

SECOR INTERNATIONAL INCORPORATED www.secor.com 12034 134th Court Northeast Suite 102 Redmond, WA 98052 425 372 1600 ft. 425 372 1650 Ftx

January 17, 2005

Mr. Kipp Eckert ConocoPhillips Company 1144 Eastlake Avenue East, Suite 201 Seattle, Washington 98109

RE:

Subsurface Investigation

247 "D" Street, Blaine, Washington, 98230

ConocoPhillips Site No. 255028

Department of Ecology Identifier: 84364874

Dear Mr. Eckert:

The following presents the results of a subsurface investigation performed by SECOR International, Inc. (SECOR) on November 1, 2004, at 247 D Street, Blaine, Washington (site). The purpose of the investigation was to further assess subsurface conditions near the former diesel underground storage tank (UST). This work was completed under work order No. 1344SEC006. The results of the investigation are presented below.

#### Site Description

The site is located at the southeast corner of the intersection of D Street and the Interstate 5 off-ramp in Blaine, Washington (Figure 1). The site is located in Whatcom County in the southeast quarter of Section 36; Township 41 North; and Range 1 West.

The site is currently undeveloped and mostly unpaved. Prior to site decommissioning in 2002, improvements consisted of a station building with hydraulic hoists and a sump, two gasoline dispenser islands, two 12,000-gallon USTs containing gasoline, and associated piping. In 1990, a 550-gallon heating oil UST and 550-gallon used oil UST were decommissioned by removal. A site plan showing the approximate location of these features is presented on Figure 2.

The site is bound by an Interstate 5 off-ramp to the west; D Street, a restaurant, and an abandoned gas station to the north; and active retail gasoline stations to the south and east. The nearest surface water body is an unnamed creek, located approximately 1,200 feet southwest of the site. The site is located at an elevation of approximately 50 feet above mean sea level.

#### Background

The following briefly describes environmental services performed at the site based on SECOR's review of files available from ConocoPhillips' prior consultant and from ConocoPhillips' WEBxtender internet site.

The station was reportedly constructed in 1950 and operated until approximately 1997.

A 1986 investigation was performed in response to a reported discharge to the Blaine sewer system. Six wells (MW-1 through MW-6) were installed to depths of 13.5 feet below ground surface (bgs). The report for this work was not available for review. This description is based on the site history from other assessment reports. Petroleum hydrocarbons were reportedly not detected in soil samples collected from the borings. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were reportedly detected in groundwater samples collected from wells located near the gasoline USTs and dispenser islands (MW-1 through MW-4). Benzene was detected at concentrations between 3,900 µg/L to 9,900 µg/L in these wells. As a result of the investigation, two steel gasoline USTs were decommissioned and replaced with two 12,000-gallon fiberglass USTs. Approximately 2,000 gallons of groundwater was removed from the UST excavation. No soil samples were obtained from the UST excavation. Wells MW-1, MW-2, and MW-4 were removed during the decommissioning activities. Wells MW-3 and MW-5 were observed to be compromised and decommissioned in 1993.

A 550-gallon diesel UST and 550-gallon used oil UST were decommissioned by removal in June 1990. The USTs were located south of the station building. Concentrations above Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels were detected in soil samples collected from the north and west sidewalls of the UST excavation. No additional soil was excavated at that time due to the close proximity to the station building. No halogenated volatiles, polychlorinated biphenyls, or metals were detected in soil samples submitted for these analyses. Water was observed in the excavation and determined by the consultant not to be representative of groundwater.

During dispenser island upgrades in January 1991, approximately 100 cubic yards of impacted soil was over-excavated. Soil samples were collected from the base and sidewalls of the final excavation. Benzene was detected above MTCA Method A cleanup levels in 7 of 9 soil samples. In anticipation of future remedial action, two 4-inch diameter slotted PVC pipes were installed parallel to the dispenser islands.

In June 1993, monitoring wells MW-1 through MW-4 were installed as part of a phase II assessment. Soils encountered consisted of fine sandy silt underlain by clayey silt to total depth explored of 14 feet bgs. The location of the wells is shown on Figure 2. Soil samples collected from the boring advanced to construct well MW-2 contained petroleum hydrocarbons and hydrocarbon constituents greater than MTCA Level A cleanup levels. Groundwater samples collected from wells MW-2 and MW-3 contained concentrations of gasoline range hydrocarbons and hydrocarbon constituents above MTCA Level A cleanup levels. Concentrations of vinyl chloride above cleanup levels were also detected in groundwater samples collected from well MW-3. Depth to water was measured between 3.52 and 4.48 feet below top of well casing (TOC). The groundwater gradient was determined to flow toward the west-southwest.

Two monitoring wells (MW-5 and MW-6) were installed west of the site boundaries in October 1994. Petroleum hydrocarbons and hydrocarbon constituents were not detected above MTCA Method A cleanup levels in soil or groundwater samples collected during the advancement and following construction of wells MW-5 and MW-6.

Treatment wells TW-1 through TW-5 were installed in July 1996 and treatment began using Regenesis oxygen releasing compound (ORC). All of the treatment wells were located on the west side of the dispenser islands. Gasoline range hydrocarbons and benzene were detected above MTCA Method A cleanup levels in all of the soil samples collected during the advancement of the treatment wells. The ORC socks were not replaced due to a lack of effectiveness as measured by dissolved oxygen concentrations.

Treatment using an iSOC remediation system was performed in wells TW-1 and TW-3 between March 2000 and February 2001 to determine if this was a feasible method of remediation. Based on dissolved oxygen concentrations and groundwater concentrations, it was determined that this method of treatment was ineffective.

In March 2002, the USTs, hoists, sump, dispenser islands, and associated piping were decommissioned by removal. Remedial excavation was performed in the UST excavation, the hoist excavations, and beneath the dispenser islands. The limits of this excavation are illustrated on Figure 2. Monitoring wells MW-2, treatment wells TW-1 through TW-5, and soil venting piping were removed during these activities. Approximately 1,900 tons of impacted soil was transported to TPS Technologies in Tacoma, Washington for treatment and disposal. Approximately 2,800 gallons of water were removed from the excavations and disposed of by Cowlitz Clean Sweep of Longview, Washington. Based on chemical analysis, petroleum hydrocarbon impacted soil remained on the west property boundary north of the former gasoline USTs. In November 2002, well MW-2 was replaced with well MW-2A in the UST excavation backfill.

In September 2004, a third party performed a subsurface investigation consisting of the advancement of 5 borings (P-1 through P-5) with soil and groundwater sampling. The locations of the borings are shown on Figure 2. Based on field observations, one soil sample from 3.5 feet bgs in boring P-2 was submitted for analysis. Soil analytical test results indicated diesel range hydrocarbons at a concentration of 3,500 mg/kg. Boring P-2 is located on the west edge of the former diesel UST excavation. Analytical test results for the groundwater sample from boring P-2 indicated diesel and heavy oil range hydrocarbons at concentrations of 3,900  $\mu$ g/L and 2,400  $\mu$ g/L, respectively. Gasoline range hydrocarbons and BTEX compounds were not detected above laboratory reporting limits in the remaining groundwater samples.

#### Site Hydrogeology

Based on historical environmental explorations at the site, native soils generally consist of sandy silt or sand underlain by silty clay.

Depth to water has historically ranged from approximately 2 to 7 feet below top of casing, with a typical seasonal fluctuation of 1 to 2 feet. The groundwater flow direction has been observed to vary between west and south-southeast at a gradient varying between 0.01 and .010 feet/foot.

#### Groundwater Monitoring

Quarterly groundwater monitoring has occurred at the site since July 1993. Sampling of wells MW-1, MW-4, and MW-5 have been sporadic due to low to contaminant concentrations. Concentrations of petroleum hydrocarbons and hydrocarbon constituents have been historically detected above MTCA Method A cleanup levels in wells MW-2 and MW-3. Vinyl chloride has also been detected above MTCA Method A cleanup levels in well MW-3. Following replacement of well MW-2 with well MW-2A, contaminate concentrations have been below laboratory reporting limits. Groundwater in well MW-6 has historically contained benzene concentrations above MTCA Method A cleanup level as recently as March 2003. However, a downward trend of petroleum hydrocarbons, hydrocarbon constituents, and vinyl chloride concentrations has been observed in well MW-6. Groundwater concentrations in well MW-3 were below MTCA Method A cleanup levels during recent groundwater monitoring events.

#### SCOPE OF WORK

The scope of work included advancing four soil borings (B-1 through B-4) to depths of 10 feet bgs. The work was completed on November 1, 2004 using a direct push probe drilling rig. Soil and groundwater samples were collected from each boring and submitted for analysis.

#### **Field Activities**

SECOR directed the drilling of four soil borings (B-1 through B-4) in the vicinity of the former location of the waste oil UST and south of the former location of the gasoline USTs. Boring locations are shown on Figure 2. A direct push probe rig was provided by Cascade Drilling Inc. (Cascade). Applied Professional Services, Inc. (APS) provided private utility locating services. SECOR personnel were present during all phases of the fieldwork. Details regarding fieldwork are described as follows.

The completed scope of work included the following:

- Preparing a Site specific Health and Safety Plan;
- Marking the soil boring locations, notifying Washington State Utility Notification Center and hiring a private utility locator to identify any potential conflicts with existing underground utilities;
- Using a post hole digger to clear the boring locations to 5 feet bgs;
- Collecting soil samples at approximate 5-foot intervals for purposes of logging subsurface conditions, field screening soil samples for organic vapors using a photoionization detector (PID), and submitting selected soil samples for laboratory analysis;
- Collecting groundwater samples from each boring; and
- Preparing a report of the site assessment activities.

#### **Pre-Field Activities**

The following activities were completed prior to the start of field and drilling activities:

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- A project-specific health and safety plan (HASP) was prepared for each phase of the
  field activities. The HASP identified potential physical and chemical hazards associated
  with the proposed field activities, and specified personnel protection equipment and
  safety monitoring requirements. All SECOR personnel and subcontractors working on
  the project were required to be familiar with and to comply with the provisions in the
  HASP.
- Prior to the start of field activities, SECOR arranged to have a municipal underground
  utility location service identify subsurface municipal utilities located in public right-ofways adjacent to the site. In addition, SECOR contracted with APS to provide utility
  locating services on the site. Prior to drilling, each boring location was cleared to 5 feet
  bgs using an air wand and vacuum truck for the purpose of determining if near-surface
  utilities exist that were not identified during the utility locating activities.

#### **Drilling and Soil Sampling Activities**

Boring B-1 was completed near the location of the east end of the former waste oil UST. Boring B-2 was competed near the location of the west end of the former diesel UST (near boring P-2 advanced by a third party in September 2004). Boring B-3 was located approximately 8 feet south of the location of the former diesel UST. Boring B-4 was located approximately 16 feet west of boring B-2, south of the location of the former gasoline USTs. Groundwater was encountered in all of the borings between 3.5 and 5.0 feet bgs. The locations of all borings are shown on Figure 2.

Due to the high water table, grab soil samples were collected at 3 feet bgs in all of the borings and also at 5 feet bgs in boring B-3. Soil samples were placed into laboratory supplied containers. The containers were collected during clearing activities. Soil samples were immediately placed in an iced cooler with chain-of-custody documentation to await transport to the laboratory. A portion of soil was placed into a re-sealable baggie and volatile organic compounds (VOCs) were then measured in the headspace inside the baggie using a photo-ionization detector (PiD) calibrated to 100 parts per million (ppm) isobutylene.

Following completion of each boring, a temporary steel screen was placed across the water table and approximately 3 casing volumes were purged using a peristaltic pump. Groundwater samples were then collected using the peristaltic pump. Groundwater was pumped directly into laboratory supplied containers. Groundwater samples were immediately placed in an iced cooler with chain-of-custody documentation to await transport to the laboratory.

A physical description of the soil types encountered at each sampling location was recorded on boring logs in accordance with the Unified Soils Classification System (USCS). Soils encountered generally consisted of coarse grained sand to the maximum depth explored of 10 feet bgs. In boring B-3, soils consisted of silt with some clay and trace sand from ground surface to the depth of the boring. Groundwater was encountered at depths of 3.5 to 5 feet bgs during drilling. The boring logs are attached as Attachment A.

At the completion of each boring, the boreholes were backfilled with hydrated bentonite to within approximately 1/2 foot of ground surface. The borings were capped with sand to match the existing un-paved surface.

#### **Analytical Program and Results**

All soil and groundwater samples collected during field activities were delivered under chain-of-custody to Severn Trent Laboratories (STL) in Tacoma, Washington. One soil sample was from each of borings B-1, B-2, and B-4 and two soil samples from boring B-3 were submitted for analysis.

Selected soil samples collected from borings B-1 through B-4 and groundwater samples collected from borings B-1 through B-4 were submitted for analysis for TPH as gasoline (TPH-g) using Northwest Method NWTPH-Gx, TPH as diesel (TPH-d) and TPH as heavy oil (TPH-o) using Northwest Method NWTPH-Dx with silica gel cleanup, and BTEX using EPA Method 8021B.

Review of the soil analytical results indicate the following:

- TPH-g and TPH-d were detected in the selected soil sample from boring B-3 (B3@5), located south of the former diesel UST. TPH-g was detected at a concentration of 162 mg/kg, which is above the applicable MTCA Method A cleanup level of 100 mg/kg. TPH-d was detected at a concentration of 68.8 mg/kg, which is below the applicable MTCA Method A cleanup level. BTEX compounds were not detected in soil sample B3@5.
- TPH-g, TPH-d, TPH-o and BTEX were not detected above MTCA Method A cleanup levels in any of the other selected soil samples.

Soil sample laboratory results are summarized in Table 1 and on Figure 3. Copies of the laboratory report and chain-of-custody documentation are attached as Attachment B.

Review of the groundwater sample laboratory data indicates the following:

- TPH-g and TPH-d were detected in the groundwater sample collected from boring B-3 at concentrations of 181  $\mu$ g/L and 2,010  $\mu$ g/L, respectively. The concentration for TPH-d is above the MTCA Method A cleanup level of 500  $\mu$ g/L. No BTEX compounds were detected above laboratory reporting limits in the groundwater sample from boring B-3.
- No TPH or BTEX were detected above the laboratory reporting limits in the groundwater samples collected from borings B-1, B-2, and B-4.

Groundwater analytical data are summarized in Table 2 and on Figure 4. Copies of the laboratory report and chain-of-custody documentation are attached as Attachment B.

#### CONCLUSIONS

Environmental investigations occurred at the project site in 1986 and between 1990 to the present. During these activities, over-excavation was performed up to 10 feet bgs in the gasoline UST area, beneath the dispenser islands, and in the hoist area. Laboratory results for soil samples collected following the remedial excavation activities indicated impacted soil remain on the west property boundary north of the former gasoline USTs.

A third party investigation completed in September 2004 indicated diesel concentrations above MTCA Method A cleanup levels in a soil sampled collected at 3.5 feet bgs in a boring located west of the former diesel UST (P-2). Diesel and heavy oil concentrations above MTCA Method A cleanup levels were detected in a groundwater sample collected from boring P-2.

Wells MW-1 through MW-6 were installed in 1993 and 1994 to investigate the extent of impacted groundwater. Quarterly groundwater monitoring results between 1993 and present exhibit a downward trend of concentrations of TPH-g, TPH-d, benzene, and vinyl chloride in the impacted wells. Groundwater flow direction has varied from west to south-southeast.

To further assess subsurface conditions in the vicinity of the former diesel UST, SECOR directed the advancement of 4 borings with soil and groundwater sampling on November 1, 2004. Analytical results indicated TPH-d and TPH-o concentrations above MTCA Method A cleanup levels remain in soil and groundwater in the vicinity of boring B-3, located south of the former diesel UST.

Based on field observations, historical environmental investigation results, and analytical laboratory results for soil samples collected during this investigation, it is estimated that 25 cubic yards of impacted soils remain in the area between the former diesel UST and well MW-4.

We appreciate the opportunity to be of service on this project. Please contact the undersigned if you have any questions regarding the information presented herein.

Sincerely,

SECOR International Incorporated

Alice J Larsen

Senior Project Manager

Billie Jo Www

Marc Sauze, P.E.

Senior Project Engineer

#### LIST OF FIGURES

Figure 1 - Site Location Map

Figure 2 – Site Plan

ATTACHMENT B

Figure 3 - Site Plan with Soil Analytical Results

Figure 4 – Site Plan with Groundwater Analytical Results

#### LIST OF TABLES

Table 1 – Soil Analytical Results – TPH and BTEX

Table 2 - Groundwater Analytical Results - TPH and BTEX

#### LIST OF APPENDICES

ATTACHMENT A BORING AND

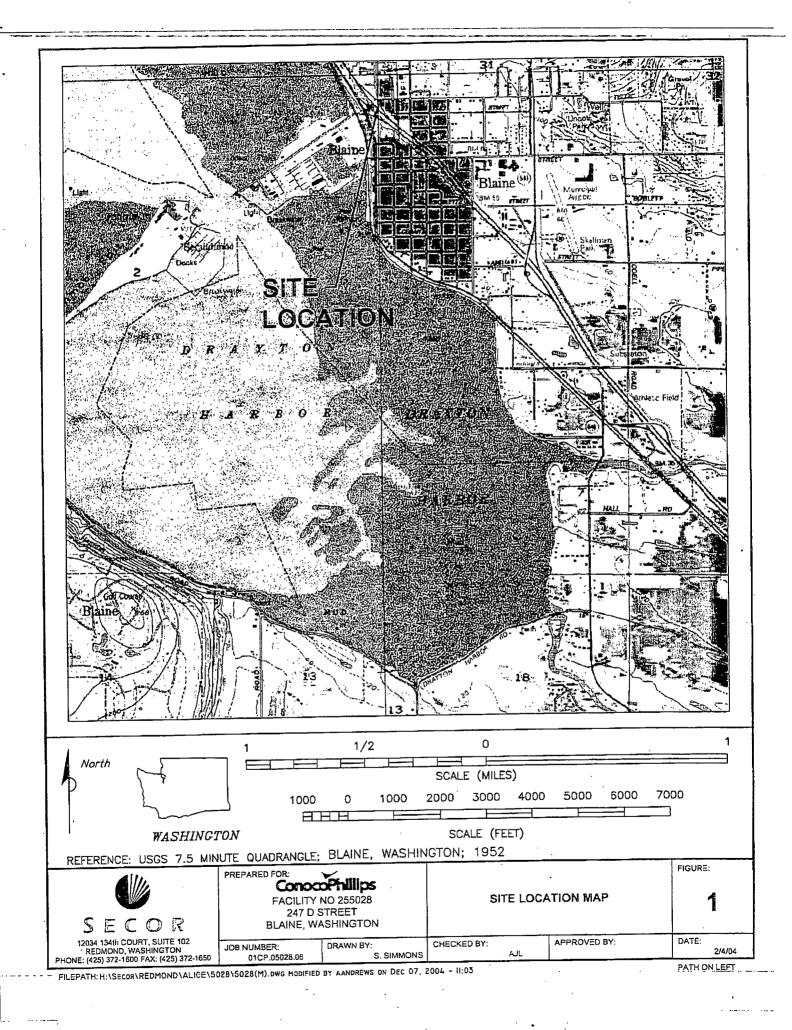
BORING AND WELL CONSTRUCTION LOGS

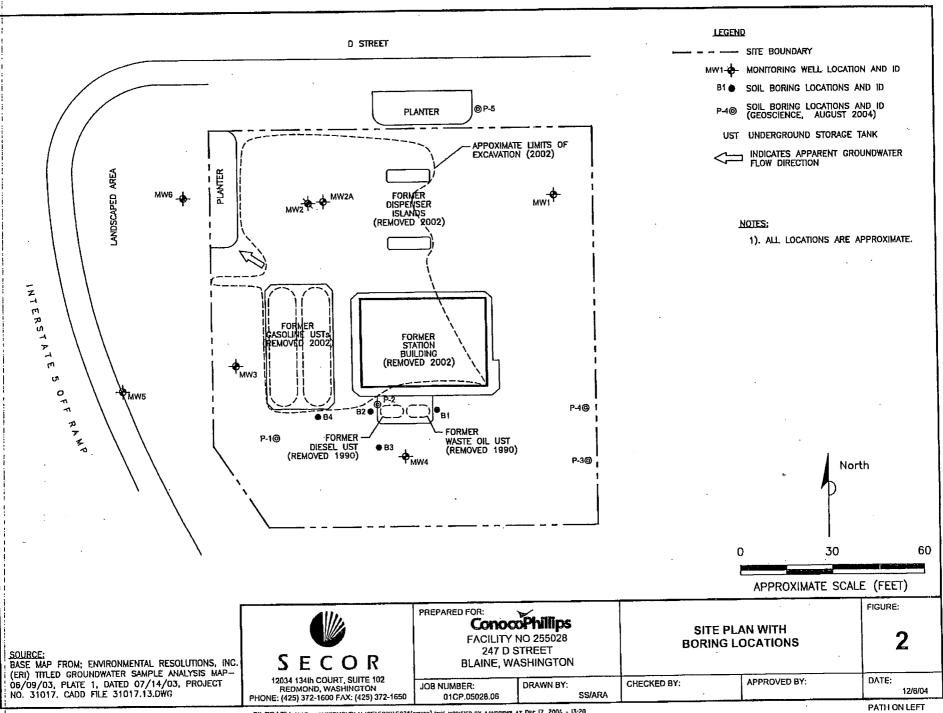
ANALYTICAL LABORATORY REPORT AND CHAIN OF CUSTODY

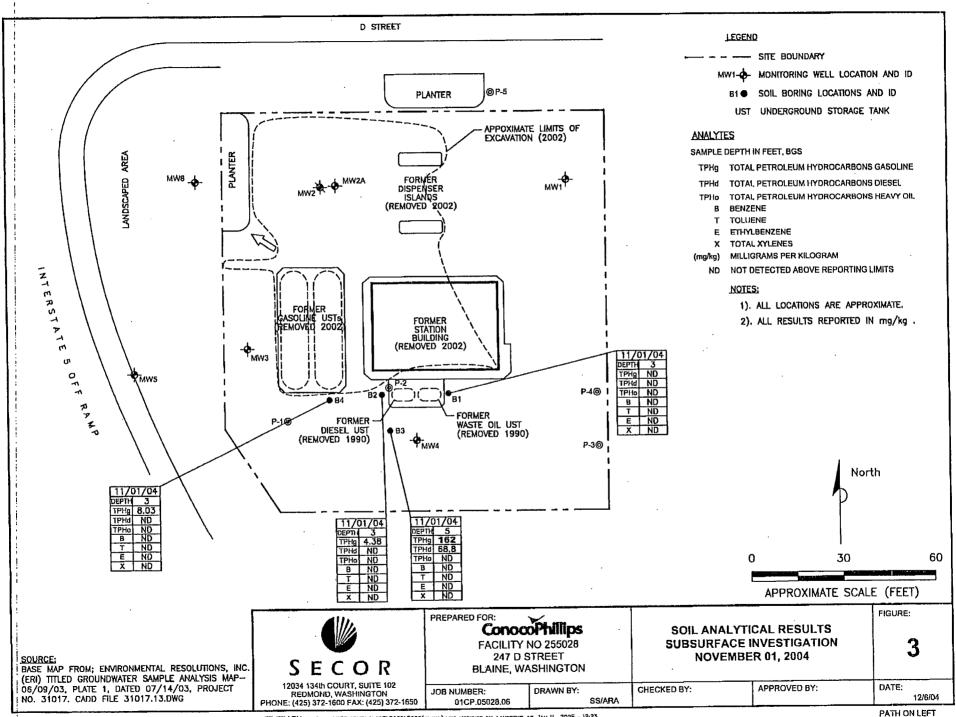
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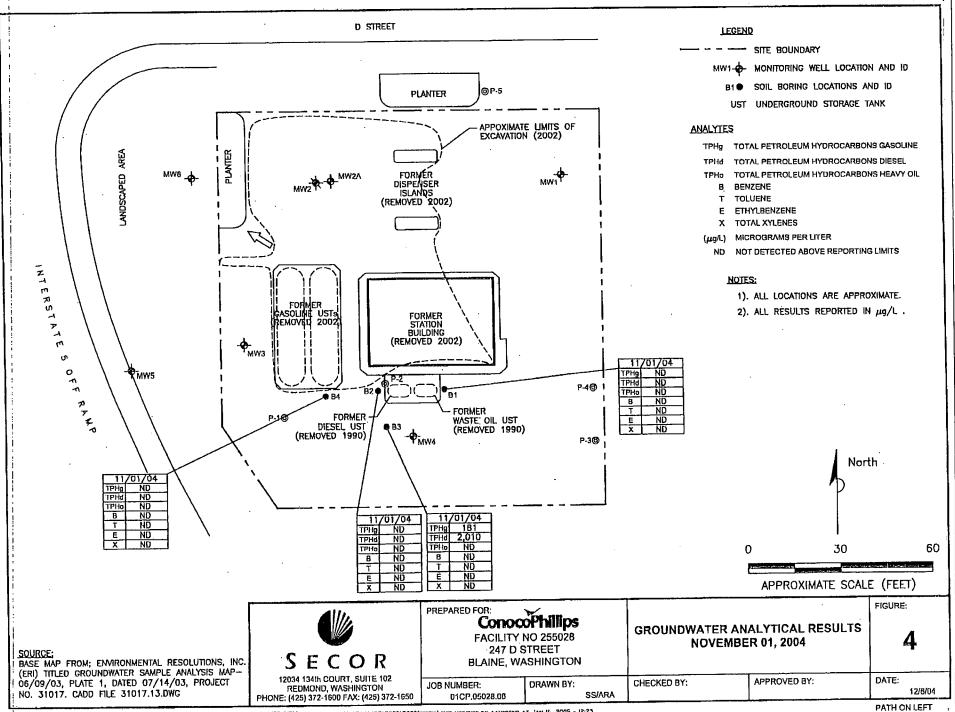
**FIGURES** 

ConocoPhillips Site No. 255028 247 D Street Blaine, WA 01CP.05028.06









TABLES
ConocoPhillips Site No. 255028
247 D Street
Blaine, WA
01CP.05028.06

## TABLE 1 SOIL ANALYTICAL RESULTS - TPH and SELECTED VOCS

ConocoPhillips Site No. 255028 247 D Street

Blaine, Washington

Sample Identification	Sample Date	Sample Depth (feet bgs)	PID Reading (ppm)	TPH-G (mg/kg)	TPH-D (rng/kg)	TPH-O (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)
B1@3	09/24/04	3	0.2	ND	ND	ND	ND	ND	ND	ND
B2@3	09/24/04	3	0.4	4.38	ND	ND	ND	ND	ND	ND
B3@3	09/24/04	3	12.4							
B3@5	09/24/04	5	22.1	162	68.8	ND	ND	ND	ND	ND
B4@3	09/24/04	3	0.7	8.03	ND	ND	ND	ND	ND	ND
	MTCA Metho	d A Soil Cle	anup Level	30/100*	2,000	2,000	0.03	7	6	9

#### Explanation:

BOLD = Concentration above MTCA Method A Cleanup Level

All concentrations in mg/kg (ppm).

bgs - below ground surface

TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx

TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx w/ silica gel cleanup

TPH-O = Total petroleum hydrocarbons as heavy oil by Northwest Method NWTPH-Dx w/ silica gel cleanup

Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B

ND = not detected above laboratory reporting limit

-- = Not analyzed or sampled.

\*Gasoline range hydrocarbon cleanup level is 30 mg/kg with benzene present in the sample, and 100 mg/kg with no benzene detected.

PID - photoionization detector

## TABLE 2 GROUNDWATER ANALYTICAL RESULTS - TPH and BTEX

ConocoPhillips Site No. 255028

#### 247 D Street

#### Blaine, Washington

Sample Location	Sample Date	Depth to Water in Feet	TPH-G (μg/L)	TPH-D (μg/L)	ΤΡΗ-Ο (μg/L)	Benzene (μg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (μgL)
B-1	09/24/04	4.0	ND	ND	ND	ND	ND	ND	ND
B-2	09/24/04	4.0	ND	ND	ND	ND	ND	ND	ND
B-3	09/24/04	5.0	181	2,010	ND	ND	ND	ND	ND
B-4	09/24/04	3.0	ND	ND	ND	ND	ND	ND	ND
MTCA Metho	od A Cleanup	Level	1,000/800**	500	500	5	1,000	700	1,000

#### EXPLANATION:

BOLD = Concentration above MTCA Method A Cleanup Level

All concentrations in μg/L (ppb).

TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx

TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx w/ slilica gel cleanup

TPH-O = Total petroleum hydrocarbons as heavy oil by Northwest Method NWTPH-Dx w/ silica gel cleanup

BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA Method 8021B

ND = not detected above laboratory reporting limit

- = Not Analyzed or Sampled.

<sup>\*\*</sup>Cleanup level is 1,000 with no detectable benzene and 800 with benzene present in groundwater

## ATTACHMENT A BORING AND WELL CONSTRUCTION LOGS

ConocoPhillips Site No. 255028 247 D Street Blaine, WA 01CP.05028.06

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	.ING EQ			ST	ATIC D	TW;	4		В	OREHOLE DIAMETER:1.25
			ENT: grab samples		GGED		ИM		С	HECKED BY: AL
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CP 5028-REV.GPJ SECOR_CO.GDT 1/14/05		ML	SAND coarse grained with gravel (1"), brown, moist (soft dig to 5' using air an wand and vacuum truck)  SILTY CLAY dark gray, wet  Bottom of boring at 10'  Notice of Intent No. E004486		09:30			0.2	₹ 5-	abandoned with hydrated bento chips
S	FC		R	OJEC	r NO.	. 1			1	PAGE 1

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OEPTH (ft) GRAPHIC LOG USCS	LITHOLOGIC DESCRIPTION	SAMPLE	TIME	RECOV. (%)	BLOW	Olld (bbm)	DEPTH (ft)	WELL CONSTRUCTION
SECO International Incorp	SAND coarse grained with angular gravel (1" brown, moist (soft dig to 5" using air an wand and vacuum truck)  SILTY CLAY dark gray, wet  Bottom of boring at 10"  Notice of Intent No. E004486		10:35			0.4	5-	temporary screer abandoned with hydrated bentoni chips
SECO International Incorp	<u> </u>	ROJEC	_		1		<u> </u>	 PAGE 1 OF

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DRILLING COMPANY: Cascade DRILLING EQUIPMENT: Truck-Mounted Push-Probe DRILLING METHOD: Probe SAMPLING EQUIPMENT: grab samples  LITHOLOGIC DESCRIPTION  LOGGED BY: MM  LOGGED BY: MM  CONSTRUCT  WELL  CONSTRUCT  A Gig to 8' using air an wand and vacuum truck)  10:10  10:10  ML SILT some clay, trace sand, light gray, (soft dig to 8' using air an wand and vacuum truck)  10:10  10:10  10:10  ME STATIC DTW: 4  DOGGED BY: MM  CHECKED BY: AL  WELL  CONSTRUCT  OB:55  112.4  10:10  DO:55  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  OB:55  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  WELL  CONSTRUCT  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  CHECKED BY: AL  TOTAL DETH: 10.0  BOREHOLE DIAMETER: 1.2  TOTAL DETH: 10.0  CHECKED BY: AL  TOTAL DETH: 10.0  CHECKED BY: AL  TOTAL DETH: 10.0  TOTAL DETH: 10.0		OMPLETED: 11/1/04								
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SMELING EQUIPMENT: grab samples  LOGGED BY: MM  CHECKED BY: AL  MEDITOR COUNTRICT  AND SILT some clay, trace sand, light gray, (soft dig to 5' using air an wand and vacuum truck)  MI SILT some clay, trace sand, light gray, (soft dig to 5' using air an wand and vacuum truck)  OB:55  10:10  10:10  CHECKED BY: AL  CHECKED BY: AL  CONSTRUCT  AD  CHECKED BY: AL  CONSTRUCT  AD  CHECKED BY: AL  CONSTRUCT  CONSTRUCT  AD  OB:55  12.4  10:10  The property of the prope		ounted Push-Probe	ĺ							
SAMELING EQUIPMENT GREEN SHAPES SAME PROOF TO SHAPE	Brazento menerale	anlos								
MIL SiLT some clay, trace sand, light gray, (soft dig to 6' using air an wand and vacuum truck)  09:55  12.4  10:10  7 5—  temporary stabandoned in hydrated ber chips		ipies					<u> </u>			<u>-</u>
SIT some clay, trace sand, light gray (soil)  09:55  12.4  10:10  10:10  10:10  10:10	G(f) (f) (f) (f) (f) (f) (f) (f) (f) (f)		SAMPI	T I	RECO (%)	COUN	Old mdd)	0EPT	CONST	RUCTIO
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	20020-020-0									
SECOR PROJECT NO. PAGE 1	SECOR	PRO	IFCT	NO NO					 	\GE 1 (

WELL / BORING NO: ConocoPhillips Facility No. 255028 PROJECT: **B4** 247 D Street, Blaine, WA LOCATION: EASTING: COMPLETED: 11/1/04 NORTHING: STARTED: 11/1/04 M.P. ELEV: GROUND ELEV: Cascade DRILLING COMPANY: TOTAL DEPTH: 10.0 3.5 INITIAL DTW: Truck-Mounted Push-Probe DRILLING EQUIPMENT: BOREHOLE DIAMETER:1.25" 3 STATIC DTW: Probe DRILLING METHOD: CHECKED BY: AL LOGGED BY: SAMPLING EQUIPMENT: grab samples SAMPLE RECOV. (%) BLOW GRAPHIC LOG PID (mdd) WELL. CONSTRUCTION DEPTH (ft) TIME USCS LITHOLOGIC DESCRIPTION SAND coarse grained with angular gravel (1"), brown, moist (soft dig to 5<sup>th</sup> using air an wand and vacuum truck) SP sand 0.7 09:10 立 SILTY CLAY dark gray, wet ML temporary screen 5 abandoned with hydrated bentonite chips WELL CP 5028-REV.GPJ SECOR\_CO.GDT 1/14/05 10-10 Bottom of boring at 10' Notice of Intent No. E004486 PAGE 1 OF 1 PROJECT NO.

## ATTACHMENT B ANALYTICAL LABORATORY REPORT AND CHAIN OF CUSTODY DOCUMENTATION

ConocoPhillips Site No. 253588 247 D Street Blaine, WA 01CP.05028.06

# SEVERN STL

STL Seattle 5755 8th Street East Tacoma, WA 98424

Tel: 253 922 2310 Fax: 253 922 5047 www.stl-inc.com

#### TRANSMITTAL MEMORANDUM

DATE: November 18, 2004

TO: Alice Larsen SECOR International Inc. 12034 134th Ct. NE, Suite 102 Redmond, WA 98052

PROJECT: Blaine WA

REPORT NUMBER: 124630

TOTAL NUMBER OF PAGES:

Enclosed are the test results for nine samples received at STL Seattle on November 2, 2004.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely.

Project Manager

#### Sample Identification:

Lab. <u>No.</u>	Client ID	Date/Time Sampled	Matrix
124630-1 124630-2 124630-3 124630-4 124630-5 124630-6 124630-7 124630-8 124630-9	B1@3' B1 B2@3' B2 B3@3' B3@5' B3 B4@3'	11-01-04 09:30 11-01-04 11:25 11-01-04 10:35 11-01-04 12:15 11-01-04 09:55 11-01-04 10:10 11-01-04 09:10 11-01-04 11:45 11-01-04 11:15	solid liquid solid liquid solid solid liquid solid liquid solid

STL Seattle is a part of Severn Trent Laboratories, Inc.

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.

 Client Name:
 SECOR International Inc.

 Client ID:
 B1@3'

 Lab ID:
 124630-01

 Date Received:
 11/2/04

 Date Prepared:
 11/15/04

 Date Analyzed:
 11/15/04

 % Solids
 86.7

 Dilution Factor
 1

#### GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

	•		Recovery Limits		
Surrogate	% Recovery	Flags	Low	High	
Trifluorotoluene	101	•	50	150	
***********	115		76	137	
1-Chloro-3-fluorobenzene	117	•	79	132	
Bromofluorobenzene	• • •		76	142	
Pentafluorobenzene	113				

Sample results are on a dry weight basis.

	Result		
Analyte	(mg/kg)	RL	Flags
Gasoline By NWTPH-G	ND	5.48	•
-	ND	0.0548	
Benzene	ND	0.0548	
Toluene	ND .	0.0548	
Ethylbenzene	=	0.11	
m&p-Xylene	ND	0.0548	
o-Xylene	· ND	0.0540	

Client Name:

SECOR International Inc.

Client ID: Lab ID: B1

Date Received:

124630-02

Date Prepared:

. 11/2/04 11/15/04

Date Analyzed:

11/15/04

% Solids
Dilution Factor

1

## GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

•			Recove	overy Limits	
Surrogate	% Recovery	Flags	Low	High	
	102		50	150	
Trifluorotoluene	114		80	120	
1-Chloro-3-fluorobenzene			80	120	
Bromofluorobenzene	111				
Pentafluorobenzene	111		81	126	

Anglista	Result (mg/L)	RL	Flags
Analyte Gasoline By NWTPH-G	ND	0.1	
	ND	0.001	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND ND	0.002	
m&p-Xylene		0.001	
o-Xylene	ND	3.501	

SECOR International Inc. Client Name: B2@3' Client ID: 124630-03 Lab ID: 11/2/04 Date Received: 11/15/04 Date Prepared: 11/15/04 Date Analyzed: 94.61 % Solids 1 Dilution Factor

#### GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recov	ery Limits
Currents	% Recovery	Flags	Low	Hìgh
Surrogate Trifluorotoluene	96.3	•	50	150
1-Chloro-3-fluorobenzene	114		76	137
Bromofluorobenzene	116		79	132
Pentafluorobenzene	111		76	142

Sample results are on a dry weight basis.

	Result	4	
Analyte	(mg/kġ)	RL .	Flags
Gasoline By NWTPH-G	4.38	3.18	
	ND	0,0318	
Benzene	ND	0.0318	
Toluene	ND	0.0318	
Ethylbenzene	ND .	0.0637	
m&p-Xylene	•	0.0318	
o-Xylene	ND	0.0010	

Client Name:

SECOR International Inc.

Client ID: Lab ID: B2 124630-04

Date Received:

11/2/04

Date Prepared: Date Analyzed: 11/15/04 11/15/04

% Solids
Dilution Factor

\_

## GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recovery Limits	
Surrogate	% Recovery	Flags	<b>Low</b> 50	<b>High</b> 150
Trifluorotoluene	103			
1-Chloro-3-fluorobenzene	113		80	120
Bromofluorobenzene	110		80	120
Pentafluorobenzene	114		81	126

	Result	RL	Flags
Analyte	(mg/L)		5-
Gasoline By NWTPH-G	ND	0.1	
Benzene	ND	0.001	
	ND	0.001	
Toluene	=	0.001	
Ethylbenzene	ND		
m&p-Xylene	ND	0.002	
o-Xylene	ND .	0.001	

SECOR International Inc. Client Name: B3@5' Client ID: 124630-06 Lab ID: 11/2/04 Date Received: 11/15/04 Date Prepared: 11/15/04 Date Analyzed: 69.06 % Solids 1 Dilution Factor

#### GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recovery Limits	
Surrogate	% Recovery	Flags	Low	High
Trifluorotoluene	78.2	•	. 50	150
1-Chloro-3-fluorobenzene	117		76	137
Bromofluorobenzene	121		79	132
Pentafluorobenzene	116		76	142

Sample results are on a dry weight basis.

	Resul	t		
Analyte	(mg/kg	3)	RL	Flags
Gasoline By NWTPH-G		162	6.66	
Benzene	ND		0,0666	
Toluene	ND		0.0666	
Ethylbenzene	ND		0.0666	
m&p-Xylene	ND		0.133	
o-Xylene	ND		0.0666	

Client Name:

SECOR International Inc.

Client ID:

B3 124630-07

Lab ID: Date Received:

11/2/04

Date Prepared: Date Analyzed: 11/15/04 11/15/04

% Solids
Dilution Factor

\_

## GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

	•		Hecovery Linus	
Surrogate	% Recovery	Flags	Low	High 150
Trifluorotoluene	103		50	
1-Chloro-3-fluorobenzene	118		80	120
· -	114		80	120
Bromofluorobenzene Pentafluorobenzene	121		81	126

0 - alarke	Result (mg/L)	RL	Flags
Analyte Gasoline By NWTPH-G	0.181	0.1	
	ND	0.001	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND	0.002	
m&p-Xylene o-Xylene	ND	0.001	

Client Name: Si
Client ID:
Lab ID:
Date Received:
Date Prepared:
Date Analyzed:
% Solids
Dilution Factor

SECOR International Inc.

B4@3' 124630-08 11/2/04 11/15/04 11/15/04 91.45

#### GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

		•	Recovery Limits	
Surrogate	% Recovery	Flags	Low	<b>High</b> 150
Trifluorotoluene	97.2		50	
1-Chloro-3-fluorobenzene	113		76	137
	115	•	79	132
Bromofluorobenzene	• • •		76	142
Pentafluorobenzene	113	•	, ,	

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	RL	Flags
Gasoline By NWTPH-G	8.03	4.96	
Benzene	ND	0.0496	
Toluene	ND	0.0496	
Ethylbenzene	ND	0,0496	
•	ND	0.0991	
m&p-Xylene o-Xylene	ND	0,0496	

Client Name:

SECOR International Inc.

Client ID:

B4

Lab ID: Date Received: 124630-09

Date Prepared:

11/2/04 11/15/04

Date Analyzed: % Solids

11/15/04

% Solids
Dilution Factor

-

#### GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			necovery Limits	
Surrogate	% Recovery	Flags -	Low	High
Trifluorotoluene	103		50	150
	117		80	120
1-Chioro-3-fluorobenzene	. , ,		80	120
Bromofluorobenzene	113			
Pentafluorobenzene	114		81	126

Analyte Gasoline By NWTPH-G Benzene	Result (mg/L) ND ND ND ND	RL 0.1 0.001 0.001	Flags
Toluene Ethylbenzene m&p-Xylene o-Xylene	ND ND ND	0.001 0.002 0.001	

Client Name:

SECOR International Inc.

Client ID:

B1@3'

Lab ID:

124630-01

Date Received:

11/2/2004

Date Prepared: Date Analyzed: 11/8/2004

% Solids Dilution Factor 11/10/2004 86.7

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Surrogate o-terphenyl % Recovery 77.8

Flags

**Recovery Limits** Low

50

High 150

Sample results are on a dry weight basis.

Analyte #2 Diesel Motor Oil

Result (mg/kg)

RL

Flags

ND ND 27.9 55.7

Client Name:

SECOR International Inc.

Client ID:

**B**1

Lab ID:

124630-02

Date Received:

11/2/2004

Date Prepared: Date Analyzed: 11/5/2004

% Solids

11/11/2004

Dilution Factor

\_\_\_\_

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Surrogate o-terphenyl % Recovery

Flags

**Recovery Limits** 

Low 50

High 150

.

Result (mg/L)

RL

Flags

Analyte #2 Diesel Motor Oil

ND ND 0.244 0.488

00012

Client Name:

SECOR International Inc.

Client ID:

B2@3'

Lab ID:

124630-03

Date Received: Date Prepared: 11/2/2004 11/8/2004

Date Analyzed:

11/10/2004

% Solids Dilution Factor 94.61

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Surrogate o-terphenyl % Recovery 94.8

Flags

**Recovery Limits** Low

50

High 150

Sample results are on a dry weight basis.

Analyte

Result (mg/kg)

RL

Flags

#2 Diesel Motor Oil

ND ND

48.8

. Client Name:

SECOR International Inc.

Client ID:

**B**2

Lab ID:

124630-04

Date Received: Date Prepared: 11/2/2004

Date Analyzed:

11/5/2004

% Solids

11/11/2004

Dilution Factor

## Diesel and Motor Oil by NWTPH-Dx Modified with Sillca Gel Cleanup

Surrogate	
o-terphenyl	

50

High 150

**Analyte** #2 Diesel Motor Oil

Result (mg/L)

RL

Flags

ND

ND

0.264 0.528

Client Name:

SECOR International Inc.

Client ID:

B3@5'

Lab ID: Date Received: 124630-06

Date Prepared: Date Analyzed: 11/2/2004 11/8/2004

% Solids

11/10/2004 69.06

Dilution Factor

### Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

•			Recovery Limits		
Surrogate	% Recovery	Flags	L <b>ow</b>	High	
o-terphenyl	89.4		50	150	

Sample results are on a dry weight basis.

w 1 da	Result (mg/kg)	RL	Flags
Analyte	68,8	36	X1
#2 Diesel Motor Oil	ND:	72	•

Client Name:

SECOR International Inc.

Client ID: Lab ID:

В3 124630-07

Date Received: Date Prepared: 11/2/2004 11/5/2004

Date Analyzed: % Solids

11/11/2004

Dilution Factor

#### Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

			Recov	ery Limits
Surrogate	% Recovery	Flags	Low	<b>High</b>
o-terphenyl	116		50	150

Analyte #2 Diesel Motor Oil

Result (mg/L)

RL

Flags

ND

2.01

0.254 0.509 **X**1

Client Name:

SECOR International Inc.

Client ID:

B4@3'

Lab ID: Date Received: 124630-08 11/2/2004

Date Prepared: Date Analyzed: 11/8/2004 11/10/2004

% Solids
Dilution Factor

91.45

### Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

			Recov	ery Limits
Surrogate	% <b>Recovery</b>	Flags	<b>Low</b>	High
o-terphenyl	89.5		50	150

Sample results are on a dry weight basis.

Amalida	Result (mg/kg)	RL	Flags
Analyte #2 Diesel Motor Oil	ND ND	26.6 53.2	

Client Name:

SECOR International Inc.

Client ID:

B4

Lab ID:

124630-09

Date Received:

11/2/2004

Date Prepared:

11/5/2004

Date Analyzed: % Solids

11/11/2004

Dilution Factor

1

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Recovery Limits

Surrogate o-terphenyl

% Recovery 107 Flags

Low High

50

150

Analyte #2 Diesel

Motor Oil

Result (mg/L)

RL

Flags

ND ND 0.245

. \*\*

Lab ID:

Method Blank - GB4009

Date Received:

11/15/04

Date Prepared: Date Analyzed: % Solids

11/15/04

Dilution Factor

1

#### GRO by NWTPH-Gx / Volatile Aromatics by 5030/8021B

			Recove	ery Limits
Surrogate	% Recovery	Flags	<b>Low</b> 50	<b>High</b> 150
Trifluorotoluene	108		76	137
1-Chloro-3-fluorobenzene	130			. – .
Bromofluorobenzene	132		79	132
Pentafluorobenzene	128		76	142

Sample results are on an as received basis.

Analyte	Result (mg/kg)	RL	Flags
Gasoline By NWTPH-G	ND ·	4	
	ND	0.04 .	
Benzene	ND	0.04	
Toluene		0.04	
Ethylbenzene	ND · ND	0.08	
m&p-Xylene	ЙD	0.04	
o-Xylene	ND	0.04	

Lab ID:

Method Blank - GB4010

Date Received: Date Prepared:

11/15/04 11/15/04

Date Analyzed: % Solids Dilution Factor

1

			Hecovery Linnes		
Surrogate Trifluorotoluene	% Recovery 92.1 103	Flags	L <b>ow</b> 50 80	Hi <b>g</b> h 150 120	
1-Chloro-3-fluorobenzene Bromofluorobenzene Pentafluorobenzene	101 101		BO 81	120 126	

A - aludo	Resuit (mg/L)	RL,	Flags
Analyte	ND ( )	0.1	
Gasoline By NWTPH-G	ND	0.001	
Benzene	ND	0.001	
Toluene	ND	0.001	
Ethylbenzene	ND .	0.002	
m&p-Xylene	•	0.001	
o-Xylene	ND '	0.50	•

#### Blank Spike/Blank Spike Duplicate Report

Lab ID: Date Prepared: Date Analyzed: QC Batch ID: GB4009 11/15/04 11/15/04 GB4009

Compound Name Gasoline By NWTPH-G	Blank Result (mg/kg) 0	Spike Amount (mg/kg) 50	BS Result (mg/kg) 54.6	BS % <b>Rec</b> . 109	BSD Result (mg/kg) 54.2	BSD % Rec. 108	RPD -0.92	Flag
Benzene	0	0.736	0.711	96.5	0.706	95.9	-0.62	
Toluene	0	3.54	3.86	109	3.81	108	-0.92	
Ethylbenzene	0	0.791	0.821	104	0.811	102	-1.9 • 0	
m&p-Xylene	0	2.92	3.15	·10B	3.1	106	-1.9	•
o-Xylene	0	1.15	1.18	103	1.17	102	-0.98	

### Blank Spike/Blank Spike Duplicate Report

Lab ID:
Date Prepared:
Date Analyzed:
QC Batch ID:

GB4010 11/15/04 11/15/04 GB4010

Compound Name Gasoline By NWTPH-G Benzene Toluene Ethylbenzene m&p-Xylene o-Xylene	Blank Result (mg/L) 0 0 0 0 0	Spike Amount (mg/L) 1.25 0.0184 0.0884 0.0198 0.073 0.0286	Resulf (mg/L) 1.26 0.0167 0.0917 0.0195 0.0743 0.0284	BS % Rec. 101 90.9 104 98.7 102 99.3	Result (mg/L) 1.25 0.0165 0.0905 0.0193 0.0732 0.0281	BSD % Rec. 100 89.7 102 97.6 100 98.3	RPD -1 -1.3 -1.9 -1.1 -2 -1	Flag
--	--	--	--	---	--	--	---	------

#### Matrix Spike Report .

Client Sample ID: Lab ID: Date Prepared: Date Analyzed: QC Batch ID: B4@3' 124630-08 11/15/04 11/15/04 GB4009

Compound Name Gasoline By NWTPH-G Benzene Toluene Ethylbenzene m&p-Xylene o-Xylene	Sample Result (mg/kg) 8 0 0 0 0	Spike - Amount (mg/kg) 62 0.913 4.38 0.98 3.62 1.42	MS Result (mg/kg) 70.9 0.887 4.84 1.04 3.91 1.47	MS % Rec. 101 97.2 110 106 108 104	Flag
--	---------------------------------	---	--	---	------

Lab ID:

Method Blank - DS1331

Date Received:

11/8/2004

Date Prepared: Date Analyzed: % Solids

11/10/2004

Dilution Factor

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

			Recovery Limits				
Surrogate o-terphenyl	% Recovery 98.4	Flags	<b>Low</b> 50	Hìgh 150			
o-terphenyl	98.4		30	,00			

Sample results are on an as received basis.

Analyte	Result (mg/kg)	RL 05	Flags
#2 Diesel	ND	25	·
Motor Oil	ND	50	

Lab ID:

Method Blank - DW0691

Date Received:

Date Prepared: Date Analyzed:

11/8/2004 11/11/2004

% Solids Dilution Factor

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

**Recovery Limits** 

Surrogate o-terphenyl % Recovery 97.8

Flags

High' Low 150

50

Analyte #2 Diesel Motor Oil

Result (mg/L)

ND

ND

RL

Flags

0.25 0.5

### Blank Spike/Blank Spike Duplicate Report

Lab ID: Date Prepared: Date Analyzed: QC Batch ID: DW0691 11/5/2004 11/12/2004 DW0691

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Compound Name #2 Diesel	Blank Result (mg/L) 0 0	Spike Amount (mg/L) 5	BS Result (mg/L) 5.75 5.41	BS % Rec. 115 108	BSD Result (mg/L) 5.55 5.29	BSD % Rec. 111 106	<b>RPD</b> -3.5 -1.9	Flag
Motor Oil	U	_						

#### Duplicate Report

Client Sample ID: MW-7-5'
Lab ID: 124619-01
Date Prepared: 11/8/2004
Date Analyzed: DS1331

Diesel and Motor Oil by NWTPH-Dx Modified with Silica Gel Cleanup

Parameter Name #2 Diesel	Sample Result (mg/kg) 18400 314	Duplicate Result (mg/kg) 33500 730	<b>RPD</b> % -58.0 -80.0	Flag
Motor Oil	514			



STL Seattle 5755 8th Street East Tacoma, WA 98424

Tel: 253 922 2310 Fax: 253 922 5047 www.sll-inc.com

#### DATA QUALIFIERS AND ABBREVIATIONS

- This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported B1:
- This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration B2: reported in the blank).
- Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%. C1:
- Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted. C2:
- Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be  $\leq$  30%. C3:
- Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The original analysis was reported unless anomalies were noted. C4:
- GC/MS confirmation was performed. The result derived from the original analysis was reported. M:
- The reported result for this analyte was calculated based on a secondary dilution factor.
- The concentration of this analyte exceeded the instrument calibration range and should be considered an D: E: estimated quantity.
- The analyte was analyzed for and positively identified, but the associated numerical value is an estimated J: quantity.
- MCL: Maximum Contaminant Level
- Method Detection Limit MDL:
- Reporting Limit RL:
- See analytical narrative N:
- ND: Not Detected
- Contaminant does not appear to be "typical" product. Elution pattern suggests it may be \_ X1:
- Contaminant does not appear to be "typical" product. X2:
- Identification and quantitation of the analyte or surrogate was complicated by matrix interference. X3:
- RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The X4: sample matrix may be nonhomogeneous.
- RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical X4a: quantitation limit/detection limit.
- Matrix spike recovery was not determined due to the required dilution. X5:
- Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample X6: was re-analyzed with similar results.
- Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD. X7:
- Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration X7a: of the analyte in the original sample.
- Surrogate recovery was not determined due to the required dilution. X8:
- Surrogate recovery outside advisory QC limits due to matrix interference. X9:

#### Chain of Custody Record

STL Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.stl-inc.com SEVERN TRENT

SEVERN STI

-(	Client		Project M	lanage	<u>r</u>	 I .							/			7	) ate	Uni	/ /1	4		Ch	ain of Custody Number 06671	
	Client Secor Address		Telephone Number (Area Code)/Fax Num 360-931-3600														1 NOV 04					+	0001	
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: -	City State Zip Code	·	Site Con	tact			Lab	Contac	ct						,	Anal) nore	rsis (A space	ttach is ne	list if eded	)				
	Redmond WAI 98	052	Carrier A	1/a. da :0	Numba							-  ر	$\sqrt{}$	7	4	-								
	Project Name and Location (State)  SLAINE WA 5028		Carriery	тауши	MOINIDE	,						$ \mathcal{F} $		- ار	7	Jan 18	}			ļ			Special Instructions/	
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	13445EC006			<del></del>			+	·	resen			_   }	される	7/5	5		7		.				preliminary results	
-	Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	A. A.	Sed.	žos.	Unpres	H2504	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ZPAC/ NaOH		-1-	$\neg$	3 -	3 6	25	-		_	$\perp$	-	results	
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