Tosco #6380
Bellingham

DATE: Feb 17th, 2004

ConocoPhillips

## GROUNDWATER MONITORING REPORT

Site No.: 6380 Address: 200 South 36th Street, Bellingham, Washington
ConocoPhillips Site Manager: Timothy D. Johnson
Consultant / Contact Person: SECOR International Inc. / Marc Sauze
Primary Agency/Regulatory ID No.: Washington State Department of Ecology
SECOR Project No: 01CP.06380.04

**WORK PERFORMED THIS QUARTER(S) [4th - 2003]:**

- On 12/12/03, SECOR personnel monitored, purged, and sampled four of the existing network of four groundwater monitoring wells (MW-1 through MW-4). Samples were submitted to Severn Trent Laboratories, Inc. (STL) for analysis of gasoline-range hydrocarbons per NWTPH-Gx Method; diesel-range hydrocarbons per NWTPH-Dx Method, BTEX per USEPA Method 5030/8260B, and Total Lead per ICP-USEPA Method 6010.

**WORK PROPOSED FOR NEXT QUARTER [1st - 2004]:**

- Measure depth to water, purge, and sample 4 groundwater monitoring wells (MW-1 through MW-4). Submit groundwater samples to STL for analysis for NWTPH-Gx, NWTPH-Dx, BTEX and Total Lead.

**SUMMARY:**

| | | |
|---|---|---|
| Frequency of Sampling Events: | Quarterly | (03/04,06/04,09/04,10/04) |
| Depth to Groundwater: | 4.79 ft. (MW-1) | (Measured Feet Below |
| | to 8.12 ft. (MW-2) | Top of Well Casing) |
| Groundwater Gradient: | Northwest | (Direction) |
| | 0.003 ft/ft | (Magnitude) |
| Maximum TPH-D Concentrations: | 700 µg/L / MW-1 | (ppb / well ID) |
| Maximum TPH-G Concentrations: | 204 µg/L / MW-1 | (ppb / well ID) |
| Maximum TPH-O Concentrations: | 304 µg/L / MW-1 | |
| Maximum Benzene Concentrations: | 2.45 µg/L / MW-1 | (ppb / well ID) |
| Measurable Free Product Detected: | No | (Yes - ID well(s)/No) |
| Free Product Recovered This Quarter: | None | (Gallons) |
| Cumulative Free Product Recovered to Date: | None | (Gallons) |
| Water Wells (WW) or | i.) One WW | (Type) |
| Surface Waters w/in 2,000 ft: | ii.) Connelly Creek - SW | |
| Radius and Respective | i.) 1600 ft. West | (Respective Distance |
| Direction From Site: | ii.) 1000 ft. Southwest | & Direction) |
| Current Remedial Action: | MNA | (SVE/AS/P&T/MNA etc.) |
| Permits for Discharge: | None | (NPDES, POTW, etc.) |

**DISCUSSION:**

- MW-1 contained diesel range hydrocarbons at a concentration of 700 µg/L, exceeding the MTCA Method A Cleanup Levels for Groundwater (MTCA A). MW-1 contained gasoline, motor-oil range hydrocarbons and benzene concentrations of 204 µg/L, 304 µg/L and 2.45 µg/L respectively.

- None of the other wells sampled contained any gasoline, diesel or motor-oil range hydrocarbon concentrations or BTEX constituent concentrations above the laboratory method reporting limits (MRLs).

- None of the wells sampled contained any total lead above the MRLs



entered CM 3/8/04

- No drums were left on site.

**ATTACHMENTS:**

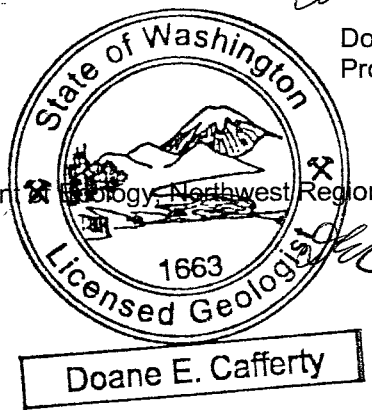
Figure 1: Site Location Map
Figure 2: Site Plan with Groundwater Elevation Contours
Figure 3: Site Plan with and Analytical Results (3/05/03– 12/12/03)
Table 1: Summary of Cumulative Groundwater Elevations and Sample Analytical Results
Laboratory Analytical Report and Chain of Custody Record
Groundwater Monitoring Field Data Records

Prepared By:

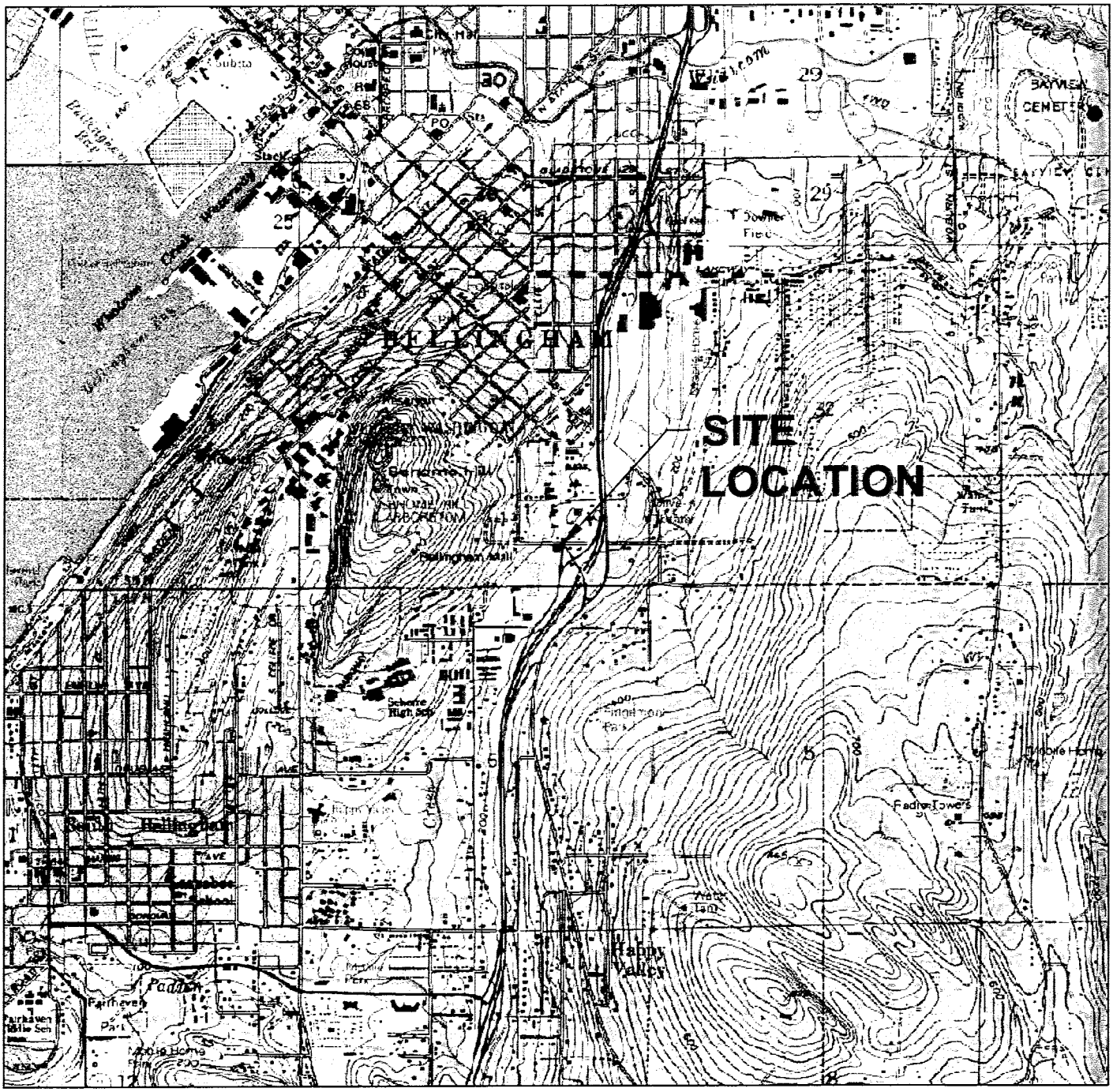
August Welch
Assistant Scientist

Reviewed By:

Doane E. Cafferty, L.G.
Project Geologist




cc: LUST Coordinator, Washington State Department of Ecology, Northwest Regional Office
Mr. Frank Diehl, Keith Oil Corporation




North

WASHINGTON

1 1/2 0 1

SCALE (MILES)

1000 0 1000 2000 3000 4000 5000 6000 7000

SCALE (FEET)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; BELLINGHAM SOUTH, WASHINGTON; 1972

12034 134th COURT, SUITE 102
REDMOND, WASHINGTON
PHONE: (425) 372-1600 FAX: (425) 372-1650

PREPARED FOR:
ConocoPhillips
FACILITY NO 6380
200 SOUTH 36th STREET
BELLINGHAM, WASHINGTON

**SITE LOCATION MAP**

FIGURE: **1**

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 01CP.06380.04 | S. SIMMONS | | | 2/5/04 |

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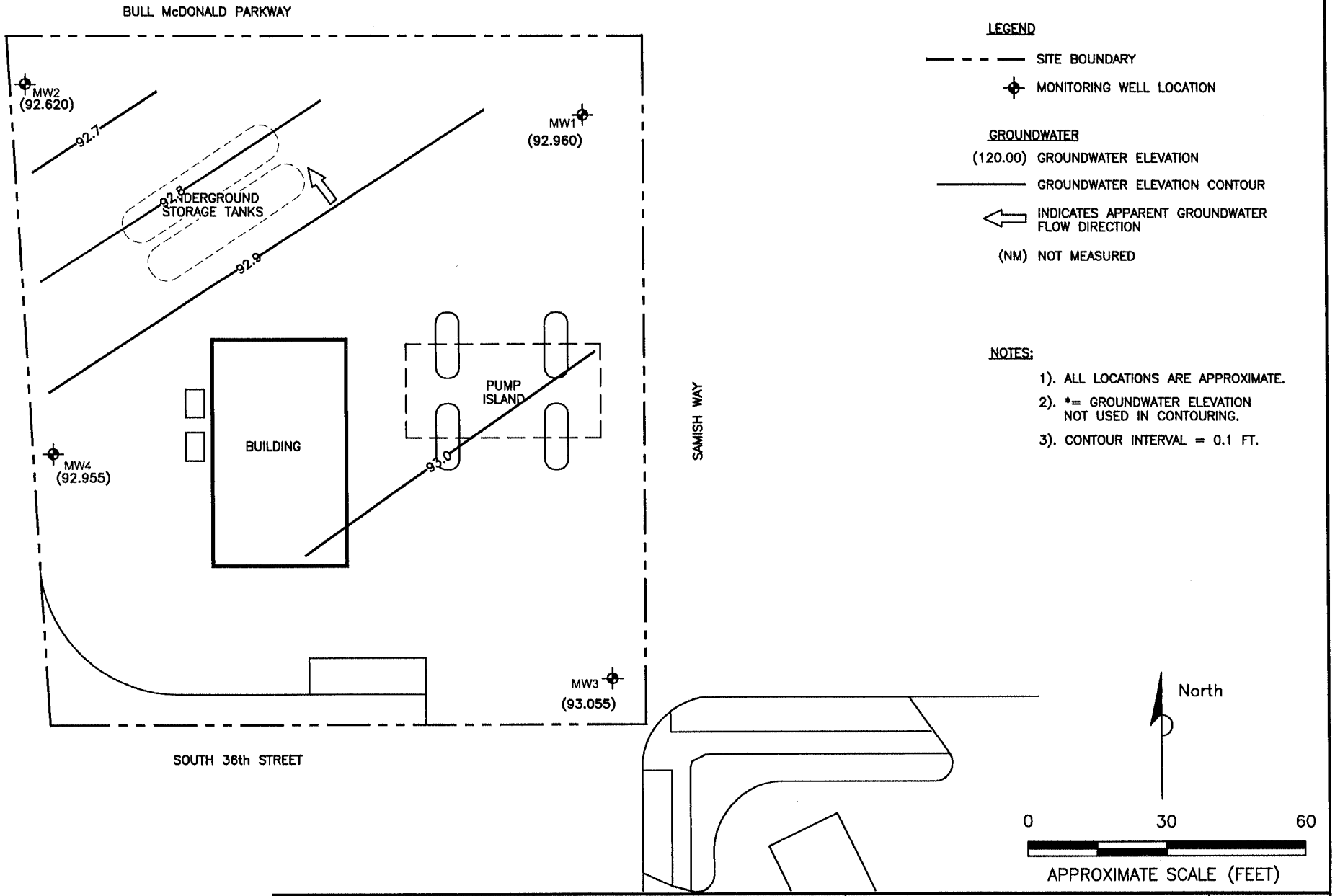


SOURCE:
BASE MAP FROM; ENVIRONMENTAL RESOLUTIONS, INC. (ERI) TITLED GROUNDWATER SAMPLE ANALYSIS MAP– 06/10/03, PLATE 1, DATED 07/08/03, PROJECT NO. 31065. CADD FILE 31065.13.DWG


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BELLINGHAM, WASHINGTON

**SITE PLAN WITH GROUNDWATER ELEVATION CONTOURS (12/12/03)**

FIGURE: **2**

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 01CP.06380.04 | S. SIMMONS | | | 2/5/04 |

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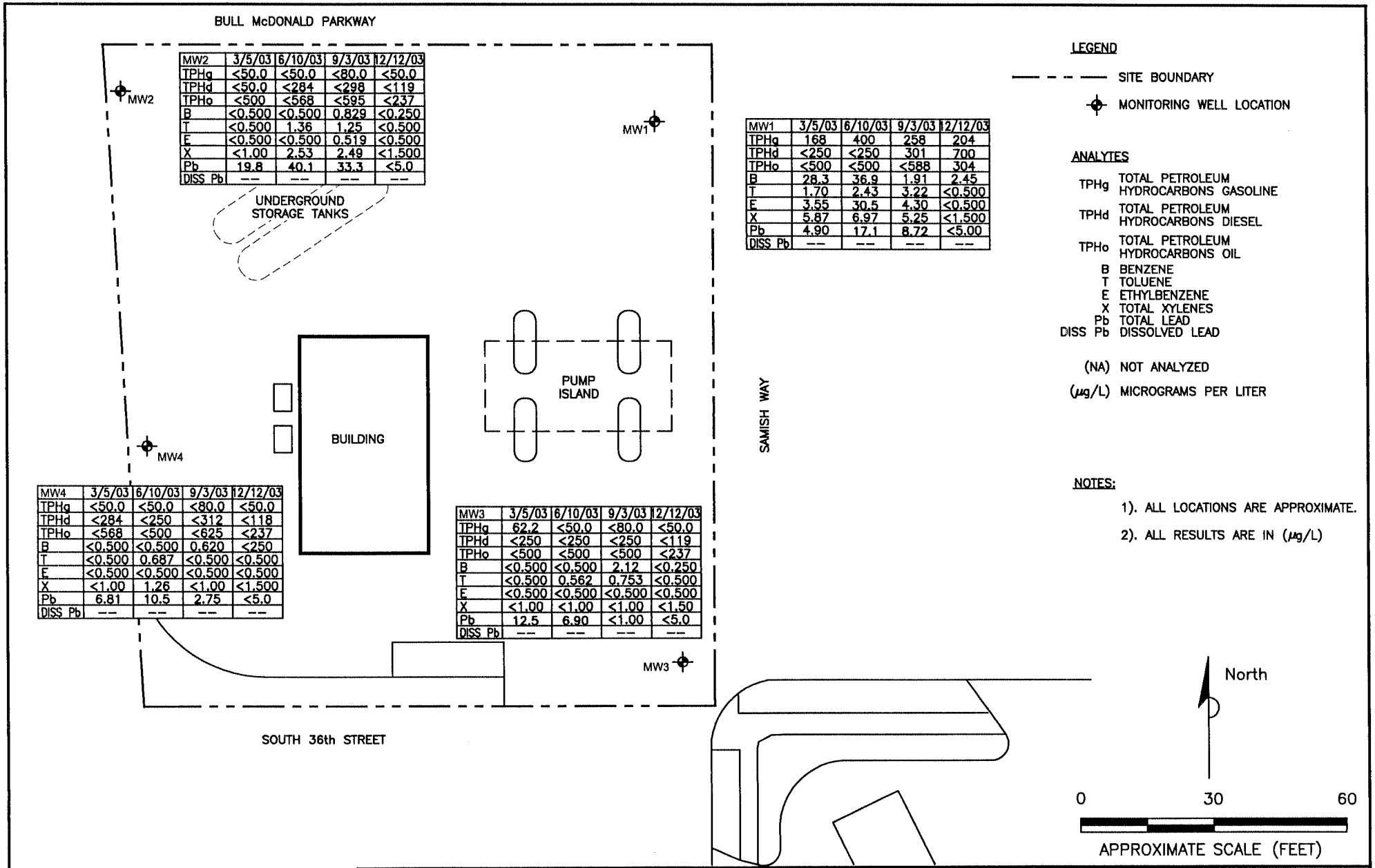


| MW2 | 3/5/03 | 6/10/03 | 9/3/03 | 12/12/03 |
|---|---|---|---|---|
| TPHg | <50.0 | <50.0 | <80.0 | <50.0 |
| TPHd | <50.0 | <284 | <298 | <119 |
| TPHo | <500 | <568 | <595 | <237 |
| B | <0.500 | <0.500 | 0.829 | <0.250 |
| T | <0.500 | 1.36 | 1.25 | <0.500 |
| E | <0.500 | <0.500 | 0.519 | <0.500 |
| X | <1.00 | 2.53 | 2.49 | <1.500 |
| Pb | 19.8 | 40.1 | 33.3 | <5.0 |
| DISS Pb | -- | -- | -- | -- |

| MW1 | 3/5/03 | 6/10/03 | 9/3/03 | 12/12/03 |
|---|---|---|---|---|
| TPHg | 168 | 400 | 258 | 204 |
| TPHd | <250 | <250 | 301 | 700 |
| TPHo | <500 | <500 | <588 | 304 |
| B | 28.3 | 36.9 | 1.91 | 2.45 |
| T | 1.70 | 2.43 | 3.22 | <0.500 |
| E | 3.55 | 30.5 | 4.30 | <0.500 |
| X | 5.87 | 6.97 | 5.25 | <1.500 |
| Pb | 4.90 | 17.1 | 8.72 | <5.00 |
| DISS Pb | -- | -- | -- | -- |

| MW4 | 3/5/03 | 6/10/03 | 9/3/03 | 12/12/03 |
|---|---|---|---|---|
| TPHg | <50.0 | <50.0 | <80.0 | <50.0 |
| TPHd | <284 | <250 | <312 | <118 |
| TPHo | <568 | <500 | <625 | <237 |
| B | <0.500 | <0.500 | 0.620 | <250 |
| T | <0.500 | 0.687 | <0.500 | <0.500 |
| E | <0.500 | <0.500 | <0.500 | <0.500 |
| X | <1.00 | 1.26 | <1.00 | <1.500 |
| Pb | 6.81 | 10.5 | 2.75 | <5.0 |
| DISS Pb | -- | -- | -- | -- |

| MW3 | 3/5/03 | 6/10/03 | 9/3/03 | 12/12/03 |
|---|---|---|---|---|
| TPHg | 62.2 | <50.0 | <80.0 | <50.0 |
| TPHd | <250 | <250 | <250 | <119 |
| TPHo | <500 | <500 | <500 | <237 |
| B | <0.500 | <0.500 | 2.12 | <0.250 |
| T | <0.500 | 0.562 | 0.753 | <0.500 |
| E | <0.500 | <0.500 | <0.500 | <0.500 |
| X | <1.00 | <1.00 | <1.00 | <1.50 |
| Pb | 12.5 | 6.90 | <1.00 | <5.0 |
| DISS Pb | -- | -- | -- | -- |

LEGEND

SITE BOUNDARY

MONITORING WELL LOCATION

ANALYTES

TPHg TOTAL PETROLEUM HYDROCARBONS GASOLINE

TPHd TOTAL PETROLEUM HYDROCARBONS DIESEL

TPHo TOTAL PETROLEUM HYDROCARBONS OIL

B BENZENE

T TOLUENE

E ETHYLBENZENE

X TOTAL XYLENES

Pb TOTAL LEAD

DISS Pb DISSOLVED LEAD

(NA) NOT ANALYZED

(µg/L) MICROGRAMS PER LITER

NOTES:

1). ALL LOCATIONS ARE APPROXIMATE.

2). ALL RESULTS ARE IN (µg/L)

SOURCE:
BASE MAP FROM; ENVIRONMENTAL RESOLUTIONS, INC. (ERI) TITLED GROUNDWATER SAMPLE ANALYSIS MAP– 06/10/03, PLATE 1, DATED 07/08/03, PROJECT NO. 31065. CADD FILE 31065.13.DWG

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200 SOUTH 36th STREET
BELLINGHAM, WASHINGTON

**SITE PLAN WITH ANALYTICAL RESULTS (3/5/03 - 12/12/03)**

FIGURE: **3**

| JOB NUMBER: | DRAWN BY: | CHECKED BY: | APPROVED BY: | DATE: |
|---|---|---|---|---|
| 01CP.06380.04 | S. SIMMONS | | | 2/5/04 |

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TABLE 1
SUMMARY OF CUMMULATIVE GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
ConocoPhillips Site No. 6380
200 South 36th Street
Bellingham, Washington
Page 1 of 2

| Well Name | Sample Date | DTW | GW Elev. | TPH-G | TPH-D | TPH-O | B | T | E | X | Total Pb | Diss Pb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW1 | 03/11/99 | 4.96 | 93.53 | <50 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 2.41 | -- |
| TOC Elevation | 05/25/99 | 5.33 | 93.16 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | -- |
| 98.49 | 08/12/99 | 6.66 | 91.83 | <50.0 | -- | -- | <0.500 | <0.500 | <0.500 | <1.00 | -- | -- |
| | 12/07/99 | 6.10 | 92.39 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 6.18 | -- |
| | 02/10/00 | 6.10 | 92.39 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 1.75 | -- |
| | 02/02/01 | 5.17 | 93.32 | <50.0 | 588 | <750 | **12.4** | 1.02 | 1.10 | 2.77 | -- | <1.00 |
| | 02/08/02 | 5.77 | 92.72 | **838** | **1,600** | <500 | **128** | 2.15 | 85.4 | 6.55 | 7.70 | <1.00 |
| | 09/20/02 | 6.27 | 92.22 | 197 | **1,320** | <588 | 1.82 | <0.500 | 33.0 | <1.00 | <1.00 | -- |
| | 12/04/02 | 7.05 | 91.44 | 373 | 511 | <568 | **106** | 1.32 | 1.39 | 5.41 | 4.65 | -- |
| | 03/05/03 | 5.70 | 92.79 | 168 | <250 | <500 | **28.3** | 1.70 | 3.55 | 5.87 | 4.90 | -- |
| | 06/10/03 | 5.92 | 92.57 | 400 | <250 | <500 | **36.9** | 2.43 | 30.5 | 6.97 | **17.1** | -- |
| | 09/03/03 | 6.30 | 92.19 | 258 | 301 | <588 | 1.91 | 3.22 | 4.30 | 5.25 | 8.72 | -- |
| | 12/12/03 | 5.530 | 92.960 | 204 | **700** | 304 | 2.45 | <0.500 | <0.500 | <1.500 | <5.0 | -- |
| MW2 | 03/11/99 | 7.93 | 92.81 | <50 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | **162** | -- |
| TOC Elevation | 05/25/99 | 8.18 | 92.56 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | -- |
| 100.74 | 08/12/99 | 8.94 | 91.80 | <50.0 | 281 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | -- |
| | 12/07/99 | 8.04 | 92.70 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | **17.0** | -- |
| | 02/10/00 | 8.32 | 92.42 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | **49.1** | -- |
| | 02/02/01 | 6.40 | 94.34 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | <1.00 |
| | 02/08/02 | 7.77 | 92.97 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | **40.6** | <1.00 |
| | 09/20/02 | 9.23 | 91.51 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | <1.00 | -- |
| | 12/04/02 | 9.15 | 91.59 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | 2.89 | -- |
| | 03/05/03 | 8.28 | 92.46 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | **19.8** | -- |
| | 06/10/03 | 8.56 | 92.18 | <50.0 | <284 | <568 | <0.500 | 1.36 | <0.500 | 2.53 | **40.1** | -- |
| | 09/03/03 | 9.13 | 91.61 | <80.0 | <298 | <595 | 0.829 | 1.25 | 0.519 | 2.49 | **33.3** | -- |
| | 12/12/03 | 8.120 | 92.620 | <50.0 | <119 | <237 | <0.250 | <0.500 | <0.500 | <1.500 | <5.0 | -- |
| MW3 | 03/11/99 | 4.93 | 92.91 | <50 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 6.35 | -- |
| TOC Elevation | 05/25/99 | 5.19 | 92.65 | 210 | 383 | <750 | <0.500 | <0.500 | 3.04 | 3.93 | -- | -- |
| 97.84 | 08/12/99 | 5.70 | 92.14 | 56.3 | <250 | <750 | <0.500 | <0.500 | 0.732 | 1.84 | -- | -- |
| | 12/07/99 | 5.03 | 92.81 | 94.7 | <250 | <750 | <0.500 | 0.598 | <0.500 | <1.00 | 4.40 | -- |
| | 02/10/00 | 4.92 | 92.92 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | **17.6** | -- |
| | 02/02/01 | 4.76 | 93.08 | 63.0 | 413 | <750 | <0.500 | <0.500 | 0.503 | <1.00 | -- | <1.00 |
| | 02/08/02 | 4.59 | 93.25 | 91.5 | 410 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | **22.3** | <1.00 |
| | 09/20/02 | 5.88 | 91.96 | 129 | 372 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | <1.00 | -- |
| | 12/04/02 | 5.26 | 92.58 | 147 | 371 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | 4.60 | -- |
| | 03/05/03 | 4.70 | 93.14 | 62.2 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | 12.5 | -- |
| | 06/10/03 | 5.31 | 92.53 | <50.0 | <250 | <500 | <0.500 | 0.562 | <0.500 | <1.00 | 6.90 | -- |
| | 09/03/03 | 5.66 | 92.18 | <80.0 | <250 | <500 | 2.12 | 0.753 | <0.500 | <1.00 | <1.00 | -- |
| | 12/12/03 | 4.785 | 93.055 | <50.0 | <119 | <237 | <0.250 | <0.500 | <0.500 | <1.500 | <5.0 | -- |
| MTCA Method A Cleanup Levels | | | | 1000/800* | 500 | 500 | 5 | 1000 | 700 | 1000 | 15 | 15 |

TABLE 1
SUMMARY OF CUMMULATIVE GROUNDWATER ELEVATIONS AND SAMPLE ANALYTICAL RESULTS
ConocoPhillips Site No. 6380
200 South 36th Street
Bellingham, Washington


| Well Name | Sample Date | DTW | GW Elev. | TPH-G | TPH-D | TPH-O | B | T | E | X | Total Pb | Diss Pb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW4 | 03/11/99 | 6.39 | 93.05 | <50 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 29.0 | -- |
| TOC Elevation | 05/25/99 | 6.62 | 92.82 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | -- |
| 99.44 | 08/12/99 | 7.31 | 92.13 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | -- |
| | 12/07/99 | 6.37 | 93.07 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 10.2 | -- |
| | 02/10/00 | 6.48 | 92.96 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | 23.6 | -- |
| | 02/02/01 | 6.37 | 93.07 | <50.0 | <250 | <750 | <0.500 | <0.500 | <0.500 | <1.00 | -- | <1.00 |
| | 02/08/02 | 6.03 | 93.41 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | 3.30 | <1.00 |
| | 09/20/02 | 7.37 | 92.07 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | <1.00 | -- |
| | 12/04/02 | 7.03 | 92.41 | <50.0 | <250 | <500 | <0.500 | <0.500 | <0.500 | <1.00 | <1.00 | -- |
| | 03/05/03 | 6.33 | 93.11 | <50.0 | <284 | <568 | <0.500 | <0.500 | <0.500 | <1.00 | 6.81 | -- |
| | 06/10/03 | 6.99 | 92.45 | <50.0 | <250 | <500 | <0.500 | 0.687 | <0.500 | 1.26 | 10.5 | -- |
| | 09/03/03 | 7.60 | 91.84 | <80.0 | <312 | <625 | 0.620 | <0.500 | <0.500 | <1.00 | 2.75 | -- |
| | 12/12/03 | 6.485 | 92.955 | <50.0 | <118 | <237 | <0.250 | <0.500 | <0.500 | <1.500 | <5.0 | -- |
| Waste Water Effluent | 12/12/03 | -- | -- | <50.0 | -- | -- | <0.250 | <0.500 | <0.500 | <1.500 | -- | -- |
| MTCA Method A Cleanup Levels | | | | 1000/800[a] | 500 | 500 | 5 | 1000 | 700 | 1000 | 15 | 15 |

EXPLANATION:

TOC = Top of Casing

All concentrations are in ug/L (ppb).

Wellhead elevations were taken from prior consultants reports.

DTW = Depth to water in feet below top of casing

GW Elev. = Groundwater elevation relative to top of casing elevation

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Ecology Method NWTPH-Gx

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method NWTPH-Dx

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes

Prior to 12/12/03 BTEX = Aromatic compounds by EPA Method 8020 and 8021B, refer to laboratory reports.

After 9/03/03 BTEX = Aromatic compounds by EPA Method 5030/8260B, refer to laboratory reports.

Prior to 12/12/03 Total Pb by EPA Method 6020; Diss Pb = Dissolved lead by EPA Method 6020

After 9/03/03Total Pb = Total lead by ICP-USEPA Method 6010,

-- = Not Analyzed or Sampled

< = Less than the stated laboratory reporting limit

Shaded values equal or exceed MTCA Method A Cleanup Levels.

[a] Concentration levels stated by MTCA Method A for TPH-G are 1000 µg/L when no benzene is present and 800 µg/L when benzene is present.

Data collected before 12/12/03 are taken from prior consultants.

SEVERN TRENT 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: December 29, 2003

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

PROJECT: 6380 Bellingham

REPORT NUMBER: 118369

TOTAL NUMBER OF PAGES: 30

Enclosed are the test results for five samples received at STL Seattle on December 15, 2003.

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,

Tom Coyner
Project Manager



*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.*

# STL Seattle

Sample Identification:

| Lab. No. | Client ID | Date/Time Sampled | Matrix |
|---|---|---|---|
| 118369-1 | MW-1 | 12-12-03 16:50 | Liquid |
| 118369-2 | MW-2 | 12-12-03 16:25 | Liquid |
| 118369-3 | MW-3 | 12-12-03 15:45 | Liquid |
| 118369-4 | MW-4 | 12-12-03 16:10 | Liquid |
| 118369-5 | Dis-6380 | 12-12-03 17:15 | Liquid |



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# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-1 |
| Lab ID: | 118369-01 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/17/2003 |
| Date Analyzed: | 12/18/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Diesel and Motor Oil by NWTPH-Dx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| o-terphenyl | 109 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| #2 Diesel | 0.7 | 0.237 | 0.119 | X1 |
| Motor Oil | 0.304 | 0.475 | 0.237 | J |

X1 - Chromatogram suggests this might be aged or degraded diesel

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-2 |
| Lab ID: | 118369-02 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/17/2003 |
| Date Analyzed: | 12/18/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Diesel and Motor Oil by NWTPH-Dx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| o-terphenyl | 110 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| #2 Diesel | ND | 0.237 | 0.119 | |
| Motor Oil | ND | 0.474 | 0.237 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-3 |
| Lab ID: | 118369-03 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/17/2003 |
| Date Analyzed: | 12/18/2003 |
| % Solids | - |
| Dilution Factor | 1 |

## Diesel and Motor Oil by NWTPH-Dx Modified

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| o-terphenyl | 120 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| #2 Diesel | ND | 0.237 | 0.119 | |
| Motor Oil | ND | 0.474 | 0.237 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-4 |
| Lab ID: | 118369-04 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/17/2003 |
| Date Analyzed: | 12/18/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Diesel and Motor Oil by NWTPH-Dx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| o-terphenyl | 119 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| #2 Diesel | ND | 0.237 | 0.118 | |
| Motor Oil | ND | 0.473 | 0.237 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-1 |
| Lab ID: | 118369-01 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified**

| | | | Recovery Limits | |
|---|---|---|---|---|
| **Surrogate** | **% Recovery** | **Flags** | **Low** | **High** |
| Trifluorotoluene | 106 | | 50 | 150 |
| Bromofluorobenzene | 105 | | 50 | 150 |
| Pentafluorobenzene | 109 | | 50 | 150 |

| **Analyte** | **Result (mg/L)** | **PQL** | **Flags** |
|---|---|---|---|
| Gasoline by NWTPH-G | 0.204 | 0.1 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-2 |
| Lab ID: | 118369-02 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified**

| | | | Recovery Limits | |
|---|---|---|---|---|
| **Surrogate** | **% Recovery** | **Flags** | **Low** | **High** |
| Trifluorotoluene | 106 | | 50 | 150 |
| Bromofluorobenzene | 106 | | 50 | 150 |
| Pentafluorobenzene | 97.4 | | 50 | 150 |

| **Analyte** | **Result (mg/L)** | **PQL** | **Flags** |
|---|---|---|---|
| Gasoline by NWTPH-G | ND | 0.1 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-3 |
| Lab ID: | 116369-03 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 104 | | 50 | 150 |
| Bromofluorobenzene | 103 | | 50 | 150 |
| Pentafluorobenzene | 96.4 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Gasoline by NWTPH-G | ND | 0.1 | |

60000

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-4 |
| Lab ID: | 118369-04 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 99.9 | | 50 | 150 |
| Bromofluorobenzene | 101 | | 50 | 150 |
| Pentafluorobenzene | 92.7 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Gasoline by NWTPH-G | ND | 0.1 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | DIS-6380 |
| Lab ID: | 118369-05 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified**

| | | | Recovery Limits | |
|---|---|---|---|---|
| **Surrogate** | **% Recovery** | **Flags** | **Low** | **High** |
| Trifluorotoluene | 104 | | 50 | 150 |
| Bromofluorobenzene | 103 | | 50 | 150 |
| Pentafluorobenzene | 96.6 | | 50 | 150 |

| **Analyte** | **Result (mg/L)** | **PQL** | **Flags** |
|---|---|---|---|
| Gasoline by NWTPH-G | ND | 0.1 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-1 |
| Lab ID: | 118369-01 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Aromatic Hydrocarbons by USEPA Method 5030/8260B**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 112 | | 82 | 120 |
| Bromofluorobenzene | 109 | | 84 | 135 |
| Pentafluorobenzene | 112 | | 90 | 121 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| Benzene | 0.00245 | 0.0005 | 0.00025 | |
| Toluene | ND | 0.001 | 0.0005 | |
| Ethylbenzene | ND | 0.001 | 0.0005 | |
| m&p-Xylene | ND | 0.002 | 0.001 | |
| o-Xylene | ND | 0.001 | 0.0005 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-2 |
| Lab ID: | 118369-02 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Aromatic Hydrocarbons by USEPA Method 5030/8260B**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 111 | | 82 | 120 |
| Bromofluorobenzene | 109 | | 84 | 135 |
| Pentafluorobenzene | 111 | | 90 | 121 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| Benzene | ND | 0.0005 | 0.00025 | |
| Toluene | ND | 0.001 | 0.0005 | |
| Ethylbenzene | ND | 0.001 | 0.0005 | |
| m&p-Xylene | ND | 0.002 | 0.001 | |
| o-Xylene | ND | 0.001 | 0.0005 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-3 |
| Lab ID: | 118369-03 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Aromatic Hydrocarbons by USEPA Method 5030/8260B**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 112 | | 82 | 120 |
| Bromofluorobenzene | 109 | | 84 | 135 |
| Pentafluorobenzene | 111 | | 90 | 121 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| Benzene | ND | 0.0005 | 0.00025 | |
| Toluene | ND | 0.001 | 0.0005 | |
| Ethylbenzene | ND | 0.001 | 0.0005 | |
| m&p-Xylene | ND | 0.002 | 0.001 | |
| o-Xylene | ND | 0.001 | 0.0005 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-4 |
| Lab ID: | 118369-04 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Aromatic Hydrocarbons by USEPA Method 5030/8260B**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 108 | | 82 | 120 |
| Bromofluorobenzene | 108 | | 84 | 135 |
| Pentafluorobenzene | 109 | | 90 | 121 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| Benzene | ND | 0.0005 | 0.00025 | |
| Toluene | ND | 0.001 | 0.0005 | |
| Ethylbenzene | ND | 0.001 | 0.0005 | |
| m&p-Xylene | ND | 0.002 | 0.001 | |
| o-Xylene | ND | 0.001 | 0.0005 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | DIS-6380 |
| Lab ID: | 118369-05 |
| Date Received: | 12/15/2003 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Aromatic Hydrocarbons by USEPA Method 5030/8260B**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 112 | | 82 | 120 |
| Bromofluorobenzene | 109 | | 84 | 135 |
| Pentafluorobenzene | 112 | | 90 | 121 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| Benzene | ND | 0.0005 | 0.00025 | |
| Toluene | ND | 0.001 | 0.0005 | |
| Ethylbenzene | ND | 0.001 | 0.0005 | |
| m&p-Xylene | ND | 0.002 | 0.001 | |
| o-Xylene | ND | 0.001 | 0.0005 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-1 |
| Lab ID: | 118369-01 |
| Date Received: | 12/15/03 |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| Dilution Factor | 1 |

**Metals by ICP - USEPA Method 6010**

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Lead | ND | 0.01 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-2 |
| Lab ID: | 118369-02 |
| Date Received: | 12/15/03 |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| Dilution Factor | 1 |

**Metals by ICP - USEPA Method 6010**

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Lead | ND | 0.01 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-3 |
| Lab ID: | 118369-03 |
| Date Received: | 12/15/03 |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| Dilution Factor | 1 |

**Metals by ICP - USEPA Method 6010**

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Lead | ND | 0.01 | |

# STL Seattle

| | |
|---|---|
| Client Name | SECOR International Inc. |
| Client ID: | MW-4 |
| Lab ID: | 118369-04 |
| Date Received: | 12/15/03 |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| Dilution Factor | 1 |

**Metals by ICP - USEPA Method 6010**

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Lead | ND | 0.01 | |

# STL Seattle

| | |
|---|---|
| Lab ID: | Method Blank - DW0544 |
| Date Received: | - |
| Date Prepared: | 12/17/2003 |
| Date Analyzed: | 12/18/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Diesel and Motor Oil by NWTPH-Dx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| o-terphenyl | 111 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| #2 Diesel | ND | 0.25 | 0.125 | |
| Motor Oil | ND | 0.5 | 0.25 | |

# STL Seattle

Blank Spike/Blank Spike Duplicate Report

| | |
|---|---|
| Lab ID: | DW0544 |
| Date Prepared: | 12/17/2003 |
| Date Analyzed: | 12/18/2003 |
| QC Batch ID: | DW0544 |

Diesel and Motor Oil by NWTPH-Dx Modified

| Compound Name | Blank Result (mg/L) | Spike Amount (mg/L) | BS Result (mg/L) | BS % Rec. | BSD Result (mg/L) | BSD % Rec. | RPD | Flag |
|---|---|---|---|---|---|---|---|---|
| #2 Diesel | 0 | 5 | 5.42 | 108 | 5.12 | 102 | -5.7 | |
| Motor Oil | 0 | 5 | 4.86 | 97.2 | 4.72 | 94.4 | -2.9 | |

# STL Seattle

| | |
|---|---|
| Lab ID: | Method Blank - GB3687 |
| Date Received: | - |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 94.2 | | 50 | 150 |
| Bromofluorobenzene | 97.9 | | 50 | 150 |
| Pentafluorobenzene | 89.9 | | 50 | 150 |

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Gasoline by NWTPH-G | ND | 0.1 | |

# STL Seattle

Blank Spike/Blank Spike Duplicate Report

| | |
|---|---|
| Lab ID: | GB3687 |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/19/2003 |
| QC Batch ID: | GB3687 |

Volatile Petroleum Products by WSDOE Method NWTPH-Gx Modified

| Compound Name | Blank Result (mg/L) | Spike Amount (mg/L) | BS Result (mg/L) | BS % Rec. | BSD Result (mg/L) | BSD % Rec. | RPD | Flag |
|---|---|---|---|---|---|---|---|---|
| Gasoline by NWTPH-G | 0 | 1.25 | 1.14 | 91.6 | 1.14 | 91.3 | -0.33 | |

# STL Seattle

| | |
|---|---|
| Lab ID: | Method Blank - GB3687 |
| Date Received: | - |
| Date Prepared: | 12/19/2003 |
| Date Analyzed: | 12/20/2003 |
| % Solids | - |
| Dilution Factor | 1 |

**Volatile Aromatic Hydrocarbons by USEPA Method 5030/8260B**

| Surrogate | % Recovery | Flags | Recovery Limits Low | Recovery Limits High |
|---|---|---|---|---|
| Trifluorotoluene | 99.3 | | 82 | 120 |
| Bromofluorobenzene | 102 | | 84 | 135 |
| Pentafluorobenzene | 101 | | 90 | 121 |

| Analyte | Result (mg/L) | PQL | MRL | Flags |
|---|---|---|---|---|
| Benzene | ND | 0.0005 | 0.00025 | |
| Toluene | ND | 0.001 | 0.0005 | |
| Ethylbenzene | ND | 0.001 | 0.0005 | |
| m&p-Xylene | ND | 0.002 | 0.001 | |
| o-Xylene | ND | 0.001 | 0.0005 | |

# STL Seattle

| | |
|---|---|
| Lab ID: | Method Blank - TP488 |
| Date Received: | - |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| Dilution Factor | 1 |

**Metals by ICP - USEPA Method 6010**

| Analyte | Result (mg/L) | PQL | Flags |
|---|---|---|---|
| Lead | ND | 0.01 | |

# STL Seattle

Matrix Spike Report

| | |
|---|---|
| Client Sample ID: | KUIC UIC WELL 1 |
| Lab ID: | 118286-01 |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| QC Batch ID: | TP488 |

Metals by ICP - USEPA Method 6010

| Parameter Name | Sample Result (mg/L) | Spike Amount (mg/L) | MS Result (mg/L) | MS % Rec. | Flag |
|---|---|---|---|---|---|
| Lead | 0 | 1 | 0.96 | 96 | |

# STL Seattle

Duplicate Report

| | |
|---|---|
| Client Sample ID: | KUIC UIC WELL 1 |
| Lab ID: | 118286-01 |
| Date Prepared: | 12/17/03 |
| Date Analyzed: | 12/17/03 |
| QC Batch ID: | TP488 |

Metals by ICP - USEPA Method 6010

| Parameter Name | Sample Result (mg/L) | Duplicate Result (mg/L) | RPD % | Flag |
|---|---|---|---|---|
| Lead | 0 | 0 | NC | |

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

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

## DATA QUALIFIERS AND ABBREVIATIONS

B1: 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 in the blank).

B2: 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 reported in the blank).

C1: 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%.

C2: 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.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be ≤ 30%.

C4: 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.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

MRL: Method Reporting Limit

N: See analytical narrative

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: 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.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

# 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

118369
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J4

SEVERN TRENT **STL**

| | | | |
|---|---|---|---|
| Client: SECOR for ConocoPhillips | Project Manager: Marc Sauze | Date: 12/12/03 | Chain of Custody Number: 08451 |
| Address: 12034 134th CT NE | Telephone Number (Area Code)/Fax Number: 425-372-1600 | Lab Number | Page 1 of 1 |
| City: Redmond / State: WA / Zip Code | Site Contact | Lab Contact | |
| Project Name and Location (State): 6380 Bellingham | Carrier/Waybill Number | | |
| Contract/Purchase Order/Quote No.: 157 SECOO1 | | | |

| Sample I.D. and Location/Description (Containers for each sample may be combined on one line) | Date | Time | Matrix: Air | Aqueous | Sed. | Soil | Containers & Preservatives: Unpres. | H2SO4 | HNO3 | HCl | NaOH | ZnAc/NaOH | Analysis: NWTPH-Gx | BTEX | Total Pb | NWTPH-Dx |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 12/12/03 | 1650 | | X | | | | | 1 | 4 | | | X | X | X | X |
| MW-2 | ↓ | 1625 | | ↓ | | | | | ↓ | ↓ | | | ↓ | ↓ | ↓ | ↓ |
| MW-3 | | 1545 | | | | | | | | | | | | | | |
| MW-4 | | 1610 | | | | | | | | | | | | | | |
| D.S - 6380 | 12/12/03 | 1715 | | | | | | | | 3 | | | | | | |

Special Instructions/ Conditions of Receipt

Cooler: ☒ Yes ☐ No Cooler Temp:_____

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☒ 10 Days ☐ 15 Days ☐ Other _____

QC Requirements (Specify)

| | Date | Time |
|---|---|---|
| 1. Relinquished By: Stuart Walker | 12/15/03 | 930 |
| 2. Relinquished By: [illegible] STL | 12-15-03 | 1325 |
| 3. Relinquished By: | | |
| 1. Received By: [signature] | 12-15-03 | 1745 |
| 2. Received By: [signature] | 12-15-03 | 3:10 |
| 3. Received By: | | |

Comments



DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

**SECOR**

# DAILY FIELD LOG

Page: 1 of 1
Date:

Client: **ConocoPhillips** | Site No: 6380 BELLINGHAM | Project No: 01CP.06380.04

Scope of Work: x Quarter Monitoring/Sampling WNO 1571SEC001

Describe Daily Activities:

Gauged 4 monitoring wells.
Purged 4 monitoring wells.
Sampled 4 monitoring wells.

Number of drums left on site: 0

Field Notes:

1:40 August Webb (AW) on site. Locate wells as identified on site plan. Set up equipment & decon
2:10 Gauge MW-1 – MW-4
2:40 Purge MW-1 – MW-4 of 3 well volumes.
3:40 Sample MW-1 – MW-4 using a Peristaltic Pump. ~~Anax~~ Submit for NWTPH-Gx + BTEX; NWTPH-Dx; Total Pb. Samples NOT field filtered.
5:05 Discharge Purge water through carbon canister to grass on NW corner of site.
5:40 AW off-site.

Arrived on Site: 1:40 Departed Site: 5:40

Decontamination Procedures: **3-Stage (Alconox Wash, Tap Water Rinse, & Distilled Water Rinse)**

Daily Health and Safety Log Completed?: Y Utility Locations Checked?: N/A

Important Conversations:

Important Changes in Scope of Work:

Weather Conditions: Partly cloudy ~45° Subcontractors On Site: N/A

SECOR Personnel On Site: August Webb

Signed: August Webb Date: 12/12/03

# SECOR

INTERNATIONAL INCORPORATED

## MONITORING & SAMPLING LOG

Page 1 of 1

Project Name: 6380 BELLINGHAM

Date: 12/12/03

Project Number: 01CP.06380.04

No. of Monitoring Wells Gauge: 4

SECOR Rep: August Welch

Checked by:

No. of Monitoring Wells Sampled: 4

## MONITORING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Dissolved Oxygen Meter Type/ID: YSI Model 55 # _____ Calibration: _____ ft above mean sea level

Sampling Method: _____Teflon Bailer _____Disposable Bailer _____Other: Dedicated Pump Tubing

Decontamination Method: _____Steam / High Pressure Wash ___x___3 Stage (Alconox, Tap & DI rinse) _____Other: _____

## MONITORING / SAMPLING DATA

| Well I.D. | Previous Quarter DTW | Previous Quarter Gas/Benz (µg/L) | Depth to Floating Product (ft) | Current DTW (ft) | Floating Product Thickness | Total Depth | Meas. Time | Casing Elevation[1] | Groundwater Elevation | Corrected Groundwater Elevation[2] | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | | | | 5.530 | | 21.75 | 225 | | | | |
| MW-2 | | | | 8.120 | | 20.60 | 221 | | | | |
| MW-3 | | | | 4.785 | | 20.83 | 212 | | | | |
| MW-4 | | | | 6.485 | | 20.33 | 217 | | | | |

## SAMPLING INFORMATION

| Container Types & Volumes | Filtered (Y/N) | Sample Preservatives | Analytical Parameters |
|---|---|---|---|
| 3 x 40ml VOAs | N | HCL & ICE | NWTPH-Gx |
| 1 x 1 L Amber | N | HCL & ICE | NWTPH-Dx |
| 1 x 16 oz PLASTIC | N | | DISS. Pb |

Notes: 1 = feet from mean sea level

2 = elevation adjusted by adding (.75 x product thickness) to measured water elevation

# SECOR

International Incorporated

## Monitoring Well Inspection Report

Site No. & Name: 6380 BELLINGHAM

Date: 12/12/03

Project Number: 01CP.06380.04

Field Personnel: August Welch

| | Well Location Number: | MW-1 | MW-2 | MW-3 | MW-4 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| EXTERIOR | Well Perimeter Seal Condition (G-Good P-Poor) | G | G | G | G | | | | |
| | Well Structure Drainage (G-Good P-Poor) | P | G | G | G | | | | |
| | Properly Secured (Y-Yes N-No) | Y | Y | Y | Y | | | | |
| | Type of Well Vault (E=EMCO Wheaton M=Morrison V=Vault) | M | M | M | M | | | | |
| INTERIOR | Type of Well Seal (Dirt, Concrete, etc.) | C | C | C | C | | | | |
| | Well Casing Type (i.e. 2" or 4") | 2 | 2 | 2 | 2 | | | | |
| | Locking Cap Condition (G-Good P-Poor) | G | G | G | G | | | | |
| | Rubber Seal Condition (G-Good P-Poor) | G | G | G | G | | | | |
| | Lock on Well (Y-Yes N-No) | N | N | N | N | | | | |
| | Liquid Present in Well Vault (Y-Yes N-No) | Y | N | N | Y | | | | |

| | Well Location Number: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| EXTERIOR | Well Perimeter Seal Condition (G-Good P-Poor) | | | | | | | | |
| | Well Structure Drainage (G-Good P-Poor) | | | | | | | | |
| | Properly Secured (Y-Yes N-No) | | | | | | | | |
| | Type of Well Vault (E=EMCO Wheaton M=Morrison V=Vault) | | | | | | | | |
| INTERIOR | Type of Well Seal (Dirt, Concrete, etc.) | | | | | | | | |
| | Well Casing Type (i.e. 2" or 4") | | | | | | | | |
| | Locking Cap Condition (G-Good P-Poor) | | | | | | | | |
| | Rubber Seal Condition (G-Good P-Poor) | | | | | | | | |
| | Lock on Well (Y-Yes N-No) | | | | | | | | |
| | Liquid Present in Well Vault (Y-Yes N-No) | | | | | | | | |

Comments: Wet grout around casing on all wells except MW-2

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# WELL PURGING / SAMPLING LOG

| | |
|---|---|
| Project Name: | 6380 BELLINGHAM |
| Project Number: | 10CP.06380.04 |
| SECOR Rep: August Welch | Checked by: |

Well No: MW-1
Date: 12/12/03
Sample Time: 1650
Sample No: MW-1

## PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Purging Equipment / Method: ___Vac Truck ___Bailer ___Submersible Pump __x_Peristaltic

pH Temp/Conductivity Meter Type / ID:

Sampling Method: ____Teflon Bailer ____Disposable Bailer x Other: Peristaltic

Decontamination Method: ___Steam / High Pressure Wash _x_3 Stage (Alconox, Tap & DI rinse) Other:

## WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12

Casing Diameter (in): (2) 4 6

Depth to Water ($DTW_1$) (ft): 5.530

Total Well Depth 21.75 (DTB) (ft): Water Column: 16.22

Floating Product: Thickness (in):

Casing Volume (gal): 2.60 3 Casing Volumes (gal): 7.79

## PURGING INFORMATION

| Time | DTW (ft) | Water Volume Purged (gal) | pH | Temp (°C) | ORP | Elect. Cond. (μ mhos) | Water Description (odor, turbidity, color) |
|---|---|---|---|---|---|---|---|
| 314 | Started Purging | | | | | | odor, m-h, gr |
| 319 | | 8 | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Maximum Drawdown ($DTW_2$) (ft) =

Pump Rate (GPM) =

____Fast Recharging Well

____Slow Recharging Well

## SAMPLING INFORMATION

Time Sampled:

Depth to Water at time of sampling ($DTW_3$):

| Container Types & Volumes | Filtered (Y/N) | Sample Preservatives | | Analytical Parameters |
|---|---|---|---|---|
| 3 x 40ml VOAs | N | HCL & ICE | | NWTPH-Gx & 8021B (BTEX) |
| 1 X 1L AMBER | N | HCL & ICE | | NWTPH-DX |
| 1 X 16 oz PLASTIC | N | | | DISS. Pb |

## BOREHOLE VOLUME CALCULATIONS

**The calculation of one borehole volume is based on the formula in the SAM Manual.**

| Casing Diameter (in) | Borehole Diameter (in) | Calculated Borehole Volume (gal) |
|---|---|---|
| 2 | 8 | .77 ($DTB-DTW_1$) |
| 2 | 10 | 1.14 ($DTB-DTW_1$) |
| 4 | 10 | 1.50 ($DTB-DTW_1$) |
| 4 | 12 | 1.95 ($DTB-DTW_1$) |
| 6 | 10 | 2.11 ($DTB-DTW_1$) |

Notes:

## RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \quad\quad = \quad\quad \%$$

80% Recharge =

# SECOR

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## WELL PURGING / SAMPLING LOG

| | |
|---|---|
| Project Name: | 6380 BELLINGHAM |
| Project Number: | 10CP.06380.04 |
| SECOR Rep: August Welch | Checked by: |
| Well No: | MW-2 |
| Date: | 12/12/03 |
| Sample Time: | 1625 |
| Sample No: | MW-2 |

### PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #

Purging Equipment / Method: ___ Vac Truck ___ Bailer ___ Submersible Pump _x_ Peristaltic

pH Temp/Conductivity Meter Type / ID:

Sampling Method: ____Teflon Bailer ____Disposable Bailer _x_ Other: Peristaltic

Decontamination Method: ___ Steam / High Pressure Wash _x_ 3 Stage (Alconox, Tap & DI rinse) Other:

### WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12

Casing Diameter (in): (2) 4 6

Depth to Water ($DTW_1$) (ft): 8.120

Total Well Depth (DTB) (ft): 20.60

Water Column: 12.48

Floating Product:

Thickness (in):

Casing Volume (gal): 2.00

3 Casing Volumes (gal): 6.00

### PURGING INFORMATION

| Time | DTW (ft) | Water Volume Purged (gal) | pH | Temp (°C) | ORP | Elect. Cond. (μ mhos) | Water Description (odor, turbidity, color) |
|---|---|---|---|---|---|---|---|
| 304 | Started Purging | | | | | | no odor m-h-gr |
| 307 | | 6 | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Maximum Drawdown ($DTW_2$) (ft) =

Pump Rate (GPM) =

____Fast Recharging Well

Slow Recharging Well

### SAMPLING INFORMATION

Time Sampled:

Depth to Water at time of sampling ($DTW_3$):

| Container Types & Volumes | Filtered (Y/N) | Sample Preservatives | | Analytical Parameters |
|---|---|---|---|---|
| 3 x 40ml VOAs | N | HCL & ICE | | NWTPH-Gx & 8021B (BTEX) |
| 1 X 1L AMBER | N | HCL & ICE | | NWTPH-DX |
| 1 X 16 oz PLASTIC | N | | | DISS. Pb |

### BOREHOLE VOLUME CALCULATIONS

**The calculation of one borehole volume is based on the formula in the SAM Manual.**

| Casing Diameter (in) | Borehole Diameter (in) | Calculated Borehole Volume (gal) |
|---|---|---|
| 2 | 8 | .77 (DTB-$DTW_1$) |
| 2 | 10 | 1.14 (DTB-$DTW_1$) |
| 4 | 10 | 1.50 (DTB-$DTW_1$) |
| 4 | 12 | 1.95 (DTB-$DTW_1$) |
| 6 | 10 | 2.11 (DTB-$DTW_1$) |

Notes:

### RECOVERY CALCULATIONS

$$\%\ of\ Recovery = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\%\ of\ Recovery = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \quad = \quad \%$$

80% Recharge = _____

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INTERNATIONAL INCORPORATED

# WELL PURGING / SAMPLING LOG

Well No: MW-3
Project Name: 6380 BELLINGHAM
Date: 12/12/03
Project Number: 10CP.06380.04
Sample Time: 1545
SECOR Rep: August Welch
Checked by:
Sample No: MW-3

## PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist #
Purging Equipment / Method: ___ Vac Truck ___ Bailer ___ Submersible Pump __x_ Peristaltic
pH Temp/Conductivity Meter Type / ID:
Sampling Method: _____ Teflon Bailer _____ Disposable Bailer ___x__ Other: Peristaltic
Decontamination Method: ___ Steam / High Pressure Wash _x__ 3 Stage (Alconox, Tap & DI rinse) Other:

## WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 10 12
Casing Diameter (in): (2) 4 6
Depth to Water ($DTW_1$) (ft): 4.785
Total Well Depth (DTB) (ft): 20.83
Water Column: 16.05
Floating Product:
Thickness (in):
Casing Volume (gal): 2.57
3 Casing Volumes (gal): 7.70

## PURGING INFORMATION

| Time | DTW (ft) | Water Volume Purged (gal) | pH | Temp (°C) | ORP | Elect. Cond. ($\mu$ mhos) | Water Description (odor, turbidity, color) |
|---|---|---|---|---|---|---|---|
| 242 | Started Purging | | | | | | |
| 245 | | 8 | | | | | odor, M, gr |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Maximum Drawdown ($DTW_2$) (ft) =
Pump Rate (GPM) =
____ Fast Recharging Well
____ Slow Recharging Well

## SAMPLING INFORMATION

Time Sampled:
Depth to Water at time of sampling ($DTW_3$):

| Container Types & Volumes | Filtered (Y/N) | Sample Preservatives | | Analytical Parameters |
|---|---|---|---|---|
| 3 x 40ml VOAs | N | HCL & ICE | | NWTPH-Gx & 8021B (BTEX) |
| 1 X 1L AMBER | N | HCL & ICE | | NWTPH-DX |
| 1 X 16 oz PLASTIC | N | | | DISS. Pb |

## BOREHOLE VOLUME CALCULATIONS

**The calculation of one borehole volume is based on the formula in the SAM Manual.**

| Casing Diameter (in) | Borehole Diameter (in) | Calculated Borehole Volume (gal) |
|---|---|---|
| 2 | 8 | .77 (DTB-$DTW_1$) |
| 2 | 10 | 1.14 (DTB-$DTW_1$) |
| 4 | 10 | 1.50 (DTB-$DTW_1$) |
| 4 | 12 | 1.95 (DTB-$DTW_1$) |
| 6 | 10 | 2.11 (DTB-$DTW_1$) |

Notes:

## RECOVERY CALCULATIONS

$$\%\ of\ Recovery = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\%\ of\ Recovery = 1 - \frac{(\quad)-(\quad)}{(\quad)-(\quad)} = \_\_\_\_$$

$$= \_\_\_\_\ \%$$

80% Recharge = _____

SECOR

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INTERNATIONAL
INCORPORATED

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Redmond, WA 98052
425 372 1600 TEL
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March 2, 2004

LUST Coordinator
Washington Department of
Ecology
3190 160th Ave SE
Bellevue, WA 98008-5452

RE: FOURTH QUARTER 2003 GROUNDWATER MONITORING REPORT FOR CONOCOPHILLIPS INC. FACILITY NUMBER: 256380

Dear Sir or Madam:

SECOR International Incorporated (SECOR) has prepared this ground water monitoring report summarizing the quarterly groundwater monitoring and sampling event that occurred during the fourth quarter of 2003 at ConocoPhillips facility number 256380 located at 200 South 36th St., Bellingham, WA.

If you have any questions or comments regarding the information provided in this report please contact us.

Sincerely,
**SECOR International Incorporated**

August Welch
Assistant Scientist

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DEPT OF ECOLOGY