in October 2002. The property has been re-development as a brew pub by the new owner.

Site Characterization & Cleanup, Former Gas Stations – Everett, Washington

Jon Einarsen completed an environmental site assessment for three contiguous parcels located on Evergreen Way in Everett in September 2001. The purpose of the project was to facilitate a property transfer. Preliminary investigations indicated a high probability that previously unreported underground storage tanks (USTs) were located on two of the properties, based on past use of the properties as gas stations. The services of a geophysics contractor were retained, and three USTs were located using a magnetometer and ground penetrating radar. The USTs were removed in October, 2001. Minor soil contamination was discovered near one of the tanks, and was suspected to be present near the former location of a fuel pump island. In order to minimize the potential future liability of our client, we retained the services of a geoprobe contractor and conducted a focused site characterization in November 2001. Contaminated soil was indeed discovered near the former pump island and one of the tanks. The results of the site characterization were used to develop an appropriate plan of action to clean up the site. Cleanup was completed in November 2001 and a cleanup report was submitted to the Washington State Department of Ecology's Voluntary Cleanup Program in December 2001. Following review of our report, Ecology granted a "No Further Action" letter in March of 2002. The property transfer subsequently proceeded smoothly, and the subject property has been re-developed by the new owner.

On-Site Environmental Site Assessment, Everett Multi-Modal Transportation Station – Everett, Washington

Jon Einarsen designed the protocol and supervised daily on-site environmental site assessment in support of site development activities completed by Wilder Construction Company for the 33 million dollar Everett Station. Prepared the Remedial Action Management Plan, which was the primary document utilized by on-site personnel to manage and control contaminated soil. Identified hydrocarbon contaminated soil using field techniques, supervised the excavation of contaminated soil and construction of temporary storage facilities to contain the contaminated soil. Developed a system to track the soil from point of excavation to point of final disposition. Acted as liaison between Wilder Construction Company and analytical laboratories. Provided other technical and regulatory assistance on an as-needed basis, including interpretation of the Model Toxics Control Act and the Interim TPH Policy as specifically applied to the project site.

Solid Waste Handling Permit Application and Plan of Operation, Regional Soil Bioremediation Facility – Whatcom County, Washington

Completed a SEPA checklist and Conditional Use Permit Application to treat 4,000 cubic yards of hydrocarbon contaminated soil. We proposed to treat the soil using imported bacteria and by augmenting the nutrients within the soil. The Conditional Use Permit was approved, and the soil was successfully treated at a significant savings to the liable party. Following treatment of the soil, provided technical and regulatory assistance to our client in support of full-time operation of the bioremediation facility. Prepared the Whatcom County Solid Waste Handling Permit application, provided technical representation for our client in public hearings, and completed a detailed Plan of Operation for the facility. Designed and supervised the installation of a ground water monitoring well network, and completed extensive ground water sampling and analysis to document background ground water quality conditions prior to start-up of the facility. The regional soil bioremediation received final operating permits in December of 1999.

LANDFILLS

Hydrogeologic And Waste Characterization Investigation, Hilltop Wood Waste Landfill – Whatcom County, Washington

Primary responsibilities for this project consisted of investigation design, project management, supervision of field personnel, and report preparation. The purpose of the project was to evaluate the characteristics of the waste material and the performance of the landfill soil cover, in support of landfill closure activities. Negotiated the location of exploratory boreholes, ground water monitoring wells, landfill gas probes, and a Waste Sampling And Analysis Plan with client, the Whatcom County Health Department, and the Washington State Department of Ecology. Arranged for and documented the results of a seismic refraction investigation to map the top of the bedrock surface underlying parts of the landfill. Logged the subsurface geologic and hydrologic conditions encountered during drilling in nineteen boreholes. Selected soil, waste, leachate, and ground water samples were analyzed for metals, volatile and semi-volatile organic compounds, polycyclic aromatic hydrocarbons, sulfate, nitrate, nitrite, nitrogen, conductivity, and pH. Additional relevant investigation for this project included evaluation of regional and local ground water recharge and discharge areas for the shallow and deep aquifers underlying the site; leachate, groundwater, surface water, and landfill gas sampling, analysis, and interpretation, and preparation of hydrogeolgic geologic cross-sections. Worked closely with the project civil engineer with regard to landfill drainage issues and cover improvements, and with regard to the design, location, and installation of a leachate collection system.

Ground Water Modeling, Hilltop Wood Waste Landfill – Whatcom County, Washington

Co-developed the preparation of a computerized ground water flow model (ModFlow) in support of proposed engineered improvements at this wood waste landfill. Project tasks included the collection and analysis of aquifer data collected from slug and pumping tests on existing monitoring wells installed within a shallow, perched aquifer at the project site, and development of input parameters for the computer model. Working closely with the project civil engineer, the impact to ground water flow due to several alternative leachate control systems was evaluated, and a preferred leachate control alternative was recommended and subsequently implemented.

Hydrogeologic Investigation & Risk Assessment, Y-Road Landfills – Whatcom County, Washington

Dr. Einarsen provided design and implementation of a hydrogeologic investigation for Whatcom County Public Works. The purpose of the project was to assess regional and local hydrogeologic conditions and evaluate the environmental risk presented to surface water and ground water by two abandoned municipal solid waste landfills. The scope of services included a review of existing information regarding hydrogeologic conditions and sampling of adjacent surface water and nearby domestic water supply wells. These data were used to prepare conceptual hydrogeologic models for confined and perched aquifers in the vicinity of the landfills. The models were subsequently evaluated to determine to the risk presented to groundwater and surface water by the landfills. Based on the results of the hydrogeologic modeling, subsurface investigations using direct-push technology and temporary piezometers were completed at both landfills to further quantify groundwater quality.

RI/FS, Holly Street Landfill Re-Development Project – Bellingham, Washington

Part of a multi-firm consultant team chosen by the City of Bellingham to investigate environmental conditions and delineate redevelopment scenarios for this abandoned municipal solid waste landfill on the Bellingham Bay waterfront. Primary responsibilities included implementation of the project sampling and analysis plan for on-site soil and ground water, and for adjacent sediments in Whatcom Creek and Bellingham Bay. Directed the installation of three ground water monitoring wells, and completed low-flow ground water sampling and analysis for a wide variety of potential contaminants.

Landfill Monitoring – Whatcom County, Washington

Provided project management for landfill monitoring services at the Cedarville Landfill for Whatcom County Public Works from 1995 to 1997 and from 1999 to 2001, and at the Hilltop and Airport Wood Waste Landfills for Georgia-Pacific West Corporation from 1992 to 2001. Services were conducted in general accordance

with the "Minimum Functional Standards for Solid Waste Handling" (WAC 173-304). Services included sampling and field monitoring of ground water, surface water, and landfill gas. Analytical parameters included volatile organic compounds, metals (iron, manganese, zinc, arsenic, barium, chromium, lead, mercury, copper, and nickel), chloride, nitrate, nitrite, ammonia, sulfate, total organic carbon, chemical oxygen demand, biological oxygen demand, fecal coliform, turbidity, total suspended solids, total dissolved solids, pH, conductivity, temperature and the landfill gases methane and hydrogen sulfide. The results of laboratory analyses were described in quarterly reports, and a statistical summary of changes in parameter concentrations was prepared each year.

Hydrogeologic Investigation & Risk Assessment, Bassett Road Landfill – Sedro Woolley

The purpose of this investigation was to complete a subsurface evaluation of geologic and hydrogeologic conditions within and immediately adjacent to the landfill area, and to develop a hydrogeologic model for the immediate vicinity of the landfill. In particular, the project focused on identifying the location of saturated zones that could potentially interact with the waste material, an evaluation of the nature of intermediate soil covers within the waste material upon which ground water may be perched, and a subsequent evaluation of the causes of leachate breakouts that had been observed on the landfill. It was concluded that leachate breakouts at the surface of the landfill were primarily the result of infiltration through the landfill cover.

HYDROGEOLOGY

Hydrogeologic Investigation & Site Specific Dewatering Plan – Tulalip Casino, Washington

Completed hydrogeologic investigations in support of several thousand feet of utility installations for the new Tulalip Casino. This project was exceptionally challenging due to the shallow water table (less than 4 feet below grade in areas) and deep dewatering requirements (up to 18 feet below grade). Additionally, the project was not allowed to discharge water to nearby surface drainage features, and all water had to be infiltrated back to the water table within the confines of the subject property. Dr. Einarsen designed and completed pumping tests in February and March 2002. Individual tests lasted up to three days and included the use of multiple pumping wells, data loggers, and pressure transducers. Following the completion of the pumping tests and analysis of the resultant data, provided pumping well and discharge point spacing recommendations to the engineering team and worked closely with their engineers to develop a detailed dewatering plan. Dewatering activities commenced in April, 2002 and proceeded smoothly to completion in October, 2002.

Hydrogeologic Investigation, Proposed Gravel Pit – Oak Harbor, Washington

Completed a hydrogeologic investigation at the site of a proposed gravel pit in Island County to confirm that the floor elevation of the pit was within regulatory limits regarding separation from the underlying upper-most aquifer. Local hydrogeologic conditions were evaluated by review of existing well logs for the subject property and nearby properties, and by boring four exploratory wells on the subject property. Our investigation revealed that appropriate separation from the underlying aquifer could be achieved with minor modifications to our client's proposed grading plan. Following review of our report by the Island County Health Department, our client was granted a mining permit.

Hydrogeologic Investigation & Risk Assessment, Y-Road Landfills – Whatcom County, Washington

Dr. Einarsen provided design and implementation of a hydrogeologic investigation for Whatcom County Public Works. The purpose of the project was to evaluate regional and local hydrogeologic conditions and evaluate the environmental risk presented to surface water and ground water by two abandoned municipal solid waste landfills. Scope of services included a review of existing information regarding hydrogeologic conditions and sampling of adjacent surface water and nearby domestic water supply wells. These data were used to prepare conceptual hydrogeologic models for confined and perched aquifers in the vicinity of the landfills. These models were subsequently evaluated to determine to the risk presented to surface water by the landfills.

Ground Water Modeling, Hilltop Wood Waste Landfill – Whatcom County, Washington

Supervised the preparation of a computerized ground water flow model in support of proposed engineered improvements at this wood waste landfill. Project included the collection and analysis of aquifer data collected from slug and pumping tests on existing monitoring wells installed within a shallow, perched aquifer at the

project site, and development of a computer model. The impact to ground water flow due to several alternative leachate control systems was evaluated, and a preferred leachate control alternative was recommended.

Hydrogeologic And Waste Characterization Investigation, Hilltop Wood Waste Landfill – Whatcom County, Washington

Primary responsibilities for this project consisted of investigation design, project management, and supervision of field personnel. Negotiated location of exploratory boreholes and ground water monitoring wells and a Waste Sampling And Analysis Plan with client, the Whatcom County Health Department, and the Washington State Department of Ecology. Arranged for the services of laboratory and drilling contractors. Logged the subsurface geologic and hydrologic conditions encountered during drilling in nineteen boreholes. Ground water monitoring wells were installed in accordance with Minimum Standards For Construction and Maintenance of Wells (WAC 173-160) in two the boreholes. Soil samples collected were classified in accordance with ASTM D 2487-92 (Classification of Soils for Engineering Purposes), including use of the ASTM standards D 4221-90 (Standard Test Method for Dispersive Characteristics of Clay Soil by Double Hydrometer), D 2216 (Method for Laboratory Determination of Water Content of Soil, Rock, and Soil-Aggregate Mixtures), D 422-63 (Standard Test Method for Particle-Size Analysis of Soils), and D 4318 (Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils). Constant head permeability for selected soil samples was determined in our laboratory using the ASTM D 2434. (Standard Test for Constant Head Permeability) Selected soil, waste, leachate, and ground water samples were analyzed for metals, BTEX (benzene, ethyl benzene, toluene, and xylenes), volatile and semi-volatile organic compounds, PAH (ploy-aromatic hydrocarbons), sulfate, nitrate, nitrite, nitrogen, conductivity, and pH. Additional relevant investigation for this project evaluation of regional and local ground water recharge and discharge areas for the shallow and deep aquifers underlying the site, and preparation of hydrogeologic cross-sections.

ENGINEERING GEOLOGY

Solid Waste Handling Permit Application and Plan of Operation, Regional Soil Bioremediation Facility – Whatcom County, Washington

Completed a SEPA checklist and Conditional Use Permit Application to treat 4,000 cubic yards of hydrocarbon contaminated soil. We proposed to treat the soil using imported bacteria and by augmenting the nutrients within the soil. The Conditional Use Permit was approved, and the soil was successfully treated at a significant savings to the liable party. Following treatment of the soil, provided technical and regulatory assistance to our client in support of full-time operation of the bioremediation facility. Prepared the Whatcom County Solid Waste Handling Permit application, provided technical representation for our client in public hearings, and completed a detailed Plan of Operation for the facility. Designed and supervised the installation of a ground water monitoring well network, and completed extensive ground water sampling and analysis to document background ground water quality conditions prior to start-up of the facility. The regional soil bioremediation received final operating permits following the completion of our work.

Engineering Geology Investigation, Abandoned Coal Mine Hazard Assessment - Bellingham, Washington

Dr. Einarsen designed, supervised, and interpreted the results of a combined unconsolidated soil and bedrock boring investigation in downtown Bellingham for the City of Bellingham. The purpose of the project was to evaluate the potential hazards associated with abandoned coal mine workings thought to be present beneath the project site. The first phase of the investigation was designed to be a low cost method of investigating the subsurface soil and ground water conditions, depth to bedrock, existence of and depth to abandoned coal mines beneath the property, and thickness of the working stratum within the mine. The boring investigation indicated the existence of historic mining operations between 77 and 110 feet below the ground surface. Historical information was subsequently collected regarding the extent of mining operations in the vicinity of the subject property. Dr. Einarsen supervised the advancement of additional borings on an adjoining property to further identify potential mine workings. Bedrock was cored to depths of 125 and 165 feet. A third boring was advanced adjacent to one of the earlier borings to confirm the presence of a void (assumed to be coal mine workings) within the coal seam. Dr. Einarsen worked closely with the project geotechnical engineer who prepared alternative foundation designs to span the mine workings.

Reconnaissance Observations for Channel Migration Zones– Goldbar, Washington
Jon Einarsen was retained to determine if a proposed timber harvest unit was located within historic channel migration zones of the Skykomish River. He was retained only one day prior to an on-site meeting with regulatory agencies, and the project therefore required an immediate response and hydrogeologic analysis. The proposed harvest area comprised approximately 200 acres, and was located on the south side of the Skykomish River near Goldbar. Dr. Einarsen completed several traverses of the proposed harvest area. Intermittent, broad, curvilinear, un-scoured depressions were observed within the proposed harvest area, but was concluded that the channels were above bankfull elevation and do not constitute evidence for channel migration zones. Instead, the channels appeared to be utilized as overflow channels during intermittent flooding. Our client successfully received a harvest permit.

Engineering Geology Investigation & Deep-Seated Landslide Analysis – Pierce County, Washington
Completed an investigation within a proposed timber harvest unit where several small, deep-seated landslides were thought to exist. The area was particularly sensitive, because there was a high probability that any slope failures would deliver sediment directly into the Nisqually River, and thereby damage fragile salmon spawning habitat. Several field reconnaissance visits confirmed that small, deep-seated landslides were present. Dr. Einarsen completed extensive review of current and historic aerial photographs, and determined that the small failures were actually super-imposed on a much larger deep-seated landslide. Although it is generally assumed that logging may theoretically result in accelerated movement or re-activation of deep-seated landslides, primarily due to potential effects on the water table, actual processes whereby this may occur are poorly understood. An extensive review of the academic and professional literature failed to reveal significant quantitative information regarding the impacts of clear cut harvesting on deep-seated landslides. Dr. Einarsen designed a timber harvest program for the unit that allowed for selective harvest of parts of the area over time, while at the same time mitigating the effects of harvest on the deep-seated landslides. A timber harvest permit was issued following review of our report by the Washington State Department of Natural Resources.

Engineering Geology Reconnaissance, Forest Hydrogeology – Kitsap Peninsula, Washington
Completed an engineering geology reconnaissance for a proposed harvest unit on the Kitsap Peninsula in February 2002. The investigation included analysis and discussion of hydrogeologic and slope stability conditions, erosion potential and storm water runoff potential from the areas to be logged, and conclusions and recommendations concerning mass wasting and erosion potential, logging and root strength retention issues within inner gorges, and storm water drainage. Several unstable areas were identified in the field and were excluded from the proposed harvest area, but most of the parcel was suitable for the harvest. Following review of our report a harvest permit for the parcel was granted by the Washington State Department of Natural Resources.

Hydrogeologic Investigation & Site Specific Dewatering Plan – Tulalip Casino, Washington
Completed hydrogeologic investigations in support of several thousand feet of utility installations for the new Tulalip Casino. This project was exceptionally challenging due to the shallow water table (less than 4 feet below grade in areas) and deep dewatering requirements (up to 18 feet below grade). Additionally, the project was not allowed to discharge water to nearby surface drainage features, and all water had to be infiltrated back to the water table within the confines of the subject property. Dr. Einarsen designed and completed pumping tests in February and March 2002. Individual tests lasted up to three days and included the use of multiple pumping wells, data loggers, and pressure transducers. Following the completion of the pumping tests and analysis of the resultant data, provided pumping well and discharge point spacing recommendations to the engineering team and worked closely with their engineers to develop a detailed dewatering plan. Dewatering activities commenced in April, 2002 and proceeded smoothly to completion in October, 2002.

Engineering Geology Investigation & Slope Stability Modeling – Kitsap County, Washington
Completed a hydrogeologic investigation in support of a timber harvest application in Kitsap County. Our field reconnaissance revealed that part of the subject property was underlain by deep-seated landslides. Further field investigation and aerial photo review suggested that the landslides were inactive, but that there was a

potential the failures could be re-activated under clear cut conditions. We measured several topographic profiles and constructed a conceptual hydrogeologic and slope stability computer model using estimated soil physical characteristics. The model was designed to evaluate the factor of safety for a theoretical failure surface. Our analysis revealed that there was a negligible potential for re-activation of the deep-seated landslides. Following review of our report and several on-site meetings, a harvest permit for the parcel was granted by the Washington State Department of Natural Resources.

Hydrogeologic Investigation, Proposed Gravel Pit – Oak Harbor, Washington
Completed a hydrogeologic investigation at the site of a proposed gravel pit in Island County to confirm that the floor elevation of the pit was within regulatory limits regarding separation from the underlying upper-most aquifer. Local hydrogeologic conditions were evaluated by review of existing well logs for the subject property and nearby properties, and by boring four exploratory wells on the subject property. Our investigation revealed that appropriate separation from the underlying aquifer could be achieved with minor modifications to our client's proposed grading plan. Following review of our report by the Island County Health Department, our client was granted a mining permit.