

## APPENDIX C

### HISTORIC REPORTS



**HART CROWSER**

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102-3699  
206.324.9530

*Earth and Environmental Technologies*

J-1784

July 31, 1986

Mobil Oil Corporation  
P.O. Box 3268  
Kirkland, Washington 98083

Attn: Mr. M.A. Standley

Re: Subsurface Petroleum Product Assessment  
Renton Bulk Storage Facility

Dear Mr. Standley

This letter presents the survey data, water level measurements, and free petroleum product observations made in six monitoring wells at the Renton Bulk Storage Facility. This work was authorized by Mobil Oil purchase order WE6136 issued July 31, 1986. This work has been prepared for the exclusive use of Mobil for specific application to the project site using generally accepted engineering and hydrogeologic practices. No other warranty, expressed or implied, is made.

Six monitoring wells were installed at locations selected by Mike Standley and two Hart Crowser representatives, Kim Marcus and Lori Herman in order to make a preliminary assessment of the extent of free petroleum product beneath the facility (Figure 1). Subsurface free product had been previously detected in an excavation completed on the site.

The monitoring wells consist of 2-inch slotted PVC extending from near the bottom of the boring to within two feet of the surface. The upper two feet consists of solid 2-inch PVC. The installation is completed with a cemented flush-mounted monument (Figures 2 to 8). An explosimeter was used continuously during drilling to monitor combustible gas levels issuing from the boreholes.

COPY TO BP



Mobil Oil Corporation  
July 31, 1986

J-1784  
Page 2

The surface and subsurface conditions generally consist of a 4-inch thick layer of asphalt overlying 8 to 12 feet of gravelly sand fill. The fill overlies native soils that consist of very organic-rich clayey silt to silty clay. The depth to groundwater appears to vary based on the time of year. Water levels at 6 to 7 feet below ground surface were measured during our current work.

Product with a petroleum-like odor was noticed as a vapor, sheen, or fluid during drilling in all borings. The depth that product was first noticed appeared to be dependent on the location of the boring. Product-like odor was noticed immediately below the asphalt in borings B-2, B-3, and B-4; at a depth of approximately 2 feet in borings B-1 and B-5; and at approximately 4 feet in boring B-6. A sheen of product was observed on soil in borings B-2, B-3, and B-4 at depths ranging from 2 to 4 feet. Soil, wet with free product was present on samples at 7.5 feet in boring B-2 and B-3 and at 10.0 feet in boring B-4. No odor, sheen, or liquid product was observed below the fill and generally became less evident below the water table.

Water and gasoline finding pastes were used to determine the amount of product in each well. The elevation to the top of water was subtracted from the elevation to the top of liquid in the well in order to determine the thickness of product. One gallon samples of product from boring B-2 and B-4 were obtained using a bailer. The amount of product in each boring is shown in Table 1.

The well elevations were surveyed by Hart Crowser on July 29, 1986 and are presented in Table 1. An elevation of 19.00 feet from the top of the cement of the southern-most pump island was used as the benchmark and all elevations were recorded to a black arrow placed on the rim of the 2-inch PVC.

Water level measurements were made using a steel tape and water paste. The water level measurements were converted to elevation and are given in Table 1. Corrected water level elevations were estimated to assess the general groundwater flow directions beneath the facility and are also presented in Table 1.

COPY TO BP



Mobil Oil Corporation  
July 31, 1986

J-1874  
Page 3

The distribution of product thickness and the estimated groundwater flow direction indicate that the source of the product is (or was) located near Borings B-2, B-3, and B-4 or to the southwest of these borings within the bulk fuel storage area. The data also indicate that free product may have migrated to the northeast of well B-3.

We recommend that additional work be completed as follows:

- o Three to five wells should be installed to the northeast of well B-3 to further assess how far free product may have migrated. These wells should be installed in a similar fashion as well B-1 to B-6 using hollow-stem auger techniques except that galvanized screen be used instead of PVC screen.
- o An additional three to five wells should be installed within the bulk fuel storage area. This will require that the wells be installed using hand equipment. We have installed this type of well at a Mobil facility in the Port of Tacoma
- o The new wells should be surveyed and water level/product thickness measurements should be obtained and analyzed.

COPY TO BP



Mobil Oil Corporation  
July 31, 1986

J-1784  
Page 4

We appreciate this opportunity to provide you with these services. If you have any questions or need additional assistance please call at your convenience.

Sincerely,

HART CROWSER, INC.

*Kim L. Marcus*

KIM L. MARCUS  
Engineering Geologist

*Matthew G. Dalton*

MATTHEW G. DALTON  
Senior Associate Hydrogeologist

KLM/MGD:klm

Attachments:

|                    |                                                               |
|--------------------|---------------------------------------------------------------|
| Table 1            | Monitoring Well Data                                          |
| Figure 1           | Site and Exploration Plan                                     |
| Figure 2           | Key to Exploration Logs                                       |
| Figure 3 through 8 | Boring Log and Construction Data<br>for Wells B-1 through B-6 |

COPY TO BP



Mobil Oil Corporation  
July 31, 1986

J-1784  
Page 5

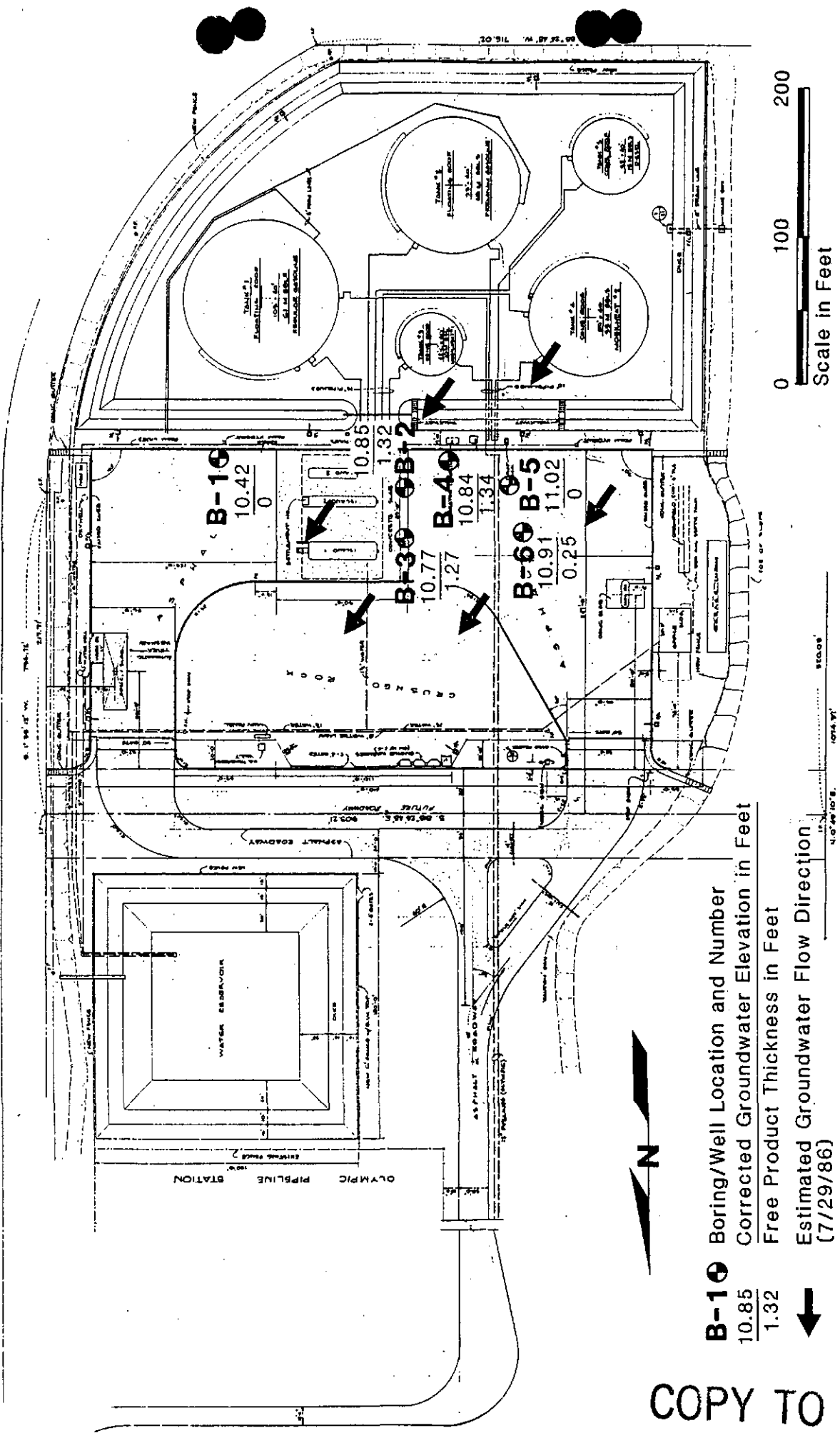
Table 1 - Monitoring Well Data

| Well<br>Number | TOP OF CASING            | FLUID LEVEL              | PRODUCT              | WATER LEVEL                          |           |
|----------------|--------------------------|--------------------------|----------------------|--------------------------------------|-----------|
|                | Elevation (1)<br>in Feet | Elevation (2)<br>in Feet | Thickness<br>in Feet | Elevation (3) in Feet<br>Uncorrected | Corrected |
| B-1            | 18.62                    | 10.42                    | 0.00                 | 10.42                                | 10.42     |
| B-2            | 18.60                    | 11.27                    | 1.32                 | 9.95                                 | 10.85     |
| B-3            | 18.73                    | 11.18                    | 1.27                 | 9.91                                 | 10.77     |
| B-4            | 18.09                    | 11.27                    | 1.34                 | 9.93                                 | 10.84     |
| B-5            | 17.97                    | 11.02                    | 0.00                 | 11.02                                | 11.02     |
| B-6            | 17.94                    | 10.99                    | 0.25                 | 10.74                                | 10.91     |

- (1) Elevations measured to the rim of the 2-inch casing (marked) by Hart Crowser on July 29, 1986. Elevation of benchmark assumed at top of concrete of southern-most pump island as 19.00 feet as noted on Grading Plan dated 11/14/68 (Drawing No. A-208).
- (2) All fluid level measurements were taken on July 29, 1986.
- (3) Corrected for density difference between water and gasoline where the density of gasoline is assumed to be 0.68 grams per cubic centimeter.

COPY TO BP

# Site and Exploration Plan



**B-10** Boring/Well Location and Number  
 10.85 Corrected Groundwater Elevation in Feet  
 1.32 Free Product Thickness in Feet  
 ↓ Estimated Groundwater Flow Direction  
 (7/29/86)

COPY TO BP

Base map prepared from drawing entitled Plot Plan, Renton Terminal  
 by Ryan & Haworth Co., for Mobil Oil Corporation, dated 11/14/67.

# Key to Exploration Logs

## Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

### Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

| SAND or GRAVEL | Standard Penetration Resistance in Blows/Foot | SILT or CLAY | Standard Penetration Resistance in Blows/Foot | Approximate Shear Strength in TSF |
|----------------|-----------------------------------------------|--------------|-----------------------------------------------|-----------------------------------|
| Density        |                                               | Consistency  |                                               |                                   |
| Very loose     | 0 - 4                                         | Very soft    | 0 - 2                                         | <0.125                            |
| Loose          | 4 - 10                                        | Soft         | 2 - 4                                         | 0.125 - 0.25                      |
| Medium dense   | 10 - 30                                       | Medium stiff | 4 - 8                                         | 0.25 - 0.5                        |
| Dense          | 30 - 50                                       | Stiff        | 8 - 15                                        | 0.5 - 1.0                         |
| Very dense     | >50                                           | Very stiff   | 15 - 30                                       | 1.0 - 2.0                         |
|                |                                               | Hard         | >30                                           | >2.0                              |

### Moisture

|       |                                                   |
|-------|---------------------------------------------------|
| Dry   | Little perceptible moisture                       |
| Damp  | Some perceptible moisture, probably below optimum |
| Moist | Probably near optimum moisture content            |
| Wet   | Much perceptible moisture, probably above optimum |

### Minor Constituents

| Minor Constituents             | Estimated Percentage |
|--------------------------------|----------------------|
| Not identified in description  | 0 - 5                |
| Slightly (clayey, silty, etc.) | 5 - 12               |
| Clayey, silty, sandy, gravelly | 12 - 30              |
| Very (clayey, silty, etc.)     | 30 - 50              |

## Legends

### Sampling

#### BORING SAMPLES

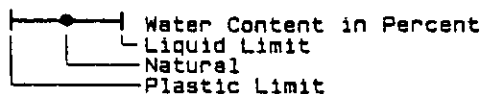
-  Split Spoon
-  Shelby Tube
-  Cuttings
-  Core Run
- \* No Sample Recovery
- P Tube Pushed, Not Driven

#### TEST PIT SAMPLES

-  Grab (Jar)
-  Bag
-  Shelby Tube

### Test Symbols

- GS Grain Size Classification
- CN Consolidation
- TUU Triaxial Unconsolidated Undrained
- TCU Triaxial Consolidated Undrained
- TCD Triaxial Consolidated Drained
- QU Unconfined Compression
- DS Direct Shear
- K Permeability
- PP Pocket Penetrometer
- TV Approximate Compressive Strength in TSF
- TV Torvane
- CBR Approximate Shear Strength in TSF
- CBR California Bearing Ratio
- MD Moisture Density Curve
- AL Atterberg Limits



### Ground Water Observations

-  Surface Seal
-  Ground Water Level on Date (ATD) At Time of Drilling
-  Observation Well Tip or Slotted Section
-  Ground Water Seepage (Test Pits)

J-1784 July 1986

HART-CROWSER & associates, inc.

Figure 2

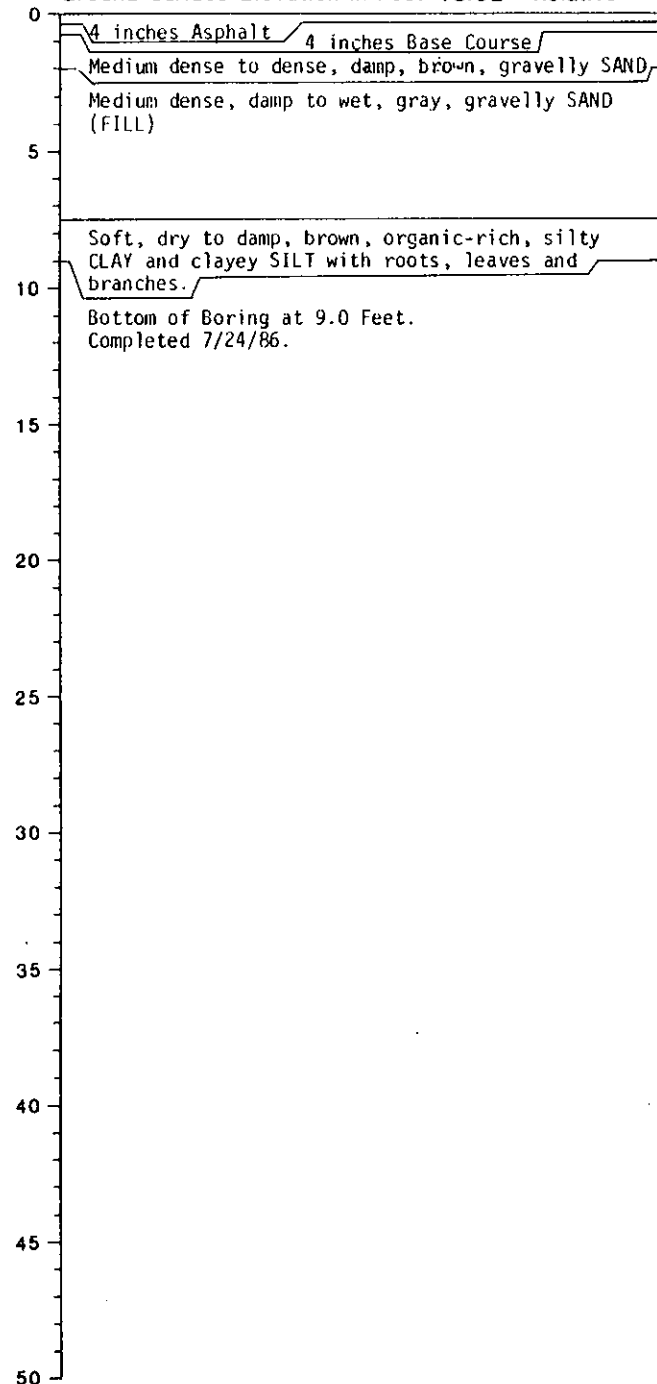
COPY TO BP

# Boring Log and Construction Data for Well B-1

## Geologic Log

Depth  
in Feet

Ground Surface Elevation in Feet 18.62 Relative



Faint  
Odor of  
Product

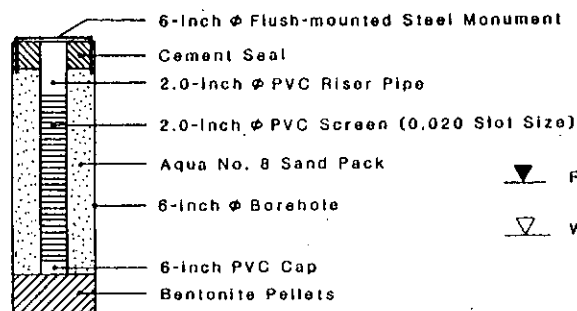
Sample

## Well Design

Top Casing Elevation in Feet 18.62



7/29/86



Free Product Level

Water Level

### NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling

J-1784

July

1986

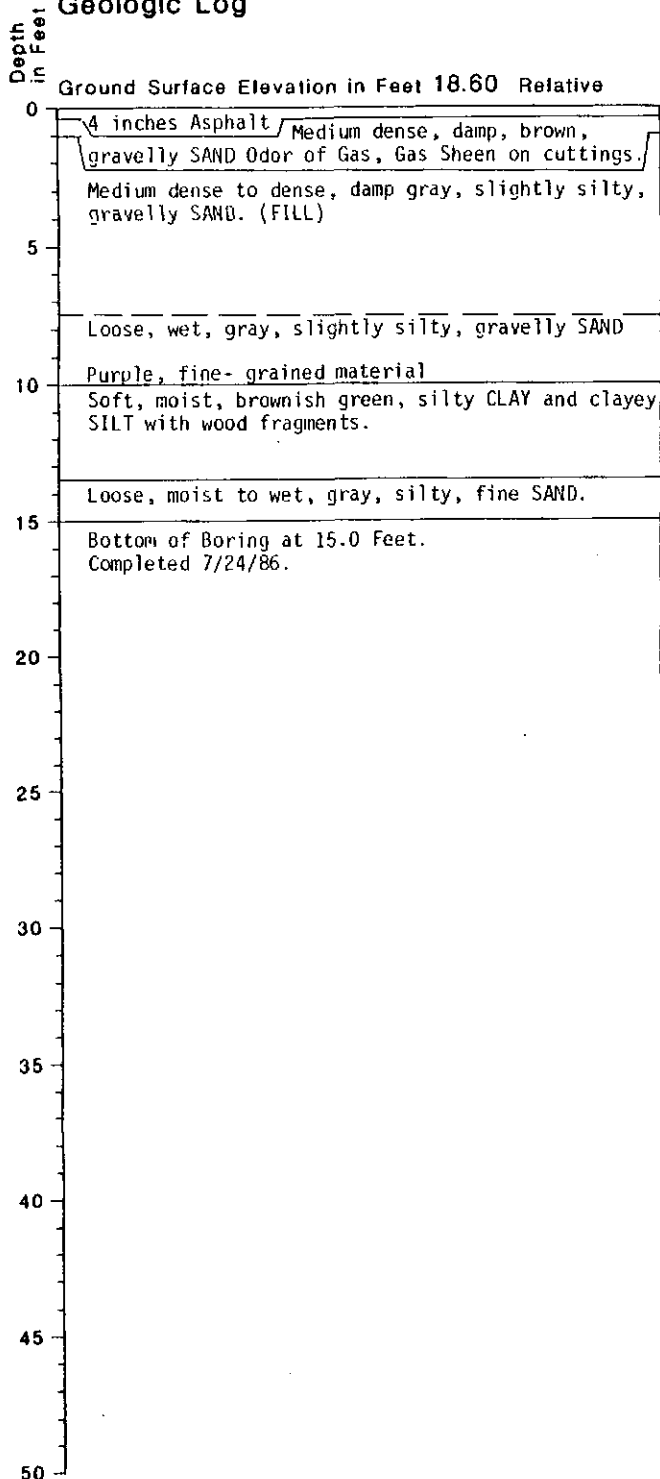
HART-CROWSER & associates, inc.

COPY TO BP

Figure 3

# Boring Log and Construction Data for Well B-2

## Geologic Log

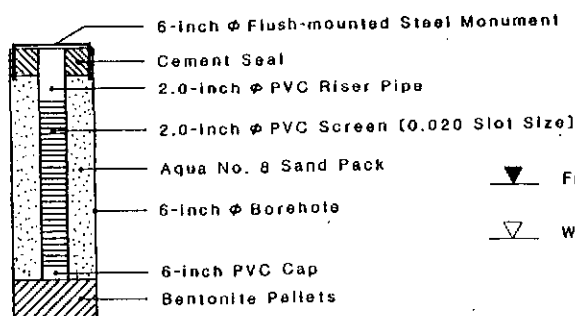
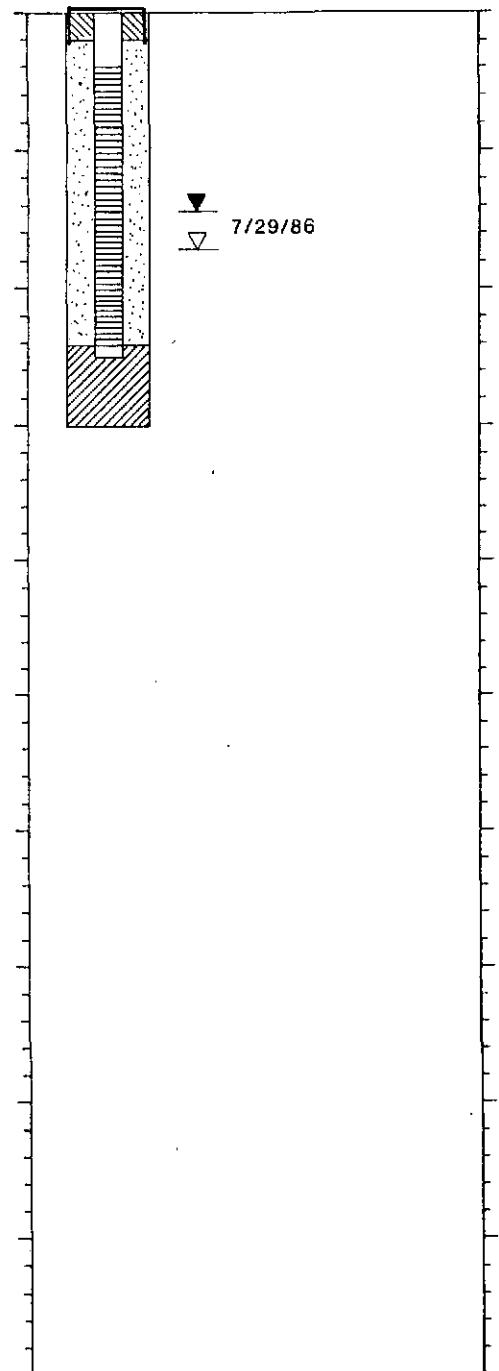


## Sample

Gas and Sewage Odor

## Well Design

Top Casing Elevation in Feet 18.60



▼ Free Product Level

▽ Water Level

## NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling

J-1784

July

1986

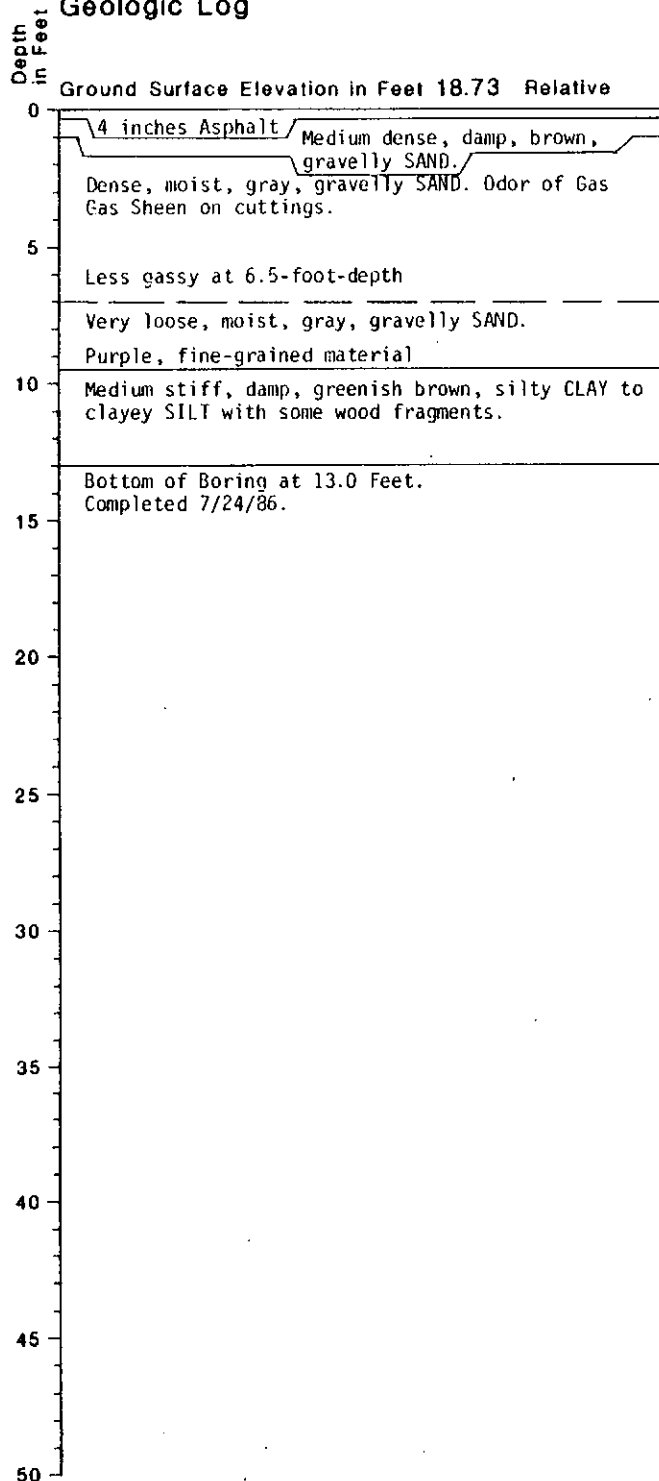
HART-CROWSER & associates, inc.

Figure 4

COPY TO BP

# Boring Log and Construction Data for Well B-3

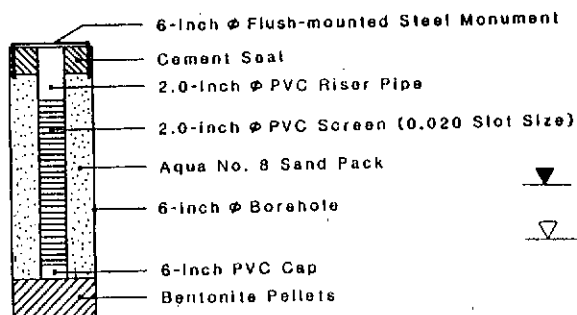
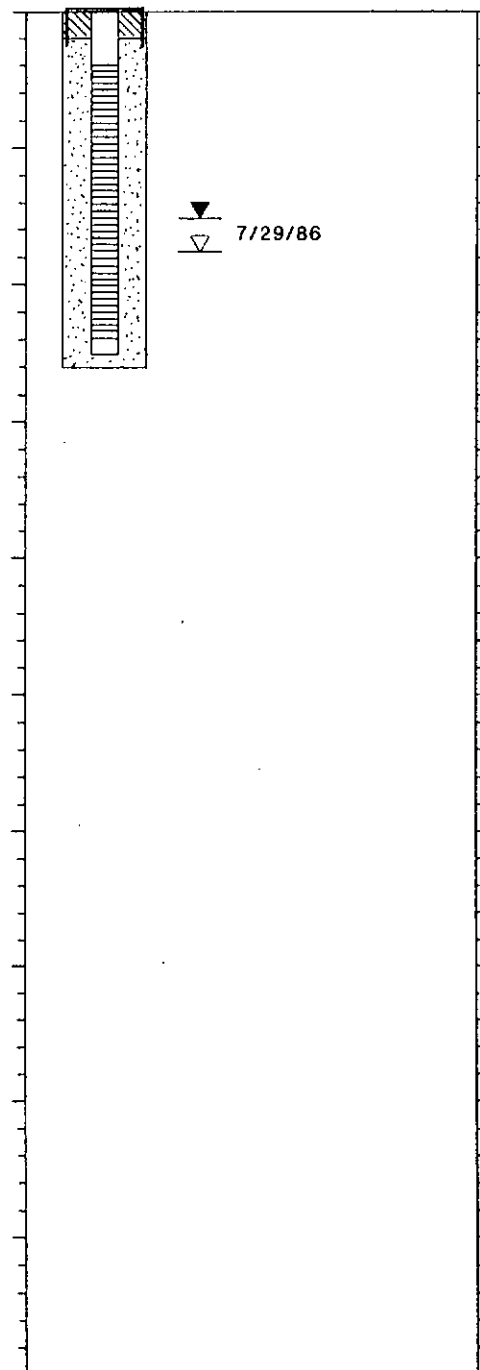
## Geologic Log



## Well Design

Top Casing Elevation in Feet 18.73

Sample



▼ Free Product Level  
 ▽ Water Level

### NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling

J-1784

July

1986

HART-CROWSER & associates, inc.

Figure 5

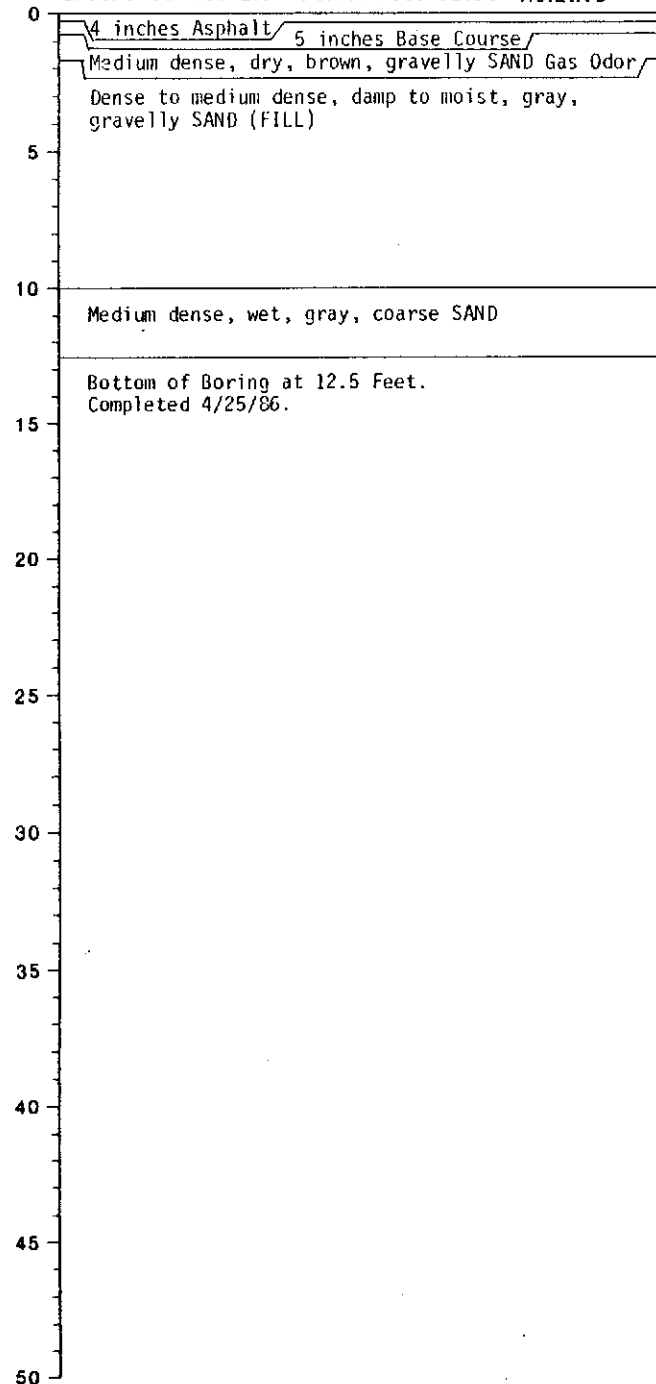
COPY TO BP

# Boring Log and Construction Data for Well B-4

## Geologic Log

Depth  
in Feet

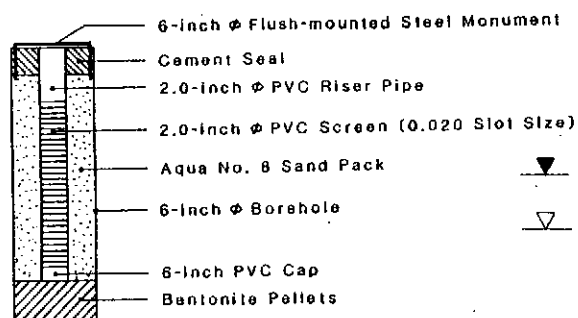
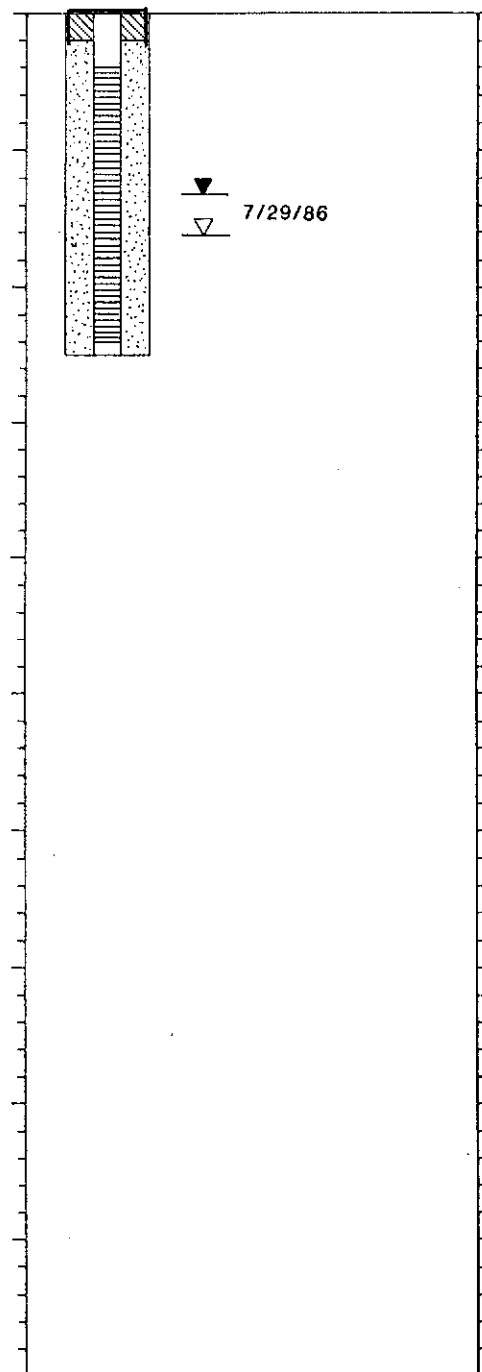
Ground Surface Elevation in Feet 18.09 Relative



## Well Design

Top Casing Elevation in Feet 18.09

Sample



Free Product Level

Water Level

### NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling

J-1784

July

1986

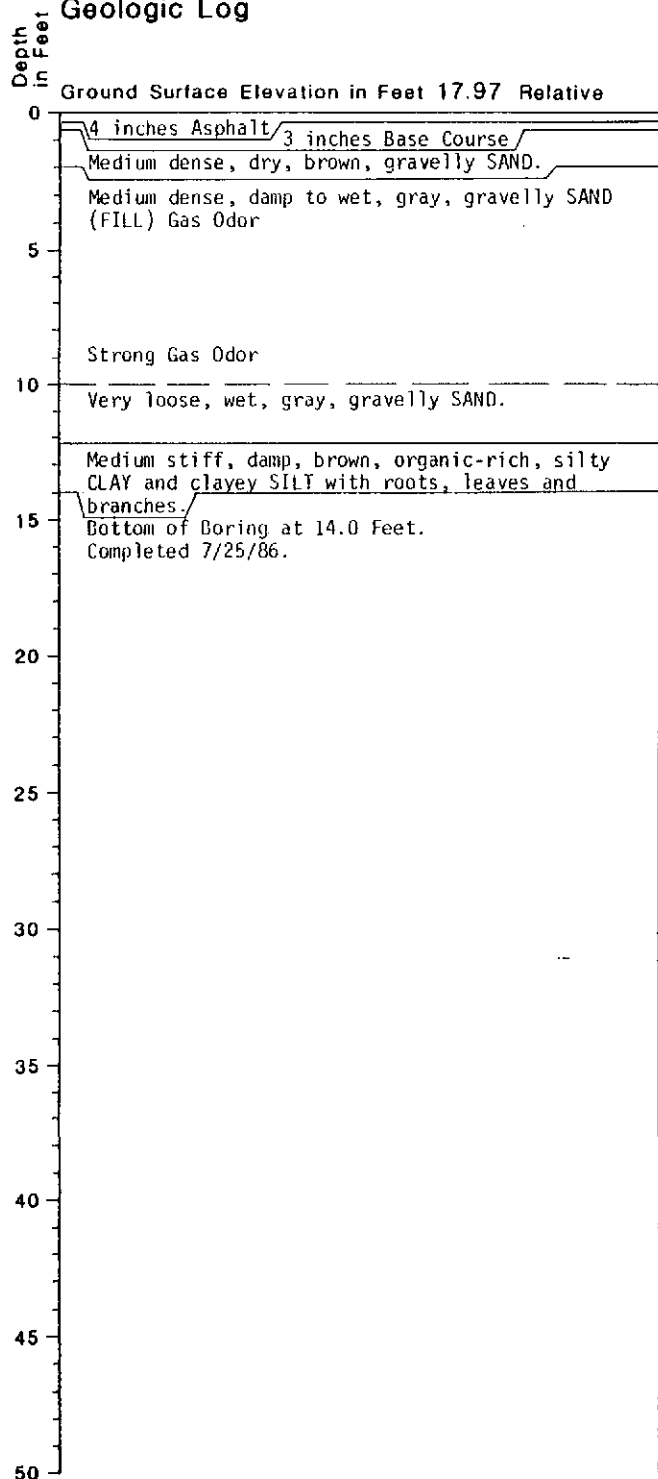
HART-CROWSER & associates, inc.

Figure 6

COPY TO BP

# Boring Log and Construction Data for Well B-5

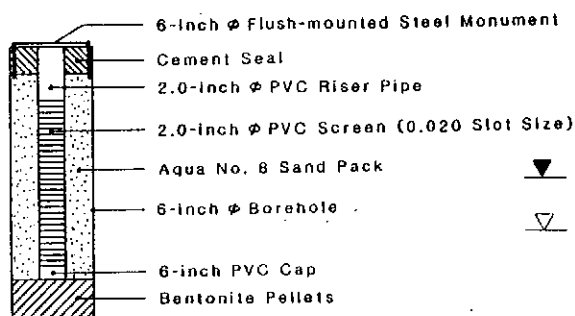
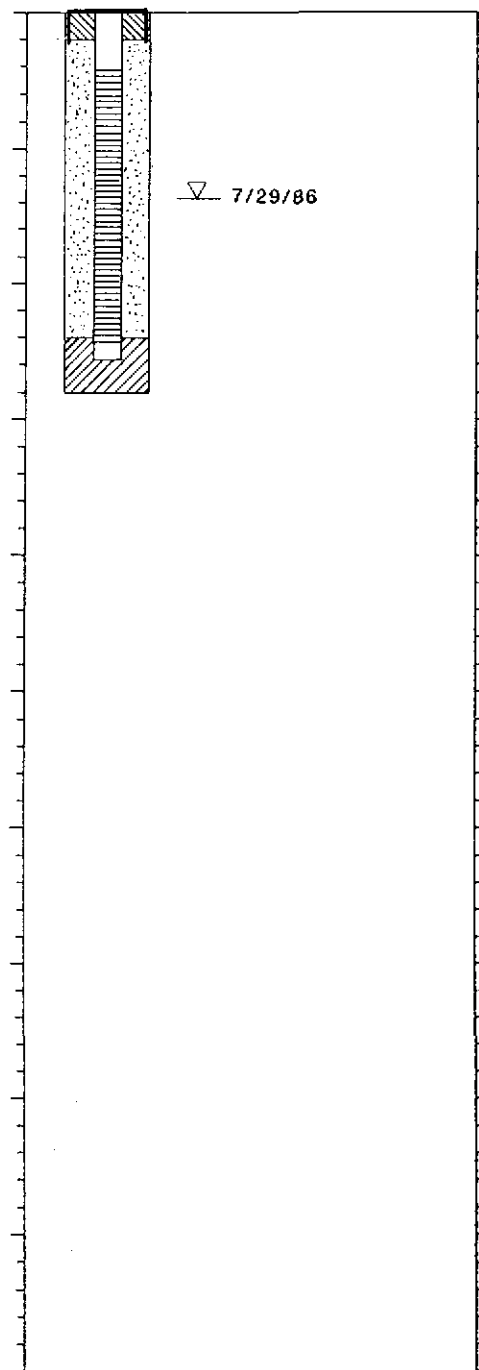
## Geologic Log



## Well Design

Top Casing Elevation in Feet 17.97

Sample



▼ Free Product Level

▽ Water Level

### NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. ATD: At Time of Drilling

J-1784

July

1986

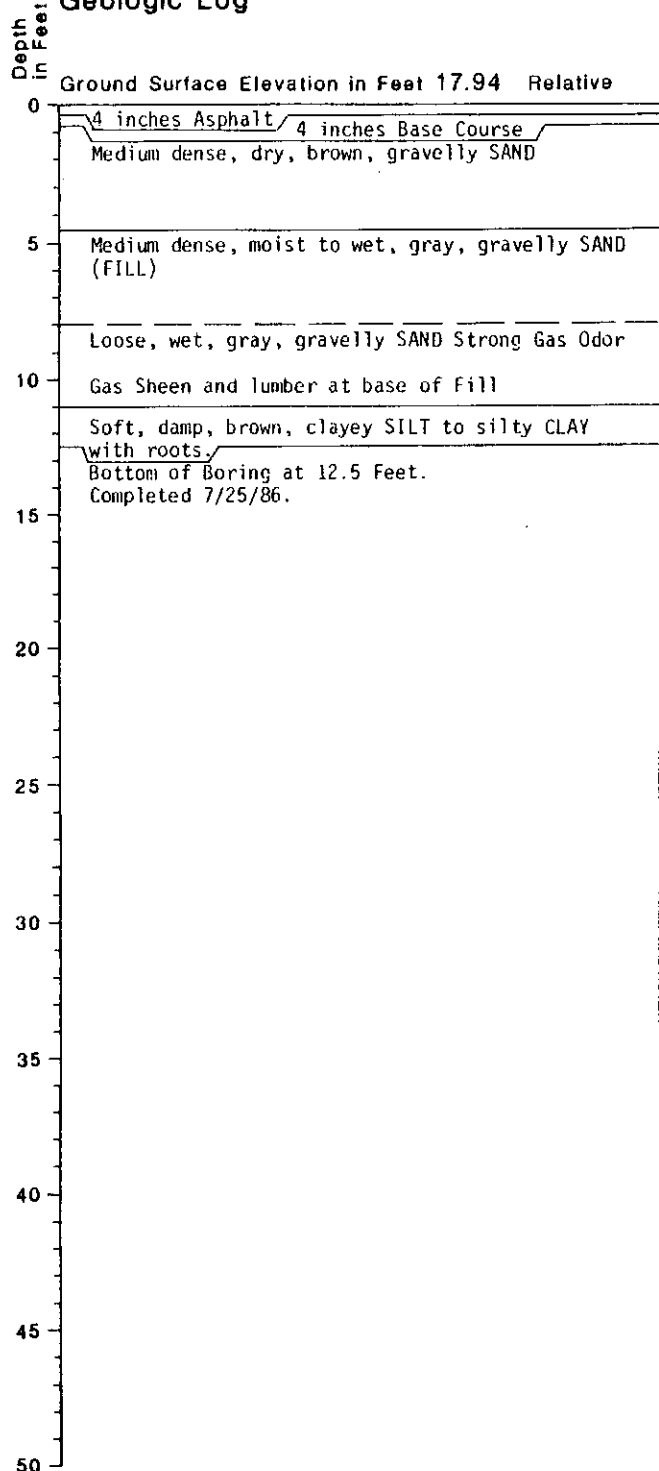
HART-CROWSER & associates, inc.

COPY TO BP

Figure 7

# Boring Log and Construction Data for Well B-6

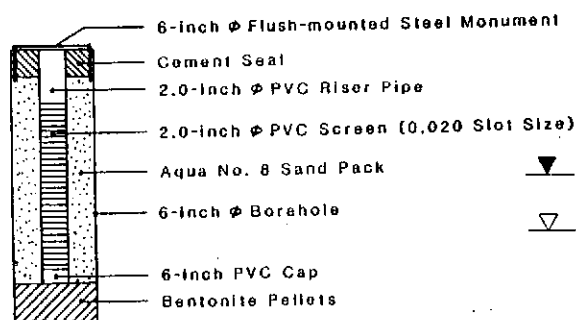
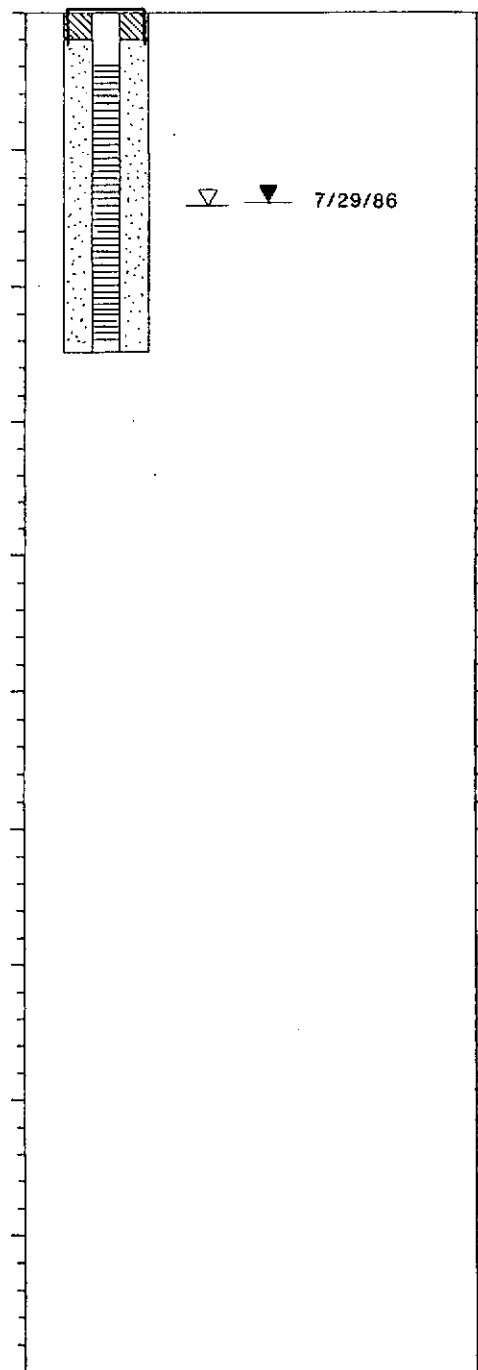
## Geologic Log



## Well Design

Top Casing Elevation in Feet 17.94

Sample



▼ Free Product Level  
▽ Water Level

### NOTES:

1. Soil descriptions are interpretive and actual changes may be gradual.
2. Water Level is for date indicated and may vary with time of year. A1D: At Time of Drilling

J-1784

July

1986

HART-CROWSER & associates, inc.

COPY TO BP

Figure 8

# Mobil Oil Corporation

September 21, 1990

Mr. David Shuttleworth  
British Petroleum Oil Company  
2423 Lind Avenue SW  
Renton, Washington 98055

Dear Mr. Shuttleworth:

Per our conversation at the September 10, 1990 meeting at Hart Crowser's office in Seattle and at the request of Gary Stumpf, I am enclosing information related to a suspected release of BP regular leaded gasoline at the Renton Terminal between March 15 and March 21, 1990.

Though we could not identify the source of the release, we suspect that product spilled during tanker truck refueling and leaked from the rack drain tank. Our best estimate of the volume of product released is 1,800 gallons.

This information is provided to help you determine the source of the release. It is obviously in the best interests of both BP and Mobil to verify that there is no ongoing leak. If you identify and fix the problem, we would appreciate confirmation of the work.

Please call me if you wish to discuss this matter.

MPA:ars  
enclosure  
ausb0235

cc: James O'Hara  
British Petroleum Oil Company  
4850 E. 49th Street  
Cleveland, Ohio 44124

*Don't -  
Please critique  
this. Jim*

|                                                                                      |                                     |
|--------------------------------------------------------------------------------------|-------------------------------------|
| RECEIVED                                                                             |                                     |
| SEP 26 '90                                                                           |                                     |
| 3800 WEST ALAMEDA AVENUE, SUITE 200<br>BURBANK, CALIFORNIA 91505-4331<br>ENGINEERING |                                     |
| KEENAN                                                                               | <input type="checkbox"/>            |
| KUNCE                                                                                | <input type="checkbox"/>            |
| LANGSHAW                                                                             | <input type="checkbox"/>            |
| LAUSACHER                                                                            | <input checked="" type="checkbox"/> |
| MUELLER                                                                              | <input type="checkbox"/>            |
| NORTON                                                                               | <input type="checkbox"/>            |
| O'HARA                                                                               | <input type="checkbox"/>            |
| ROGOZINSKI                                                                           | <input type="checkbox"/>            |
| SCIALABBA                                                                            | <input type="checkbox"/>            |
| BP RENTON BULK TERMINAL                                                              | <input type="checkbox"/>            |
| RENTON, WASHINGTON                                                                   | <input type="checkbox"/>            |
| SUSPECTED PRODUCT RELEASE                                                            | <input type="checkbox"/>            |

Sincerely,  
  
Mark P. Ausburn  
Sr. Staff Hydrogeologist

INTEROFFICE CORRESPONDENCE  
Burbank, California

DATE: September 19, 1990

TO: G. A. Stumpf

c.c.: R. W. Begier

**BP RENTON BULK TERMINAL  
RENTON, WASHINGTON  
ANOMALOUS FREE PRODUCT  
RECOVERY - MARCH 15 TO  
MARCH 23, 1990**

As you know, we experienced anomalously high free product recovery and product thickness in wells during an eight day period in March 1990, at the subject site. Below is a chronology of events during this time period:

03/14/90: 1,000 gals. pumped from recovery tank.

03/15/90: 5.5' of product noted in well B-3 (normal level is 1-2 feet).

Recovery tank fills again (1,000 gals in one day; normal recovery rate is 27.6 gals/day). System shuts down.

03/19/90: System inspected. Shut down was due to full recovery tank. 1,000 gals pumped out.

03/21/90: System restarted.

03/23/90: 295 gals recovered since 03/21/90 (well in excess of average recovery rate).

Free product samples taken from recovery tank, fill racks (stove oil, SUL, UL, Regular Leaded) and wells HA-7 and B-2.

03/29/90: Daily monitoring ends. 120 gals recovered since 03/23/90 (normal recovery rate restored). B-3 product thickness is .78'.

04/09/90: Product samples sent to TSL.

At my request, Hart Crowser prepared a series of figures relating variations with time of product recovery, product thickness, pumping rate, and groundwater elevation. Also at my request, TSL provided comparative product sample analyses. These data suggest that the anomalies noted above resulted from a release of BP regular gasoline, and cannot be explained by seasonal groundwater fluctuations.

Evidence for a product release is summarized in the following figures:

Figure 1: Indicates that the amount of product recovered above "expected" recovery was 1,800 gallons. This figure is a good estimate of the amount of product recovered from March 15 to March 23, 1990.

Figure 2: Shows a large increase in pumping rate on March 15.

Figure 3: Product recovery of 1,000 gallons from March 14 - 15.

Figure 4: Wells B-3 and HA-7 show large increases in product thickness during same time period.

Figure 5: Shows groundwater elevations were stable during and before the period of anomalous product recovery.

The results of the TSL analysis (attached) support the contention that the anomalous product recovered was BP regular gasoline. The results of the analysis are summarized below:

- 1) The GC fingerprints of the gasoline fraction of the free product in well B-2 and the product recovery tank are very similar to that of the BP regular leaded reference.
- 2) The faint orange dye from the free product in well B-2 and the recovery tank is characteristic of the BP regular leaded reference.
- 3) The free product in well B-2 and the recovery tank contains mixed lead alkyls, including TEL and a manganese additive.

G. A. Stumpf

**BP RENTON BULK TERMINAL  
RENTON, WASHINGTON  
ANOMALOUS FREE PRODUCT  
RECOVERY - MARCH 15 TO  
MARCH 23, 1990**

The BP regular leaded reference contains TEL and a manganese additive.

- 4) Total lead content of the free product in well B-2 and the recovery tank is 0.16 and 0.29 g/gal, respectively. The BP leaded regular reference contains 0.06 g/gal lead. The difference in lead content could be due to residual lead from the previous spills.

In summary, the product samples from well B-2 and the recovery tank are very similar to the BP regular leaded reference, when mixing of the fresh free product with the pre-existing plume is taken into account.

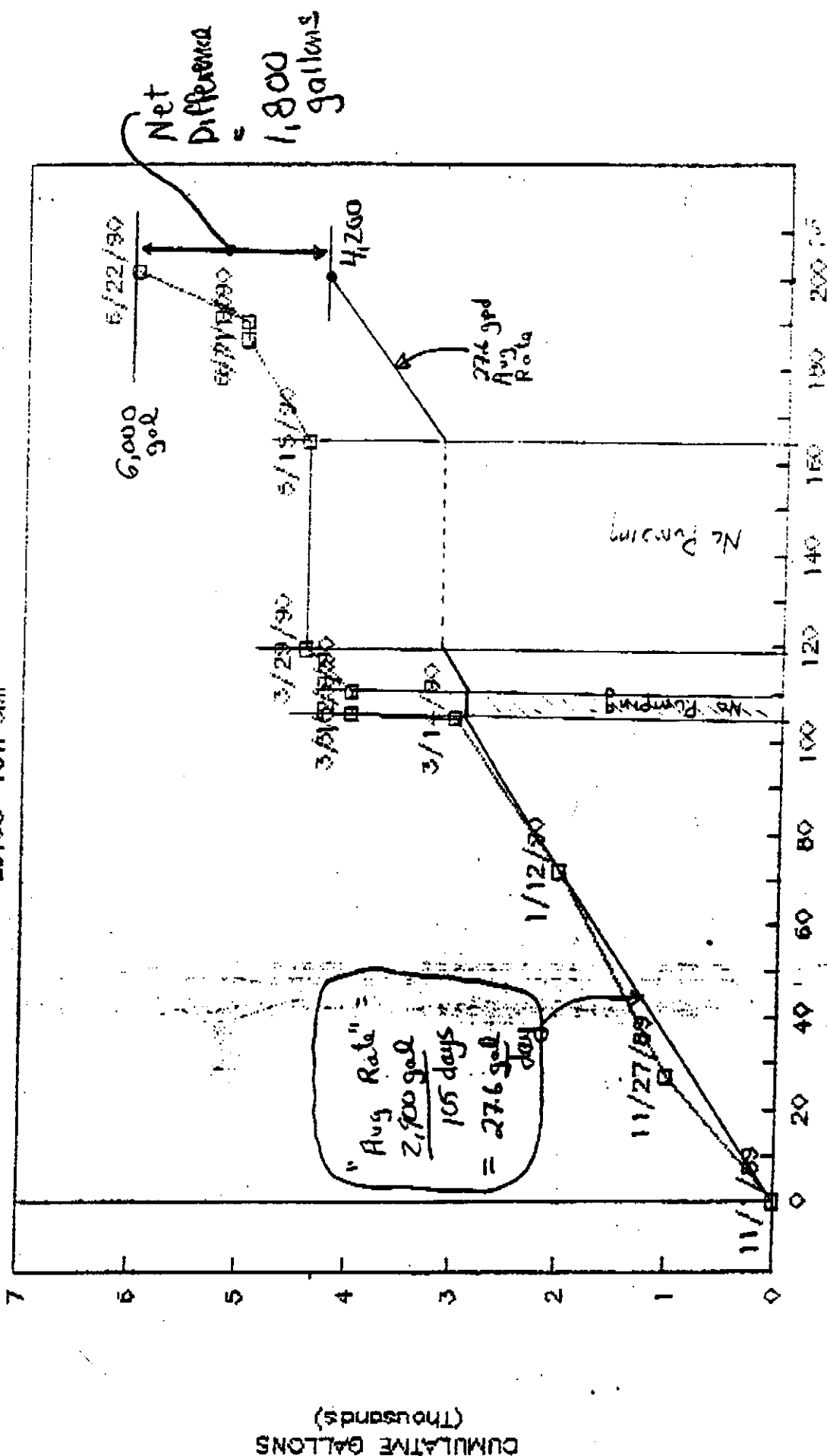


M. P. Ausburn

MPA:ars  
attachments  
ausb0165

# CUMULATIVE PUMPED PRODUCT AT BP RENTON

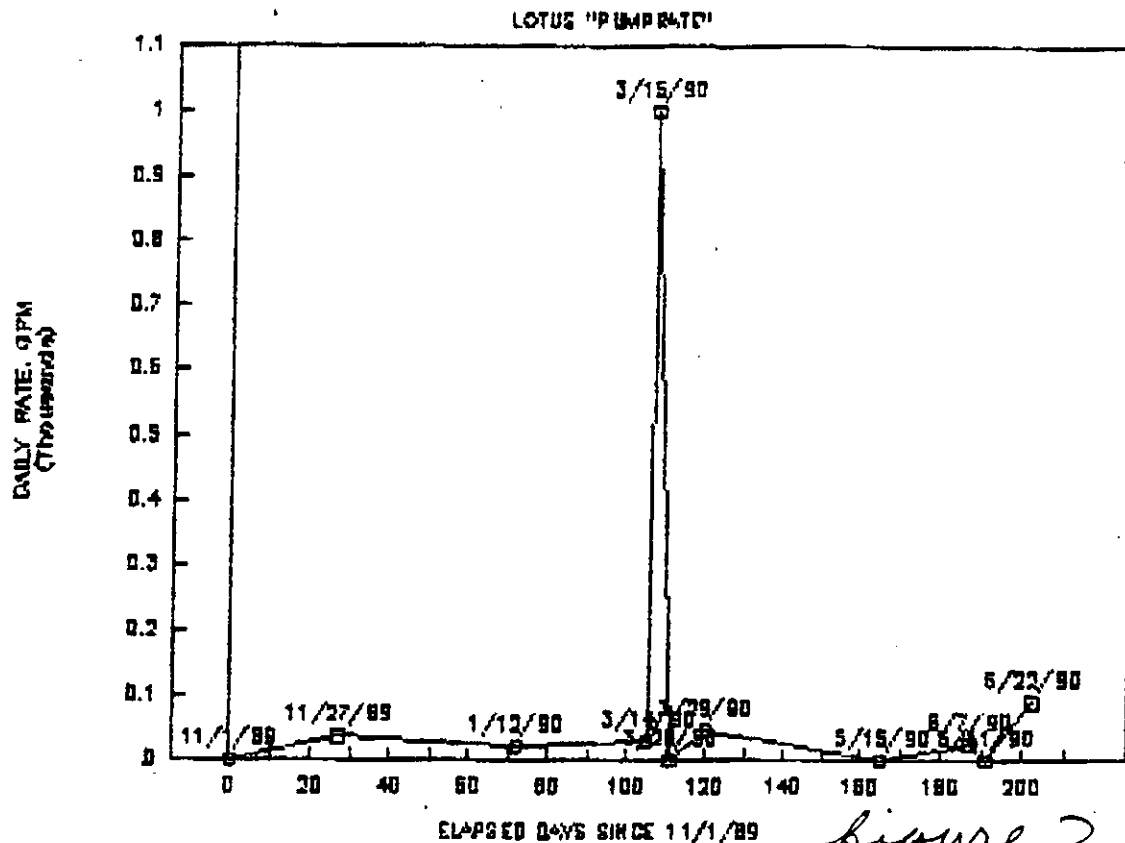
LOTUS "TOTPUMP"



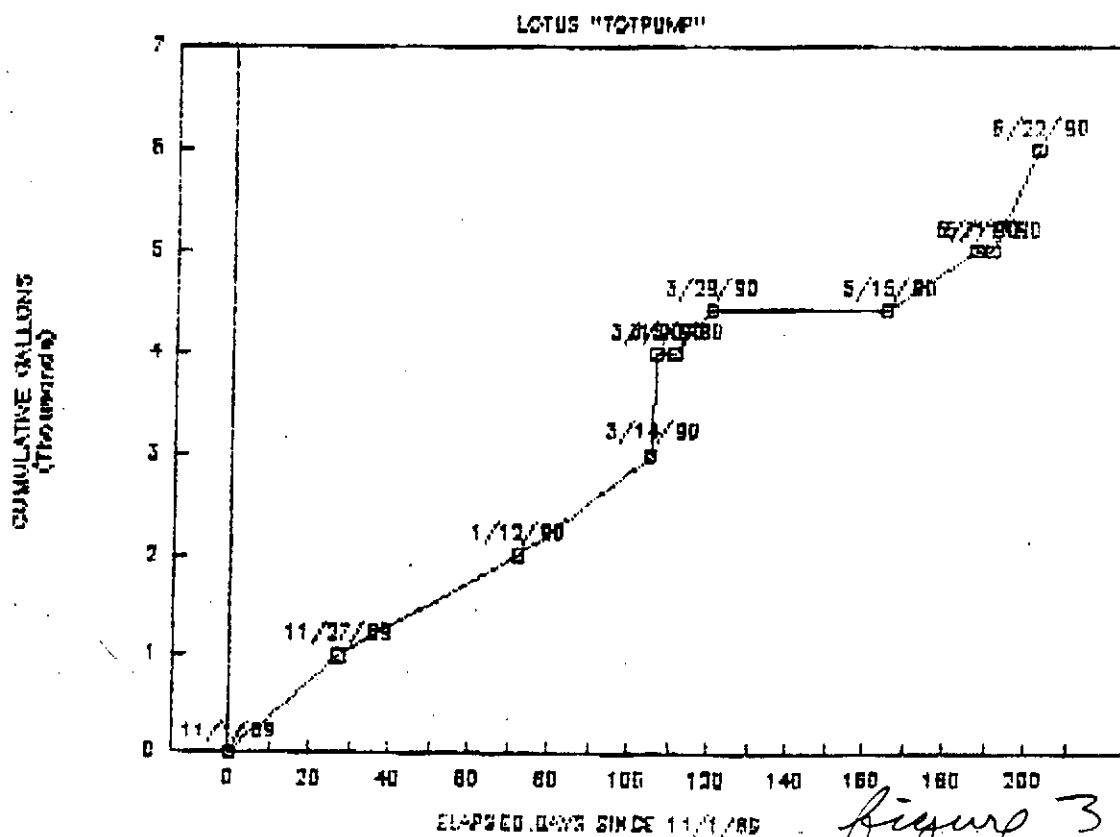
ELAPSED DAYS SINCE 11/1/89

Figure 1

## AVERAGE PUMPING RATE

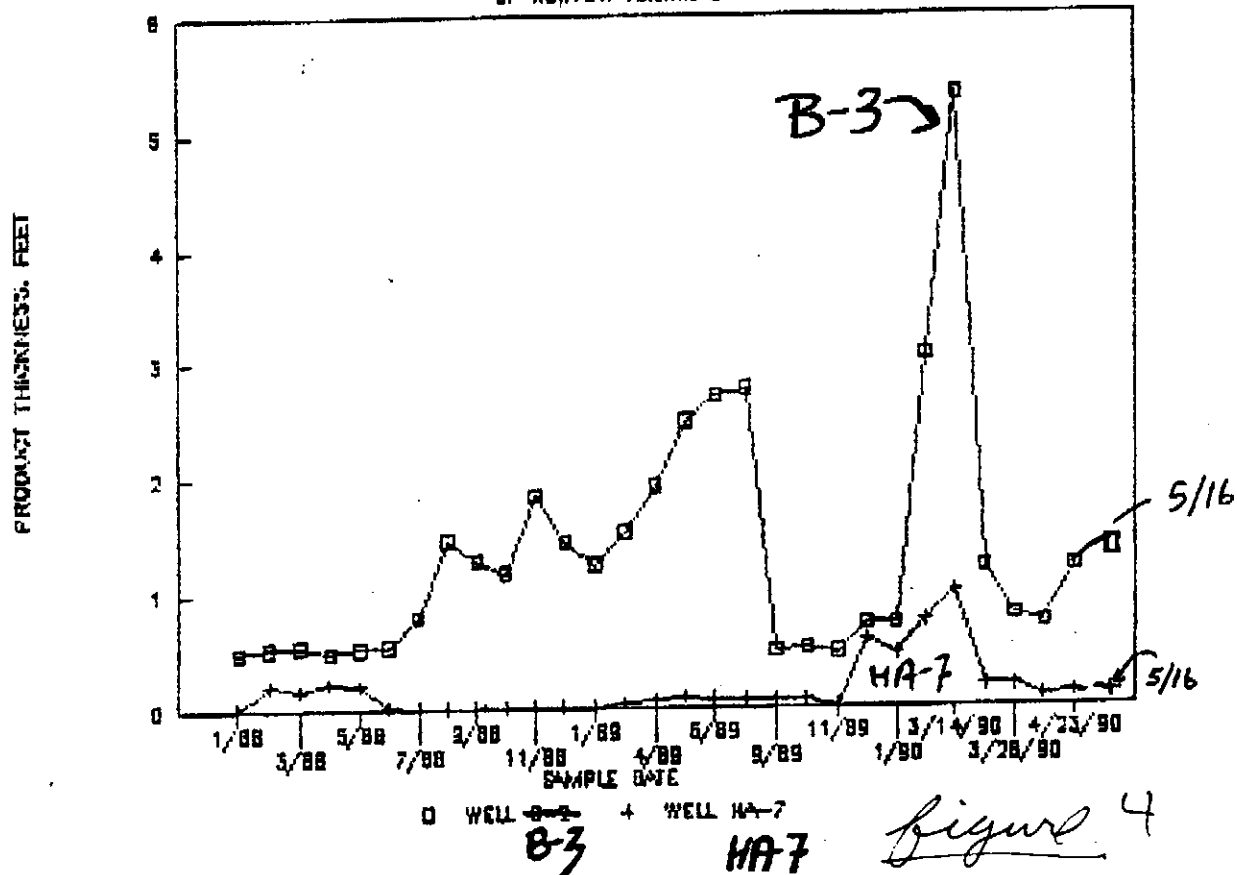
*Figure 2*

## CUMULATIVE PUMPED PRODUCT AT BP RENTON

*Figure 3*

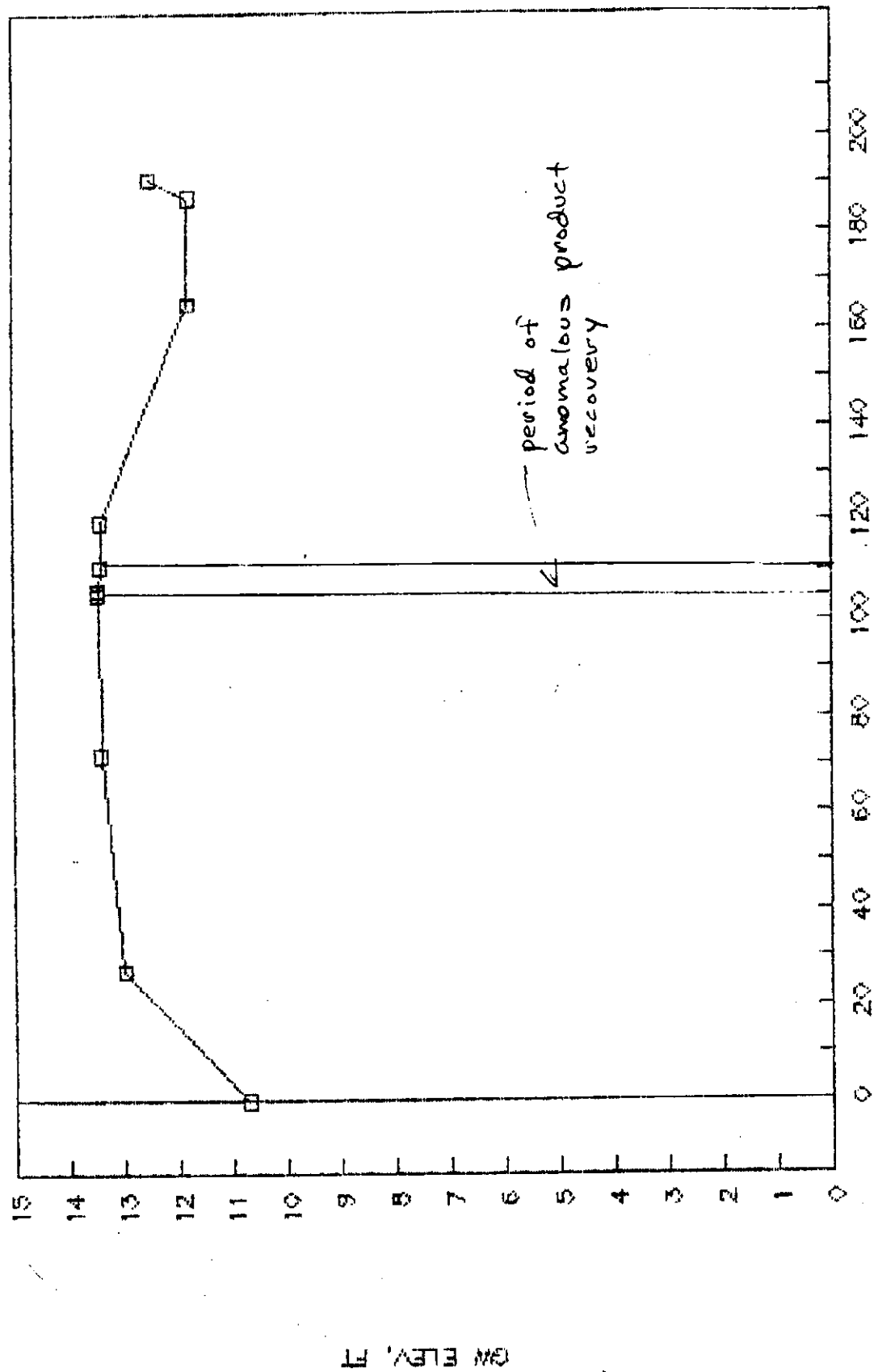
# FLOATING PRODUCT THICKNESS

BP RENTON TERMINAL



## WELL B-1 ELEVATION

LOTUS B1ELEV



ELAPSED DAYS SINCE 11/1/89

Figure 5

GW ELEV, FT

JUN 7 - 1990

Technical Service Laboratories  
Mobil Technical Center  
Princeton, New Jersey

June 1, 1990

M. P. Ausburn  
Burbank

cc:  
P. DelVecchio - WOI 2M910  
C. F. Gerster - WOII 5W101  
C. R. Morgan - WOII 5W501  
G. A. Stumpf - Burbank

FREE PRODUCT INVESTIGATION  
RENTON, WA  
BP TERMINAL

TSL ENDORSEMENT NO. 9048-SP

Code: 1661316

Kindly refer to your April 9, 1990 comparative analyses request on the above subject. We understand that free product was found on the groundwater and then collected in a recovery tank. An unexpectedly high recovery rate of the product has occurred and you wish to know its source. Two well samples, one recovery tank sample, one BP reference kerosene sample and three BP reference gasoline samples were received at TSL on March 23 and April 11, 1990.

All analytical data are provided in the attached Tables 1 and 2, and confirm the preliminary results reported by telephone on May 22, 1990. Overall, the free products in Well B-2 and the Product Recovery Tank are very similar to each other and to the BP Regular leaded gasoline reference, the major differences being that the tankage contains slightly more lead and B-2 contains about 5 percent heavier gas oil range hydrocarbons. The difference in lead content could be due to residual lead from an older leak or spill. The free product in Well HA-7 is slightly similar to those in Well B-2, the Product Recovery Tank and the BP Regular leaded gasoline reference, but it contains much more lead.

From the data, we highlight the following points:

Well B-2 and Product Recovery Tank

- ° The free product in Well B-2 is a mixture of approximately 80 percent unweathered gasoline, 15 percent non-biodegraded fuel oil boiling in the range of No. 2 fuel oil/diesel fuel and 5 percent hydrocarbon boiling in the range of heavy gas oil. The hydrocarbon in the Product Recovery Tank is a mixture of approximately 82 percent slightly weathered gasoline and 18 percent non-biodegraded No. 2 range fuel oil/diesel fuel.
- ° The lead contents of the gasoline portions of the free products in Well B-2 and the Product Recovery Tank, calculated on the basis of the gasoline fractions in the total free product, are 0.16 and 0.29 g/gal. These lead contents are typical of low-lead gasolines manufactured during the federal lead phase-down program.
- ° The types of anti-knock additives present in both free product samples are mixed lead alkyls (that include tetraethyl lead) and a manganese-containing additive. These data indicate that both gasoline samples could be recently produced leaded gasoline that has incorporated residual lead alkyls present in the subsurface. The BP Regular leaded gasoline reference contains 0.06 g/gal lead, present as tetraethyl lead and also a manganese anti-knock additive.
- ° The faint orange dye separated from the free product in Well B-2 and the Product Recovery Tank is characteristic of the BP Regular leaded gasoline reference.
- ° The GC fingerprints of the free product in Well B-2 and the Product Recovery Tank are identical to each other and are very similar to that of the BP Regular leaded reference except that those of the free products contain fuel oil.

Well HA-7

- ° The free product is a mixture of approximately 69 percent slightly weathered gasoline and 31 percent non-biodegraded fuel oil boiling in the range of No. 2 fuel oil/diesel fuel. The gasoline portion of the free product contains depleted amounts of benzene, toluene and xylenes, probably due to dissolution in groundwater.
- ° The lead content of the free product's gasoline portion is 1.78 g/gal, calculated on the basis of the gasoline fraction in the total free product. Mixed lead alkyls are present as a lead anti-knock additive. The relatively high lead content is indicative of older leaded gasoline production.

June 1, 1990

- ° The faint orange dye separated from the free product is characteristic of the BP Regular leaded gasoline reference and shows that the gasoline portion of the free product may be a mixture of older and newer leaded gasolines.
- ° The GC fingerprint of the free product in Well HA-7 is not similar to the fingerprints of the other free products and is not similar to any of the BP references.

In conclusion, the free product in Well B-2 and the hydrocarbon in the Product Recovery Tank are very similar to each other. Both are mixtures of fuel oils and leaded gasolines very similar to the BP Regular leaded gasoline reference, but do not exactly match. The orange dye found in Well HA-7 is similar to the dyes in Well B-2 and the Product Recovery Tank. This is characteristic of the dye found in the BP Regular gasoline. The free product in HA-7 contains much more lead than the other free products and the BP Regular gasoline.



R. E. BEYER

AJMalanowicz/jlg  
Attachments  
AF8

TABLE 1

FREE PRODUCT INVESTIGATION  
TSL ENDORSEMENT NO. 9048-SP  
RENTON, WA TERMINAL

SAMPLE INFORMATION

|                         |          |           |                       |                       |          |                   |             |
|-------------------------|----------|-----------|-----------------------|-----------------------|----------|-------------------|-------------|
| TSL Number:             | 748141   | 749913    | 749915                | 749916                | 749917   | 749918            | 749919      |
| Date of Sample:         | 3-21-90  | 3-23-90   | 3-23-90               | 3-23-90               | 3-23-90  | 3-23-90           | 3-23-90     |
| Date Received:          | 3-23-90  | 4-11-90   | 4-11-90               | 4-11-90               | 4-11-90  | 4-11-90           | 4-11-90     |
| Description from Label: | Well B-2 | Well HA-7 | Product Recovery Tank | BP stove oil/kerosene | BP Super | BP Regular leaded | BP Unleaded |

## Appearance:

|                         |                          |                          |           |                     |                       |                     |
|-------------------------|--------------------------|--------------------------|-----------|---------------------|-----------------------|---------------------|
| Light amber hydrocarbon | Medium amber hydrocarbon | Medium amber hydrocarbon | Colorless | Pale green gasoline | Light orange gasoline | Pale green gasoline |
|-------------------------|--------------------------|--------------------------|-----------|---------------------|-----------------------|---------------------|

ANALYTICAL DATA

|                                   |      |      |      |      |      |      |      |
|-----------------------------------|------|------|------|------|------|------|------|
| API Gravity (60°F)                | 50.2 | 50.0 | 49.4 | 47.4 | 60.4 | 61.1 | 59.9 |
| Lead Content, g/gal (ASTM D-3237) | 0.13 | 1.23 | 0.24 | 0.00 | 0.00 | 0.06 | 0.00 |

## Lead Type by Electron Capture Gas Chromatography

|                             |         |                             |    |    |    |                            |    |
|-----------------------------|---------|-----------------------------|----|----|----|----------------------------|----|
| MLA-250 and trace manganese | MLA-500 | MLA-250 and trace manganese | NA | NA | NA | TEL and trace of manganese | NA |
|-----------------------------|---------|-----------------------------|----|----|----|----------------------------|----|

## Dye Test by Thin Layer Chromatography (TLC)

|                                                                          |                 |                 |                 |                 |                 |                 |
|--------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Faint orange dye characteristic of BP Regular leaded gasoline reference. | No visible dyes | No visible dyes | No visible dyes | No visible dyes | Oranges, yellow | No visible dyes |
|--------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|

## Comparative Hydrocarbon Distribution by Gas Chromatography (GC fingerprint)

The fingerprint of Well B-2 shows a mixture of an unweathered gasoline and a non-biodegraded fuel oil. The fingerprints of Wells HA-7 and the Product Recovery Tank shows mixtures of very slightly weathered gasoline and non-biodegraded fuel oils. The benzene, toluene and xylene content of Well HA-7 is depleted.

NA = Not Analyzed, zero lead content.

Technical Service Laboratories  
Mobil Technical Center  
Princeton, New Jersey  
AJMalanovicz/jlg/AF8

TABLE 2

FREE PRODUCT INVESTIGATION  
TSL ENDORSEMENT NO. 9048-SP  
RENTON, WA TERMINAL

SIMULATED DISTILLATIONS  
ASTM D-2887

|                     |          |           |                             |
|---------------------|----------|-----------|-----------------------------|
| TSL Sample Number:  | 748141   | 749913    | 749915                      |
| Sample Description: | Well B-2 | Well HA-7 | Product<br>Recovery<br>Well |

| <u>% Recovered</u> | <u>°F</u> | <u>°F</u> | <u>°F</u> |
|--------------------|-----------|-----------|-----------|
| IBP                | 66        | 88        | 68        |
| 2                  | 84        | 118       | 86        |
| 5                  | 98        | 155       | 102       |
| 10                 | 145       | 182       | 151       |
| 20                 | 190       | 216       | 192       |
| 30                 | 231       | 268       | 231       |
| 40                 | 257       | 306       | 265       |
| 50                 | 286       | 339       | 288       |
| 60                 | 324       | 386       | 325       |
| 70                 | 361       | 438       | 362       |
| 80                 | 429       | 507       | 417       |
| 90                 | 597       | 575       | 515       |
| 95                 | 721       | 626       | 588       |
| 98                 | 807       | 685       | 662       |

Technical Service Laboratories  
Mobil Technical Center  
Princeton, New Jersey  
AJMalanowicz/jlg/AF8  
June 1990

Rec'd 5/21/91

# Mobil Oil Corporation

CERTIFIED MAIL - RETURN  
RECEIPT REQUESTED

3800 WEST ALAMEDA AVENUE, SUITE 700  
BURBANK, CALIFORNIA 91505-4331

May 14, 1991

Mr. R. James O'Hara  
Manager, Environmental  
Engineering and Compliance  
BP Oil Company  
4850 East 49th Street  
Cleveland, OH 44125

**BP TERMINAL**  
**RENTON WASHINGTON**

Dear Jim:

As you know, Mobil has strongly suspected for over a year that there is an ongoing leak at the subject site. We are grateful for your continuing efforts to detect the source of the suspected leak, but feel action must be taken soon to correct the ongoing problem.

The attached two maps (Figures 1 & 2) show the extent and thickness of the free product plume in July of 1986 and April of 1990. Despite three years of recovery system operation and the recovery of 34,000 gallons of free product, the plume has actually increased in size. The two maps are appropriate to compare since they reflect hydrologic conditions prior to system operation and after a time of prolonged system shut-down.

The attached monitoring well hydrographs and Table of free product thicknesses track the changes in free product thickness with time in monitoring wells near the loading rack and in the north-central area of the tank farm. None of the wells shows any clear trend of decreasing free product thickness during three years of system operation, from November 1987 to December 1990. If one removes the effect of seasonal ground-water elevation changes on free product thicknesses in B-2 and B-3, the two wells which historically have shown the largest free product accumulations, free product thicknesses in these wells have remained essentially unchanged for the past three years. All of the wells with free product, except for HA-6, showed a rapid rise in product thicknesses following system shut-down in December 1990. Free product thicknesses in most of the wells are now greater than those seen prior to the start of recovery operations in November 1987. This situation could only be caused by an ongoing leak.

Mobil is currently having samples of free product analyzed to determine the degree of freshness and similarity to BP products stored at the facility. We will provide you with a copy of the

analysis when it is completed. Comparative product analysis conducted in May 1990 for free product samples and BP reference gasolines from the site revealed a strong similarity of free product in well B-2 and the product recovery tank to BP regular leaded gasoline. These data also strongly support the contention that there is an ongoing leak of BP product at the facility.

The comparative free product analysis referred to above was done in response to anomalous product recovery at the site in March 1990. Sudden large increases in free product thicknesses in B-3 and HA-7 were accompanied by recovery of 1000 gallons of free product in less than 24 hours. Abnormally high recovery rates continued for an 8 day period, during which the volume of product recovered above the "expected" amount was 1,800 gallons. If added soil contamination is taken into account, the total amount of product released probably exceeded 2000 gallons. This anomalous event is believed to have been caused by a release of free product.

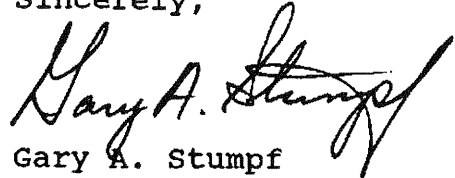
At this time, neither Mobil nor BP has identified a leak at the site. We understand that BP has gauged the water bottoms on the above ground tanks and that they show no indication of leaking. Also, the underground overfill tank for the loading rack has not shown any anomalous increases. We feel that the most likely sources for the leak are the Olympic Pipeline or the BP underground lines. Both should be tested immediately.

The Mobil/BP Exchange Agreement, effective May 1, 1989, stipulates that all incremental costs incurred by Mobil for additional recovery operations at the Northwest Fee Terminals caused by BP would be covered by the Transferee for 10 years. If unabated, the costs would be shared in a 50/50 ratio after 10 years up to 20 years, or through the year 2009.

Since it appears that the recovery system is capturing the free product, Mobil plans to seek reimbursement for all operational and maintenance costs, including analyses, from March 1990 until the ongoing leak is located and repaired.

For these reasons, it is imperative that BP continues its efforts to locate the ongoing leak in order to reduce long term clean-up costs. Please call me at 818-953-2517 to discuss this matter.

Sincerely,



Gary A. Stumpf  
Western Ground-Water  
Projects Manager

MPA:st

cc: David J. Shuttleworth  
Terminal Manager  
BP Oil Company  
2423 Lind Avenue S.W.  
Renton, WA 98055

|                              |                          |
|------------------------------|--------------------------|
| RECEIVED                     |                          |
| MAY 21 '91                   |                          |
| ENVIRONMENTAL<br>ENGINEERING |                          |
| KEENAN                       | <input type="checkbox"/> |
| KUNCE                        | <input type="checkbox"/> |
| LANGSHAW                     | <input type="checkbox"/> |
| LAUBACHER                    | <input type="checkbox"/> |
| MUELLER                      | <input type="checkbox"/> |
| NORTON                       | <input type="checkbox"/> |
| O'HARA                       | <input type="checkbox"/> |
| ROGOZINSKI                   | <input type="checkbox"/> |
| SCIALABBA                    | <input type="checkbox"/> |
| VOPAT                        | <input type="checkbox"/> |
| _____                        | <input type="checkbox"/> |
| _____                        | <input type="checkbox"/> |
| _____                        | <input type="checkbox"/> |

bcc: M. P. Ausburn  
C. A. Gifford  
T. C. Felt  
C. E. Doumas  
T. M. Milton

# Product Level Contour Map

JULY 31, 1986

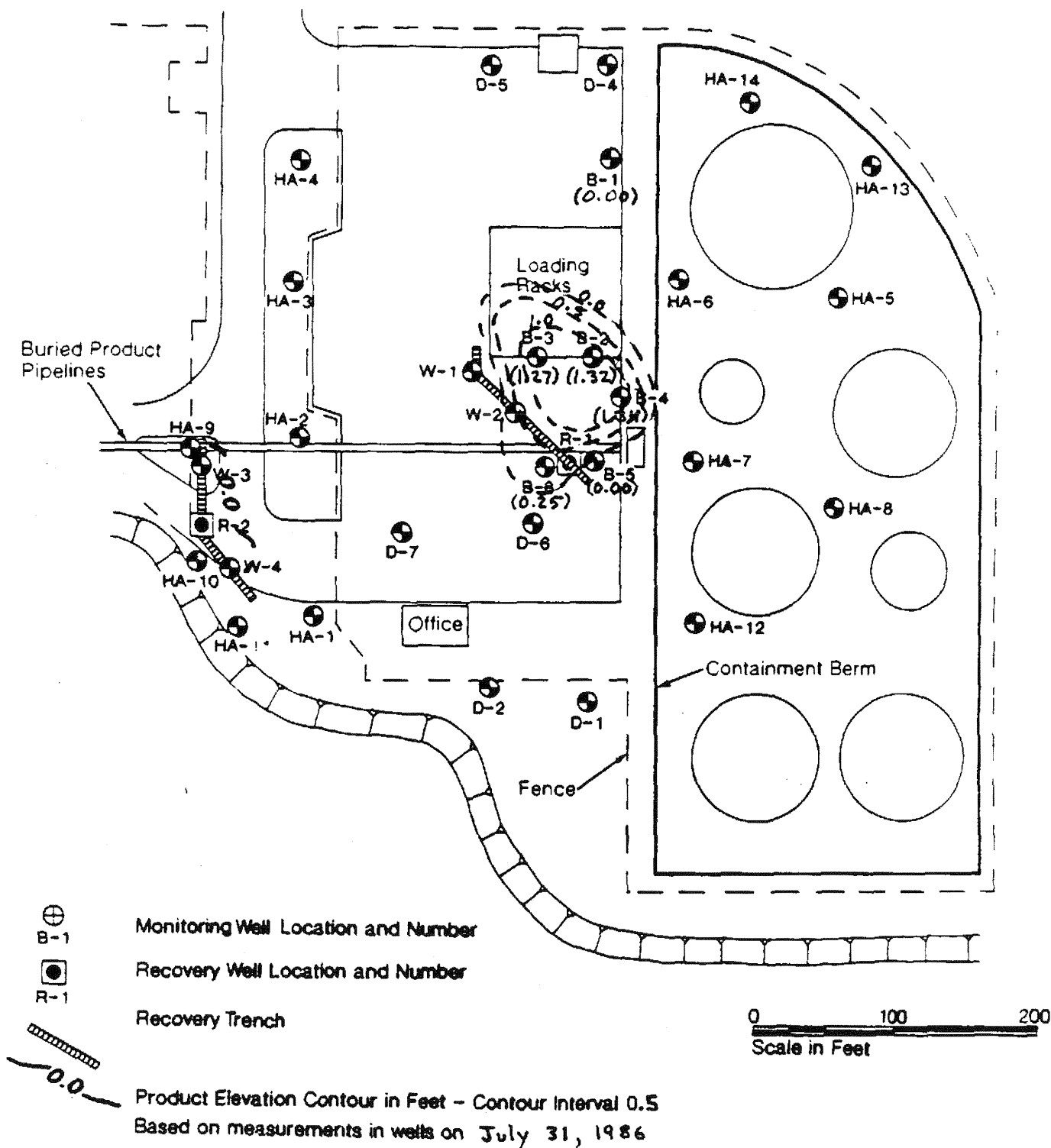




Table 1 - Summary of Mobil Renton Terminal Free-Product Measurements

J-1734-02

| Date   | Product Thickness in Feet |      |      |      |      |       | Corrected Water Elevation in Feet |       |       |       |       |       |       |       |
|--------|---------------------------|------|------|------|------|-------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|
|        | HA-6                      | HA-7 | B-2  | B-3  | B-4  | B-5   | B-6                               | HA-6  | HA-7  | B-2   | B-3   | B-4   | B-5   | B-6   |
| Jul-86 |                           |      | 1.32 | 1.27 | 1.34 | 0     | 0.25                              |       |       | 10.85 | 10.77 | 10.84 | 11.02 | 10.91 |
| Aug-86 |                           |      | 1.12 | 3.71 | 1.2  | 0.02  | 0                                 |       |       | 10.77 | 9.84  | 10.8  | 10.84 | 10.72 |
| Nov-86 |                           |      | 1.62 | 1.97 | 1.66 | 1.75  | 0.24                              |       |       | 11.75 | 11.27 | 11.87 | 11.89 | 11.71 |
| Jan-87 | 0.07                      | 0    | 0.3  | 0.6  | 0.43 | 0.05  | 1.29                              | 11.53 | 11.37 | 9.93  | 10.08 | 10.23 | 9.52  | 9.78  |
| Jun-87 | 0.01                      | 0    | 1.17 | 2.49 | 1.08 | 1.99  | 0.01                              | 12.79 | 12.93 | 12.6  | 12.43 | 12.51 | 12.54 | 12.61 |
| Oct-87 | 1.15                      | 0    | 1.12 | 2.01 | 0.82 | 0.15  | 0.9                               | 9.93  | 9.95  | 9.83  | 9.34  | 9.72  | 9.26  | 9.53  |
| Nov-87 | 1.18                      | 0    | 0.99 | 1.06 | 0.73 | 0.24  | 1.07                              | 9.82  | 9.91  | 9.74  | 9.51  | 9.67  | 9.85  | 9.76  |
| Dec-87 | 0.08                      | 0    | 0.23 | 0.45 | 0.59 | 0.02  | 1.37                              | 12.02 | 11.82 | 10.41 | 10.18 | 10.5  | 9.65  | 9.88  |
| Feb-88 | 0.01                      | 0.21 | 1.86 | 0.52 | 1.1  | 0.01  | 0.35                              | 12.11 | 11.94 | 11    | 10.8  | 10.8  | 9.75  | 9.9   |
| Mar-88 | 0                         | 0.15 | 1.46 | 0.54 | 0.62 | 0.01  | 0.97                              | 11.64 | 11.45 | 10.52 | 10.02 | 10.3  | 9.58  | 9.81  |
| Apr-88 | 0                         | 0.23 | 0.98 | 0.49 | 0.46 | 0     | 0.93                              | 13.15 | 12.76 | 11.15 | 10.7  | 11.02 | 10.01 | 10.18 |
| May-88 | 0.01                      | 0.2  | 0.46 | 0.52 | 0.4  | 0.005 | 1.21                              | 12.02 | 11.83 | 10.49 | 10.17 | 10.47 | 9.72  | 9.99  |
| Jun-88 | 0                         | 0.02 | 0.39 | 0.47 | 0.4  | 0.01  | 1.07                              | 11.85 | 11.71 | 10.48 | 9.85  | 10.44 | 9.67  | 9.94  |
| Jul-88 | 0                         | 0    | 0.79 | 0.78 | 0.12 | 0     | 1.53                              | 10.98 | 10.83 | 10.12 | 9.37  | 9.89  | 9.39  | 9.8   |
| Aug-88 | 0                         | 0    | 0.53 | 1.45 | 0.13 | 0     | 1.66                              | 10.22 | 10.05 | 9.6   | 8.23  | 9.44  | 9.12  | 9.55  |
| Oct-88 | 0.07                      | 0    | 0.84 | 1.17 | 0.32 | 0     | 1.44                              | 9.68  | 9.52  | 9.2   | 7.74  | 9.05  | 8.82  | 9.19  |
| Feb-89 | 0                         | 0.1  | 0.77 | 1.46 | 0.05 | 0     | 0                                 | 12.44 | 12.52 | 11.61 | 10.07 | 12.07 | 12.07 | 11.84 |
| Mar-89 | 4.43                      | 5.05 | 0.67 | 1.52 | 0.46 | 0     | 0.01                              | 12.28 | 11.73 | 11.55 | 10.25 | 11.63 | 10.38 | 10.38 |
| Apr-89 | 0.08                      | 0.06 | 0.44 | 1.92 | 0.41 | 0     | 0                                 | 13.18 | 12.79 | 11.22 | 10.17 | 11.17 | 10.2  | 10.34 |
| May-89 | 0.08                      | 0.09 | 0.09 | 2.48 | 0    | 0     | 0                                 | 12.11 | 12.1  | 11.68 | 9.74  | 11.74 | 11.67 | 11.48 |
| Jun-89 | 0.06                      | 0.07 | 0.14 | 2.71 | 0.11 | 0     | 0                                 | 11.29 | 11.11 | 10.18 | 9.22  | 10.14 | 9.57  | 9.67  |
| Aug-89 | 0.05                      | 0.06 | 0.37 | 2.76 | 0    | 0     | 0                                 | 10.31 | 10.27 | 9.91  | 8.77  | 9.9   | 9.97  | 9.9   |
| Sep-89 | 0.04                      | 0.05 | 0.51 | 0.49 | 0.56 | 0.02  | 0.18                              | 10.33 | 10.38 | 10.39 | 8.72  | 10.33 | 10.43 | 10.39 |
| Oct-89 | 0.04                      | 0.05 | 0.54 | 0.51 | 0.64 | 0.07  | 0.015                             | 10.11 | 10.15 | 10.22 | 8.66  | 10.17 | 10.25 | 10.22 |

System  
Startup

Table 1 - Summary of Mobil Renton Terminal Free-Product Measurements

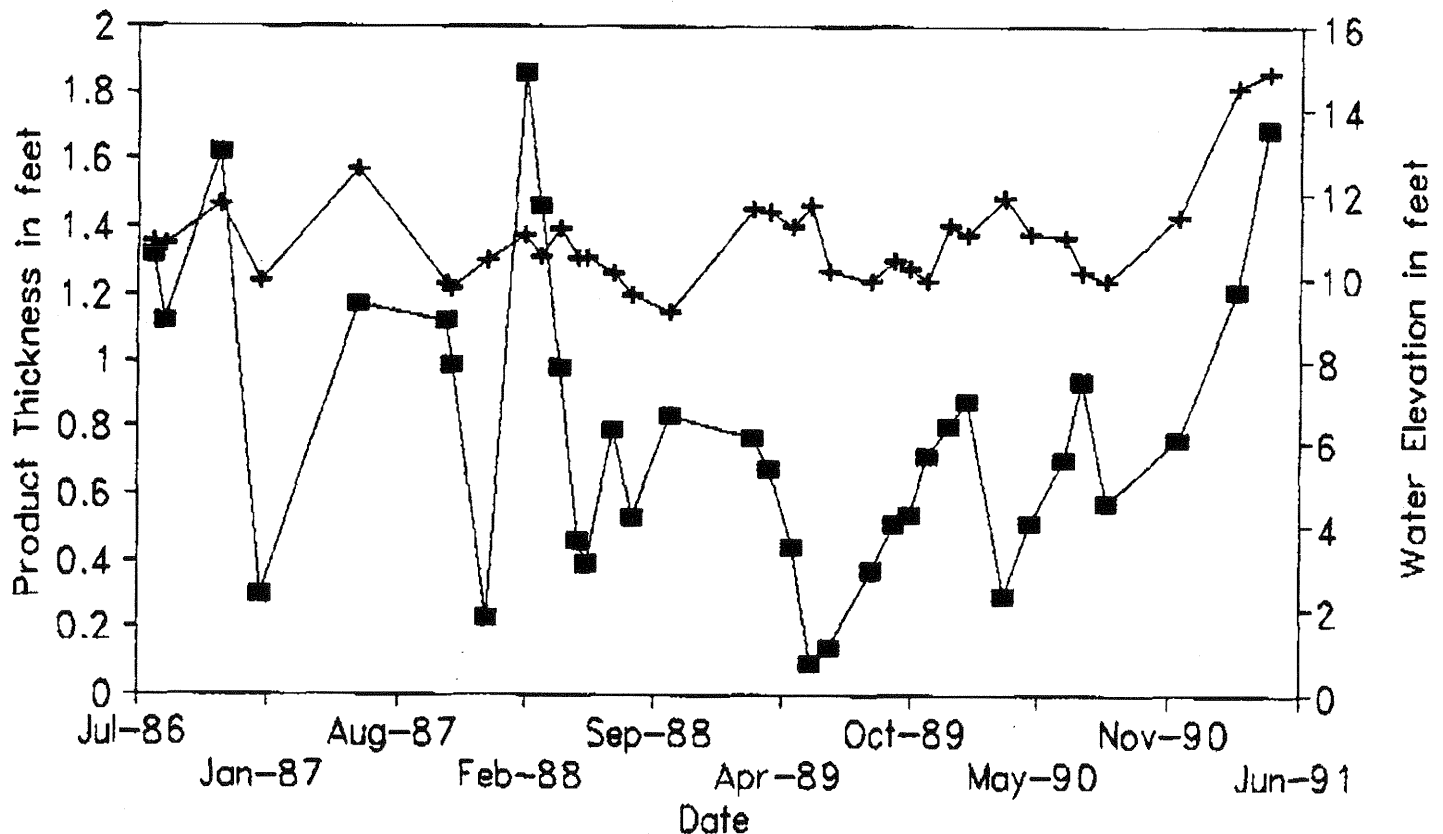
Page 2 of 2

J-1784-02

| Date   | Product Thickness in Feet |      |      |      |      |      | Corrected Water Elevation in Feet |       |       |       |       |       |       |       |
|--------|---------------------------|------|------|------|------|------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------|
|        | HA-6                      | HA-7 | B-2  | B-3  | B-4  | B-5  | B-6                               | HA-6  | HA-7  | B-2   | B-3   | B-4   | B-5   | B-6   |
| Nov-89 | 0.01                      | 0.01 | 0.71 | 0.47 | 0.11 | 0.01 | 0.01                              | 10.88 | 10.67 | 9.91  | 9.08  | 9.88  | 9.42  | 9.49  |
| Dec-89 | 0.02                      | 0.57 | 0.8  | 0.72 | 0.17 | 0.01 | 0.25                              | 12.95 | 12.66 | 11.26 | 10.33 | 11.28 | 10.64 | 10.46 |
| Jan-90 | 0.01                      | 0.45 | 0.88 | 0.71 | 0.11 | 0    | 0.01                              | 13.19 | 12.76 | 11.02 | 10.53 | 11.03 | 10.14 | 10.1  |
| Mar-90 | 0.01                      | 1    | 0.3  | 0.51 | 0.35 | 0.83 | 0.05                              | 13.37 | 13.09 | 11.88 | 10.53 | 11.88 | 11.5  | 11.25 |
| Apr-90 | 0.01                      | 0.1  | 0.51 | 1.2  | 0.08 | 0.03 | 0.01                              | 11.89 | 11.74 | 11.03 | 10.79 | 11    | 10.7  | 10.59 |
| Jun-90 | 0                         | 0.15 | 0.7  | 2.32 | 0.39 | 0.18 | 0                                 | 12.55 | 12.27 | 10.97 | 10.59 | 10.88 | 10.05 | 10.17 |
| Jul-90 | 0                         | 0.16 | 0.94 | 0.64 | 0.1  | 0.19 | 0.06                              | 11.31 | 11.14 | 10.16 | 9.78  | 10.05 | 9.58  | 9.67  |
| Aug-90 | 0                         | 0.15 | 0.57 | 0.87 | 0    | 0.09 | 0.51                              | 10.32 | 10.31 | 9.91  | 9.42  | 9.88  | 10.04 | 9.95  |
| Dec-90 | 0                         | 1.36 | 0.76 | 0.35 | 0.3  | 0    | 0                                 | 13.77 | 13.48 | 11.47 | 11.31 | 11.46 | 10.4  | 10.38 |
| Mar-91 | 0                         | 3.04 | 1.21 | 3.12 | 1.9  | 0.36 | 0.05                              | 11.57 | 15.24 | 14.52 | 14.21 | 14.7  | 14.35 | 13.97 |
| Apr-91 | 0                         | 3.67 | 1.69 | 7.3  | 1.64 | 0.91 | 0.38                              | 14.72 | 15.48 | 14.89 | 15    | 14.79 | 14.77 | 14.46 |

1784-02 WK1

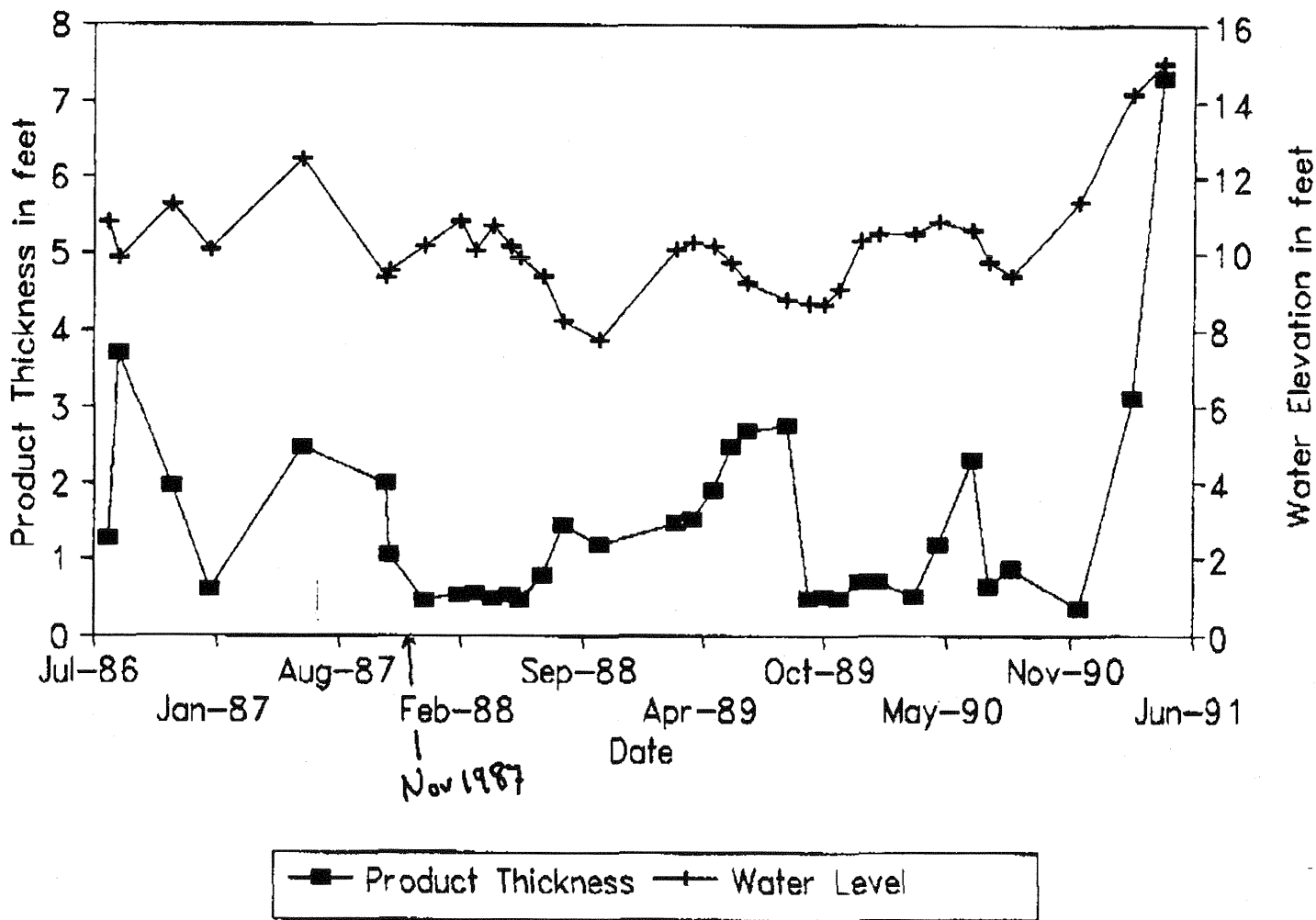
## Well B-2



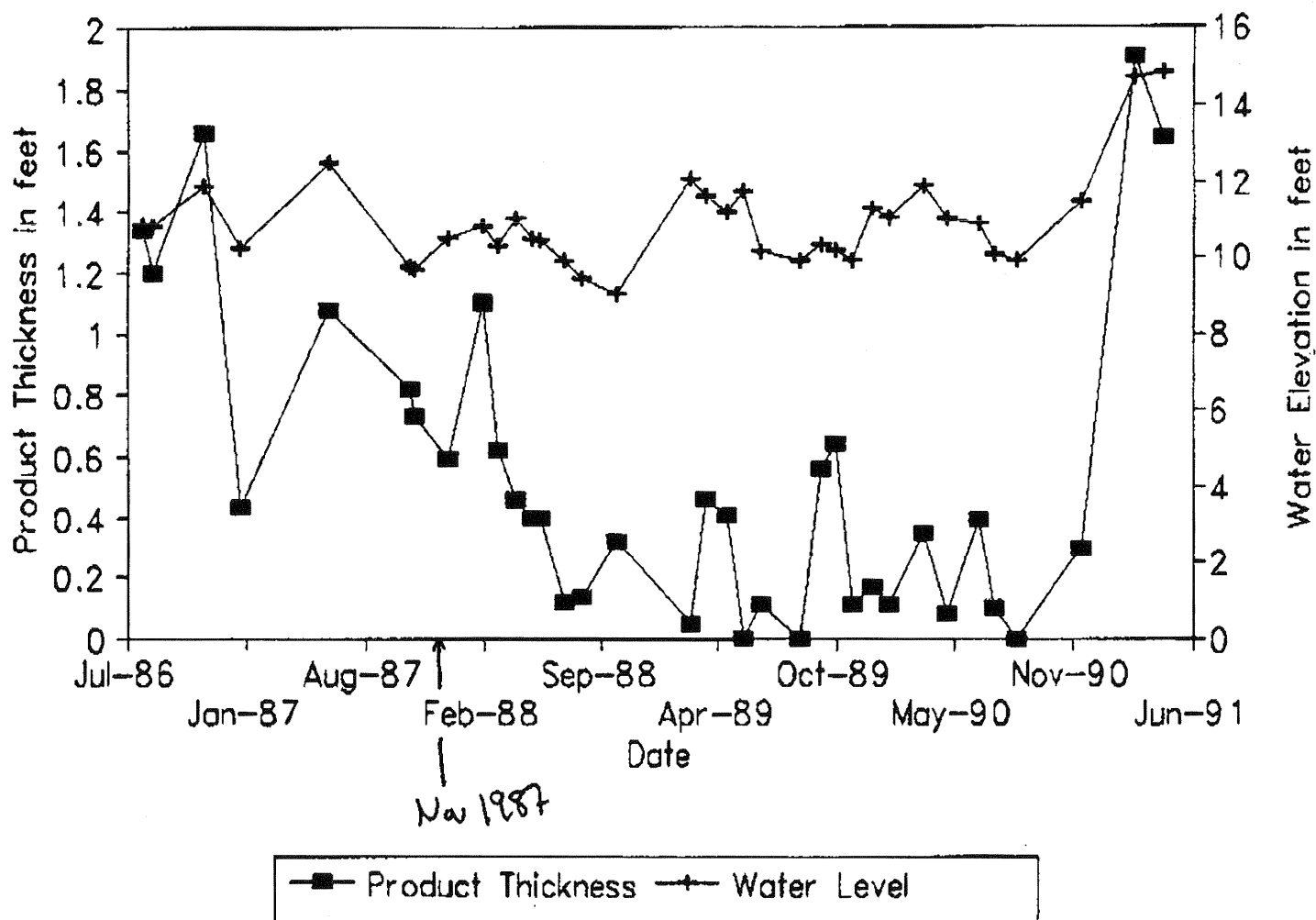
■ Product Thickness + Water Level

Nov 1987  
Startup

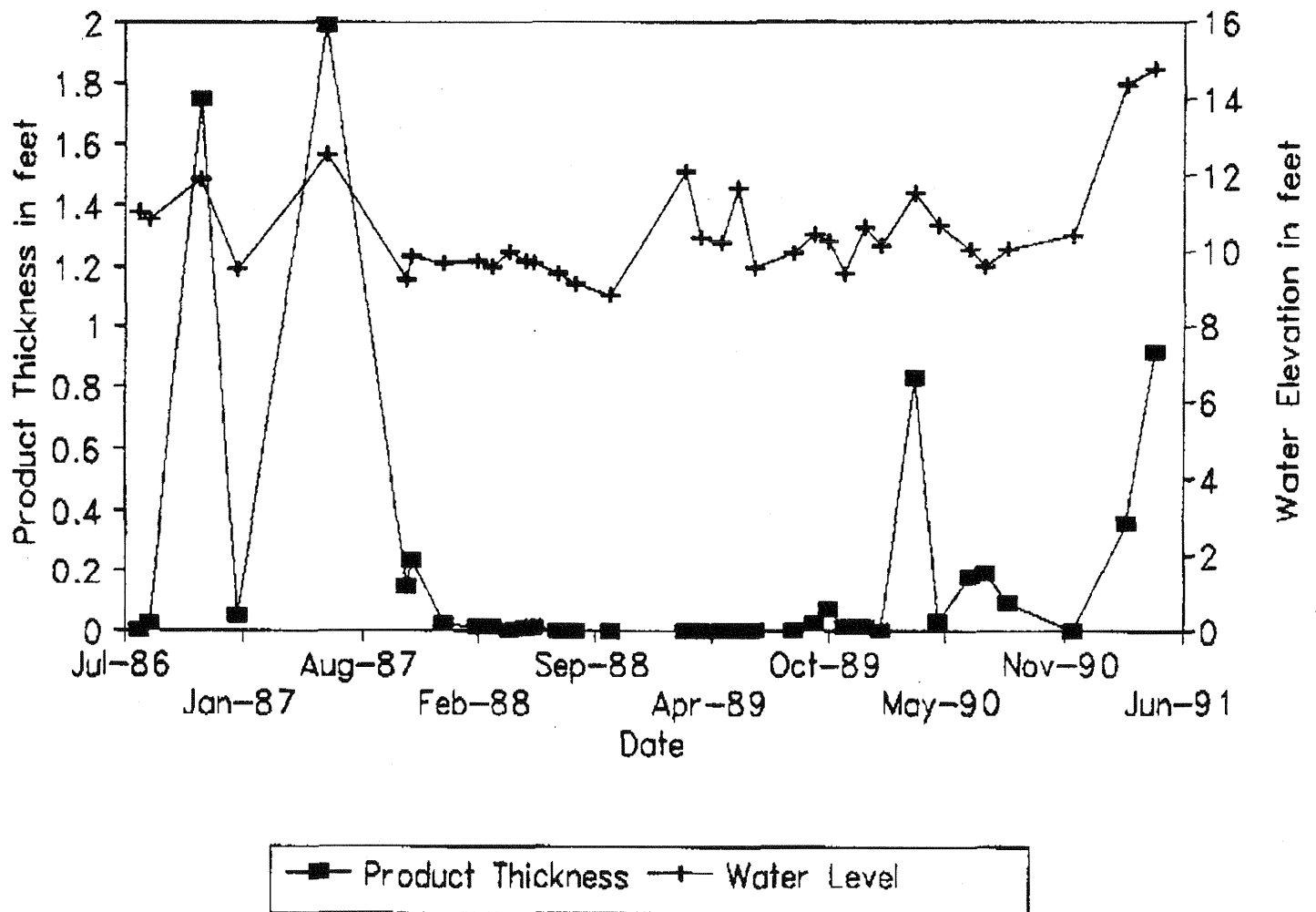
# Well B-3



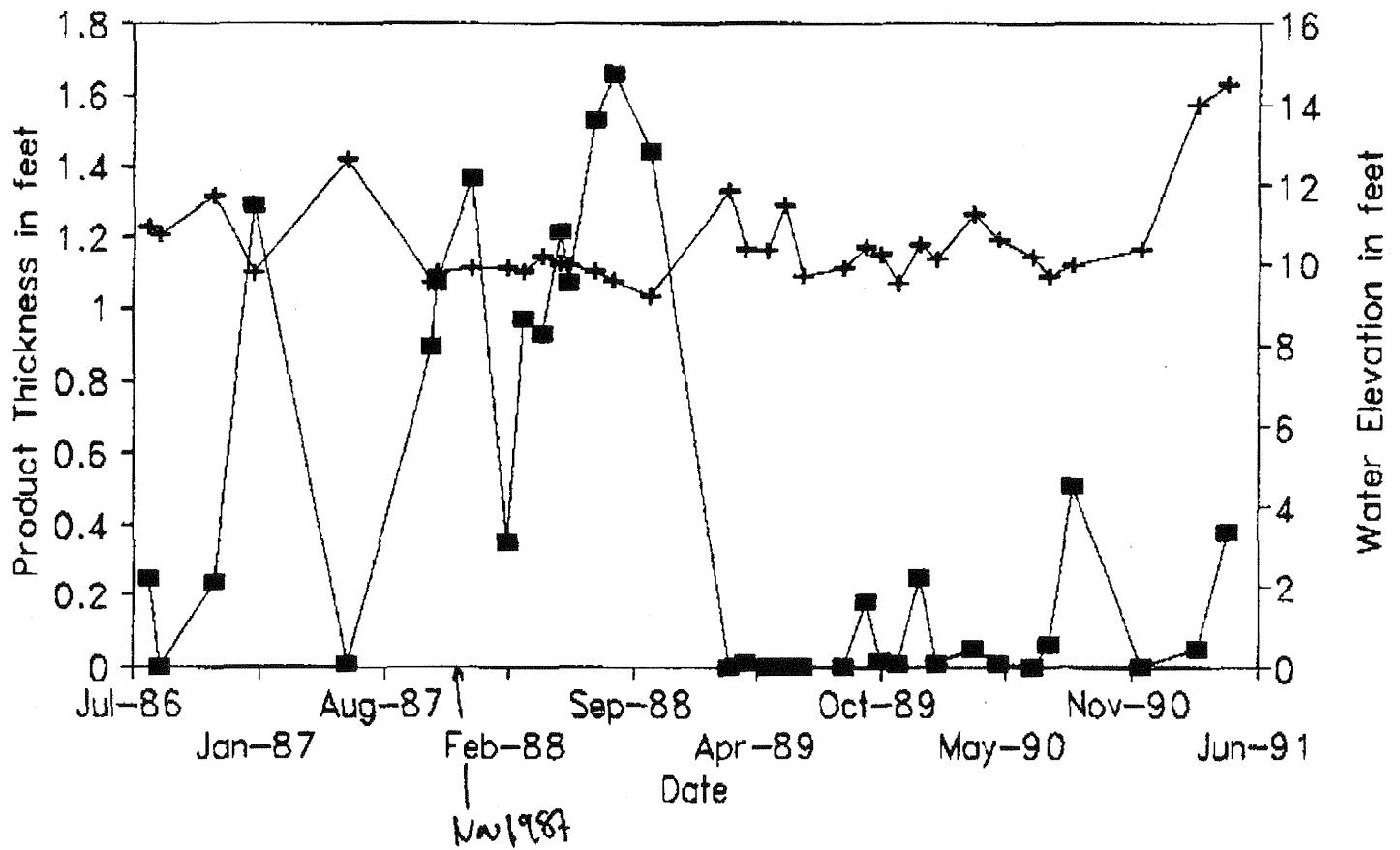
## Well B-4



# Well B-5

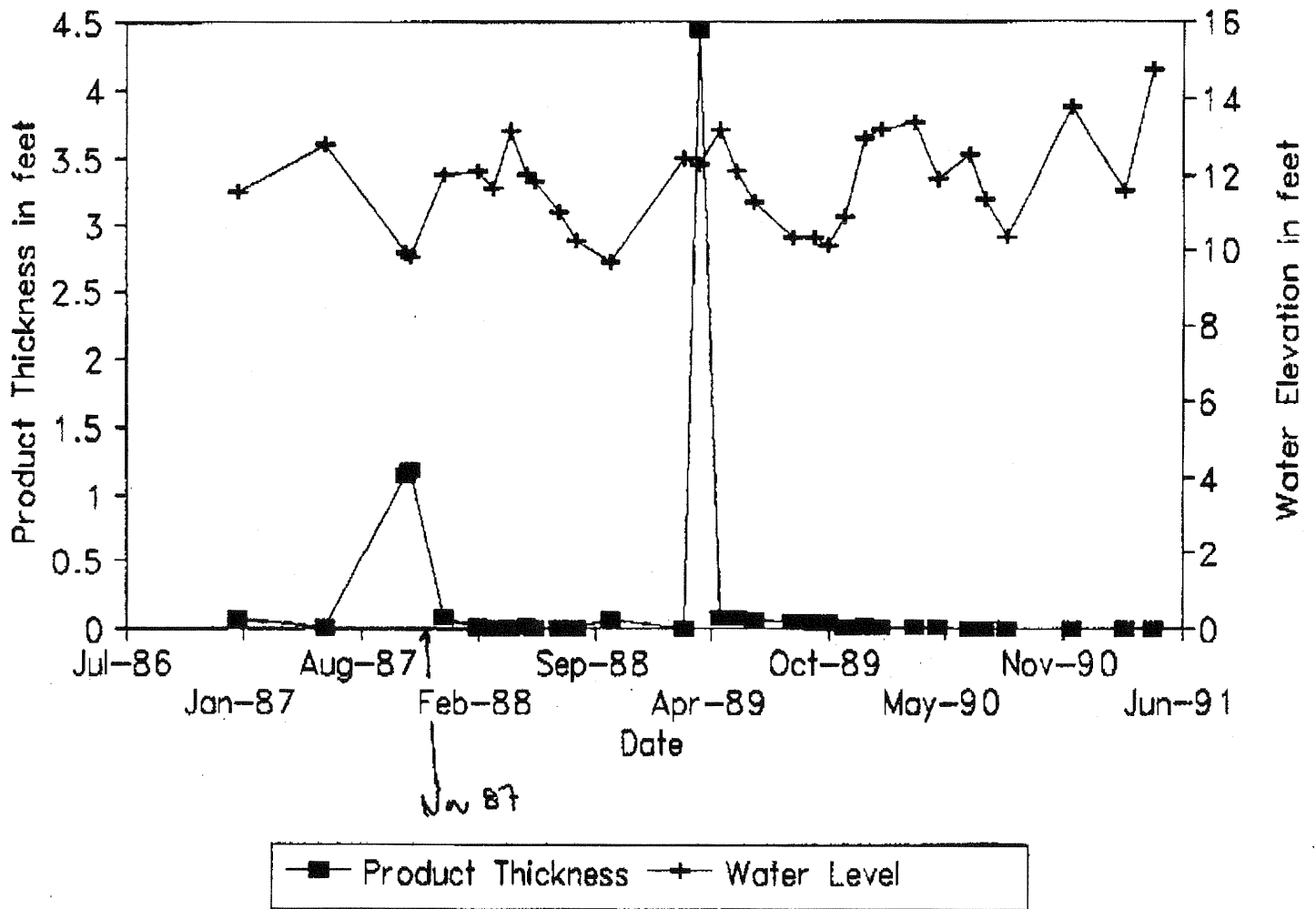


## Well B-6

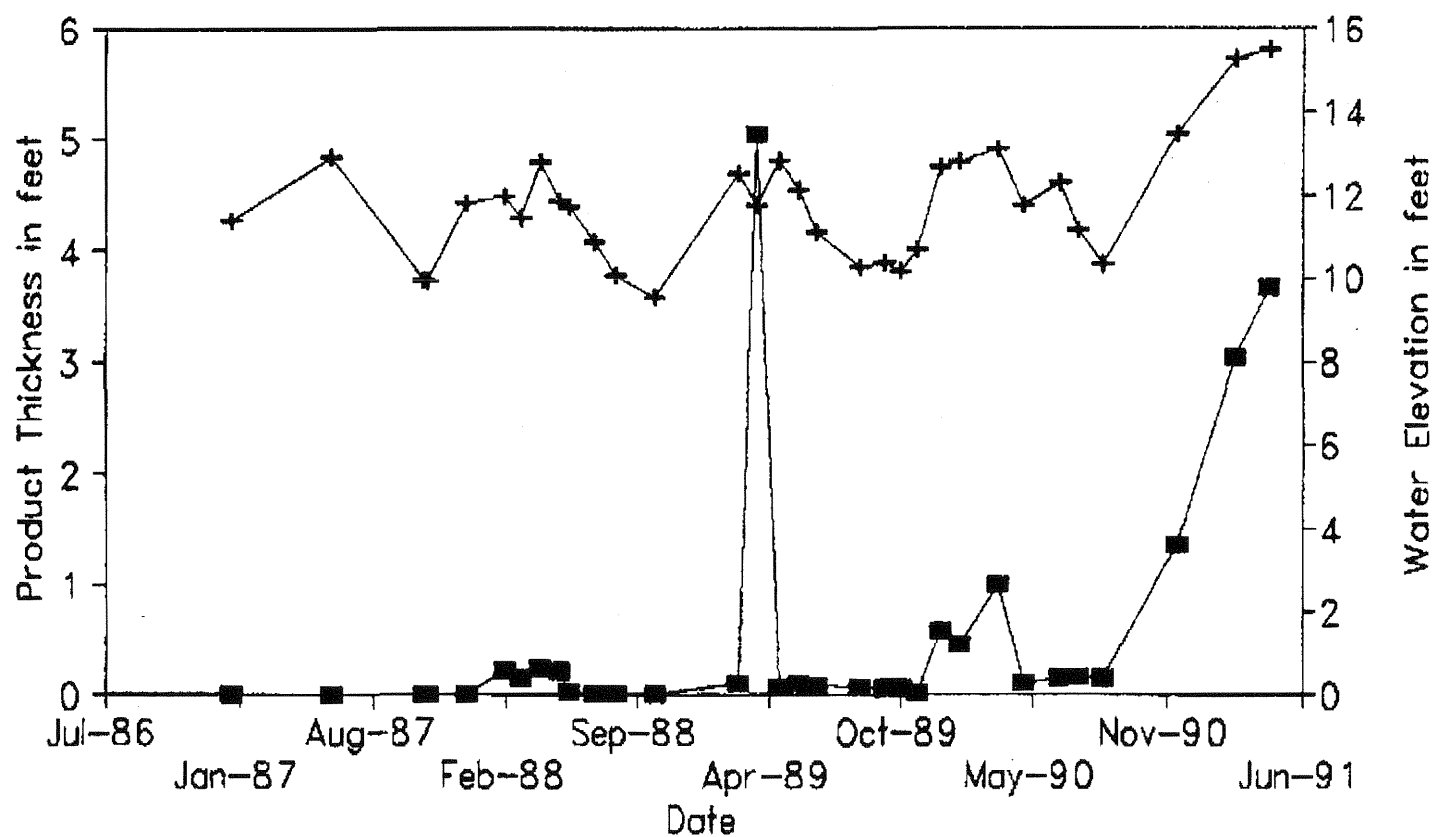


■ Product Thickness —+— Water Level

# Well HA-6



# Well HA-7



■ Product Thickness + Water Level



**BP OIL**

BP Oil Company  
4850 East 49th Street  
Cleveland, Ohio 44125-1079  
(216) 271-8711

July 1, 1991

Mr. Gary A. Stumpf  
Western Ground-Water Projects Manager  
Mobil Oil Corporation  
3800 West Alameda Avenue, Suite 700  
Burbank, California 91505-4331

**Renton Terminal**  
**Hydrocarbon Recovery Project**

Dear Gary:

This is in response to your May 14 letter concerning the recovery operations at BP's Renton Terminal. As stated in your letter, it is puzzling that the size of the free product plume has not decreased over the last three years of recovery system operation. I want to assure you that BP is committed to identifying all potential leaks or spills that may occur at our facilities. However the information reviewed to date, does not indicate to us that a spill or current leak is present at the Renton terminal. BP requests that you consider the following information in your evaluation of the Renton terminal remediation project.

Mobil's contention that a spill occurred in March, 1990, and that a current leak exists at the facility, is primarily based on three pieces of evidence. Mobil's arguments are listed below along with BP's interpretations of the data.

1. **Suspected Surface Spill:** Suspected due to sudden increases in product thicknesses in wells B-3 and HA-7 accompanied by abnormally high recovery rates for a period of eight days (March, 1990).

**Evaluation:** The progress report dated 3/19/90 indicates that the product recovery pump was not operating during the period 2/16/90 to 3/15/90, although the water table depression pump (WTDP) was in operation. The depression in the water table would cause product that normally would have been recovered to accumulate in the vicinity of the recovery well. It makes sense that wells B-3 and HA-7

BP Oil Company

would show increased thicknesses in product due to their proximity to the WTDP. In addition, once the product recovery pump was repaired, it is reasonable that rapid recovery of free product would occur for a short period of time.

2. **Product Analysis:** Product analysis was conducted on samples from both the product recovery tank and BP's regular leaded gasoline.

**Evaluation:** The product analysis results are inconclusive. The GC fingerprint of the recovered product and BP's regular leaded gasoline show some similarities. However the lead content of the product from both well B-2 and the recovery well are two to four times higher than the lead values found in the regular gasoline.

3. **Suspected Current Leak:** The "apparent" thickness and extent of the free product plume appears to have increased in size from July, 1986 to April, 1991 despite recovery operations.

**Evaluation:** A general review of the groundwater level data indicates that the water table in well B-3 has fluctuated over seven feet since recovery operations began. Large fluctuations of the water table can cause the "apparent" size of the free product plume to vary significantly. It is not appropriate to compare maps of the "apparent" free product plume for data collected in July, 1986 and April, 1991 because there is an average difference in water level of 3.95' across the site. Furthermore, well HA-7 was not used in the construction of the July, 1986 map and would most likely have increased the "size" of the plume at the time.

In the last several weeks, BP pressure tested all underground lines leading from the tanks to the rack. The results of these tests indicate none of the lines are currently leaking. BP will continue to cooperate with Mobil in your recovery efforts. We are not however, ready to begin paying fifty percent of the recovery operation costs due to a lack of conclusive

BP Oil Company

evidence that a recent spill or leak occurred. I am sure that after reviewing our interpretation of the data you can appreciate BP's position.

Please call me if you would like to discuss this matter further.

Sincerely,



R.J. O'Hara  
Manager, Environmental Services  
Terminals & Distribution

cc: Renton File  
D.L. Bell  
G.K. Hageman  
D.J. Shuttleworth

BP OIL - Terminals & Distribution

I N T E R O F F I C E   M E M O R A N D U M

Date: 23-Nov-1992 06:35pm EDT  
From: JIM O'HARA  
O'HARA,RJ  
Dept: 9681  
Tel No: (216) 271-8230

TO: DAVE SHUTTLEWORTH  
CC: RICHARD LAUBACHER  
CC: David L. Bell  
Subject: Renton Remediation

( SHUTTLEWORTH,D )  
( LAUBACHER,RC )  
( BELL,DL AT A1 AT BFACIM )

Dave Shuttleworth:

I have a letter from Mobil raising the issue of a potential ongoing leak at the Renton terminal. You were copied and I have sent copies to Dave Bell and Rick Laubacher. This issue came up some time ago and we responded that the underground lines on our property (including the Olympic Pipeline lines that are just passing through) were tested and were tight, although I seem to remember that Olympic was less than helpful. Mobil is requesting documentation of these pressure tests as well as other maintenance documents and inventory records. Do you have documentation for the line tests?

Rick:

What is your opinion of the Hart-Crowser data for this site? Does it indicate a possible problem or are we just picking up the large amount of product Mobil lost? I seem to remember a newspaper article that quoted the amount thought lost as 600,000 gallons.

Dave Bell:

How should we respond to this allegation and information request? Should we be testing again?

Thanks in advance for all of your contributions.

Jim

→ *Ruth Laubacher*



**HARTCROWSER**

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102  
FAX 206.328.5581  
206.324.9530

Earth and Environmental Technologies

J-1784-02

December 7, 1992

Ms. Hillary Holt  
Municipality of Metropolitan Seattle  
821 Second Avenue  
Seattle, Washington 98104-1598

Re: Monthly Self-Monitoring Report, Mobil Oil Company, Renton, Washington  
METRO Discharge Authorization for Special/Minor  
Discharger Number 264

Dear Ms. Eden:

Operation of the groundwater treatment system owned and operated by Mobil Oil Corporation at the BP Bulk Terminal in Renton, Washington, and discharge of the treatment system's pretreated effluent into the sanitary sewer continues. In accordance with the monitoring requirements of the Discharge Authorization, monthly monitoring was performed during the months of October and November of 1992.

The results of the monthly monitoring efforts are tabulated in Table 1. In all cases, the measured conditions were lower than the METRO discharge limits.

This system was shut down from November 2 to November 17, 1992 to replace the stripping tower packing.



Municipality of Metropolitan Seattle  
December 7, 1992

J-1784-02  
Page 2

If you should have any comments or questions with regard to the groundwater treatment system discharge at the BP Bulk Terminal in Renton, please feel free to contact us.

Sincerely,

**HART CROWSER, INC.**

*Birgitta Beuthe*

**BIRGITTA BEUTHE**  
Remediation Engineer

BB  
MET1092.LTR

**Attachments:**

Table 1 - Summary of Compliance Monitoring

cc: (w/Attachment)

Mobil Oil Company, Attn: Ms. Cherine Foutch

BP Oil Company, Attn: Mr. Jim O'Hara

City of Renton Department of Public Works, Attn: Mr. David Christensen

Washington Department of Ecology, Attn: Mr. Doug Knutson

Washington Department of Ecology, Attn: Mr. Brian Sato

Table 1 - Summary of Compliance Monitoring

| Measuring Date | Parameter                                                  | Sample Type / Method              | METRO Discharge Limits                 | Compliance Monitoring Results        |
|----------------|------------------------------------------------------------|-----------------------------------|----------------------------------------|--------------------------------------|
| 10/27/92       | Explosivity                                                | Ambient inside manhole / MSA 361* | 5 % LEL                                | 0 % LEL                              |
|                | Flow                                                       | Continuous / Magnetic Flowmeter   | 21,600 gpd<br>(2,887.5 cubic feet/day) | 318 gpd<br>(51 cubic feet/day)       |
|                | Monthly total discharge to sanitary sewer in October 1992  |                                   | 669,600 gallons<br>(89,500 cubic feet) | 10,351 gallons<br>(1,387 cubic feet) |
| 11/30/92       | Explosivity                                                | Ambient inside manhole / MSA 361* | 5 % LEL                                | 0 % LEL                              |
|                | Flow                                                       | Continuous / Magnetic Flowmeter   | 21,600 gpd<br>(2,887.5 cubic feet/day) | 1,157 gpd<br>(155 cubic feet/day)    |
|                | Monthly total discharge to sanitary sewer in November 1992 |                                   | 669,600 gallons<br>(89,500 cubic feet) | 39,478 gallons<br>(5,290 cubic feet) |

Notes:

\* MSA calibrated to methane gas

gpd = Gallons per day

LEL = Lower explosive limit





Mobil Oil Corporation  
December 14, 1992

J-1784-02  
Page 2

paragraphs present our observations of product thicknesses and product recovery during this monitoring period.

### **PRODUCT LAYER**

Figure 1 and 2 show the extent of the free-phase product layer from the September 30, and October 27, 1992, measurements. Product has reappeared in B-4 after three months of no product detection. This appearance might be explained by the onset of the rainy season and the resulting increased flushing of the soil. B-6, located directly downgradient of the recovery trench, and HA-7 continue to show product. The data collected confirm the observations made in the previous quarterly report (September 18, 1992).

### **PRODUCT RECOVERY**

Figure 3 shows the product recovered to date. An estimated 54,277 gallons of product have been recovered to date. The average recovering rate during this reporting period was 26 gallons per day.



## COMPLIANCE TESTING

During the November 17, 1992, system inspection, water samples were collected and analyzed for BTEX, as required quarterly, and for fat, oil, and grease as required yearly by the Washington State Department of Ecology. Results of the analysis for the sample are as follows:

| Test Method                  | Compound       | Influent<br>(mg/l) | Effluent<br>(mg/l) | Removal<br>Efficiency |
|------------------------------|----------------|--------------------|--------------------|-----------------------|
| BETX<br>(EPA Method<br>8020) | Benzene        | 31.000             | 0.046              | 0.999                 |
|                              | Ethylbenzene   | 1.900              | ND                 | 0.999                 |
|                              | Toluene        | 36.000             | 0.034              | 0.999                 |
|                              | Total Xylenes  | 13.000             | 0.064              | 0.995                 |
| FOG (5520 F)                 | Oil and Grease | 23                 | ND                 | 0.999                 |

## LIMITATIONS

Work for this project was performed, and this letter report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Mobil Oil Corporation for specific application to the referenced property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

Any questions regarding our work and this letter report, the presentation of the information, and the interpretation of the data are welcome and should be referred to the project manager (the undersigned).



Mobil Oil Corporation  
December 14, 1992

J-1784-02  
Page 4

We trust that this report meets your needs.

Sincerely,

**HART CROWSER, INC.**

*Birgitta Beuthe*

**BIRGITTA BEUTHE**  
Remediation Engineer

*James M. Wilder*  
**JAMES M. WILDER**  
Associate

Quarterly.w51

**Attachments:**

|                    |                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------|
| Table 1 -          | Product Thickness and Groundwater Level Observations<br>Sampling Date: September 30, 1992 |
| Table 2 -          | Product Thickness and Groundwater Level Observations<br>Sampling Date: October 27, 1992   |
| Figures 1, and 2 - | Product Thickness Contour Maps                                                            |
| Figure 3 -         | Product Recovered at the Renton Bulk Terminal                                             |
| A -                | Laboratory Analytical Reports<br>North Creek Analytical                                   |

cc: (w/Attachments)

Washington State Dept. of Ecology, Attn: Mr. Brian Sato  
BP Oil Company, Attn: Mr. Jim O'Hara

**Table 1 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: September 30, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 8.43                            | 8.43                            | 0                         | 10.19                                   |
| B-2         | 18.60                                    | 9.31                            | 10.04                           | 0.73                      | 9.14                                    |
| B-3         | 18.73                                    | 10.25                           | 11.67                           | 1.42                      | 8.20                                    |
| B-4         | 18.09                                    | 9.01                            | 9.23                            | 0.22                      | 9.04                                    |
| B-5         | 17.97                                    | 8.98                            | 9.02                            | 0.04                      | 8.98                                    |
| B-6         | 17.94                                    | 8.69                            | 10.19                           | 1.5                       | 8.95                                    |
| HA-6        | 18.16                                    | 8.62                            | 8.62                            | 0                         | 9.54                                    |
| HA-7        | 18.44                                    | 8.93                            | 9.23                            | 0.3                       | 9.45                                    |
| D-6         | 17.74                                    | 7.77                            | 7.77                            | 0                         | 9.97                                    |
| W-1         | 18.86                                    | 8.65                            | 8.65                            | 0                         | 10.21                                   |
| W-2         | 18.28                                    | 9.11                            | 9.68                            | 0.57                      | 9.06                                    |
| R-1         | 16.94                                    | 10.15                           | 10.41                           | 0.26                      | 6.74                                    |
| R-2         | 17.52                                    | 7.30                            | 7.34                            | 0.04                      | 10.21                                   |

$\bar{x}_{PSH} = 0.7$

**Table 2 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: October 27, 1992**

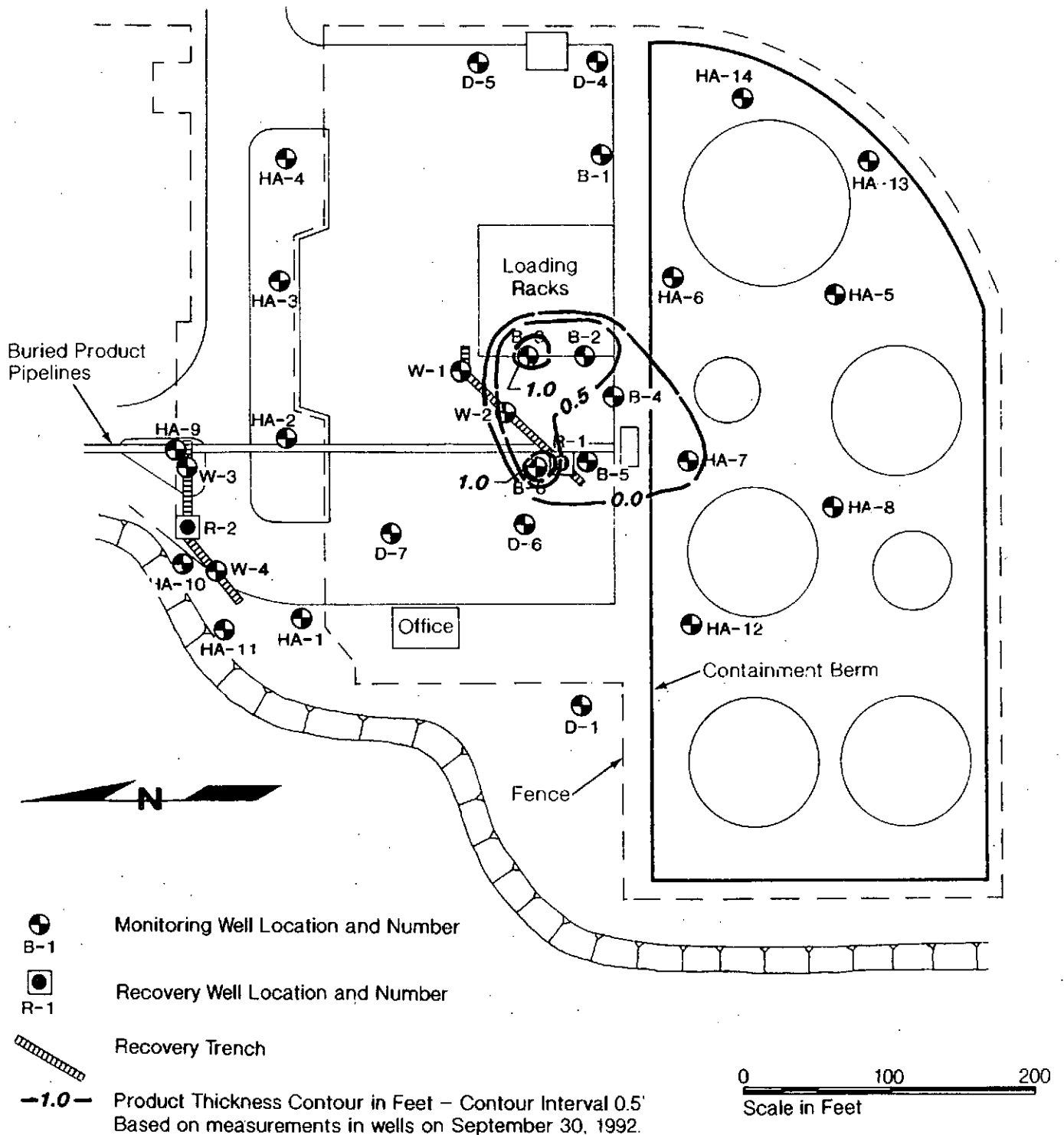
Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    |                                 |                                 |                           |                                         |
| B-2         | 18.60                                    | 8.85                            | 8.99                            | - 0.14                    | 9.72                                    |
| B-3         | 18.73                                    | 9.35                            | 11.25                           | - 1.90                    | 9.00                                    |
| B-4         | 18.09                                    | 8.29                            | 8.55                            | - 0.26                    | 9.75                                    |
| B-5         | 17.97                                    | 8.09                            | 8.09                            | - 0                       | 9.88                                    |
| B-6         | 17.94                                    | 8.09                            | 8.65                            | - 0.56                    | 9.74                                    |
| HA-6        | 18.16                                    | 8.39                            | 8.39                            | 0                         | 9.77                                    |
| HA-7        | 18.44                                    | 8.56                            | 8.82                            | - 0.26                    | 9.83                                    |
| D-6         | 17.74                                    | 7.80                            | 7.80                            | 0                         | 9.94                                    |
| W-1         | 18.86                                    | 8.65                            | 8.65                            | 0                         | 10.21                                   |
| W-2         | 18.28                                    | 8.45                            | 8.69                            | 0.24                      | 9.78                                    |
| R-1         | 16.94                                    | 7.83                            | 8.13                            | 0.30                      | 9.05                                    |
| R-2         | 17.52                                    | 7.30                            | 7.32                            | 0.02                      | 10.22                                   |

$$\bar{X} \text{ PSH} = 0.52$$

# Product Thickness Contour Map

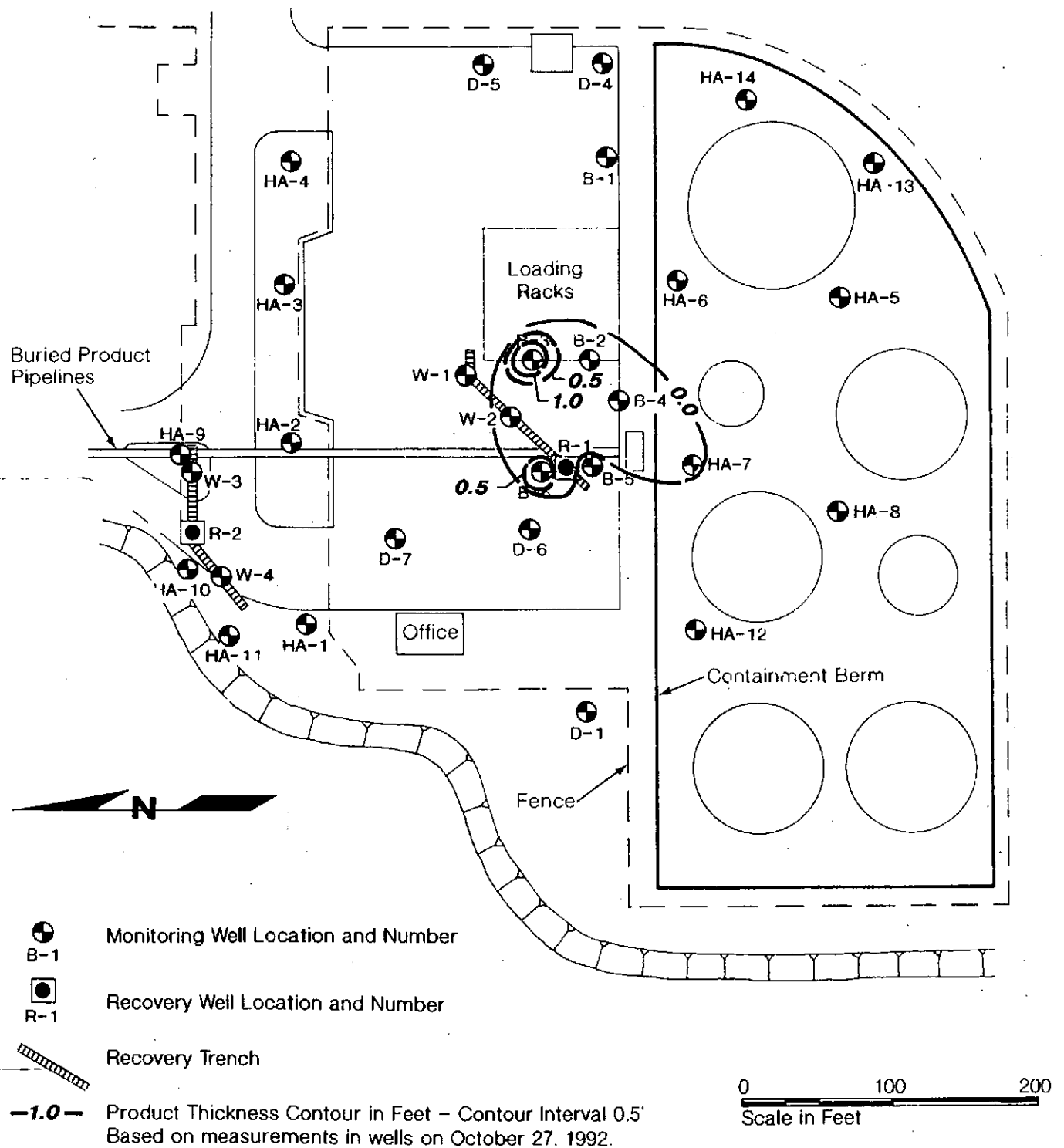
Sampling Date: September 30, 1992



Note: Base map prepared from drawing entitled 'Electrical Plan - Mobile Oil Corporation-Renton Terminal' by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

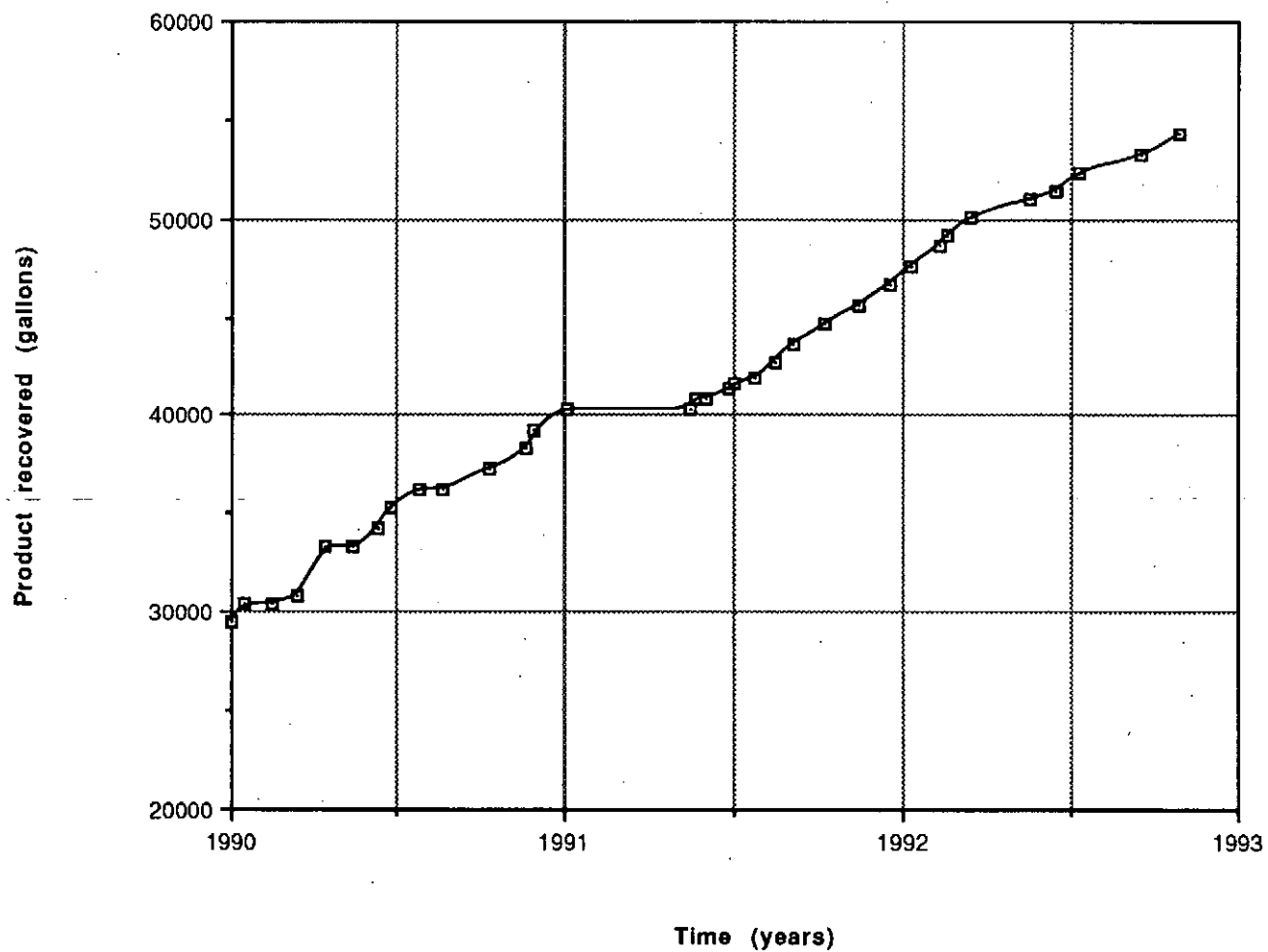
# Product Thickness Contour Map

Sampling Date: October 27, 1992



Note: Base map prepared from drawing entitled "Electrical Plan - Mobile Oil Corporation-Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

## ***Product Recovery at the Renton Bulk Terminal***



**HARTCROWSER**

J-1784-02 12/92

Figure 3



Earth and Environmental Technologies

J-1784-02

February 25, 1992

Ms. Cherine Foutch  
Mobil Oil Corporation  
Suite 700  
3800 West Alameda Avenue  
Burbank, California 91505-4331

RECEIVED  
MAR 6 '92  
ENVIRONMENTAL  
ENGINEERING

KUNCE  
LAUBACHER  
MCDONALD  
MUELLER  
NORTON  
O'HARA  
ROGOZINSKI  
VOPAT

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102  
FAX 206.328.5581  
206.324.9530

Re: Free-Phase Product Recovery System  
Renton, Washington Bulk Terminal Facility  
Quarterly Progress Report: October 25, 1991 to February 6, 1992

Dear Ms. Foutch:

This letter summarizes our monthly well monitoring results at the Renton Bulk Terminal Facility for the period between October 25, 1991, and February 6, 1992. Fluid levels were measured in all existing monitoring wells on December 2, 1991, January 8, 1992, and February 6, 1992. Tables 1 through 3 present a listing of the monitoring well measurements.

The recovery system operated without any lengthy shutdown periods during the time period above. The following presents our observations of product thicknesses and water levels during this monitoring period.



## PRODUCT LAYER

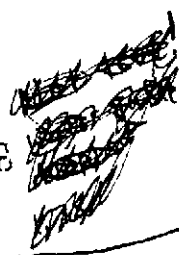
Figure 1 shows the extent of the free-phase product layer from the December 2, 1991, observation data. Typically, the product layer thickness in the soil is less than the thickness in the wells. The thickness of the free-phase product layer based on the December 2 measurements has increased slightly from the last survey taken October 24, 1991. The lateral extent of the product layer is similar to the previous survey. The location of the product thickness contours is representative of periods when the treatment system is operating.

Figure 3 depicts the product layer from the January 8, 1992, measurements. The thickness of the free-phase product in January 1992 increased slightly from the December 2, 1991, survey; however, the lateral extent of the plume is smaller than the previous month's measurements. Product was detected in well B-1 for the first time. Again, the location of the product thickness contours is representative of periods when the treatment system is operating.

Figure 5 shows the product layer from the February 6, 1992, measurements. The thickness of the free-phase product has decreased from the previous month, while the lateral extent of the plume is approximately the same as the January 8, 1992, survey. Product was again detected in well B-1. As for the previous two months, the location of the product thickness contours is representative of periods when the treatment system is operating.

## GROUNDWATER ELEVATIONS

Groundwater elevation contours are shown on Figures 2, 4, and 6. The groundwater elevations from the December 2, 1991, observations are higher than the previous month's levels. This trend continued for the January 8 and February 6 surveys as well. This is most likely a result of the increased precipitation experienced at the site over the last three months. The groundwater measurements for the last two months are typical for periods when the system is operating and are similar to previous groundwater elevations for this time of year. As shown on Figures 4 and 6, the active groundwater extraction well created a favorable drawdown within the affected area over the last two months.





Mobil Oil Corporation  
February 25, 1992

J-1784-02  
Page 3

### PRODUCT RECOVERY

Figure 7 shows the product recovered to date. Approximately 2,000 gallons of product have been recovered since October 25, 1991. An estimated 46,650 gallons of product have been recovered to date. The average recovery rate during this reporting period was 19 gallons per day.

### COMPLIANCE TESTING

During the January 22, 1992 system inspection, water samples were collected and analyzed as required quarterly by the Washington State Department of Ecology. Results of the analysis for the sample are as follows:

| Test Method                  | Compound      | Influent<br>in mg/L | Effluent<br>in mg/L | Removal<br>Efficiency |
|------------------------------|---------------|---------------------|---------------------|-----------------------|
| BETX<br>(EPA Method<br>8020) | Benzene       | 19                  | 0.033               | 0.998                 |
|                              | Ethylbenzene  | 2.1                 | 0.0031              | 0.999                 |
|                              | Toluene       | 22                  | 0.054               | 0.998                 |
|                              | Total Xylenes | 8.1                 | 0.034               | 0.996                 |



Mobil Oil Corporation  
February 25, 1992

J-1784-02  
Page 4

Please call us at your convenience if you have any questions.

Sincerely,

**HART CROWSER, INC.**

A handwritten signature in cursive script that reads "Joe Wesley".

**D. JOSEPH WESSLEY, P.E.**  
Project Engineer

DJW:tml  
oct-feb.rpt

**Attachments:**

Tables 1 through 3 - Product Thickness and Groundwater Level Observations  
Figures 1, 3, and 5 - Product Thickness Contour Map  
Figures 2, 4, and 6 - Groundwater Elevation Contour Map  
Figure 7 - Product Recovered at the Renton Bulk Terminal

cc: Mobil Oil Corporation, Attn: Mr. Gary Stumpf  
Washington State Dept. of Ecology, Attn: Mr. Brian Sato  
BP Oil Company, Attn: Mr. Jim O'Hara

**Table 1 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: December 2, 1991**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 7.80                            | 7.80                            | 0                         | 10.82                                   |
| B-2         | 18.60                                    | 8.16                            | 9.86                            | 1.70                      | 10.10                                   |
| B-3         | 18.73                                    | 7.92                            | 10.02                           | 2.10                      | 10.39                                   |
| B-4         | 18.09                                    | 8.32                            | 8.96                            | 0.64                      | 9.64                                    |
| B-5         | 17.97                                    | 8.40                            | 8.40                            | 0                         | 9.57                                    |
| B-6         | 17.94                                    | 8.33                            | 9.40                            | 1.07                      | 9.40                                    |
| HA-1        | 19.50                                    | 7.98                            | 7.98                            | 0                         | 11.52                                   |
| HA-2        | 18.17                                    | 7.46                            | 7.46                            | 0                         | 10.71                                   |
| HA-3        | 21.03                                    | 9.19                            | 9.19                            | 0                         | 11.84                                   |
| HA-4        | 20.24                                    | 8.46                            | 8.46                            | 0                         | 11.78                                   |
| HA-5        | 18.07                                    | 6.02                            | 6.02                            | 0                         | 12.05                                   |
| HA-6        | 18.16                                    | 6.78                            | 6.78                            | 0                         | 11.38                                   |
| HA-7        | 18.44                                    | 7.10                            | 7.33                            | 0.23                      | 11.29                                   |
| HA-8        | 18.88                                    | 6.33                            | 6.33                            | 0                         | 12.55                                   |
| HA-9        | 19.40                                    | 7.92                            | 7.92                            | 0                         | 11.48                                   |
| HA-10       | 19.33                                    | 7.74                            | 7.74                            | 0                         | 11.59                                   |
| HA-11       | 18.51                                    | 7.31                            | 7.31                            | 0                         | 11.20                                   |
| HA-12       | 19.91                                    | 7.65                            | 7.65                            | 0                         | 12.26                                   |
| HA-13       | 19.59                                    | 7.60                            | 7.60                            | 0                         | 11.99                                   |
| HA-14       | 20.02                                    | 8.48                            | 8.48                            | 0                         | 11.54                                   |
| D-1         | 18.03                                    | 6.31                            | 6.31                            | 0                         | 11.72                                   |
| D-4         | 17.82                                    | 6.46                            | 6.46                            | 0                         | 11.36                                   |
| D-5         | 18.12                                    | 5.17                            | 5.17                            | 0                         | 12.95                                   |
| D-6         | 17.74                                    | 7.51                            | 7.51                            | 0                         | 10.23                                   |
| D-7         | 17.69                                    | 7.13                            | 7.13                            | 0                         | 10.56                                   |
| W-1         | 18.86                                    | 8.60                            | 8.60                            | 0                         | 10.26                                   |
| W-2         | 18.28                                    | 7.76                            | 7.96                            | 0.20                      | 10.48                                   |
| W-3         | 17.10                                    | 8.19                            | 8.19                            | 0                         | 8.91                                    |
| W-4         | 18.03                                    | 8.06                            | 8.06                            | 0                         | 9.97                                    |
| R-1         | 16.94                                    | 7.13                            | 8.29                            | 1.16                      | 9.58                                    |
| R-2         | 17.52                                    | 6.12                            | 6.14                            | 0.02                      | 11.40                                   |

**Table 2 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: January 8, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 8.14                            | 8.24                            | 0.10                      | 10.46                                   |
| B-2         | 18.60                                    | 7.88                            | 10.48                           | 2.60                      | 10.20                                   |
| B-3         | 18.73                                    | 8.35                            | 10.82                           | 2.47                      | 9.89                                    |
| B-4         | 18.09                                    | 7.50                            | 7.67                            | 0.17                      | 10.56                                   |
| B-5         | 17.97                                    | 8.04                            | 8.04                            | 0                         | 9.93                                    |
| B-6         | 17.94                                    | 8.08                            | 8.08                            | 0                         | 9.86                                    |
| HA-1        | 19.50                                    | 7.85                            | 7.85                            | 0                         | 11.65                                   |
| HA-2        | 18.17                                    | 6.80                            | 6.80                            | 0                         | 11.37                                   |
| HA-3        | 21.03                                    | 8.52                            | 8.52                            | 0                         | 12.51                                   |
| HA-4        | 20.24                                    | 8.04                            | 8.04                            | 0                         | 12.20                                   |
| HA-5        | 18.07                                    | 5.50                            | 5.50                            | 0                         | 12.57                                   |
| HA-6        | 18.16                                    | 6.06                            | 6.06                            | 0                         | 12.10                                   |
| HA-7        | 18.44                                    | 6.45                            | 6.68                            | 0.23                      | 11.94                                   |
| HA-8        | 18.88                                    | 5.82                            | 5.82                            | 0                         | 13.06                                   |
| HA-9        | 19.40                                    | 7.70                            | 7.70                            | 0                         | 11.70                                   |
| HA-10       | 19.33                                    | 7.54                            | 7.54                            | 0                         | 11.79                                   |
| HA-11       | 18.51                                    | 6.70                            | 6.70                            | 0                         | 11.81                                   |
| HA-12       | 19.91                                    | 6.84                            | 6.84                            | 0                         | 13.07                                   |
| HA-13       | 19.59                                    | 7.38                            | 7.38                            | 0                         | 12.21                                   |
| HA-14       | 20.02                                    | 8.24                            | 8.24                            | 0                         | 11.78                                   |
| D-1         | 18.03                                    | 6.12                            | 6.12                            | 0                         | 11.91                                   |
| D-4         | 17.82                                    | 6.16                            | 6.16                            | 0                         | 11.66                                   |
| D-5         | 18.12                                    | 5.94                            | 5.94                            | 0                         | 12.18                                   |
| D-6         | 17.74                                    | 6.80                            | 6.80                            | 0                         | 10.94                                   |
| D-7         | 17.69                                    | 6.46                            | 6.46                            | 0                         | 11.23                                   |
| W-1         | 18.86                                    | 8.32                            | 8.36                            | 0.04                      | 10.53                                   |
| W-2         | 18.28                                    | 8.16                            | 8.20                            | 0.04                      | 10.11                                   |
| W-3         | 17.10                                    | 5.28                            | 5.28                            | 0                         | 11.82                                   |
| W-4         | 18.03                                    | 6.30                            | 6.30                            | 0                         | 11.73                                   |
| R-1         | 16.94                                    | 10.40                           | 10.72                           | 0.32                      | 6.48                                    |
| R-2         | 17.52                                    | 7.24                            | 7.28                            | 0.04                      | 10.27                                   |

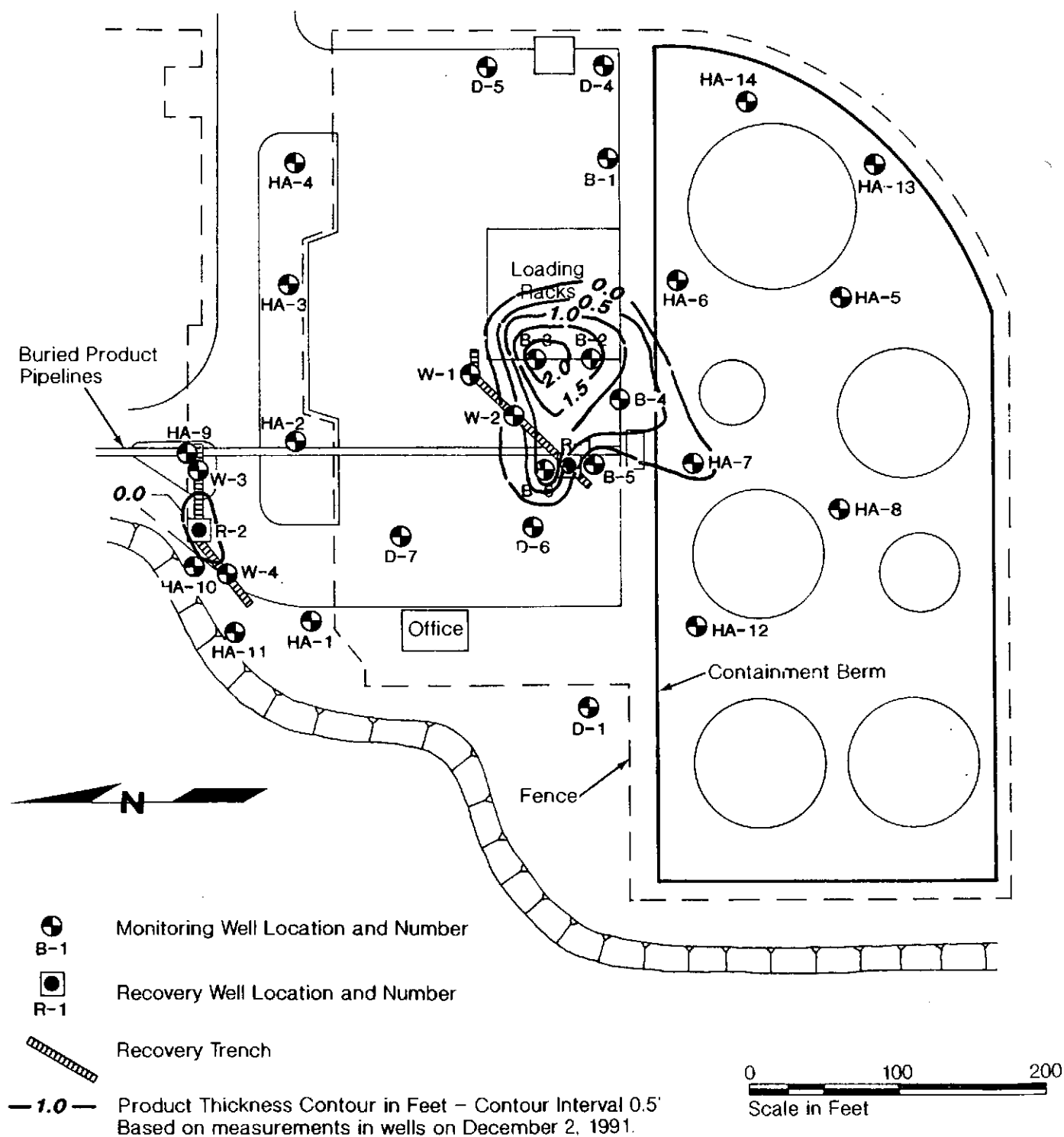
**Table 3 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: February 6, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 6.82                            | 6.87                            | 0.05                      | 11.79                                   |
| B-2         | 18.60                                    | 7.02                            | 8.69                            | 1.67                      | 11.25                                   |
| B-3         | 18.73                                    | 8.08                            | 9.86                            | 1.78                      | 10.29                                   |
| B-4         | 18.09                                    | 6.72                            | 6.86                            | 0.14                      | 11.34                                   |
| B-5         | 17.97                                    | 7.56                            | 7.56                            | 0                         | 10.41                                   |
| B-6         | 17.94                                    | 7.69                            | 7.78                            | 0.09                      | 10.23                                   |
| HA-1        | 19.50                                    | 5.71                            | 5.71                            | 0                         | 13.79                                   |
| HA-2        | 18.17                                    | 6.23                            | 6.23                            | 0                         | 11.94                                   |
| HA-3        | 21.03                                    | 8.12                            | 8.12                            | 0                         | 12.91                                   |
| HA-4        | 20.24                                    | 7.21                            | 7.21                            | 0                         | 13.03                                   |
| HA-5        | 18.07                                    | 3.91                            | 3.91                            | 0                         | 14.16                                   |
| HA-6        | 18.16                                    | 4.55                            | 4.55                            | 0                         | 13.61                                   |
| HA-7        | 18.44                                    | 5.05                            | 5.35                            | 0.30                      | 13.33                                   |
| HA-8        | 18.88                                    | 4.01                            | 4.01                            | 0                         | 14.87                                   |
| HA-9        | 19.40                                    | 6.96                            | 6.96                            | 0                         | 12.44                                   |
| HA-10       | 19.33                                    | 7.12                            | 7.12                            | 0                         | 12.21                                   |
| HA-11       | 18.51                                    | 6.29                            | 6.29                            | 0                         | 12.22                                   |
| HA-12       | 19.91                                    | 4.05                            | 4.05                            | 0                         | 15.86                                   |
| HA-13       | 19.59                                    | 5.25                            | 5.25                            | 0                         | 14.34                                   |
| HA-14       | 20.02                                    | 6.51                            | 6.51                            | 0                         | 13.51                                   |
| D-1         | 18.03                                    | 5.06                            | 5.06                            | 0                         | 12.97                                   |
| D-4         | 17.82                                    | 4.05                            | 4.05                            | 0                         | 13.77                                   |
| D-5         | 18.12                                    | -                               | -                               | -                         | -                                       |
| D-6         | 17.74                                    | 6.06                            | 6.06                            | 0                         | 11.68                                   |
| D-7         | 17.69                                    | 5.95                            | 5.95                            | 0                         | 11.74                                   |
| W-1         | 18.86                                    | 8.15                            | 8.15                            | 0                         | 10.71                                   |
| W-2         | 18.28                                    | 7.70                            | 7.82                            | 0.12                      | 10.56                                   |
| W-3         | 17.10                                    | 4.56                            | 4.56                            | 0                         | 12.54                                   |
| W-4         | 18.03                                    | 4.96                            | 4.96                            | 0                         | 13.07                                   |
| R-1         | 16.94                                    | 10.42                           | 10.76                           | 0.34                      | 6.45                                    |
| R-2         | 17.52                                    | 5.14                            | 5.15                            | 0.01                      | 12.38                                   |

# Product Thickness Contour Map

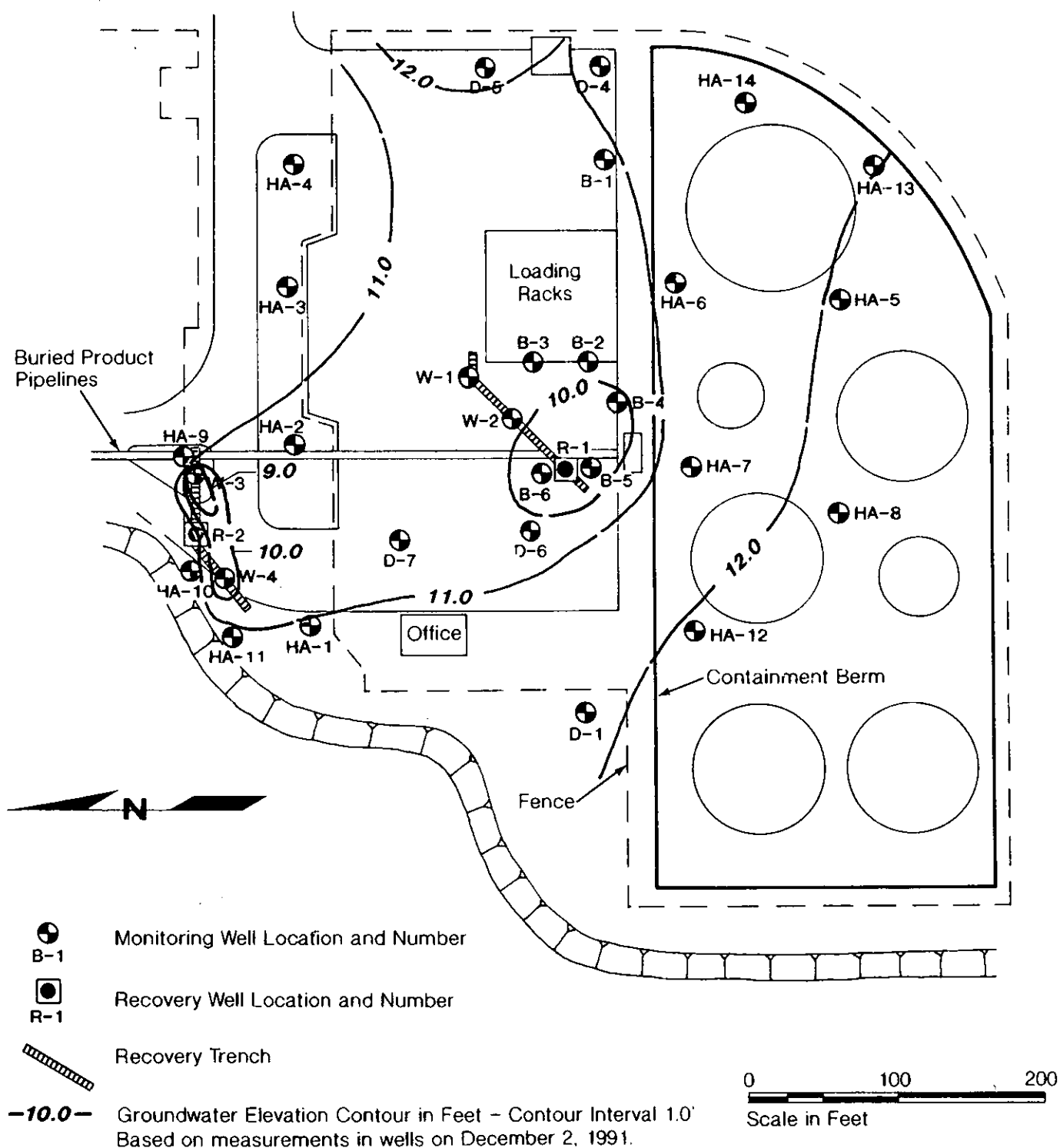
Sampling Date: December 2, 1991



Note: Base map prepared from drawing entitled 'Electrical Plan-Mobile Oil Corporation-Renton Terminal' by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968.)

# Groundwater Elevation Contour Map

Sampling Date: December 2, 1991



Note: Base map prepared from drawing entitled 'Electrical Plan-Mobile Oil Corporation-Renton Terminal' by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968.)



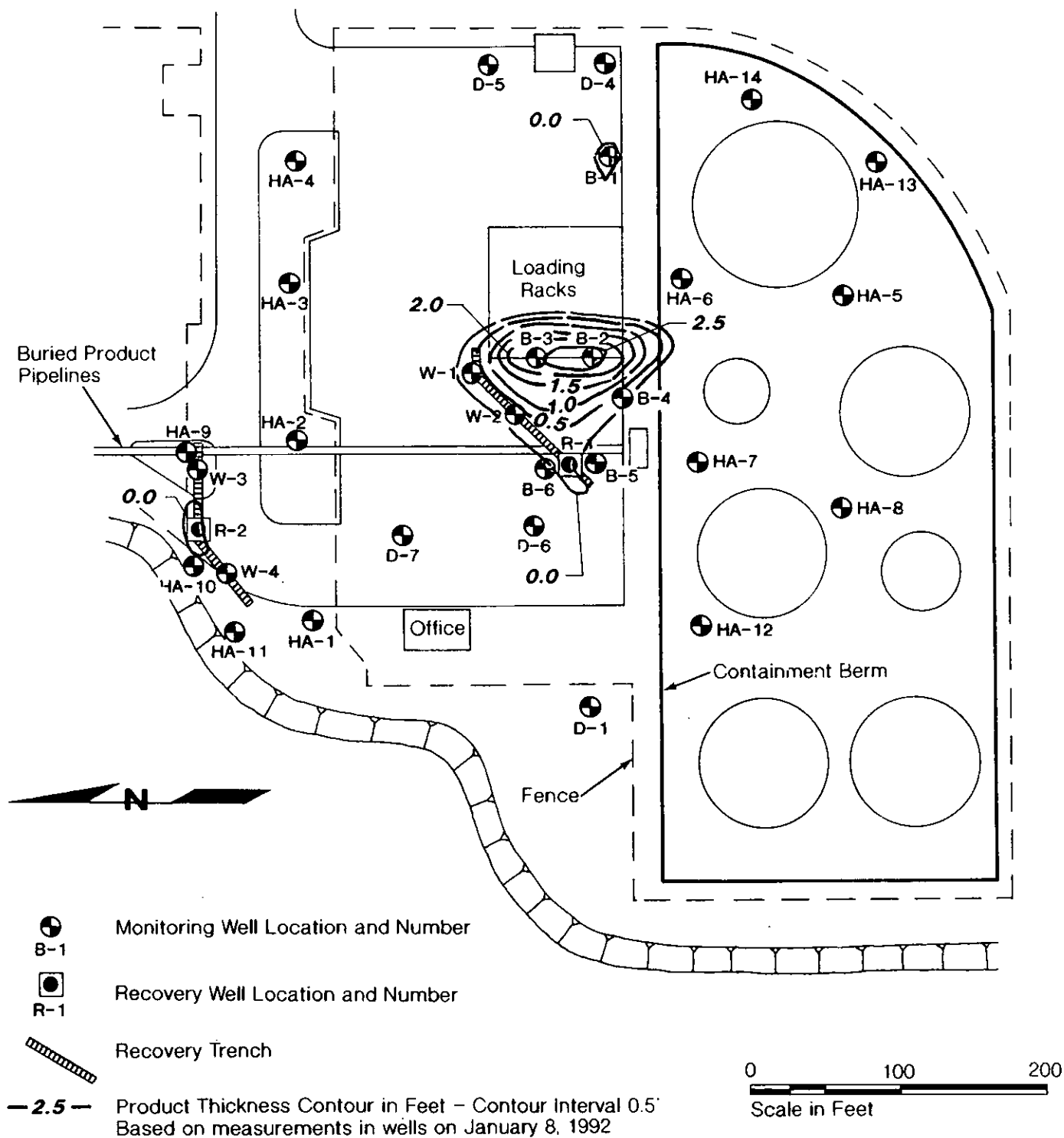
**HARTCROWSER**

J-1784-02 12/91

Figure 2

# Product Thickness Contour Map

Sampling Date: January 8, 1992



Note: Base map prepared from drawing entitled "Electrical Plan-Mobile Oil Corporation-Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968)



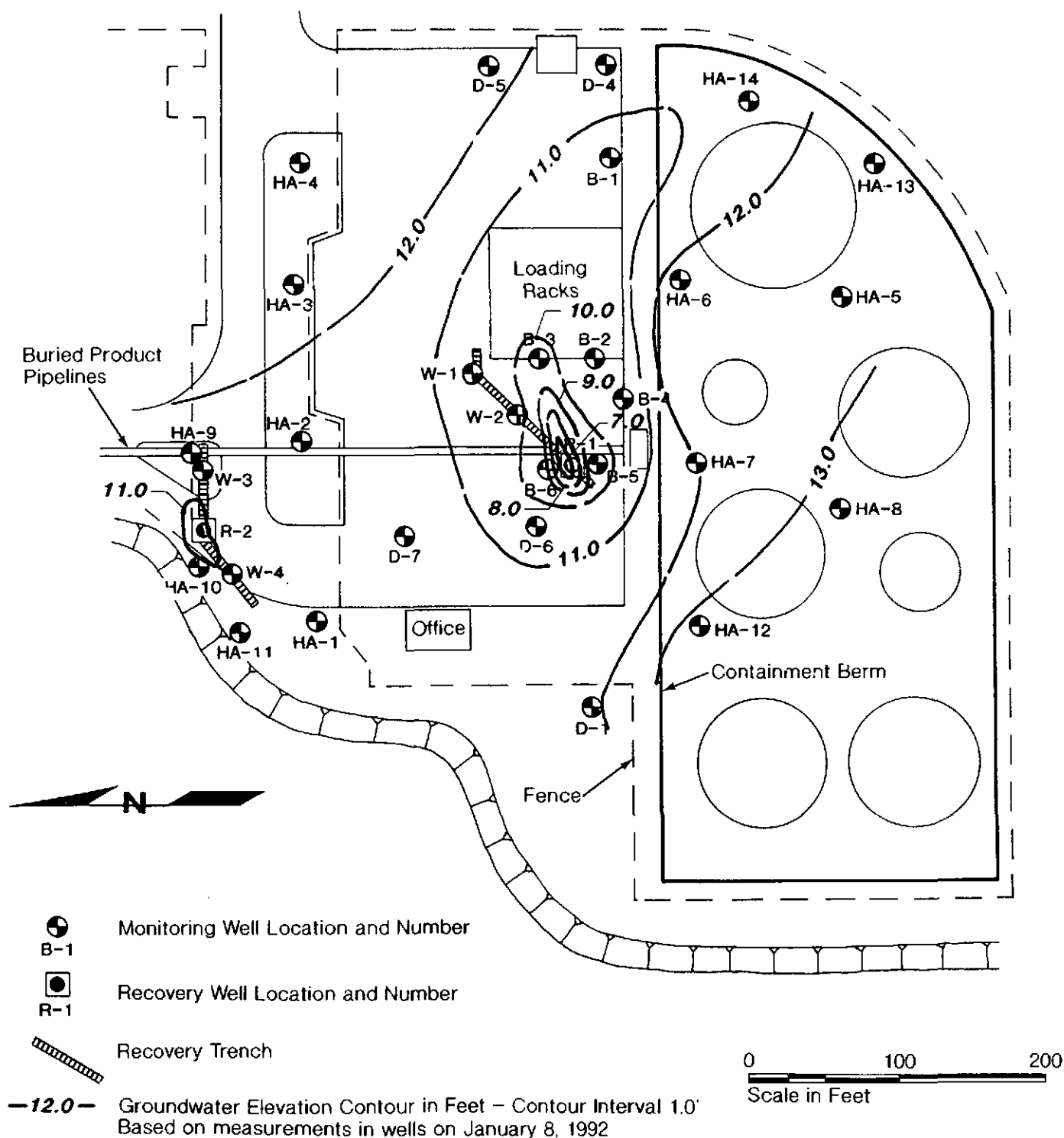
**HARTCROWSER**

J-1784-02 1/92

Figure 3

# Groundwater Elevation Contour Map

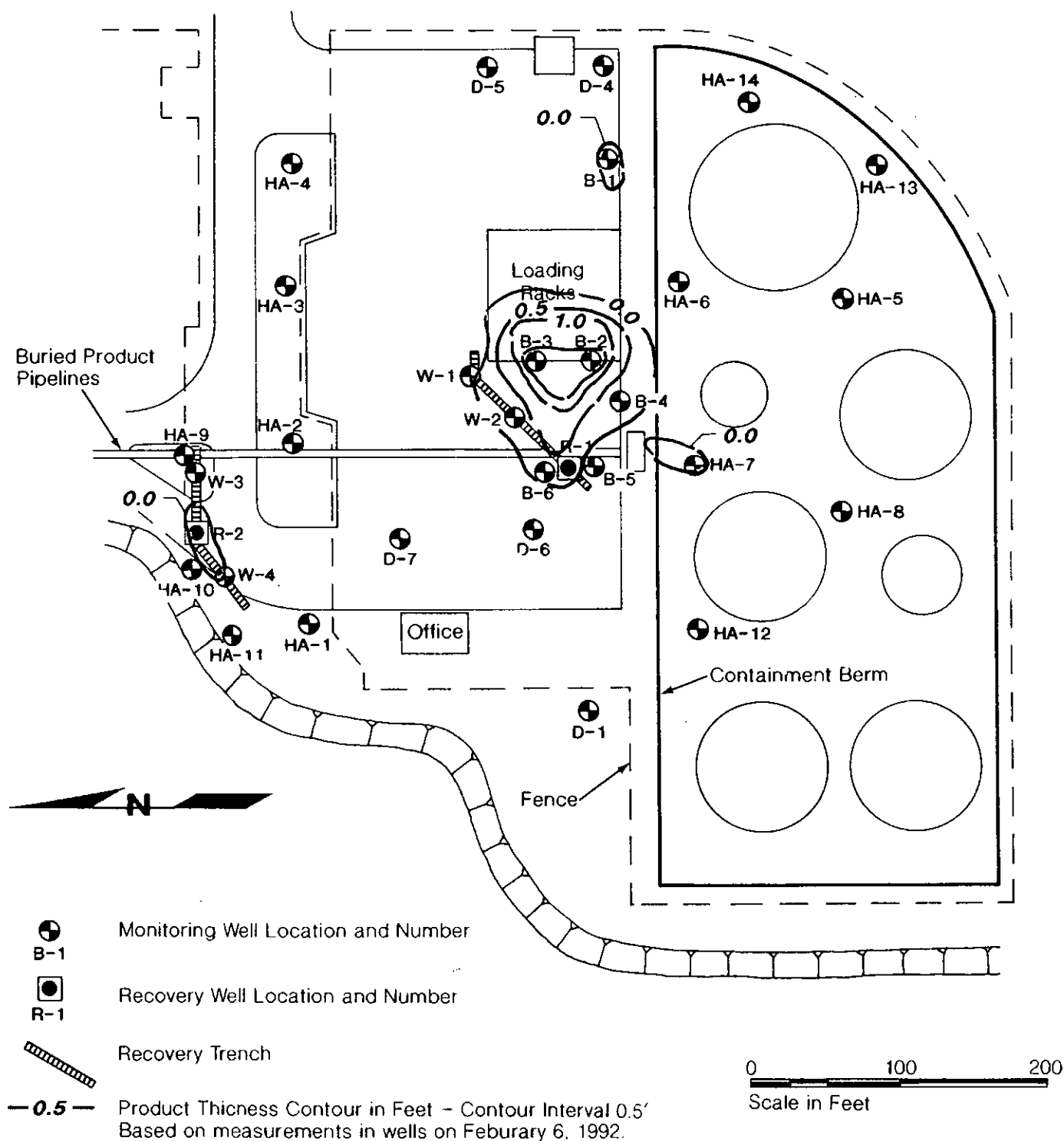
Sampling Date: January 8, 1992



Note: Base map prepared from drawing entitled "Electrical Plan-Mobile Oil Corporation-Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968)

# Product Thickness Contour Map

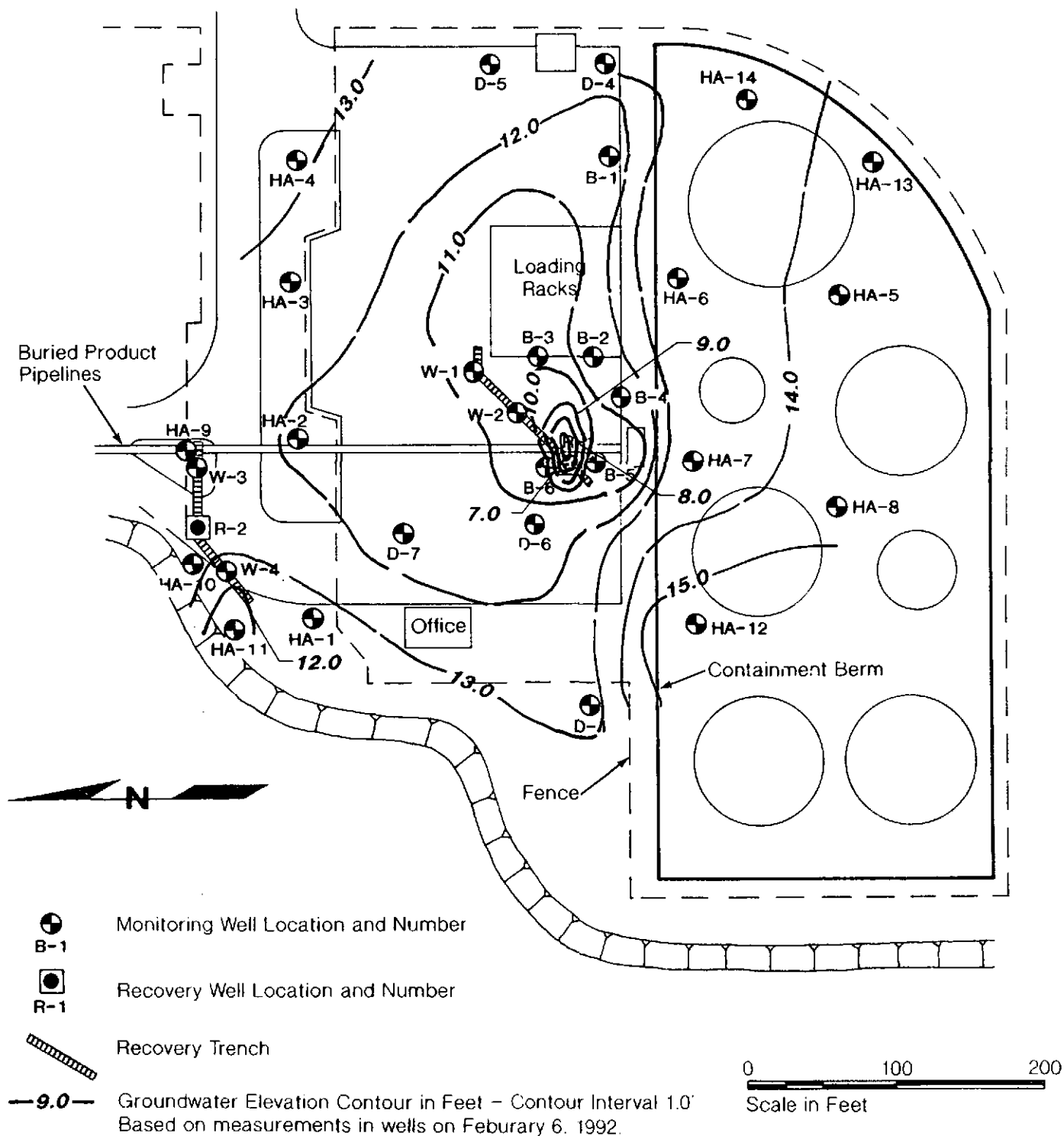
Sampling Date: February 6, 1992



Note: Base map prepared from drawing entitled "Electrical Plan-Moble Oil Corporation-Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968)

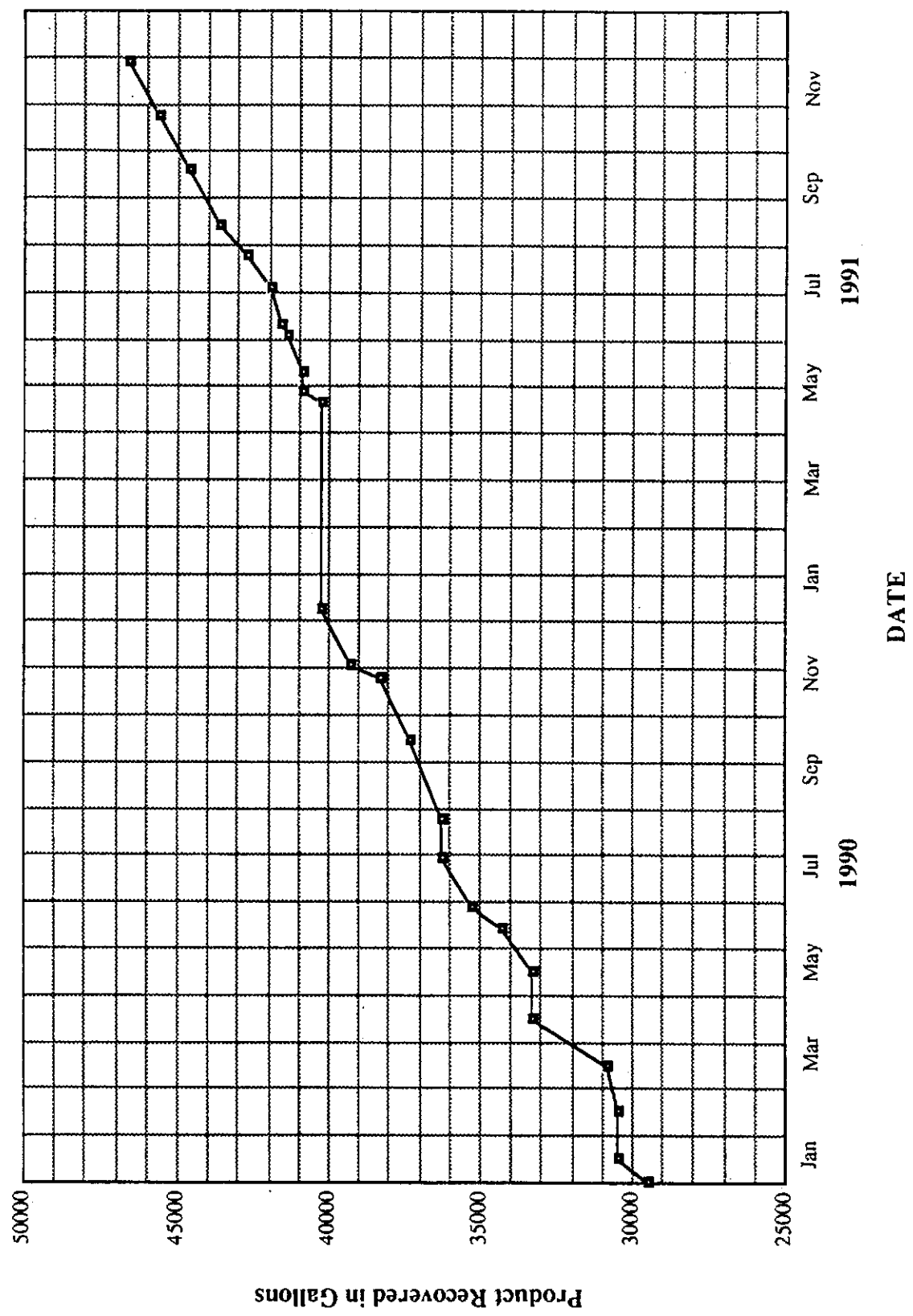
# Groundwater Elevation Contour Map

Sampling Date: February 6, 1992



Note: Base map prepared from drawing entitled 'Electrical Plan-Moble Oil Corporation-Renton Terminal' by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968)

# Product Recovered at the Renton Bulk Terminal





# HARTCROWSER

Earth and Environmental Technologies

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102  
FAX 206.328.5581  
206.324.9530

J-1784-03

March 26, 1992

Ms. Jacqueline A. Eden  
Municipality of Metropolitan of Seattle  
821 Second Ave.  
Seattle, WA 98104-1598

| RECEIVED                     |                                       |
|------------------------------|---------------------------------------|
| MAR 31 '92                   |                                       |
| ENVIRONMENTAL<br>ENGINEERING |                                       |
| BRUCE                        | <input type="checkbox"/>              |
| LAUBACHER                    | <input checked="" type="checkbox"/> ② |
| MACDONALD                    | <input type="checkbox"/>              |
| MUNISER                      | <input type="checkbox"/>              |
| NORTON                       | <input type="checkbox"/>              |
| OWARA                        | <input type="checkbox"/>              |
| <del>REDACTED</del>          | <input checked="" type="checkbox"/> ① |
| WONAT                        | <input type="checkbox"/>              |
|                              | <input type="checkbox"/>              |
|                              | <input type="checkbox"/>              |
|                              | <input type="checkbox"/>              |
|                              | <input type="checkbox"/>              |

Re: Monthly Self-Monitoring Report, Mobil Oil Company, Renton, Washington  
METRO Discharge Authorization for Special/Minor  
Discharger Number 264

Dear Ms. Eden:

Operation of the groundwater treatment system owned and operated by Mobil Oil Corporation at the BP Bulk Terminal in Renton, Washington and discharge of the treatment system's pretreated effluent into the sanitary sewer continues. In accordance with the monitoring requirements of the Discharge Authorization, monthly monitoring was performed during the months of February and March of 1992.

The results of the monthly monitoring efforts are tabulated in Table 1. In all cases, the measured conditions were lower than the METRO discharge limits.



Municipality of Metropolitan of Seattle  
March 26, 1992

J-1784-03  
Page 2

If you should have any comments or questions with regard to the groundwater treatment system discharge at the BP Bulk Terminal in Renton, please feel free to contact us.

Sincerely,

**HART CROWSER, INC.**

**D. JOSEPH WESSLEY, P.E.**  
Project Engineer

DJW:cam  
metro.wp

Attachments:

Table 1 - Summary of Compliance Monitoring

cc: Mobil Oil Company, Attn: Ms. Cherine Foutch  
Mobil Oil Company, Attn: Mr. Gary Stumpf  
BP Oil Company, Attn: Mr. Jim O'Hara  
~~City of Renton Department of Public Works, Attn: Mr. David Christensen~~  
Washington Department of Ecology, Attn: Mr. Doug Knutson  
Washington Department of Ecology, Attn: Mr. Brian Sato

Table 1 - Summary of Compliance Monitoring

| Measuring Date | Parameter                                                  | Sample Type / Method              | METRO Discharge Limits                   | Compliance Monitoring Results          |
|----------------|------------------------------------------------------------|-----------------------------------|------------------------------------------|----------------------------------------|
| 2/6/92         | Explosivity                                                | Ambient inside manhole / MSA 361* | 5 % LEL                                  | 0 % LEL                                |
|                | Flow                                                       | Continuous / Magnetic Flowmeter   | 21,600 GPD<br>(2,887.5 cubic feet / day) | 2,931 GPD<br>(392 cubic feet / day)    |
|                | Monthly total discharge to sanitary sewer in January 1992  |                                   | 669,600 gallons<br>(89,500 cubic feet)   | 85,010 gallons<br>(11,365 cubic feet)  |
| 3/10/92        | Explosivity                                                | Ambient inside manhole / MSA 361* | 5 % LEL                                  | 0 % LEL                                |
|                | Flow                                                       | Continuous / Magnetic Flowmeter   | 21,600 GPD<br>(2,887.5 cubic feet / day) | 3,525 GPD<br>(471 cubic feet / day)    |
|                | Monthly total discharge to sanitary sewer in February 1992 |                                   | 669,600 gallons<br>(89,500 cubic feet)   | 116,320 gallons<br>(15,550 cubic feet) |

Notes:

\* MSA calibrated to methane gas

LEL = Lower Explosive Limit

GPD = Gallons per Day



# HARTCROWSER

Earth and Environmental Technologies

J-1784-02

May 28, 1992

Ms. Cherine Foutch  
Mobil Oil Corporation  
Suite 700  
3800 West Alameda Avenue  
Burbank, California 91505-4331

|                              |                          |
|------------------------------|--------------------------|
| RECEIVED                     |                          |
| JUN 5 '92                    |                          |
| ENVIRONMENTAL<br>ENGINEERING |                          |
| KUNCE                        | <input type="checkbox"/> |
| LAUBACHER                    | <input type="checkbox"/> |
| MCDONALD                     | <input type="checkbox"/> |
| MUELLER                      | <input type="checkbox"/> |
| NORTON                       | <input type="checkbox"/> |
| O'HARA                       | <input type="checkbox"/> |
| ROGOZINSKI                   | <input type="checkbox"/> |
| VOPAT                        | <input type="checkbox"/> |
| .....                        | <input type="checkbox"/> |
| .....                        | <input type="checkbox"/> |
| .....                        | <input type="checkbox"/> |
| .....                        | <input type="checkbox"/> |

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102  
FAX 206.328.5581  
206.324.9530

Re: Free-Phase Product Recovery System  
Renton, Washington Bulk Terminal Facility  
Quarterly Progress Report: February 6, 1992, to May 19, 1992

Dear Ms. Foutch:

This letter summarizes our monthly well monitoring results at the Renton Bulk Terminal Facility for the period of February 6, 1992 to May 19, 1992. Fluid levels were measured in all existing monitoring wells on March 10, 1992, and April 14, 1992. In May 19, 1992, no measurement could be collected in well B-1 as its cap had been crushed into the well casing. We will repair the casing before the next system inspection. Tables 1 through 3 present a listing of the monitoring well measurements.

The recovery system operated without any lengthy shutdown periods during this monitoring period. The following sections present our observations of product thicknesses and product recovery during this monitoring period.



Mobil Oil Corporation  
May 28, 1992

J-1784-02  
Page 2

## PRODUCT LAYER

Figure 1 shows the extent of the free-phase product layer from the March 10, 1992, measurements. Product continued to be detected in B-1 and HA-7, ~~(but none was observed in B-3.)~~ Figure 2 depicts the product layer from the April 14, 1992, measurements. Product was detected again in B-3 and the lateral extent of the product layer is similar to the previous survey. Figure 3 shows the product layer from the May 19, 1992, measurements. The thickness of the free-phase product layer in May increased from the April 14, 1992, survey, concentrating around B-3. The lateral extent of the product layer is similar to the previous surveys.

## PRODUCT RECOVERY

Figure 4 shows the product recovered to date. Approximately 3,500 gallons of product have been recovered since February 6, 1992. An estimated 50,150 ~~gallons~~ of product have been recovered to date with the average recovering rate during this reporting period being 35 gallons per day.

## TREATMENT SYSTEM TESTING

During the April 22, 1992, system inspection, water samples from the influent and effluent of the treatment system were collected and analyzed as required quarterly by the Washington State Department of Ecology. Results of the analysis for the samples are as follows:

| Test Method                  | Compound      | Influent in<br>mg/L | Effluent in<br>mg/L | Removal<br>Efficiency |
|------------------------------|---------------|---------------------|---------------------|-----------------------|
| BETX<br>(EPA Method<br>8020) | Benzene       | 23.000              | 0.011               | 0.999                 |
|                              | Ethylbenzene  | 0.004               | 0.006               | NA                    |
|                              | Toluene       | 30.000              | 0.018               | 0.999                 |
|                              | Total Xylenes | 14.000              | 0.040               | 0.997                 |



Mobil Oil Corporation  
May 28, 1992

J-1784-02  
Page 3

Please call me at (206) 324-9530 if you have any questions.

Sincerely,

**HART CROWSER, INC.**

**BIRGITTA BEUTHE**  
Remediation Engineer

**JAMES M. WILDER**  
Associate

BB/JMW:tml  
freeprod.ltr

**Attachments:**

- Table 1 - Product Thickness and Groundwater Level Observations  
Sampling Date: March 10, 1992
- Table 2 - Product Thickness and Groundwater Level Observations  
Sampling Date: April 14, 1992
- Table 3 - Product Thickness and Groundwater Level Observations  
Sampling Date: May 19, 1992
- Figures 1, 2, and 3 - Product Thickness Contour Maps
- Figure 4 - Product Recovered at the Renton Bulk Terminal

cc: (w/Attachments)  
Mobil Oil Corporation, Attn: Mr. Gary Stumpf  
Washington State Dept. of Ecology, Attn: Mr. Brian Sato  
BP Oil Company, Attn: Mr. Jim O'Hara

**Table 1 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: March 10, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 6.74                            | 6.79                            | 0.05                      | 11.87                                   |
| B-2         | 18.60                                    | 6.99                            | 8.47                            | 1.48                      | 11.31                                   |
| B-3         | 18.73                                    | 7.94                            | 7.94                            | 0                         | 10.79                                   |
| B-4         | 18.09                                    | 6.67                            | 6.74                            | 0.07                      | 11.41                                   |
| B-5         | 17.97                                    | 7.80                            | 8.87                            | 1.07                      | 9.96                                    |
| B-6         | 17.94                                    | 7.65                            | 7.73                            | 0.08                      | 10.27                                   |
| HA-1        | 19.50                                    | 7.22                            | 7.22                            | 0                         | 12.28                                   |
| HA-2        | 18.17                                    | 6.37                            | 6.37                            | 0                         | 11.80                                   |
| HA-3        | 21.03                                    | 8.55                            | 8.55                            | 0                         | 12.48                                   |
| HA-4        | 20.24                                    | 7.89                            | 7.89                            | 0                         | 12.35                                   |
| HA-5        | 18.07                                    | 5.07                            | 5.07                            | 0                         | 13.00                                   |
| HA-6        | 18.16                                    | 5.45                            | 5.45                            | 0                         | 12.71                                   |
| HA-7        | 18.44                                    | 6.30                            | 6.30                            | 0                         | 12.14                                   |
| HA-8        | 18.88                                    | 6.35                            | 6.35                            | 0                         | 12.53                                   |
| HA-9        | 19.40                                    | 7.39                            | 7.39                            | 0                         | 12.01                                   |
| HA-10       | 19.33                                    | 7.56                            | 7.56                            | 0                         | 11.77                                   |
| HA-11       | 18.51                                    | 6.80                            | 6.80                            | 0                         | 11.71                                   |
| HA-12       | 19.91                                    | 6.22                            | 6.22                            | 0                         | 13.69                                   |
| HA-13       | 19.59                                    | 6.89                            | 6.89                            | 0                         | 12.70                                   |
| HA-14       | 20.02                                    | 7.60                            | 7.60                            | 0                         | 12.42                                   |
| D-1         | 18.03                                    | 5.91                            | 5.91                            | 0                         | 12.12                                   |
| D-4         | 17.82                                    | 4.83                            | 4.83                            | 0                         | 12.99                                   |
| D-5         | 18.12                                    | -                               | -                               | -                         | -                                       |
| D-6         | 17.74                                    | 6.37                            | 6.37                            | 0                         | 11.37                                   |
| D-7         | 17.69                                    | 6.13                            | 6.13                            | 0                         | 11.56                                   |
| W-1         | 18.86                                    | 8.12                            | 8.72                            | 0.60                      | 10.62                                   |
| W-2         | 18.28                                    | 7.72                            | 7.79                            | 0.07                      | 10.55                                   |
| W-3         | 17.10                                    | 4.97                            | 4.97                            | 0                         | 12.13                                   |
| W-4         | 18.03                                    | 4.96                            | 4.96                            | 0                         | 13.07                                   |
| R-1         | 16.94                                    | 10.46                           | 10.80                           | 0.34                      | 6.41                                    |
| R-2         | 17.52                                    | 5.27                            | 5.29                            | 0.02                      | 12.25                                   |

**Table 2 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: April 14, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 6.78                            | 6.81                            | 0.03                      | 11.83                                   |
| B-2         | 18.60                                    | 7.01                            | 8.38                            | 1.37                      | 11.32                                   |
| B-3         | 18.73                                    | 8.01                            | 9.12                            | 1.11                      | 10.50                                   |
| B-4         | 18.09                                    | 6.62                            | 6.76                            | 0.14                      | 11.44                                   |
| B-5         | 17.97                                    | 7.49                            | 7.49                            | 0                         | 10.48                                   |
| B-6         | 17.94                                    | 7.61                            | 7.70                            | 0.09                      | 10.31                                   |
| HA-1        | 19.50                                    | 5.68                            | 5.68                            | 0                         | 13.82                                   |
| HA-2        | 18.17                                    | 6.19                            | 6.19                            | 0                         | 11.98                                   |
| HA-3        | 21.03                                    | 8.08                            | 8.08                            | 0                         | 12.95                                   |
| HA-4        | 20.24                                    | 7.20                            | 7.20                            | 0                         | 13.04                                   |
| HA-5        | 18.07                                    | 3.86                            | 3.86                            | 0                         | 14.21                                   |
| HA-6        | 18.16                                    | 4.49                            | 4.49                            | 0                         | 13.67                                   |
| HA-7        | 18.44                                    | 5.05                            | 5.28                            | 0.23                      | 13.34                                   |
| HA-8        | 18.88                                    | 4.00                            | 4.00                            | 0                         | 14.88                                   |
| HA-9        | 19.40                                    | 6.94                            | 6.94                            | 0                         | 12.46                                   |
| HA-10       | 19.33                                    | 7.09                            | 7.09                            | 0                         | 12.24                                   |
| HA-11       | 18.51                                    | 6.22                            | 6.22                            | 0                         | 12.29                                   |
| HA-12       | 19.91                                    | 4.02                            | 4.02                            | 0                         | 15.89                                   |
| HA-13       | 19.59                                    | 5.21                            | 5.21                            | 0                         | 14.38                                   |
| HA-14       | 20.02                                    | 6.48                            | 6.48                            | 0                         | 13.54                                   |
| D-1         | 18.03                                    | 5.01                            | 5.01                            | 0                         | 13.02                                   |
| D-4         | 17.82                                    | 4.02                            | 4.02                            | 0                         | 13.80                                   |
| D-5         | 18.12                                    | -                               | -                               | -                         | -                                       |
| D-6         | 17.74                                    | 6.04                            | 6.04                            | 0                         | 11.70                                   |
| D-7         | 17.69                                    | 5.92                            | 5.92                            | 0                         | 11.77                                   |
| W-1         | 18.86                                    | 8.12                            | 8.12                            | 0                         | 10.74                                   |
| W-2         | 18.28                                    | 7.68                            | 7.76                            | 0.08                      | 10.58                                   |
| W-3         | 17.10                                    | 4.49                            | 4.49                            | 0                         | 12.61                                   |
| W-4         | 18.03                                    | 4.95                            | 4.95                            | 0                         | 13.08                                   |
| R-1         | 16.94                                    | 10.21                           | 10.52                           | 0.31                      | 6.67                                    |
| R-2         | 17.52                                    | 5.11                            | 5.12                            | 0.01                      | 12.41                                   |

**Table 3 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: May 19, 1992**

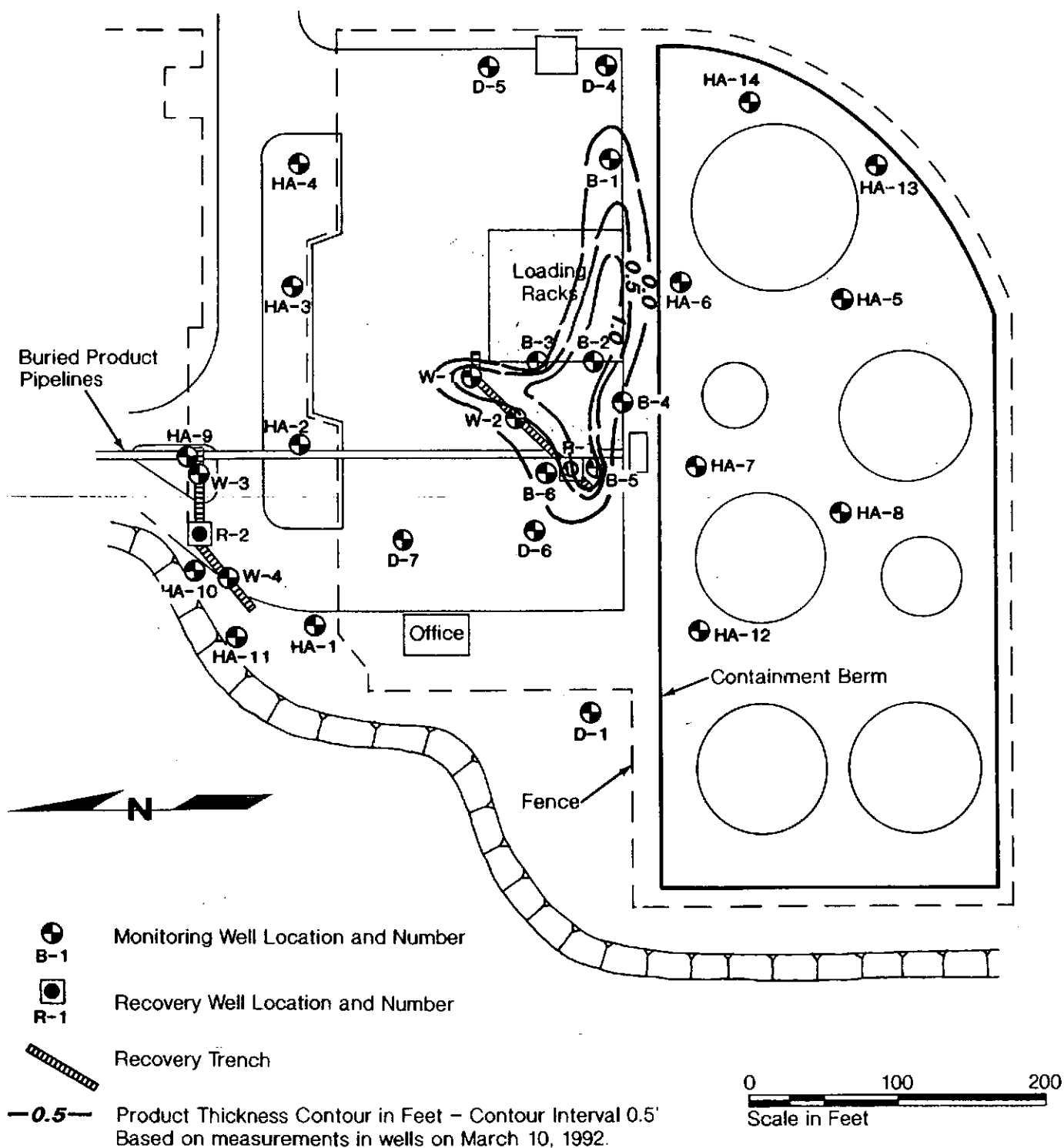
Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | *                               | *                               | *                         | *                                       |
| B-2         | 18.60                                    | 8.04                            | 8.91                            | 0.87                      | 10.39                                   |
| B-3         | 18.73                                    | 8.32                            | 11.66                           | 3.34                      | 9.74                                    |
| B-4         | 18.09                                    | 7.73                            | 8.14                            | 0.41                      | 10.28                                   |
| B-5         | 17.97                                    | 8.20                            | 8.20                            | 0                         | 9.77                                    |
| B-6         | 17.94                                    | 8.11                            | 8.11                            | 0                         | 9.83                                    |
| HA-1        | 19.50                                    | 5.60                            | 5.60                            | 0                         | 13.90                                   |
| HA-2        | 18.17                                    | 6.94                            | 6.94                            | 0                         | 11.23                                   |
| HA-3        | 21.03                                    | 9.23                            | 9.23                            | 0                         | 11.80                                   |
| HA-4        | 20.24                                    | 8.66                            | 8.66                            | 0                         | 11.58                                   |
| HA-5        | 18.07                                    | 6.43                            | 6.43                            | 0                         | 11.64                                   |
| HA-6        | 18.16                                    | 8.70                            | 8.70                            | 0                         | 9.46                                    |
| HA-7        | 18.44                                    | 7.04                            | 7.35                            | 0.31                      | 11.34                                   |
| HA-8        | 18.88                                    | 7.03                            | 7.03                            | 0                         | 11.85                                   |
| HA-9        | 19.40                                    | 7.99                            | 7.99                            | 0                         | 11.41                                   |
| HA-10       | 19.33                                    | 8.27                            | 8.27                            | 0                         | 11.06                                   |
| HA-11       | 18.51                                    | 7.41                            | 7.41                            | 0                         | 11.10                                   |
| HA-12       | 19.91                                    | 7.71                            | 7.71                            | 0                         | 12.20                                   |
| HA-13       | 19.59                                    | 8.45                            | 8.45                            | 0                         | 11.14                                   |
| HA-14       | 20.02                                    | 9.06                            | 9.06                            | 0                         | 10.96                                   |
| D-1         | 18.03                                    | 6.69                            | 6.69                            | 0                         | 11.34                                   |
| D-4         | 17.82                                    | 5.38                            | 5.38                            | 0                         | 12.44                                   |
| D-5         | 18.12                                    | 6.09                            | 6.09                            | 0                         | 12.03                                   |
| D-6         | 17.74                                    | 6.86                            | 6.86                            | 0                         | 10.88                                   |
| D-7         | 17.69                                    | 6.45                            | 6.45                            | 0                         | 11.24                                   |
| W-1         | 18.86                                    | 8.28                            | 8.33                            | 0                         | 10.53                                   |
| W-2         | 18.28                                    | 8.25                            | 8.28                            | 0.03                      | 10.02                                   |
| W-3         | 17.10                                    | 5.76                            | 5.76                            | 0                         | 11.34                                   |
| R-1         | 16.94                                    | 10.33                           | 10.49                           | 0.16                      | 6.58                                    |
| R-2         | 17.52                                    | 6.09                            | 6.10                            | 0.01                      | 11.43                                   |

\* The well cap was damaged and therefore no measurement was possible.

# Product Thickness Contour Map

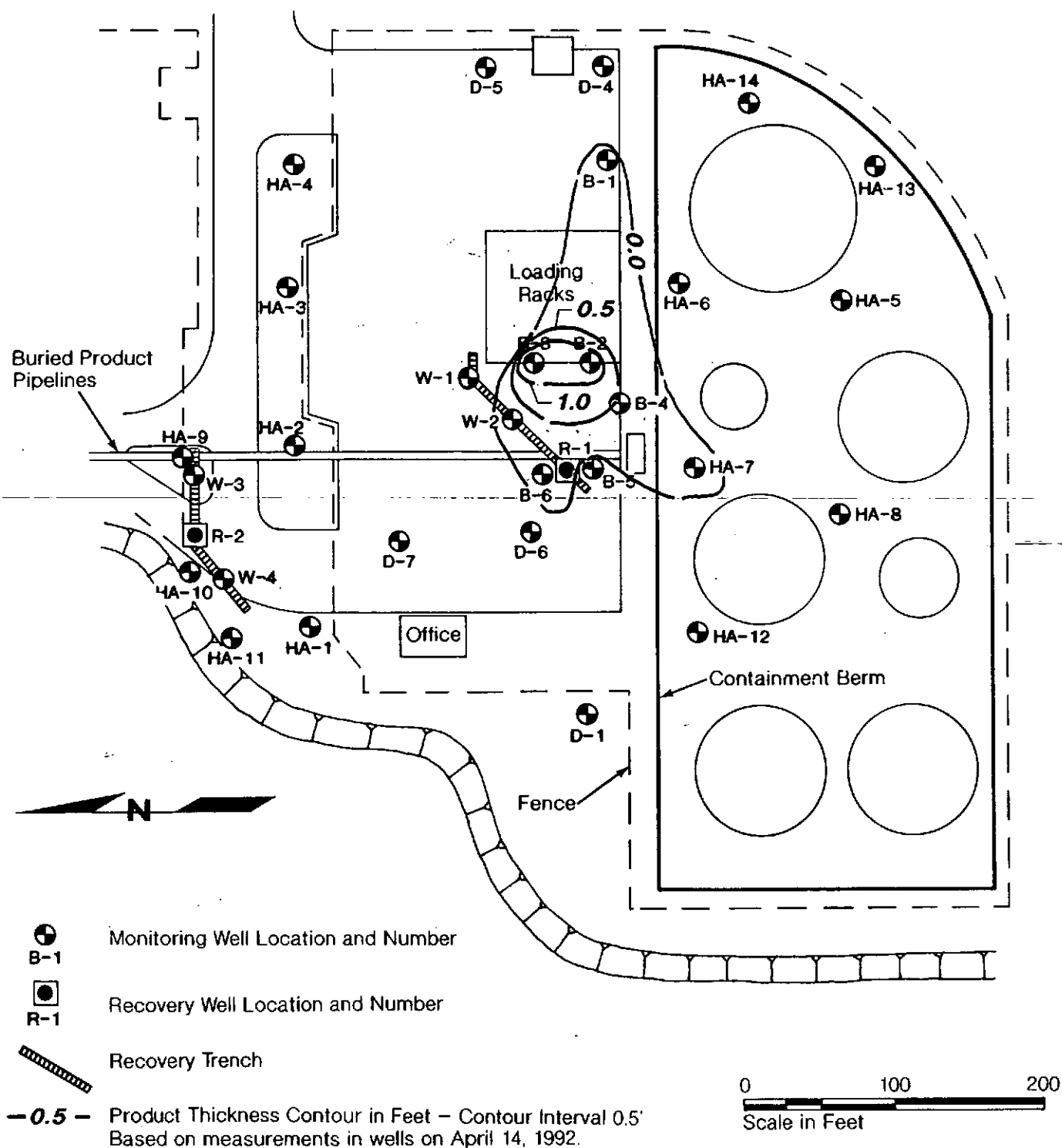
Sampling Date: March 10, 1992



Note: Base map prepared from drawing entitled "Electrical Plan— Mobile Oil Corporation—Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

# Product Thickness Contour Map

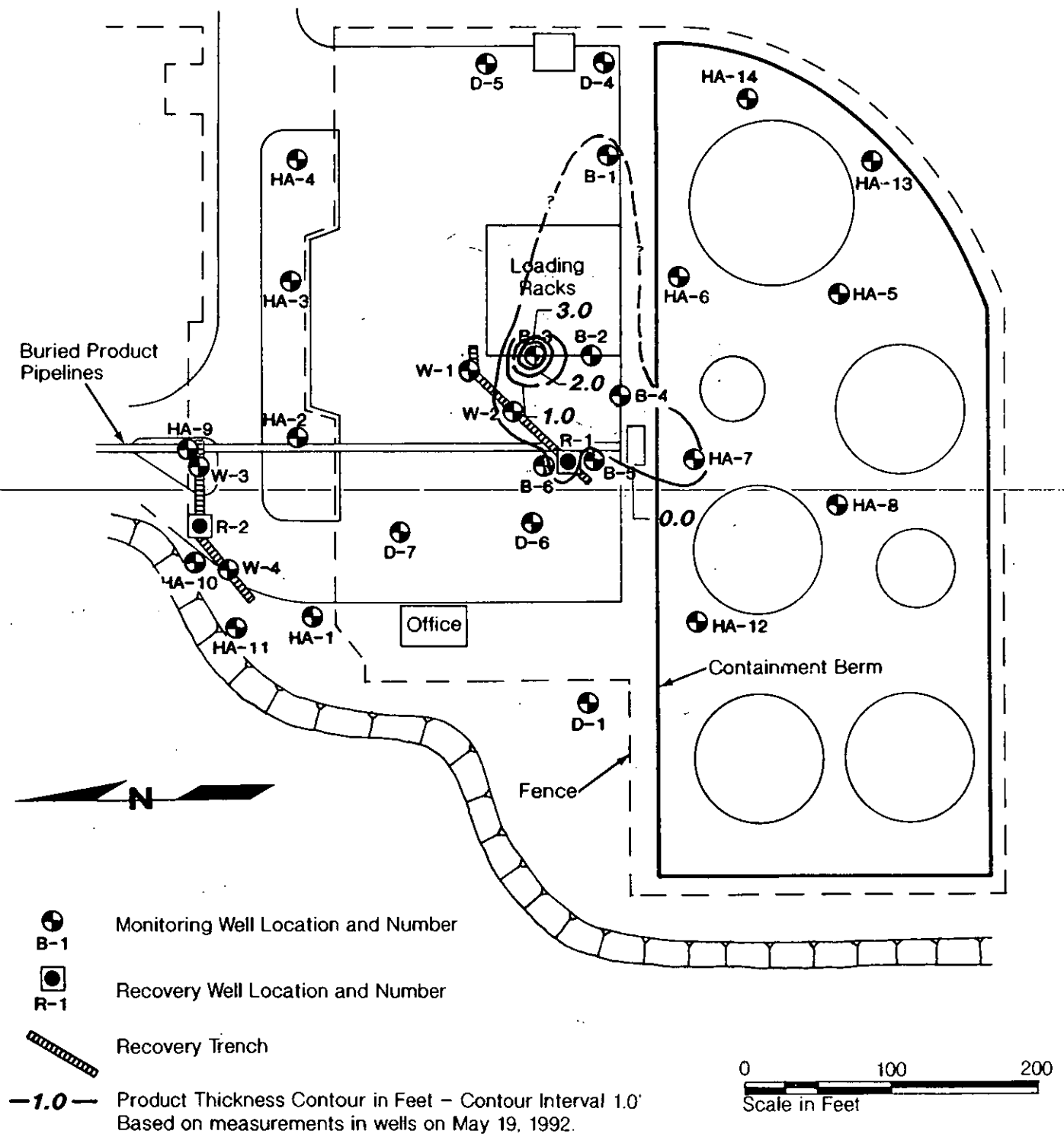
Sampling Date: April 14, 1992



Note: Base map prepared from drawing entitled 'Electrical Plan- Mobile Oil Corporation-Renton Terminal' by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

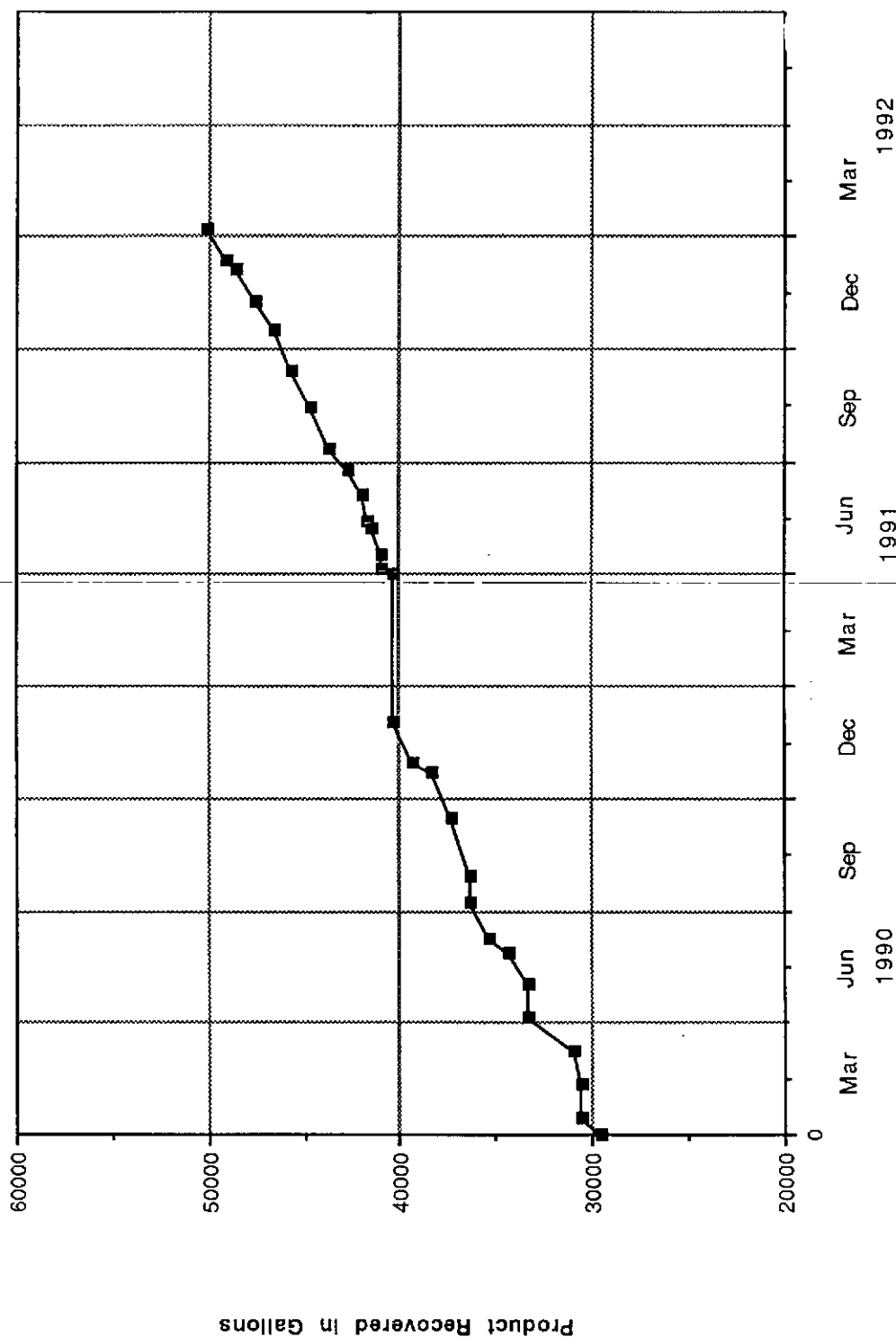
# Product Thickness Contour Map

Sampling Date: May 19, 1992



Note: Base map prepared from drawing entitled "Electrical Plan-- Mobile Oil Corporation--Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

# Product Recovered at the Renton Bulk Terminal





Earth and Environmental Technologies

J-1784-02

September 18, 1992

Ms. Cherine Foutch  
Mobil Oil Corporation  
Suite 2000  
3800 West Alameda Avenue  
Burbank, California 91505-4331

Re: Quarterly Progress Report: May 19 to August 31, 1992  
Free-Phase Product Recovery System  
Bulk Terminal Facility  
Renton, Washington

Dear Ms. Foutch:

This letter summarizes our monthly well monitoring results at the Renton Bulk Terminal Facility for the period between May 19 and August 31, 1992. Fluid levels were measured on June 11, July 9, and August 31, 1992. On June 11, no measurement could be collected in well B-1 as its cap had been crushed into the well casing. The casing has been subsequently repaired. On August 31, no measurements could be collected in B-1 and B-3 due to well obstructions resulting from the construction work on site. Tables 1 through 3 present a listing of the monitoring well measurements.

(The recovery system was shut down for one month due to a float switch failure) (from July 21 to August 25, 1992). The system has been repaired and slightly modified in order to avoid this recurrent problem. The following presents our observations of product thicknesses and product recovery during this monitoring period.

| RECEIVED      |                                     |
|---------------|-------------------------------------|
| SHP 22 97     |                                     |
| BIRMINGHAM U. |                                     |
| ENGINEERING   |                                     |
| WHITE         | <input type="checkbox"/>            |
| GREENEACHER   | <input checked="" type="checkbox"/> |
| MURPHY        | <input type="checkbox"/>            |
| NORRIS        | <input type="checkbox"/>            |
| BROWN         | <input type="checkbox"/>            |
| CYRUS         | <input type="checkbox"/>            |
| ROBERTSON     | <input type="checkbox"/>            |
| VANAT         | <input type="checkbox"/>            |
|               | <input type="checkbox"/>            |
|               | <input type="checkbox"/>            |
|               | <input type="checkbox"/>            |
|               | <input type="checkbox"/>            |

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102  
FAX 206.328.5581  
206.324.9530



## PRODUCT LAYER

Figures 1, 2, and 3 show the extent of the free-phase product layer from the June 11, July 9, and August 31, 1992, measurements, respectively. Table 4 presents a summary of the product thickness measurements since June 1989. Several observations can be made from the comparison of these figures with the data collected during the past two years:

- ▶ Product presence persists in HA-7, even though B-5 (which is downgradient of HA-7) shows no product most of the time;
- ▶ The center of mass of the plume seems to be shifting mostly between B-2 and B-3;
- ▶ No consistent reduction in the thickness of the product lens has occurred since 1989, even though 25,400 gallons of product have been removed since June 1989; and
- ▶ B-6, located immediately downgradient of the recovery trench, sporadically shows product.

Based on the data, it appears that there could be a continuing source of product near B-2 or B-3.

## PRODUCT RECOVERY

Figure 4 shows the product recovered to date. An estimated 52,350 gallons of product have been recovered to date. The average recovery rate during this reporting period was 31 gallons per day.



## COMPLIANCE TESTING

During the July 22, 1992, system inspection, water samples were collected and analyzed as required quarterly by the Washington State Department of Ecology. Results of the analysis for the sample are as follows:

| Test Method                  | Compound      | Influent in mg/L | Effluent in mg/L | Removal Efficiency |
|------------------------------|---------------|------------------|------------------|--------------------|
| BETX<br>(EPA Method<br>8020) | Benzene       | 26.000           | 0.004            | 0.999              |
|                              | Ethylbenzene  | 1.700            | 0.001            | 0.999              |
|                              | Toluene       | 26.000           | 0.003            | 0.999              |
|                              | Total Xylenes | 8.800            | 0.006            | 0.999              |

## LIMITATIONS

Work for this project was performed, and this letter report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Mobil Oil Corporation for specific application to the referenced property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

Any questions regarding our work and this letter report, the presentation of the information, and the interpretation of the data are welcome and should be referred to the project manager (the undersigned).



Mobil Oil Corporation  
September 18, 1992

J-1784-02  
Page 4

We trust that this report meets your needs.

Sincerely,

**HART CROWSER, INC.**

**BIRGITTA BEUTHE**  
Remediation Engineer

  
**JAMES M. WILDER**  
Associate

PROG08921LR

**Attachments:**

- Table 1 - Product Thickness and Groundwater Level Observations  
Sampling Date: June 11, 1992
- Table 2 - Product Thickness and Groundwater Level Observations  
Sampling Date: July 9, 1992
- Table 3 - Product Thickness and Groundwater Level Observations  
Sampling Date: August 31, 1992
- Table 4 - Summary of Product Thickness Measurements Over Two Years
- Figures 1, 2, and 3 - Product Thickness Contour Maps
- Figure 4 - Product Recovered at the Renton Bulk Terminal
- A - Laboratory Analytical Reports  
Hart Crowser *FAST* Laboratory

cc: (w/Attachments)

Mobil Oil Corporation, Attn: Mr. Gary Stumpf  
Washington State Dept. of Ecology, Attn: Mr. Brian Sato  
BP Oil Company, Attn: Mr. Jim O'Hara

**Table 1 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: June 11, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | *                               | *                               | *                         | *                                       |
| B-2         | 18.60                                    | 8.46                            | 9.46                            | 1.00                      | 9.94                                    |
| B-3         | 18.73                                    | 8.82                            | 11.67                           | 2.85                      | 9.34                                    |
| B-4         | 18.09                                    | 8.25                            | 8.25                            | 0                         | 9.84                                    |
| B-5         | 17.97                                    | 8.49                            | 8.49                            | 0                         | 9.48                                    |
| B-6         | 17.94                                    | 8.41                            | 8.41                            | 0                         | 9.53                                    |
| HA-6        | 18.16                                    | 7.50                            | 7.50                            | 0                         | 10.66                                   |
| HA-7        | 18.44                                    | 7.80                            | 8.09                            | 0.29                      | 10.58                                   |
| D-6         | 17.74                                    | 7.29                            | 7.29                            | 0                         | 10.45                                   |
| W-1         | 18.86                                    | 8.53                            | 8.58                            | 0.05                      | 10.32                                   |
| W-2         | 18.28                                    | 8.57                            | 8.65                            | 0.08                      | 9.69                                    |
| R-1         | 16.94                                    | 10.23                           | 10.40                           | 0.17                      | 6.68                                    |
| R-2         | 17.52                                    | 6.39                            | 6.40                            | 0.01                      | 11.13                                   |

\* The well cap was damaged and therefore no measurement was possible.

**Table 2 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: July 9, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | 7.88                            | 7.88                            | 0                         | 10.74                                   |
| B-2         | 18.60                                    | 8.85                            | 9.54                            | 0.69                      | 9.61                                    |
| B-3         | 18.73                                    | 9.20                            | 11.64                           | 2.44                      | 9.04                                    |
| B-4         | 18.09                                    | 8.60                            | 8.60                            | 0                         | 9.49                                    |
| B-5         | 17.97                                    | 8.69                            | 8.69                            | 0                         | 9.28                                    |
| B-6         | 17.94                                    | 8.40                            | 8.51                            | 0.11                      | 9.52                                    |
| HA-6        | 18.16                                    | 8.04                            | 8.04                            | 0                         | 10.12                                   |
| HA-7        | 18.44                                    | 8.34                            | 8.60                            | 0.26                      | 10.05                                   |
| D-6         | 17.74                                    | 7.37                            | 7.37                            | 0                         | 10.37                                   |
| W-1         | 18.86                                    | 8.62                            | 8.62                            | 0                         | 10.24                                   |
| W-2         | 18.28                                    | 8.81                            | 8.98                            | 0.17                      | 9.44                                    |
| R-1         | 16.94                                    | 10.22                           | 10.51                           | 0.29                      | 6.66                                    |
| R-2         | 17.52                                    | 6.65                            | 6.66                            | 0.01                      | 10.87                                   |

**Table 3 - Product Thickness and Groundwater Level Observations**  
**Sampling Date: August 31, 1992**

Hart Crowser  
J-1784-02

| Well Number | Top of 2-Inch PVC Well Elevation in Feet | Measured Depth to Fluid in Feet | Measured Depth to Water in Feet | Product Thickness in Feet | Corrected Groundwater Elevation in Feet |
|-------------|------------------------------------------|---------------------------------|---------------------------------|---------------------------|-----------------------------------------|
| B-1         | 18.62                                    | *                               |                                 |                           |                                         |
| B-2         | 18.60                                    | 8.89                            | 9.41                            | 0.52                      | 9.61                                    |
| B-3         | 18.73                                    | *                               |                                 |                           |                                         |
| B-4         | 18.09                                    | 8.60                            | 8.84                            | 0                         | 9.44                                    |
| B-5         | 17.97                                    | 8.72                            | 8.74                            | 0.02                      | 9.25                                    |
| B-6         | 17.94                                    | 8.37                            | 8.96                            | 0.59                      | 9.45                                    |
| HA-6        | 18.16                                    | 8.15                            | 8.15                            | 0                         | 10.01                                   |
| HA-7        | 18.44                                    | 8.45                            | 8.75                            | 0.3                       | 9.93                                    |
| D-6         | 17.74                                    | 7.61                            | 7.61                            | 0                         | 10.13                                   |
| W-1         | 18.86                                    | 8.59                            | 8.61                            | 0                         | 10.27                                   |
| W-2         | 18.28                                    | 8.79                            | 8.91                            | 0.12                      | 9.47                                    |
| R-1         | 16.94                                    | 10.23                           | 10.43                           | 0.20                      | 6.67                                    |
| R-2         | 17.52                                    | 7.21                            | 7.25                            | 0.04                      | 10.30                                   |

\* well inaccessible due to construction work on-site

Table 4 - Summary of Product Thickness Measurements over 2 years

Hart Crowser

J-1784-02

| Date   | HA-7 | B-2  | B-3  | B-4  | B-5  | B-6   |
|--------|------|------|------|------|------|-------|
| Jun-89 | 0.07 | 0.14 | 2.71 | 0.11 | 0    | 0     |
| Aug-89 | 0.06 | 0.37 | 2.76 | 0    | 0    | 0     |
| Sep-89 | 0.05 | 0.51 | 0.49 | 0.56 | 0.02 | 0.18  |
| Oct-89 | 0.05 | 0.54 | 0.51 | 0.64 | 0.07 | 0.015 |
| Nov-89 | 0.01 | 0.71 | 0.47 | 0.11 | 0.01 | 0.01  |
| Dec-89 | 0.57 | 0.8  | 0.72 | 0.17 | 0.01 | 0.25  |
| Jan-90 | 0.45 | 0.88 | 0.71 | 0.11 | 0    | 0.01  |
| Mar-90 | 1    | 0.3  | 0.51 | 0.35 | 0.83 | 0.05  |
| Apr-90 | 0.1  | 0.51 | 1.2  | 0.08 | 0.03 | 0.01  |
| Jun-90 | 0.15 | 0.7  | 2.32 | 0.39 | 0.18 | 0     |
| Jul-90 | 0.16 | 0.94 | 0.64 | 0.1  | 0.19 | 0.06  |
| Aug-90 | 0.15 | 0.57 | 0.87 | 0    | 0.09 | 0.51  |
| Dec-90 | 1.36 | 0.76 | 0.35 | 0.3  | 0    | 0     |
| Mar-91 | 3.04 | 1.21 | 3.12 | 1.9  | 0.36 | 0.05  |
| Apr-91 | 3.67 | 1.69 | 7.3  | 1.64 | 0.91 | 0.38  |
| May-91 | 0.61 | 0.32 | 0.03 | 0.15 | 0.41 | 0.26  |
| Jun-91 | 0.39 | 0.15 | 1.74 | 0.42 | 0.33 | 0     |
| Jul-91 | 0.35 | 0.59 | 1.82 | 0.83 | 0    | 0.01  |
| Aug-91 | 0    | 0.43 | 2.34 | 0.35 | 0    | 0     |
| Dec-91 | 0.23 | 1.7  | 2.1  | 0.64 | 0    | 1.07  |
| Jan-92 | 0.23 | 2.6  | 2.47 | 0.17 | 0    | 0     |
| Feb-92 | 0.3  | 1.67 | 1.78 | 0.14 | 0    | 0.09  |
| Mar-92 | 0    | 1.48 | 0    | 0.07 | 1.07 | 0.08  |
| Apr-92 | 0.23 | 1.37 | 1.11 | 0.14 | 0    | 0.09  |
| May-92 | 0.31 | 0.87 | 3.34 | 0.41 | 0    | 0     |
| Jun-92 | 0.29 | 1    | 2.85 | 0    | 0    | 0     |
| Jul-92 | 0.26 | 0.69 | 2.44 | 0    | 0    | 0.11  |
| Aug-92 | 0.3  | 0.52 | -    | 0    | 0.02 | 0.59  |

0.34

0.0 9/20/91 0.0'

0

.01

0

0.32

0.6 10/24/91 1.95

.05

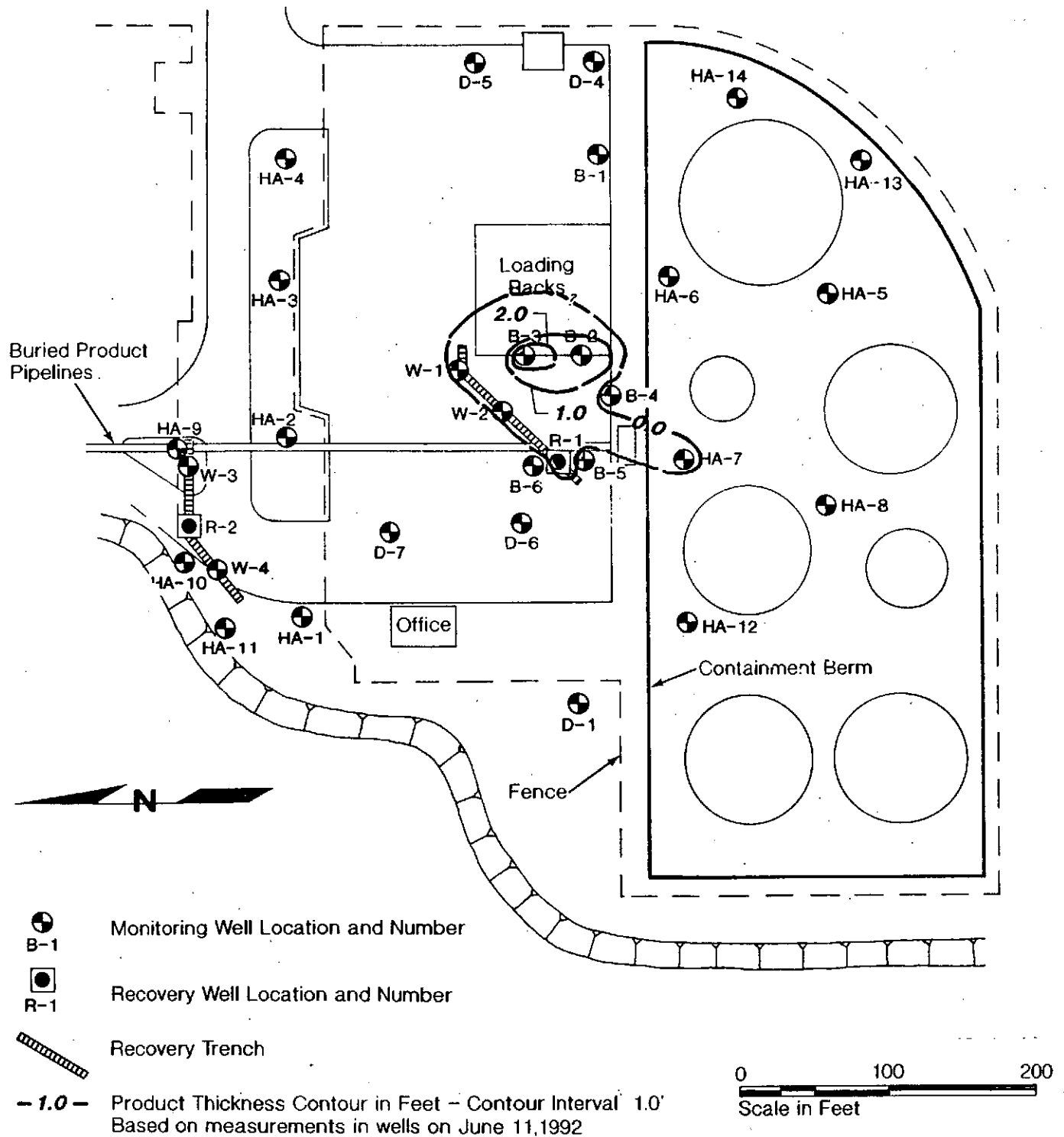
0

1.41

7/89, 2/90, 5/90, 9/90, 10/90, 11/90, 1/91, 2/91, 9/91, 10/91, 11/91.

# Product Thickness Contour Map

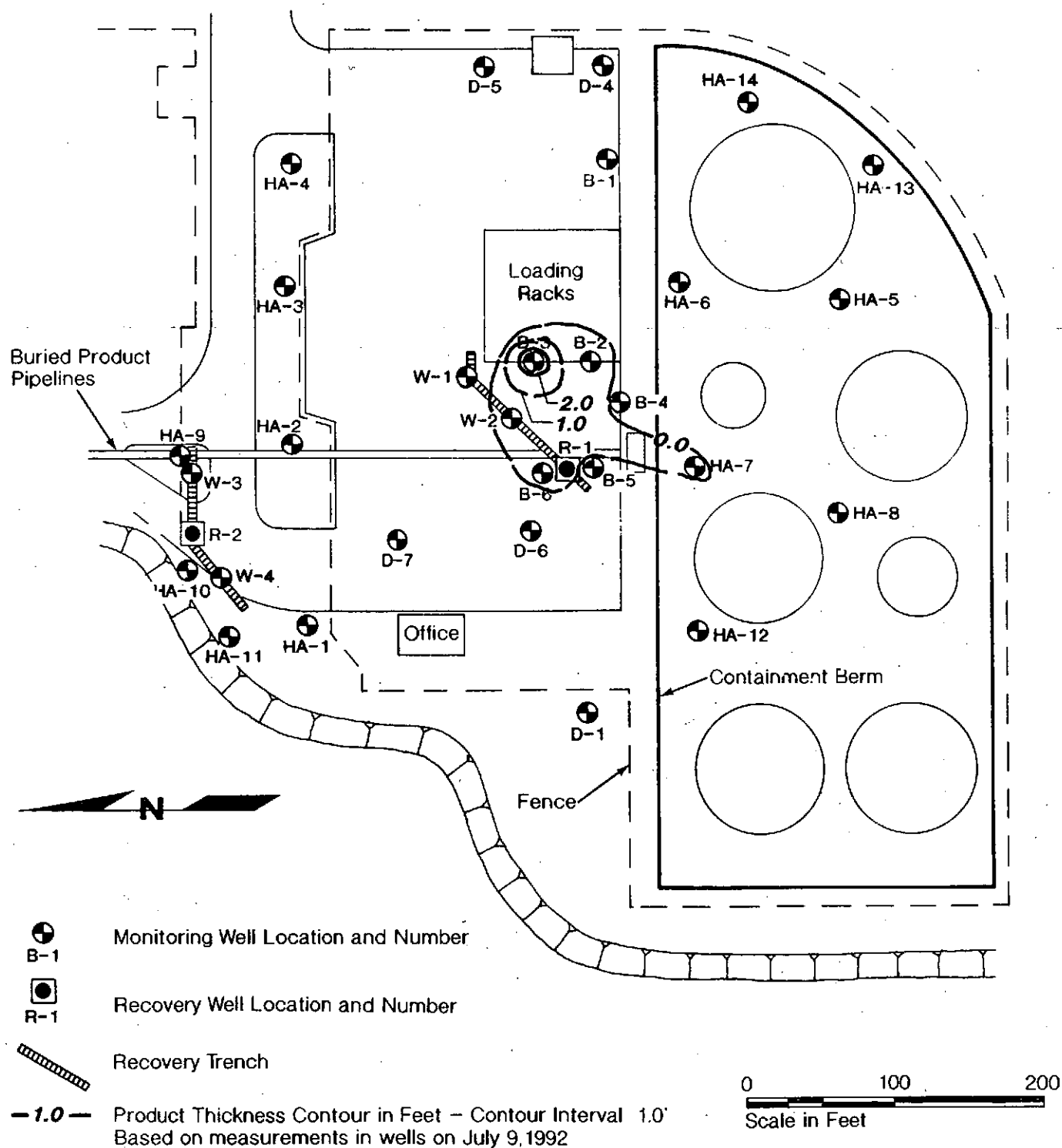
Sampling Date: June 11, 1992



Note: Base map prepared from drawing entitled "Electrical Plan- Mobile Oil Corporation-Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

# Product Thickness Contour Map

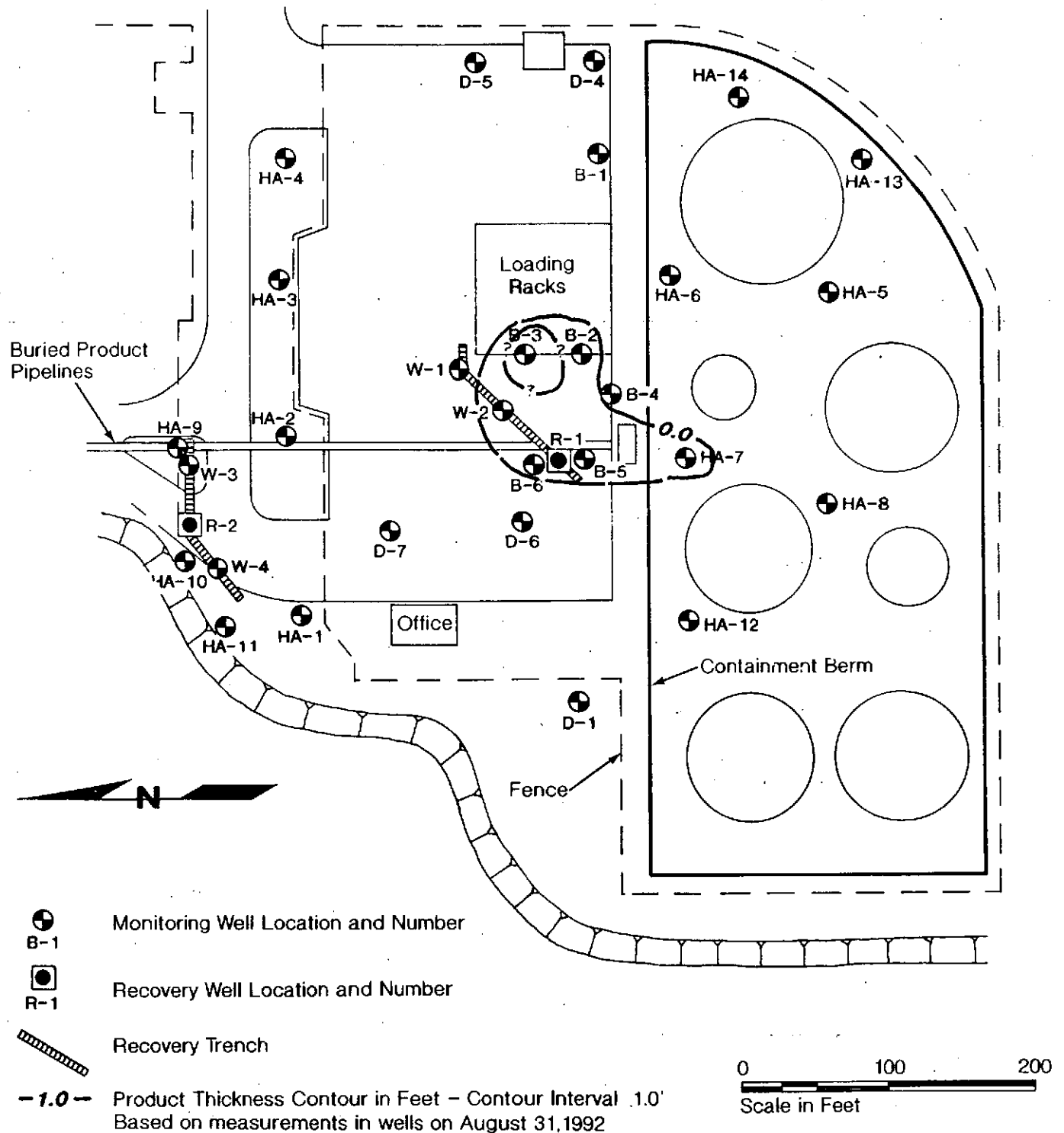
Sampling Date: July 9, 1992



Note: Base map prepared from drawing entitled "Electrical Plan- Mobile Oil Corporation-Renton Terminal" by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

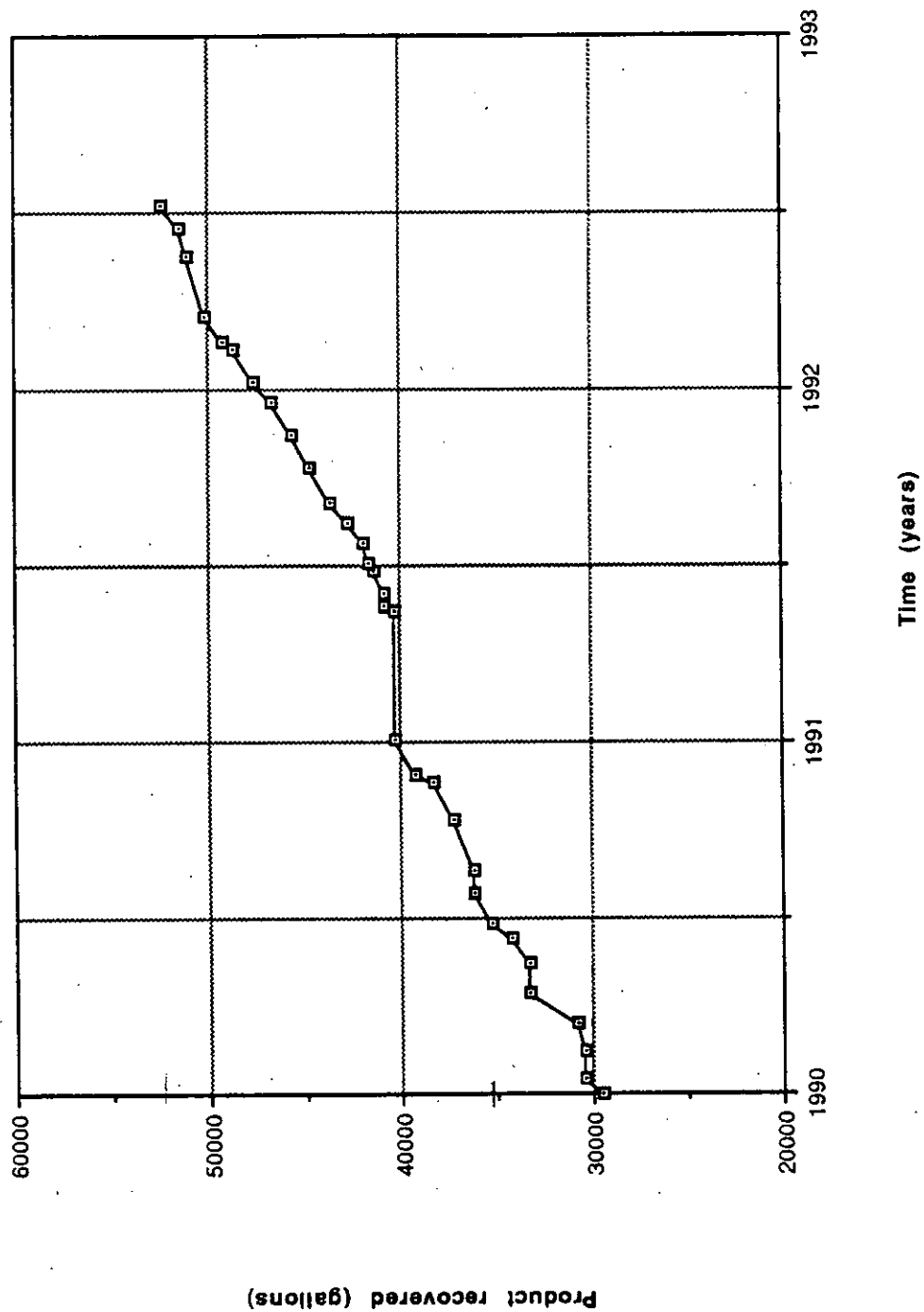
# Product Thickness Contour Map

Sampling Date: August 31, 1992



Note: Base map prepared from drawing entitled 'Electrical Plan-- Mobile Oil Corporation--Renton Terminal' by Ryan & Haworth Co. dated March 8, 1968 (As built, November 1, 1968).

# Product Recovered at the Renton Bulk Terminal



**HARTCROWSER**

J-1784-02 9/92

Figure 4



**HARTCROWSER**

Earth and Environmental Technologies

J-1784-02

January 6, 1993

Ms. Hillary Holt  
Municipality of Metropolitan Seattle  
821 Second Avenue  
Seattle, Washington 98104-1598

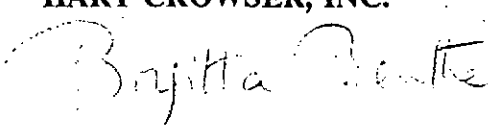
Re: Monthly Self-Monitoring Report, Mobil Oil Company, Renton, Washington  
METRO Discharge Authorization for Special/Minor  
Discharger Number 264

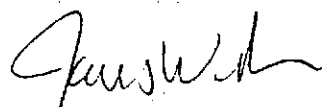
Dear Ms. Holt:

The groundwater treatment system owned and operated by Mobil Oil Corporation at the BP Bulk Terminal in Renton, Washington was shut down on December 4, 1992 due to a leak in the piping downstream from the stripping tower. The system has since been repaired, but it has not yet been re-activated because of frozen pipes. Therefore, no self-monitoring samples were taken during December, 1992.

Sincerely,

**HART CROWSER, INC.**

  
**BIRGITTA BEUTHE**  
Remediation Engineer

  
**JAMES M. WILDER**  
Associate

JMW/BB:tml  
montself.ltr

cc: Mobil Oil Company, Attn: Ms. Cherine Foutch  
BP Oil Company, Attn: Mr. Jim O'Hara  
City of Renton Department of Public Works, Attn: Mr. David Christensen  
Washington Department of Ecology, Attn: Mr. Doug Knutson  
Washington Department of Ecology, Attn: Mr. Brian Sato

RECEIVED  
R. J. O'HARA

JAN 11 '93

☐ K. KUNCE  
☒ R. C. LAUBACHER  
☐ S. L. NORTON  
☐ D. M. VOPAT  
☐ D. H. WHITMORE  
☐ R. L. WILCOX  
☐ .....  
☐ RETURN  
☐ TOSS  
☐ FILE

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102  
FAX 206.328.5581  
206.324.9530

|                          |                |
|--------------------------|----------------|
| RECEIVED                 |                |
| R. J. QUARA              |                |
| MAY 11 1968              |                |
| <input type="checkbox"/> | FILE           |
| <input type="checkbox"/> | LOSS           |
| <input type="checkbox"/> | RETURN         |
| <input type="checkbox"/> | R. L. WILCOX   |
| <input type="checkbox"/> | G. H. WHITMORE |
| <input type="checkbox"/> | D. M. VORAY    |
| <input type="checkbox"/> | S. L. NORTON   |
| <input type="checkbox"/> | R. C. LAUGHER  |
| <input type="checkbox"/> | L. K. KUNCE    |

**Status Report  
ConocoPhillips Renton Terminal  
Renton, Washington**

August 8, 2003

Prepared for

**ConocoPhillips Company  
Renton, Washington**



**LANDAU  
ASSOCIATES**

130 2nd Avenue South  
Edmonds, WA 98020  
(425) 778-0907

## TABLE OF CONTENTS

|                                              | <u>Page</u> |
|----------------------------------------------|-------------|
| INTRODUCTION                                 | 1           |
| BACKGROUND                                   | 1           |
| Historical Release                           | 1           |
| November 2002 Release                        | 2           |
| REMEDIAL COMPONENTS                          | 3           |
| Dual Phase Vacuum Extraction System          | 4           |
| Groundwater Treatment System                 | 4           |
| Groundwater Pumps                            | 4           |
| MONITORING DATA                              | 5           |
| Groundwater and Product Elevation Monitoring | 5           |
| Well Headspace Monitoring                    | 6           |
| Stormdrain Monitoring                        | 6           |
| ANALYTICAL DATA COLLECTION AND EVALUATION    | 6           |
| Groundwater Analytical Monitoring            | 6           |
| System Vapor Sampling                        | 7           |
| Baker Tank Sampling                          | 8           |
| GASOLINE VOLUME REMOVAL                      | 8           |
| LPH removal                                  | 8           |
| Dissolved Phase Gasoline Removal             | 8           |
| Gasoline Removed by Absorbent Materials      | 9           |
| Vapor Phase Gasoline Removal                 | 9           |
| Total Volume of Gasoline Removed             | 9           |
| CONCLUSIONS                                  | 10          |
| LPH Control                                  | 10          |
| Dissolved-phase Plume Control                | 11          |
| Permit compliance                            | 11          |
| RECOMMENDATIONS                              | 11          |
| USE OF THIS REPORT                           | 12          |
| REFERENCES                                   | 13          |

## LIST OF FIGURES

| <u>Figure</u> | <u>Title</u> |
|---------------|--------------|
|---------------|--------------|

|    |                                                                                   |
|----|-----------------------------------------------------------------------------------|
| 1  | Vicinity Map                                                                      |
| 2  | Site Map                                                                          |
| 3  | Groundwater Treatment System Process and Instrumentation Diagram                  |
| 4  | Potentiometric Surface, November 24, 2002                                         |
| 5  | Potentiometric Surface, January 9, 2003                                           |
| 6  | Potentiometric Surface, February 21, 2003                                         |
| 7  | Potentiometric Surface, March 12, 2003                                            |
| 8  | Potentiometric Surface, April 17, 2003                                            |
| 9  | Potentiometric Map, May 28, 2003                                                  |
| 10 | TPH-Gasoline Isoconcentration Contours – November 2002 Groundwater Sampling Event |
| 11 | Benzene Isoconcentration Contours – November 2002 Groundwater Sampling Event      |
| 12 | TPH-Gasoline Isoconcentration Contours – February 2003 Groundwater Sampling Event |
| 13 | Benzene Isoconcentration Contours – February 2003 Groundwater Sampling Event      |
| 14 | TPH-Gasoline Isoconcentration Contours – March 2003 Groundwater Sampling Event    |
| 15 | Benzene Isoconcentration Contours – March 2003 Groundwater Sampling Event         |
| 16 | TPH-Gasoline Isoconcentration Contours – April 2003 Groundwater Sampling Event    |
| 17 | Benzene Isoconcentration – April 2003 Groundwater Sampling Event                  |
| 18 | TPH-Gasoline Isoconcentration Contours – May 2003 Groundwater Sampling Event      |
| 19 | Benzene Isoconcentration – May 2003 Groundwater Sampling Event                    |

## LIST OF TABLES

| <u>Table</u> | <u>Title</u> |
|--------------|--------------|
|--------------|--------------|

|   |                                                            |
|---|------------------------------------------------------------|
| 1 | Groundwater Elevation Data                                 |
| 2 | Well Headspace Data                                        |
| 3 | Water Analytical Results                                   |
| 4 | Influent and Effluent Air Analytical Results – DPVE System |
| 5 | Tank Water Analytical Results                              |
| 6 | DPVE Mass Removal Summary                                  |

## LIST OF APPENDICES

|   |                                     |
|---|-------------------------------------|
| A | ExxonMobil Monitoring Data          |
| B | Laboratory Analytical Data          |
| C | Bills of Lading for Liquid Disposal |

## **INTRODUCTION**

This status report provides a summary of remediation activities conducted from November 2002 through June 2003 at the ConocoPhillips (formerly Tosco Corporation) bulk fuel distribution terminal in Renton, Washington (the site). Remediation activities conducted at the site and documented in this report are related to a 14,800-gallon petroleum product release, which occurred in November 2002. The petroleum release was reported to the Washington State Department of Ecology (Ecology) on November 14, 2002. A Release Notification Report (Landau Associates 2003) was submitted to Ecology in February 2003.

## **BACKGROUND**

The site is an active bulk petroleum fuel distribution terminal located at 2423 Lind Avenue SW in Renton, Washington (Figure 1). The site is surrounded by industrial properties, public streets, and undeveloped areas. There are currently seven large aboveground storage tanks located in the tank farm at the site (Figure 2), which store premium and regular unleaded gasoline, kerosene, diesel fuel, and ethanol. Each tank is surrounded by concrete block walls which are approximately 3 ft high, and the entire tank area is surrounded by an earthen containment berm which provides secondary surface spill containment. Surface drainage in the tank area is controlled by a series of gate valves in the concrete containment walls, which direct flow to a sump in the western portion of the tank area. A large portion of the surface drainage water infiltrates through the earthen material surrounding the tanks and recharges the shallow groundwater table.

## **HISTORICAL RELEASE**

A historical release at the site was discovered in 1986 when petroleum-contaminated soil was encountered in the vicinity of the tanker truck loading area. The responsible party for the release was determined to be Mobil Oil Company (currently ExxonMobil). A subsurface investigation was conducted, which revealed that contaminated groundwater and soil were present throughout the tanker truck loading area and extended south into the tank farm area. Liquid phase hydrocarbons (LPH) floating on the groundwater table were measured up to 3.55 ft thick as recently as May 2003. In response to a consent order by Ecology (Order No. DE 87-N301), an LPH recovery system was constructed and began operation in November 1987. Previous consultants documented that 57,000 gallons of LPH were removed by the product recovery system between December 1987 and November 1993. Recent repairs, including the installation of an air stripper tower have been conducted to the existing LPH recovery

system. Based on observations made by Landau Associates personnel, the existing LPH recovery system appeared to be nonfunctional through January 2003; however, the repairs and upgrades completed on the system under the direction of ExxonMobil's consultant (Kleinfelder, Inc.) appear to have resulted in the system operating since February 2003.

#### **NOVEMBER 2002 RELEASE**

The petroleum release in November 2002 consisted of 14,800 gallons of super-unleaded gasoline from the bulk storage tank designated as Tank 2 (Figure 2). The total capacity of Tank 2 is reported to be 1,720,866 gallons. The gasoline release was reported to Ecology on November 14, 2002. Upon discovery of the gasoline release from Tank 2, site personnel began transferring the remaining gasoline from Tank 2 into some of the other large bulk tanks in the tank farm and into tanker trucks. On November 14, 2002, Landau Associates began coordinating efforts to assess the extent of impact and conduct interim action LPH recovery efforts. The initial assessment and LPH recovery activities conducted prior to January 21, 2003 were documented in the Release Notification Report (Landau Associates 2003).

Initial assessment efforts included the installation of 24 postholes around the perimeter of Tank 2 and the monitoring of existing wells (HA-6, HA-7, HA-8, HA-12, HA-13, HA-14) to determine if LPH was present. Only one posthole (located northwest of Tank 2) reported any measurable LPH. No LPH were observed in postholes located to the south, southeast, and southwest of Tank 2. On November 15 and 16, 2002, Landau Associates oversaw the installation of a horizontal total fluids recovery well (HRW-1), seven vertical total fluids recovery wells (RW-1, RW-2, RW-3, RW-4, RW-5, RW-6, and RW-7), and four horizontal vapor recovery lines (VR-1, VR-2, VR-3, and VR-4) as shown on Figure 2. No recovery lines or wells were installed to the south of Tank 2 because the PID readings in the postholes installed to the south of Tank 2 did not indicate the presence of LPH. Monitoring data indicated that all vertical recovery wells contained measurable LPH by November 20, 2002.

On November 23 and 24, 2002, Landau Associates installed six groundwater monitoring wells (HA-15, HA-16, HA-17, HA-18, HA-19 and HA-20) inside the tank farm and near Tank 2 using hand auger techniques. Approximately 3.5 ft of LPH were observed in HA-20 on November 27, 2002. To delineate the LPH near HA-20 Landau Associates installed three 4-inch diameter total fluids recovery/monitoring wells (LAI-1 through LAI-3) along the outside of the tank farm on January 3, 2003 using hollow-stem auger drilling methods, as shown on Figure 2.

On January 17, 2003, LPH was discovered floating on the water surface of a stormwater retention pond located to the southeast of Tank 2. ConocoPhillips personnel contacted the Renton Fire Department and Ecology upon observing the LPH on the surface water on January 17, 2003. The Renton Fire

Department, with assistance from ConocoPhillips, Emerald Services, Inc. (Emerald), and Landau Associates, conducted the initial response. A diaphragm pump was installed in a small ditch located west of the pond, to recover water and LPH flowing to the retention pond. In addition, a network of Venturi style blowers were installed near the southern bank of the retention pond to abate vapor concentrations. Following the response actions conducted on the evening of January 17, 2003, ConocoPhillips, Landau Associates, and Emerald personnel returned to the retention pond area on January 18, 2003 and completed the following activities:

- Further assessed the source of LPH flowing to the retention pond by hand digging small test pits on the western portion of the ditch leading to the retention pond.
- Installed a sandbag dam at the eastern end of the ditch leading to the retention pond to decrease the potential for LPH to continue to flow to the retention pond.
- Dug a deeper collection sump on the western side of the sandbag dam to increase the amount of fluids that could be recovered by the diaphragm pump installed on the previous night.
- Utilized a vacuum truck to skim floating LPH from the surface of the retention pond.
- Installed product absorbent booms and pads to limit the extent of flating LPH on the surface of the retention pond.

On January 20 and 21, 2003, Landau Associates oversaw the installation of six vertical total fluids recovery wells (LAI-4 through LAI-9) inside the tank farm area and south-southeast of Tank 2. Wells LAI-4 through LAI-9 were installed by using a limited access drill rig and hollow stem auger drilling methods. Diaphragm pumps were used to recover product and water from the new wells beginning on January 20, 2003.

On January 29 and 30, 2003 Landau Associates oversaw the installation of two additional total fluids recovery wells (LAI-10 and LAI-11) and five monitoring wells (LAI-12 through LAI-16). The wells were installed along the outside of the tank farm and along the property boundary to monitor any indication of LPH migration.

Well completion logs for HA-15, 16, 17, 18, and 20 and LAI-1 through LAI-16, were provided in the Release Notification Report (Landau Associates 2003).

## **REMEDIAL COMPONENTS**

Remediation of the November 2002 gasoline release was initiated on November 17, 2002. Since the initiation of remedial efforts a combination of methods—groundwater/LPH pumping using diaphragm pumps, surface water/LPH pumping using diaphragm pumps, LPH removal using hand bailing methods, groundwater/LPH pumping using downhole pneumatic pumps and soil vapor extraction/LPH

volatilization using a dual phase vacuum extraction (DPVE) system—have been utilized in the vicinity of Tank 2. The current configuration of the remediation system being utilized at the site is provided in Figure 3.

#### **DUAL PHASE VACUUM EXTRACTION SYSTEM**

A DPVE component was installed and activated on February 12, 2003. The DPVE utilizes a positive displacement blower to apply a vacuum to seven vertical recovery wells (LAI-4, LAI-5, LAI-7, LAI-8, LAI-9, RW-2, RW-3 and RW-7). Recovered vapors are routed to a thermal oxidizer for treatment prior to atmospheric discharge in accordance with Notice of Construction (NoC) No. 8819 issued by the Puget Sound Clean Air Agency (PSCAA). Fresh air dilution valves were installed at five recovery wells (LAI-4, LAI-7, RW-2, RW-3 and RW-7) to keep the mixture of fresh air and recovered vapors at an optimal concentration for the thermal/catalytic oxidizer. The system was in operation for approximately 2,212 hours between February 12 and June 20, 2003. Landau Associates' field personnel conduct operation and maintenance checks on the system twice a week.

#### **GROUNDWATER TREATMENT SYSTEM**

##### **Groundwater Pumps**

During the initial remedial activities, a series of diaphragm pumps were utilized at the site from November 17, 2002 through March 24, 2003. Pumps were installed at a dug sump located in a ditch to the west of the stormwater retention pond and in a number of recovery wells in order to recover LPH and to minimize offsite migration of the plume. The recovery wells used for LPH recovery with diaphragm pumps were alternated based on the thickness of LPH observed. Typically, up to five recovery wells were being pumped at a time. Recovery wells utilized in conjunction with the diaphragm pumps included (RW-1 through RW-7, LAI-1, LAI-4 through LAI-9, HA-16, and HA-20). The recovered water and LPH were discharged into a Baker tank onsite. The contained water and LPH was removed from the Baker tank using vacuum trucks supplied by Emerald and disposed at the Ferndale Refinery located near Anacortes, Washington or treated and discharged to the sanitary sewer under the limitations of King County Wastewater Discharge Authorization No. 261-02.

The diaphragm pumps were replaced with dedicated top-loading downhole pneumatic pumps at LAI-4, LAI-5, LAI-7, LAI-8, LAI-9 and RW-2 on March 24, 2003. Recovered water and LPH from the pneumatic pumps were also stored in an onsite Baker tank for the ultimate disposal to the Ferndale Refinery or the sanitary sewer. The discharge of treated groundwater to the sanitary sewer system under the guidelines of King County Wastewater Discharge Authorization No. 261-02 was terminated as of March 15, 2003 due to difficulties encountered in meeting discharge concentration limits using the existing onsite air stripper operated by ConocoPhillips. As an alternative to using the existing air stripper

and discharge authorization, Landau Associates developed a design for treating the recovered groundwater using a new air stripper. The design of the new treatment system is provided in Figure 3. On June 2, 2003 King County Wastewater Discharge Authorization No. 4057-01 was issued to ConocoPhillips to allow for the treatment and discharge of recovered groundwater in accordance with the design provided in Figure 3. In addition, PSCAA modified NoC No. 8819 to allow for the treatment of vapors generated from the new air stripper using thermal or catalytic oxidation. The new water treatment system will begin operation in July 2003.

## **MONITORING DATA**

### **GROUNDWATER AND PRODUCT ELEVATION MONITORING**

Depths of groundwater and free product, if present, have been measured at weekly intervals (initial monitoring was conducted daily) since January 17, 2003 in five hand auger wells, five monitoring wells, and eighteen recovery wells. The wells were selected to allow for evaluation of groundwater elevation and LPH thickness in the vicinity of Tank 2. Depths to groundwater and LPH were measured from the northern portion of the PVC well casing using a decontaminated, intrinsically safe oil/water interface probe with readings recorded to the nearest 0.01 ft. Decontamination procedures consisted of removing any free product (if present) from the probe using a paper towel, washing the probe with a tap water andalconox soap mixture, and rinsing the probe with distilled water. Depth of groundwater and product, if present, have also been measured from wells associated with the historical Mobil Oil Company release by ExxonMobil and their consultants (Kleinfelder). Groundwater and LPH measurements have been collected by Kleinfelder in November 2002 and May 2003, and are presented in Appendix A.

The depths to groundwater, LPH thickness, and the calculated groundwater elevations are presented in Table 1 and Appendix A. Depths to groundwater were converted to groundwater elevations based on previous vertical control surveys conducted at the site. Groundwater elevations beneath the site ranged from 15.01 ft to 9.14 ft. The effect of groundwater pumping and lack of precipitation since March has been observed in general decrease in groundwater potentiometric levels. The lack of precipitation is also apparent in the stormwater retention pond being virtually dry since mid May 2003. Measurable amounts of free product have been consistently detected in wells HA-16, HA-20, LAI-4 through LAI-9, and RW-1 through RW-7. Measurements collected for ExxonMobil by Kleinfelder also indicate measurable amounts of LPH at B-2, B-3, and B-6. Indications of LPH (i.e., sheen) have been reported at B-4, B-5, HA-2, HA-6, HA-7, HA-9, and W-1.

Potentiometric maps have been developed from the depth to groundwater and LPH thickness data collected during the monthly sampling events. Potentiometric contours for November 2002, January

2003, February 2003, March 2003, April 2003, and May 2003 are presented in Figures 4 through 9, respectively. The November 2002 (baseline conditions) data appear to indicate an overall groundwater flow direction to the northeast from the tank farm area. The February, March, April and May potentiometric contour maps show alterations to the natural groundwater flow direction related to the active remediation activities at the site. Areas of depressions are apparent around active groundwater pumping locations and mounds are apparent around DPVE recovery wells.

## **WELL HEADSPACE MONITORING**

On January 30, 2003, Landau Associates began collecting headspace vapor concentration data from select wells. Headspace vapor monitoring was conducted by collecting a representative groundwater sample from a well using a disposable bailer. The groundwater sample was stored in an airtight container for 15 minutes prior to collecting volatile organic compound (VOC) measurements. The VOC measurements were measured in the headspace of the airtight container using a photoionization detector. Headspace measurements were utilized to predict possible LPH or high dissolved phase VOC migration. Headspace readings have not been recorded since May 2003. The headspace measurements are presented in Table 2.

## **STORMDRAIN MONITORING**

On January 28, 2003, Landau Associates began monitoring and recording VOC concentrations near the stormwater retention pond and in two storm sewer catch basins located on the north side of Southwest 27<sup>th</sup> Street. Monitoring was conducted near the stormwater retention pond for health and safety purposes, while monitoring at the catch basins was conducted for possible preferred pathway migration of the LPH. Monitoring was conducted using a portable PID meter. No VOCs were detected in the catch basins and monitoring ceased on February 25, 2003.

## **ANALYTICAL DATA COLLECTION AND EVALUATION**

### **GROUNDWATER ANALYTICAL MONITORING**

A baseline groundwater sampling event was conducted on November 24 and 25, 2002. The baseline monitoring was conducted in conjunction with ExxonMobil to obtain site wide groundwater conditions. After completing the baseline groundwater sampling, Landau Associates collected monthly sampling events (February through May 2003). ExxonMobil conducted a sampling event in May 2003 to coincide with the ConocoPhillips sampling event.

Samples from wells located outside the retaining wall were collected using non-dedicated centrifugal pumps with dedicated polyethylene tubing. Wells located inside the retaining walls of the tank farm were collected using disposable bailers. Authorization to use the centrifugal pumps was granted by the ConocoPhillips Renton Terminal management prior to use, per the requirements of the Health and Safety Plan. Wells were purged prior to sample collection by removing three well volumes of groundwater and noting the stabilization of field parameters. Field parameters consisted of pH, conductivity, and temperature. If the well was purged dry prior to the collection of three well volumes, then the well was considered adequately purged. Sample collection was conducted by slowly filling the laboratory-supplied containers in such a manner as to reduce aeration of the water. Sample containers for analyses that are sensitive to volatilization were completely filled so that no headspace remained. Samples were placed in coolers and packed in ice to keep samples at about 4°C. Groundwater samples were analyzed by North Creek Analytical, Inc. (NCA) for gasoline-range petroleum hydrocarbons (TPH-G) using Method NWTPH-G, diesel and lube oil-range petroleum hydrocarbons (TPH-Dx) using Method NWTPH-D) and benzene, toluene, ethylbenzene, and xylene (BTEX) using Method 8021B. Landau Associates reviewed all analytical results through a focused data validation process. The purpose of the validation was to verify if selected quality control parameters were within the limits specified by the analytical methods. The data validation was performed in accordance with applicable portions of the EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review and Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA 1994a,b). Some data was flagged as estimated based on the results of the data validation and labeled with an estimated flag "J" for detected compounds and "UJ" for non-detected compounds; however, all data was determined to be acceptable for monitoring purposes.

Figures 10 through 19 show TPH-G and benzene isoconcentration contours for each of the groundwater sampling events (November 2002, February, March, April, and May 2003). A summary of groundwater analytical results are presented in Table 3. ExxonMobil laboratory results are provided in Appendix A. Laboratory reports are provided in Appendix B.

## **SYSTEM VAPOR SAMPLING**

Samples were collected from the effluent and influent sample ports of the DPVE system on February 13 and 24, 2003; April 8 and 18, 2003; and June 20, 2003. Samples were not collected in March 2003 or May 2003 due to equipment downtime. Samples were collected in laboratory supplied summa canisters or 1-liter Tedlar™ bags, and screened for VOCs using a portable PID meter. Samples were placed in a cooler, without ice, for shipment to the laboratory. System vapor samples were submitted to either Environmental Analytical Services (EAS) or NCA under chain-of-custody

documentation. Vapor samples were analyzed for BTEX and TPH-G using TO-14 or TO-15 methods (EAS) or modified NWTPH method (NCA). Influent and effluent analytical results are summarized in Table 4. The laboratory reports are provided in Appendix B.

## **BAKER TANK SAMPLING**

Monthly grab samples from the onsite Baker tank were collected in December 2002 through April 2003. Samples were collected to characterize water and product concentrations for disposal purposes and to calculate mass removal rates. Samples were collected using a disposable bailer and slowly filling the laboratory supplied containers in such a manner as to reduce aeration of the water. Sample containers for analyses that are sensitive to volatilization were completely filled so that no headspace remained. Samples were placed in coolers and packed in ice to keep samples at about 4°C. Baker tank water samples were analyzed by NCA for TPH-G (NWTPH-G method), TPH-Dx (NWTPH-D method), and BTEX (EPA method 8021B). Baker tank analytical results are provided in Table 5. The laboratory reports for the Baker tank samples are provided in Appendix B.

## **GASOLINE VOLUME REMOVAL**

The volume of gasoline removed by remedial efforts can be estimated by summarizing the following:

- Volume of LPH collected in Baker tank and disposed at the Ferndale Refinery
- Volume of gasoline removed as dissolved phase based on the total volume of water recovered and the average TPH-G concentration of the recovered water
- Volume of LPH absorbed by pads and booms used at the site
- Volume of gasoline removed as vapor phase based on the vapor recovery flow rate and concentration exhibited by the DPVE system.

## **LPH REMOVAL**

The initial response and recovery efforts prior to January 17, 2003 recovered 3,000 gallons of LPH and disposed of the material at the Ferndale Refinery.

## **DISSOLVED PHASE GASOLINE REMOVAL**

Through June 30, 2003 Emerald removed and disposed of approximately 231,167 gallons of emulsified liquid from the Baker tank for disposal at the Ferndale Refinery. Bills of lading are provided

by Emerald and are included in Appendix C. In addition to the water disposed by Emerald through March 15, 2003, approximately 25,000 gallons of treated groundwater was drained from the Baker tank by ConocoPhillips personnel and discharged to the sanitary sewer under King County Wastewater Discharge Authorization No. 261-02.

Monthly disposal grab water samples collected from the Baker tank, indicate an average TPH-G concentration of 337 mg/L. Based on a total volume of approximately 256,000 gallons of water disposed from the Baker tank, it is estimated that approximately 112 gallons of gasoline have been removed by the groundwater recovery operations.

#### **GASOLINE REMOVED BY ABSORBENT MATERIALS**

Additional gasoline has been removed from the surface of the retention pond using absorbent pads and booms. Based on measurements completed by Landau Associates personnel, each pad used has absorbed approximately 1 lb. (0.16 gallon) of LPH and each boom has absorbed approximately 10 lbs (1.6 gallons) of gasoline. It is estimated that 625 absorbent pads and 15 absorbent booms have been utilized at the retention pond. Based on the quantities of pads and booms used, it is estimated that approximately 124 gallons of LPH have been absorbed from the surface of the retention pond. No LPH have been observed on the surface of the retention pond since March 27, 2003, which may be attributed to the operation of the remediation system and the lower seasonal groundwater elevation.

#### **VAPOR PHASE GASOLINE REMOVAL**

Monthly influent vapor sampling of the DPVE system (Table 6) indicate that in the 2,212 hours of operation between February 12 and June 20, 2003, the DPVE has removed approximately 22,751 lbs (3,555 gallons) of total petroleum hydrocarbons (i.e., gasoline) in the dissolved phase. Analytical results of the influent vapor samples also indicate that approximately 455 lbs. (71 gallons) of benzene have been removed during the DPVE operation.

#### **TOTAL VOLUME OF GASOLINE REMOVED**

Based on the above information, approximately 6,791 gallons of gasoline has been recovered since the initial release on November 13, 2002. The total estimated volume of gasoline recovered is comprised of the following:

| RECOVERY METHOD                                                                                       | GALLONS OF RECOVERED PRODUCT |
|-------------------------------------------------------------------------------------------------------|------------------------------|
| Initial Response: LPH recovered prior to January 13, 2002                                             | 3,000                        |
| Absorbent Pads in Retention Pond: 625 pads and 15 booms utilized                                      | 124                          |
| Groundwater Pumps: 256,167 gallons pumped to Baker tank at an average TPH-G concentration of 337 mg/L | 112                          |
| DPVE system: System installed on February 12, 2003. Operational for 2,212 hours as of June 20, 2003   | 3,555                        |
| <b>Estimated Total Product Recovered</b>                                                              | <b>6,791</b>                 |

## CONCLUSIONS

The effectiveness of the remedial efforts being conducted can be evaluated on the following criteria:

- Control of the LPH to reduce migration to the stormwater retention pond and decrease the thickness in the vicinity of Tank 2.
- Control of the dissolved-phase TPH-G and benzene plumes to limit offsite impacts and co-mingling with the plume generated by the historical (Mobil Oil Company) gasoline release near the loading racks.
- Discharge treated vapors and water in compliance with appropriate permits applicable to the remedial activities.

The three performance criteria identified are evaluated as follows:

## LPH CONTROL

Based on the interpretations of the extent of LPH presented in Figures 10-19, it appears that the areal extent of LPH has remained relatively consistent since monitoring began in November 2002. LPH has not been observed in the stormwater retention pond since March 2003, likely due to the effects of the groundwater and LPH pumping activities and the seasonal lack of precipitation. Overall, the thickness of LPH observed in wells appears to be diminishing, which is also attributed to groundwater LPH recovery and dry weather.

## **DISSOLVED-PHASE PLUME CONTROL**

Based on the data interpreted in Figures 4-9, it appears that groundwater flow moves in a radial pattern from the vicinity of Tank 2. The radial flow of groundwater creates the potential for the dissolved phase TPH-G and benzene plumes to co-mingle with the southern extent of the plume related to the historical Mobil Oil Company gasoline release, and it also creates the potential for the dissolved phase plume emanating from Tank 2 to migrate offsite to the south under SW 27<sup>th</sup> Street. The dissolved-phase TPH-G (Figure 18) and benzene (Figure 19) data from the May 2003 sampling event suggests that the dissolved-phase plume has not co-mingled with the Mobil Oil Company release plume, however, the plume appears to have moved offsite to the southeast of Tank 2 based on the data reported for monitoring well LAI-16.

## **PERMIT COMPLIANCE**

As of June 30, 2003 the only applicable permit for the remediation activities was NoC 8819 issued by PSCAA and dated May 8, 2003. The NoC limits the total discharge flow rate from the DPVE to 300 cfm and requires 99% destructive and removal efficiency (DRE). As indicated by the data presented in Tables 4 and 6, the remedial system is operating in compliance with the NoC.

## **RECOMMENDATIONS**

Based on the conclusions provided above, the following recommendations are made for the site:

- As of June 2003, monthly groundwater sampling at the site has been suspended. We recommend that groundwater monitoring wells be sampled and analyzed for TPH-G and benzene on a quarterly basis beginning in August 2003.
- Based on the May 2003 groundwater analytical results, we recommend resampling LAI-16 to verify TPH-G and benzene concentrations. Confirmation sampling of LAI-16 has been scheduled; however, the well has been dry since mid-July. Sampling of LAI-16 will be scheduled for the August 2003 quarterly sampling event.
- Based on the stability exhibited in the areal extent of LPH floating on the groundwater in the vicinity of Tank 2, we recommend changing the groundwater and LPH gauging frequently from weekly to monthly beginning in July 2003.
- Given the possible migration of TPH-G and benzene under SW 27<sup>th</sup> Street, we recommend converting the groundwater and LPH recovery pumps to "bottom-loading" pumps to increase the drawdown of the groundwater table in an effort to limit migration offsite. We also recommend the installation and operation of an additional recovery pump in well LAI-2.

- Upon receiving the modified NoC 8819 from PSCAA to allow for the operation of a new water treatment system onsite, we recommend treatment and discharge of the remaining water in the Baker tank in compliance with NoC 8819 and Industrial Wastewater Discharge Authorization No. 4057-C1 issued by King County. After the Baker tank is empty, we recommend continued treatment and discharge of the recovered groundwater using the new treatment system and removal of the Baker tank from the site.
- We recommend continued operation of the DPVE system.
- We recommend the preparation of a semi-annual progress report for the period from July 2003 through December 2003 and submittal of the report to Ecology in February 2004.

## **USE OF THIS REPORT**

This remediation status report has been prepared for the exclusive use of ConocoPhillips Company for specific application to the ConocoPhillips Renton Terminal. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

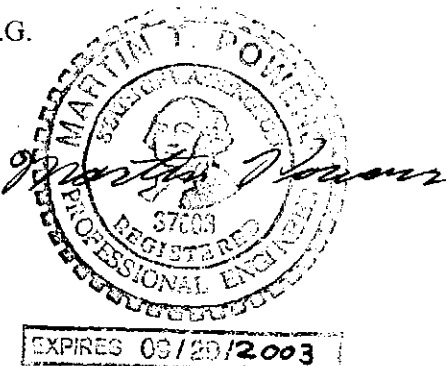
This document has been prepared under the supervision and direction of the following key staff.

LANDAU ASSOCIATES, INC.

*Christine Kimmel*

Christine B. Kimmel, L.G.  
Project Geologist

Martin T. Powers, P.E.  
Senior Engineer



## REFERENCES

EPA. 1994a. *Contract Laboratory Program National Functional Guidelines for Organic Data Review*.

EPA. 1994b. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*.

Landau Associates. 2003. *Release Notification Report, ConocoPhillips Renton Terminal, Renton, Washington*. February 11.

**Status Report  
ConocoPhillips Renton Terminal  
Renton, Washington**

August 8, 2003

Prepared for

**ConocoPhillips Company  
Renton, Washington**



**LANDAU  
ASSOCIATES**

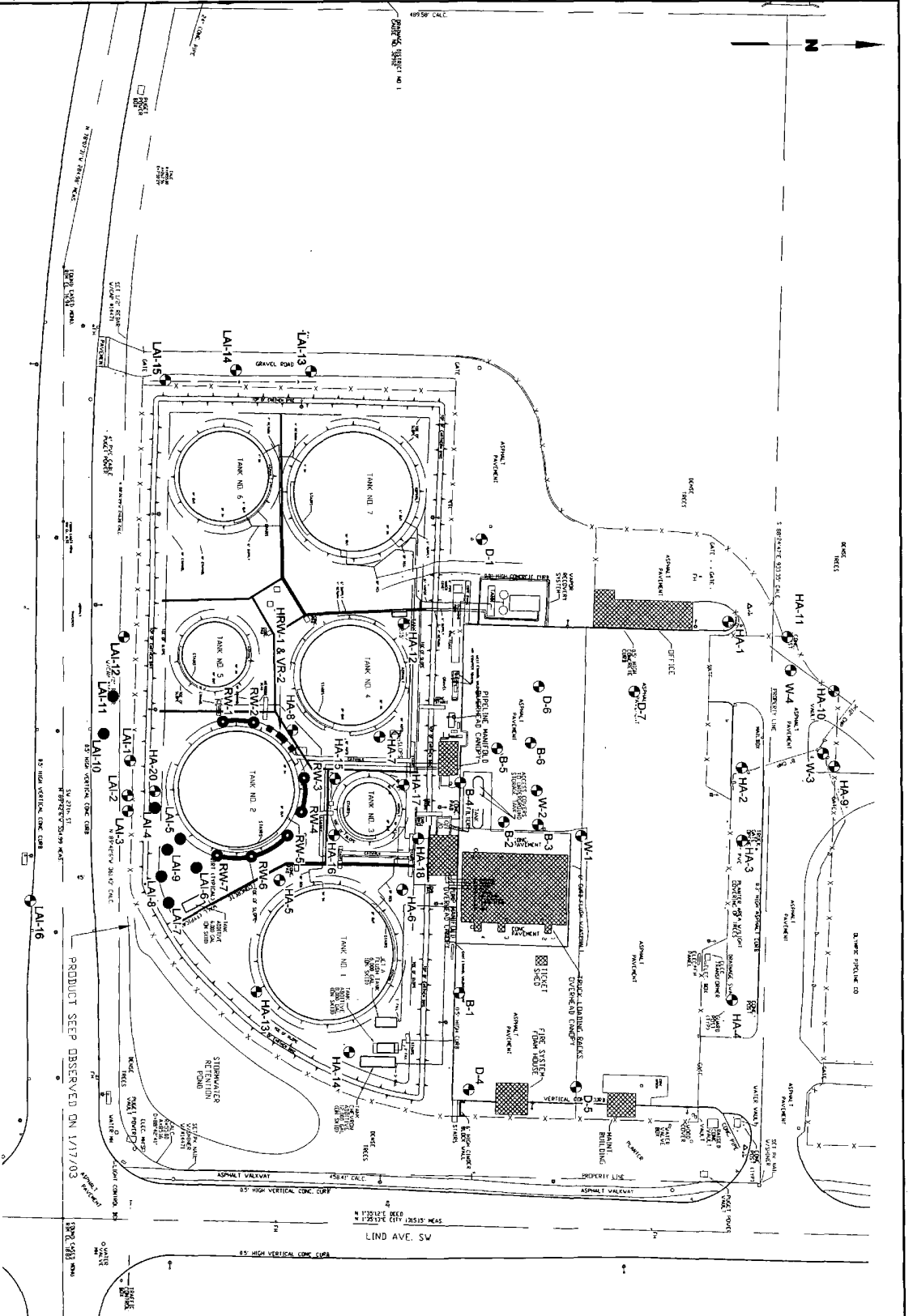
130 2nd Avenue South  
Edmonds, WA 98020  
(425) 778-0907

0 80 160  
Scale in Feet

Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

## Site Map

Figure  
**2**

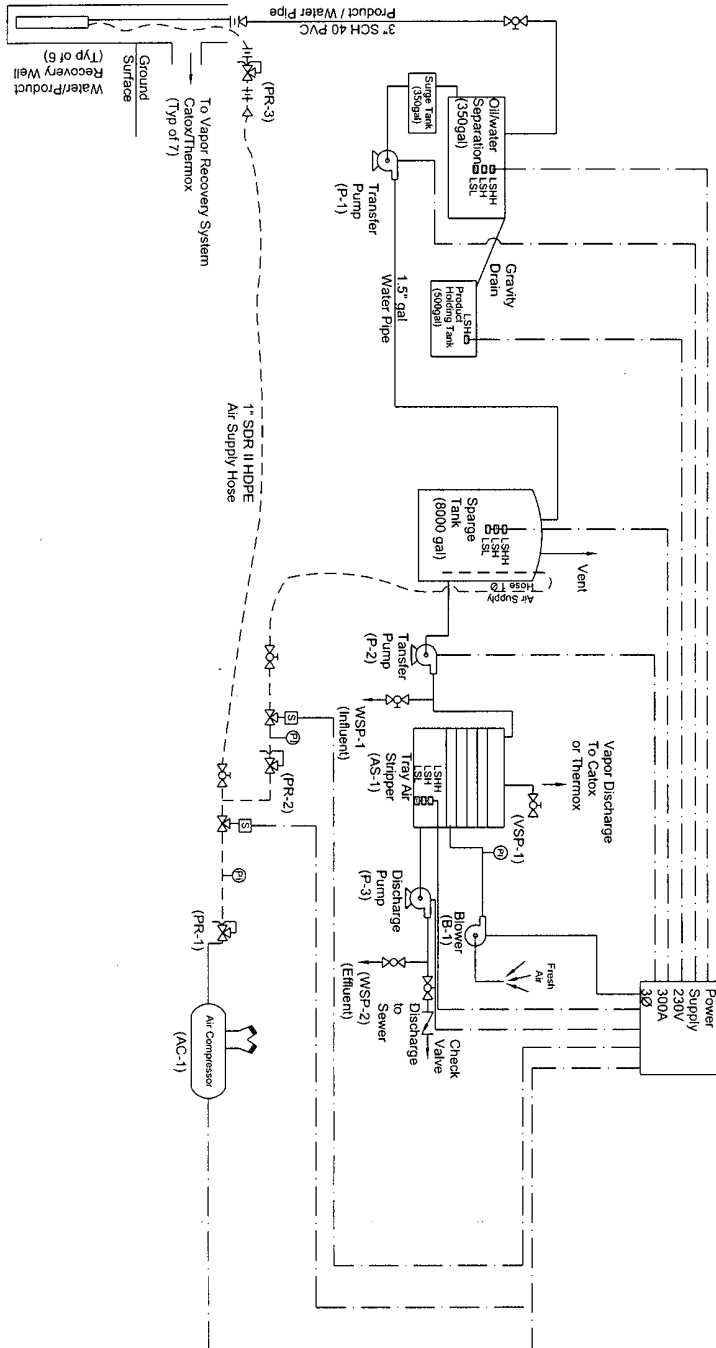


## Legend

- FOUND CASE NO. OR HOU. AS NOTED
- SET 1/2" REBAR W/ CAP (H47) OR AS NOTED
- SET INCL. IN LEAD PILE
- MEAS. MEASURED
- CALC. CALCULATED
- SPH. FIRE HYDRANT
- AERIAL PANEL POINT
- UTILITY POLE
- STORM DRAIN MANHOLE
- OH. MANHOLE
- CATCH BASIN
- TV TIP WALL
- GR. GRADE
- OUTLET
- TOP CURB
- TC TIP WALL
- LIQUID
- FEED LINE
- STEAM
- WATER VALVE
- INVERT ELEVATION
- HA-14 Monitoring Well
- Horizontal Vapor Recovery & Groundwater/Product Extraction Trench
- Horizontal Vapor Recovery Pipe
- 4" Diameter Vertical Recovery Wells Installed in November, 2002
- 4" Diameter Vertical Recovery Wells Installed in January, 2003

## Note

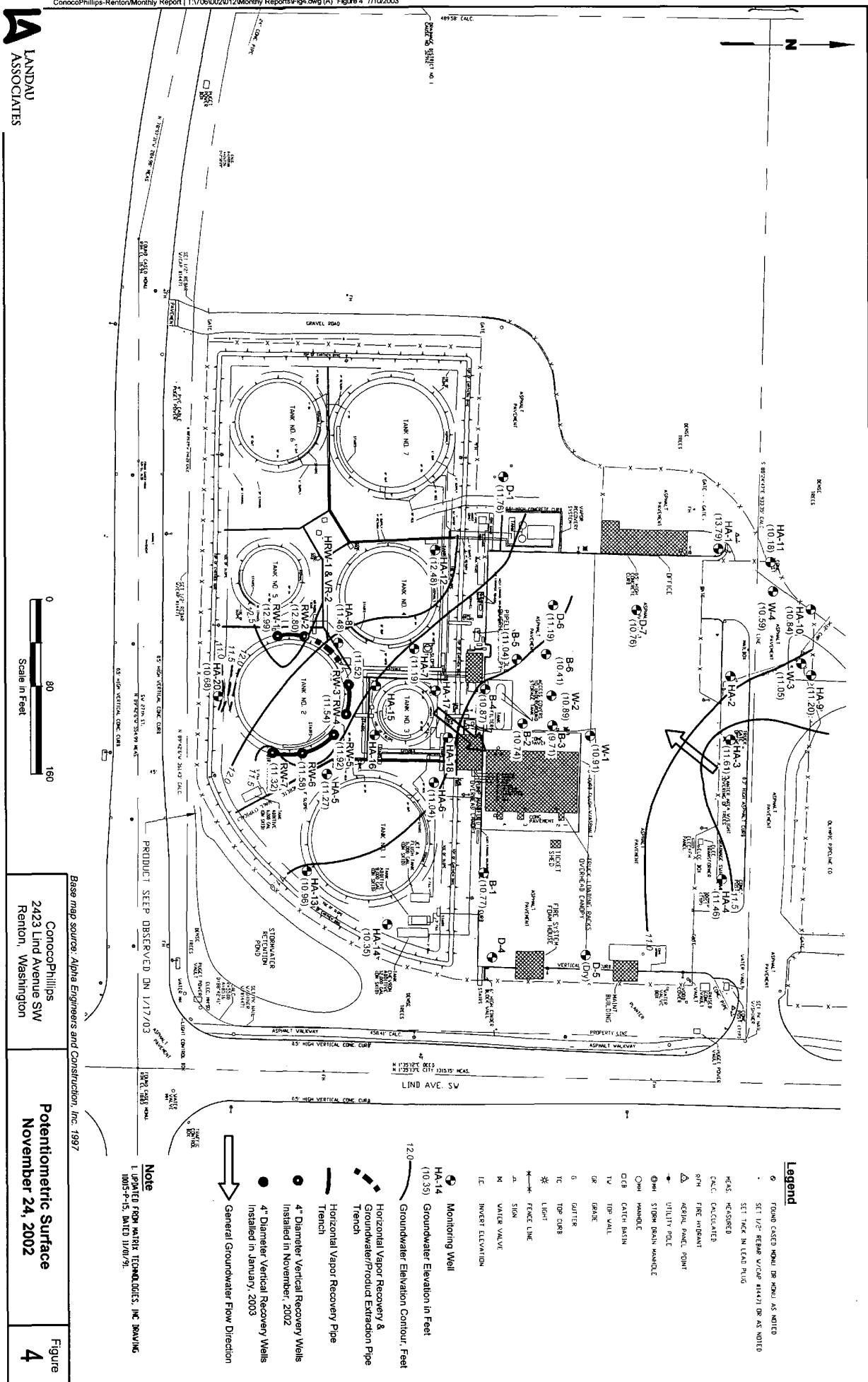
1. DATA FROM MARY TENDRICKS, INC. DRAWING 1015-P-15, DATED 10/07/01



Not to Scale

ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

Groundwater Treatment  
System Process and  
Instrumentation Diagram

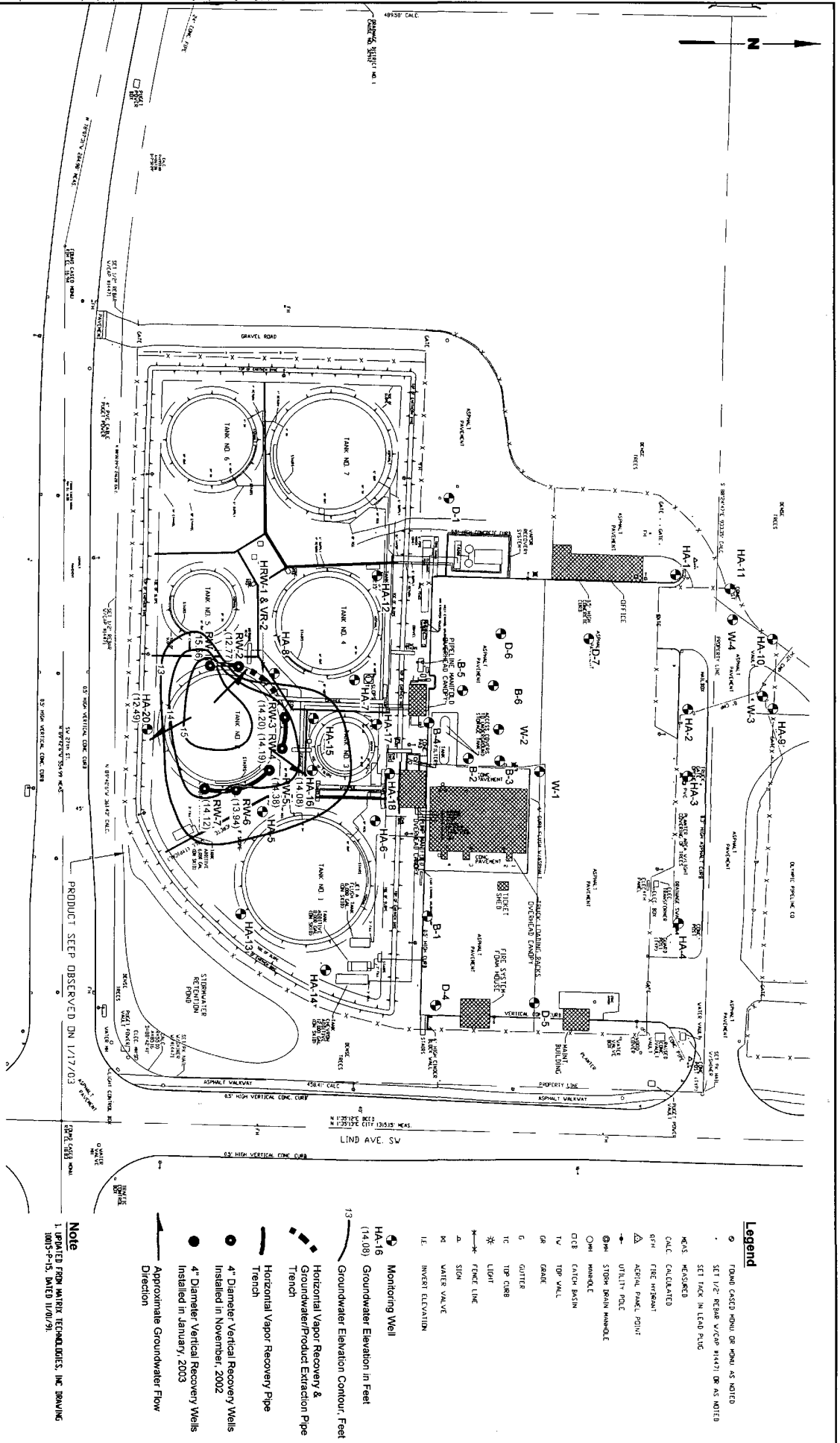


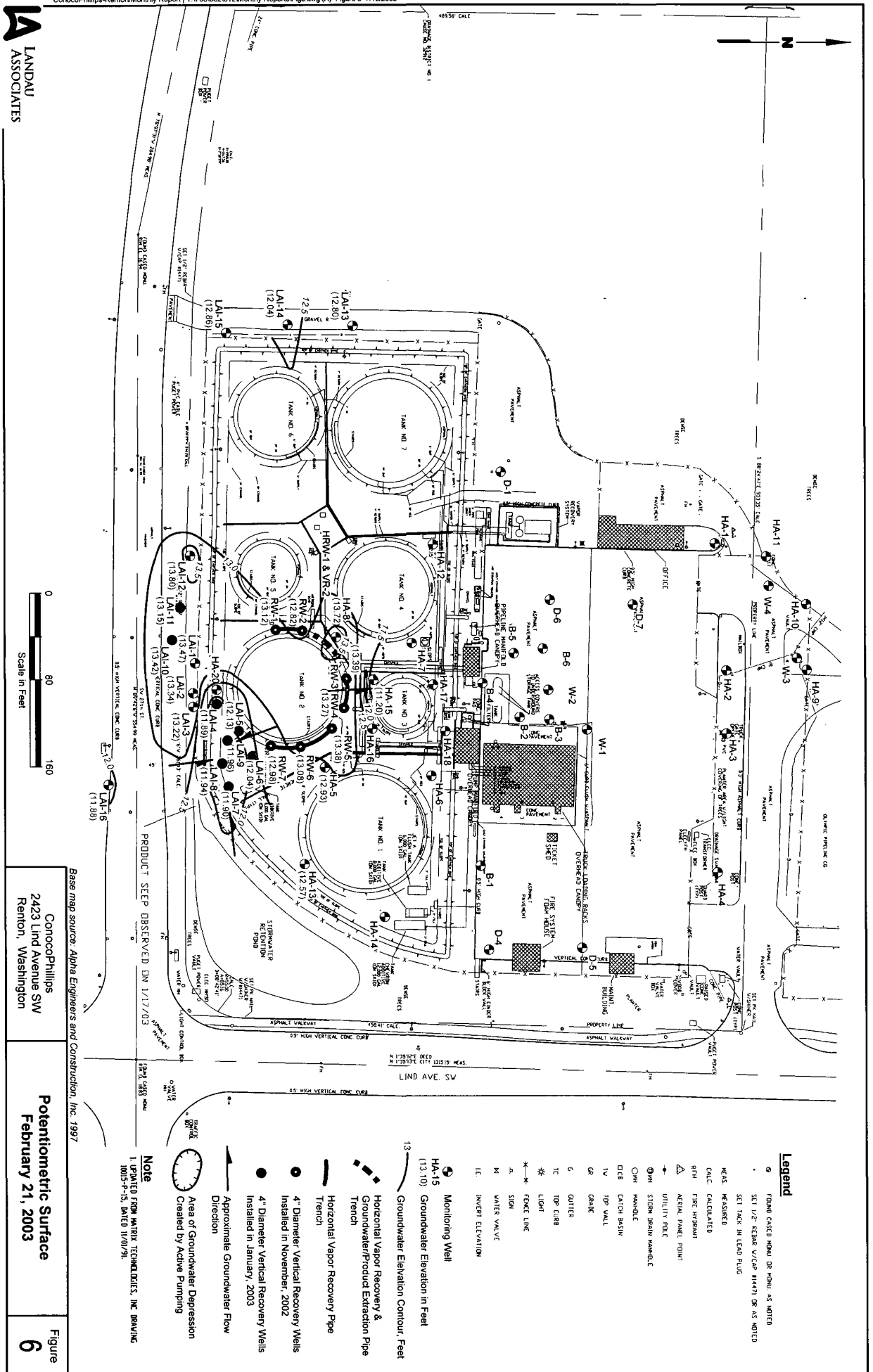


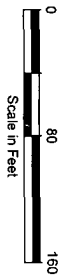
Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

Potentiometric Surface  
January 9, 2003

Figure  
5



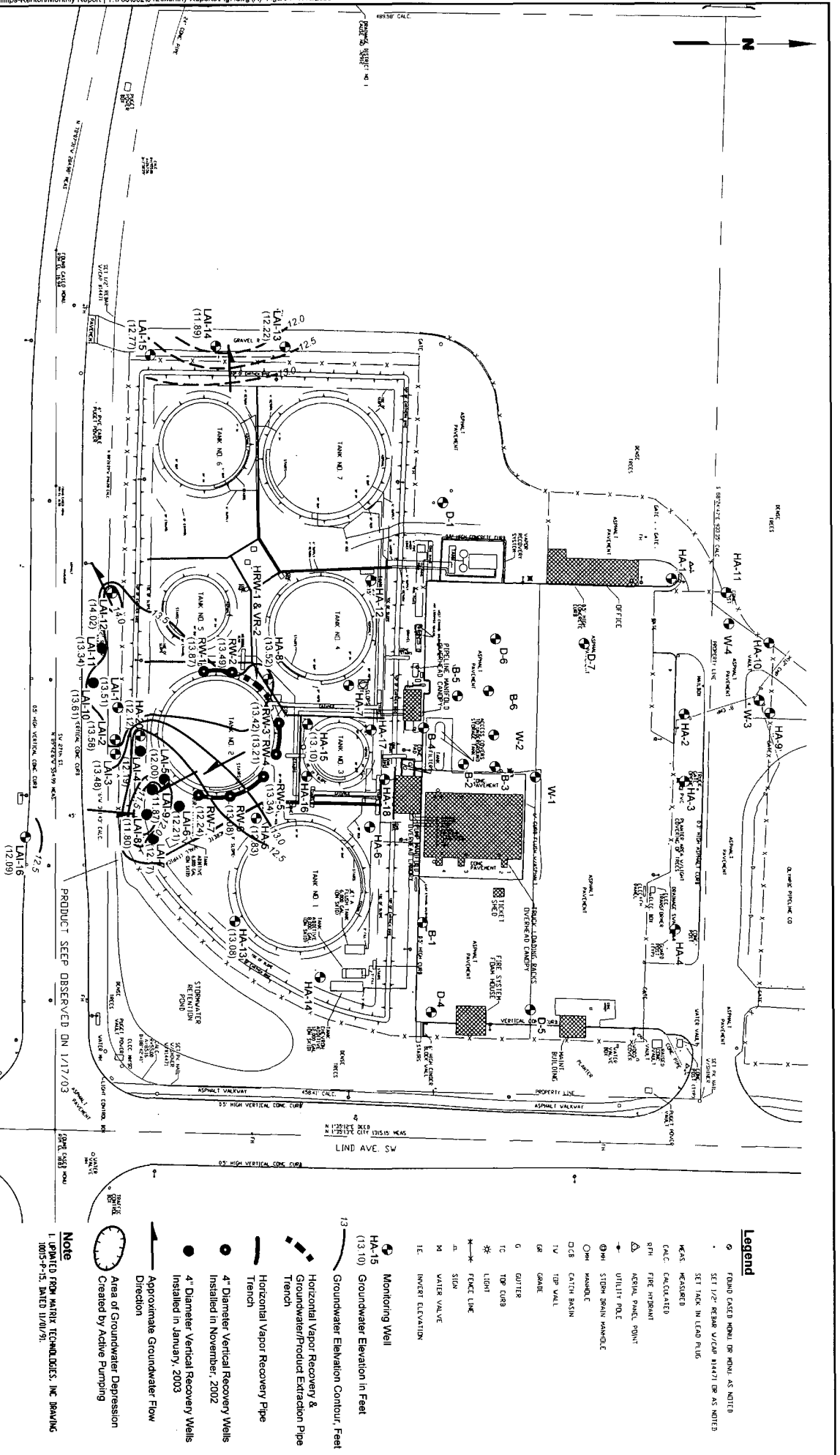




Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

Potentiometric Surface  
March 12, 2003

Figure  
**7**



**Status Report  
ConocoPhillips Renton Terminal  
Renton, Washington**

August 8, 2003

Prepared for

**ConocoPhillips Company  
Renton, Washington**



**LANDAU  
ASSOCIATES**

130 2nd Avenue South  
Edmonds, WA 98020  
(425) 778-0907

**Status Report  
ConocoPhillips Renton Terminal  
Renton, Washington**

August 8, 2003

Prepared for

**ConocoPhillips Company  
Renton, Washington**



**LANDAU  
ASSOCIATES**

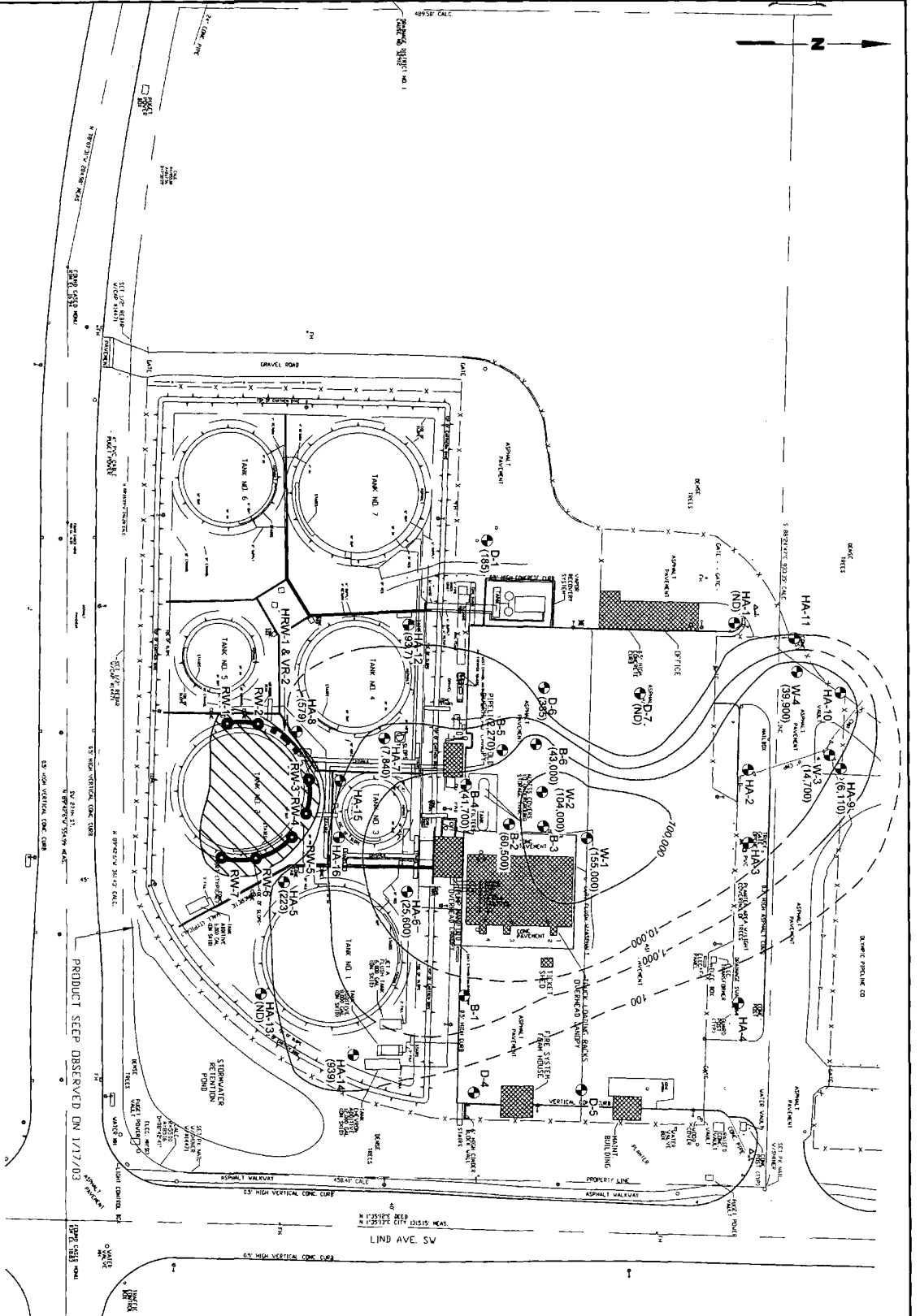
130 2nd Avenue South  
Edmonds, WA 98020  
(425) 778-0907



Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

TPH-Gasoline Isocconcentration  
Contours - November 2002  
Groundwater Sampling Event

Figure  
**10**



**Legend**

- FOUND CASED POINT OR POINT AS NOTED
- SET 1/2" REBAR VERTICAL MARK OR AS NOTED
- MEASURED
- CALC. CALCULATED
- △ FIRE HYDRANT
- △ REPAIR PANEL POINT
- UTILITY POLE
- STEEL BEAM MANHOLE
- MANHOLE
- CATCH BASIN
- TV TIP WALL
- OR GRADE
- G GUTTER
- TC TIP CURB
- \* LIGHT
- FENCE LINE
- △ SIGN
- M WATER VALVE
- LE INVERT ELEVATION

HA-14  
(939)  
Monitoring Well  
TPH-Gasoline Concentration (y/L)

Isocconcentration Contour  
for TPH-G, y/L

ND  
Analytical Results Below Reporting  
Limits

Horizontal Vapor Recovery &  
Groundwater/Product Extraction Pipe  
Trench

Horizontal Vapor Recovery Pipe  
Trench

4" Diameter Vertical Recovery Wells  
Installed in November, 2002

4" Diameter Vertical Recovery Wells  
Installed in January, 2003

Estimated Extent of Free Product

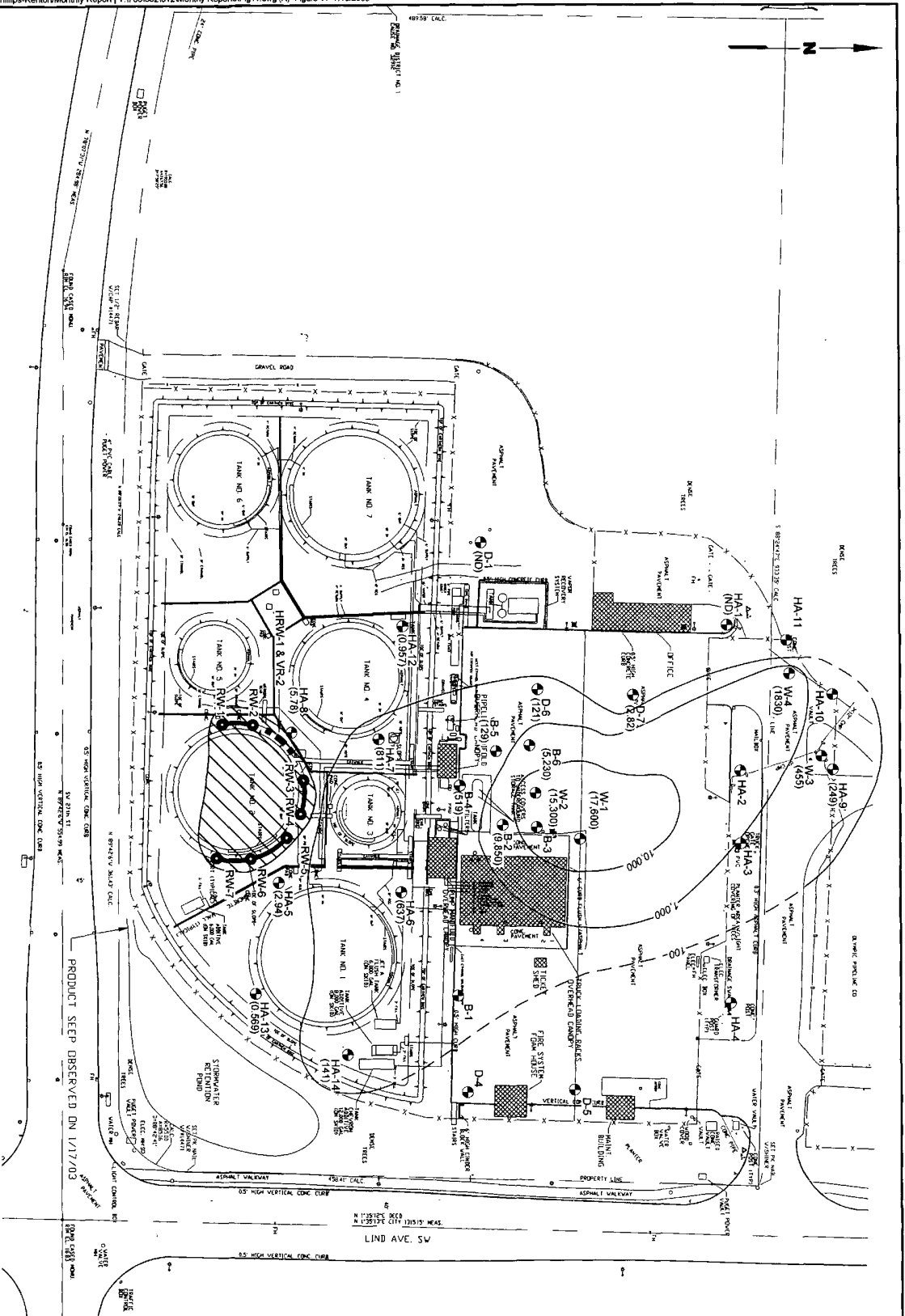
**Note**

1. UPDATED FROM MATRIX TECHNOLOGIES, INC. DRAWING  
10025-7-12, DATED 10/09/91.



Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

**Benzene Isoc concentration  
Contours - November 2002  
Groundwater Sampling Event**

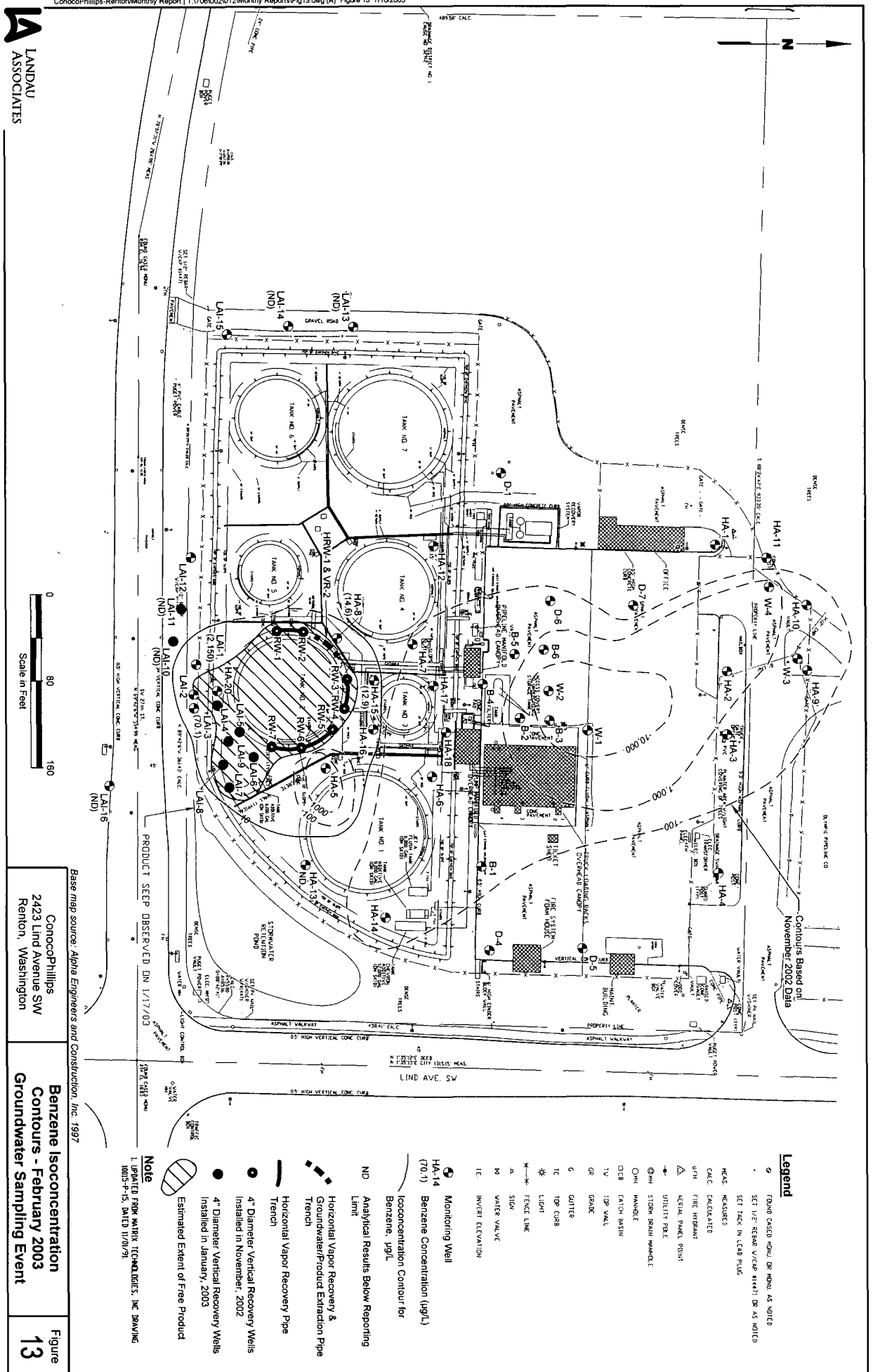


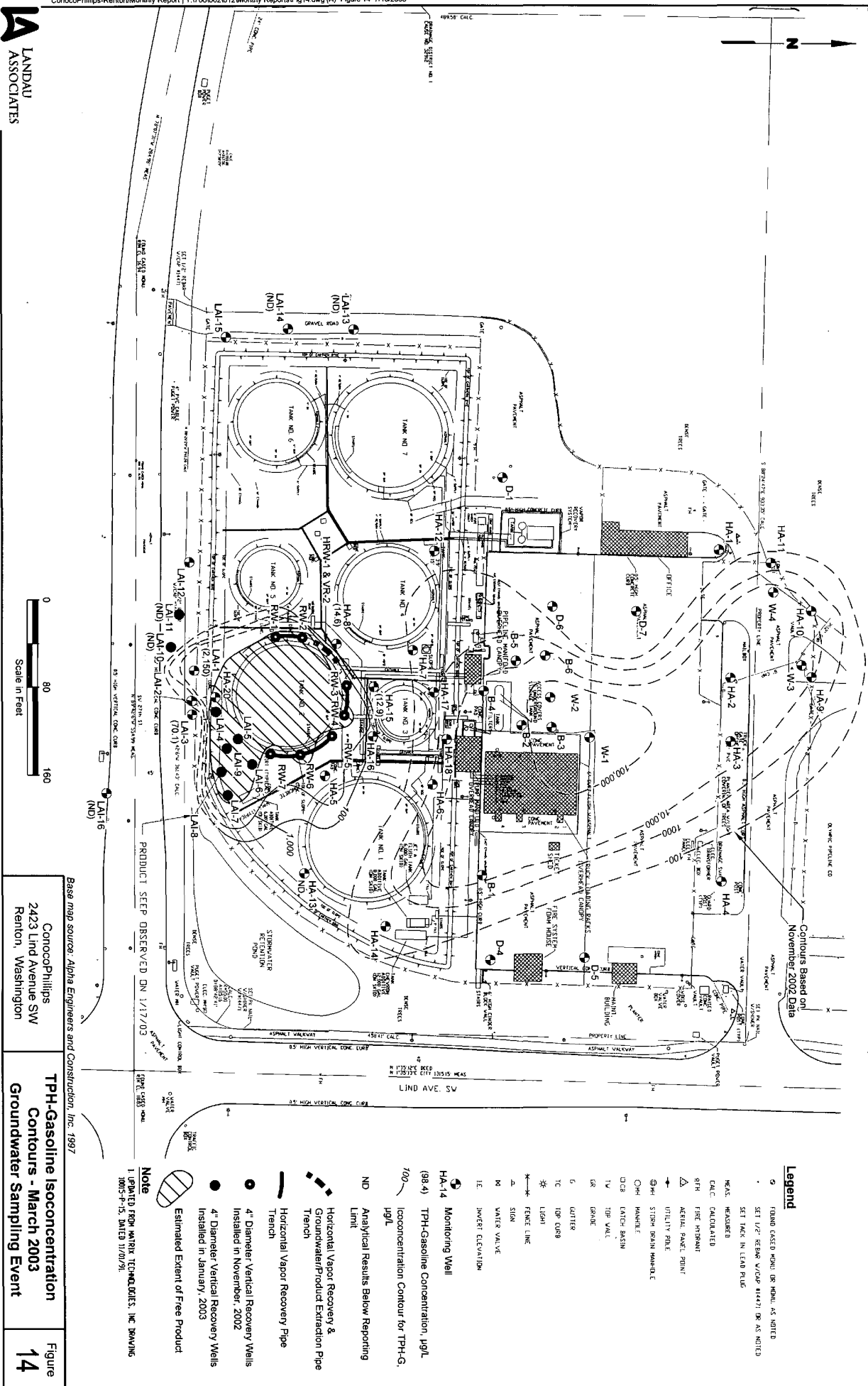
**Legend**

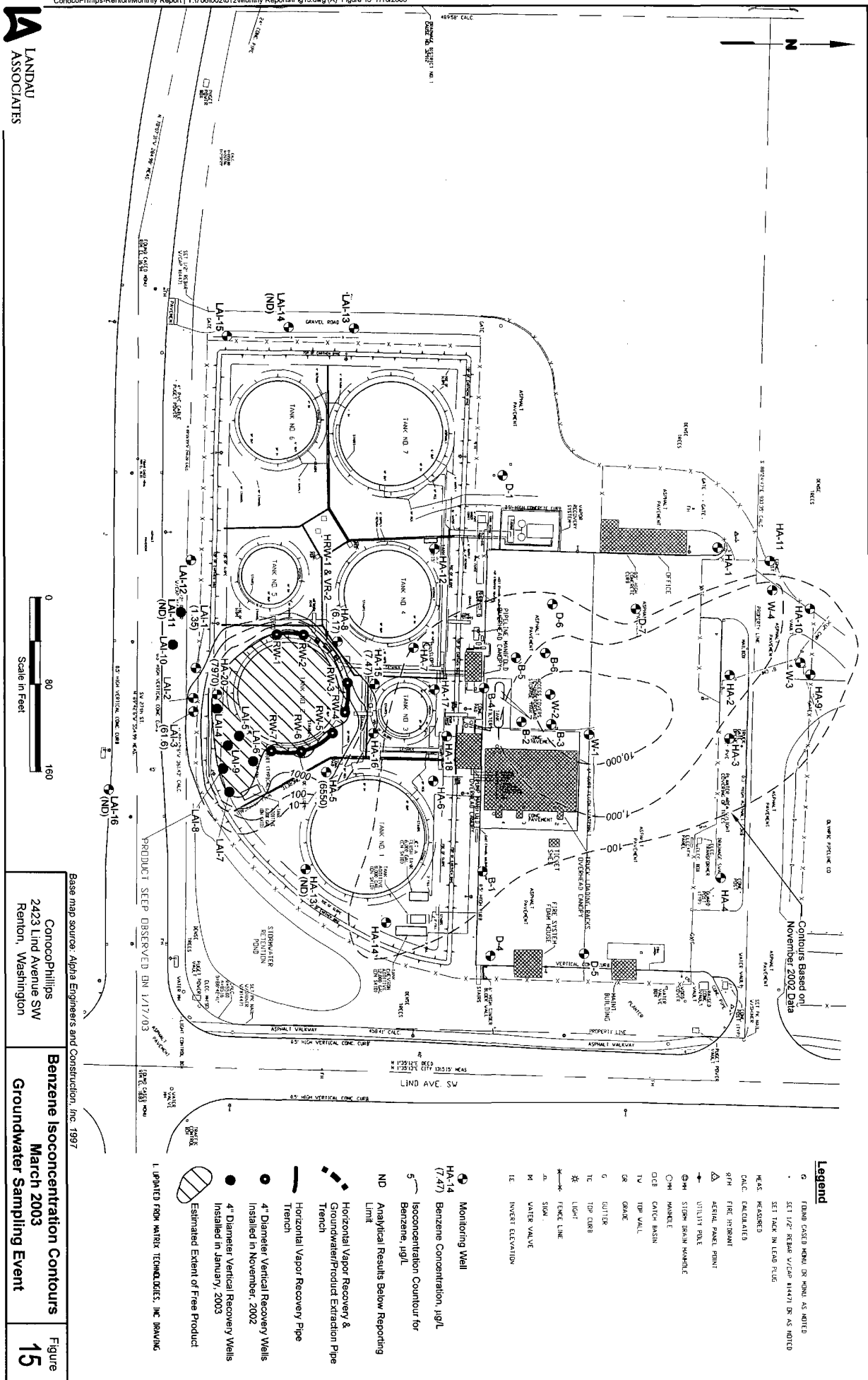
- TANK CASED HOLE OR HOLE AS NOTED
- SET 1/2" REBAR WITH #1411 OR AS NOTED
- SET BACK IN LEAD PLUG
- HAZ MEASURED
- HAZ CALCULATED
- BFI FIRE HYDRANT
- △ AERIAL PANEL POINT
- UTILITY POLE
- ⊕ STORM DRAIN MANHOLE
- OH MANHOLE
- CATCH BASIN
- TV TOP VALVE
- DR DRAIN
- G GUTTER
- TC TOP CURB
- \* LIGHT
- \* FENCE LINE
- △ SIGN
- W WATER VALVE
- IE INVERT ELEVATION
- Monitoring Well  
HA-14  
Benzene Concentration (µg/L)  
Isoc concentration Contour for Benzene, µg/L
- Horizontal Vapor Recovery & Groundwater/Product Extraction Pipe Trench
- Horizontal Vapor Recovery Pipe Trench
- 4" Diameter Vertical Recovery Wells Installed in November, 2002
- 4" Diameter Vertical Recovery Wells Installed in January, 2003
- Estimated Extent of Free Product

**Note**  
1. UPDATED FROM ANTI-TECHNOLOGIES, INC. DRAWING 110057-15, DATED 11/09/91.





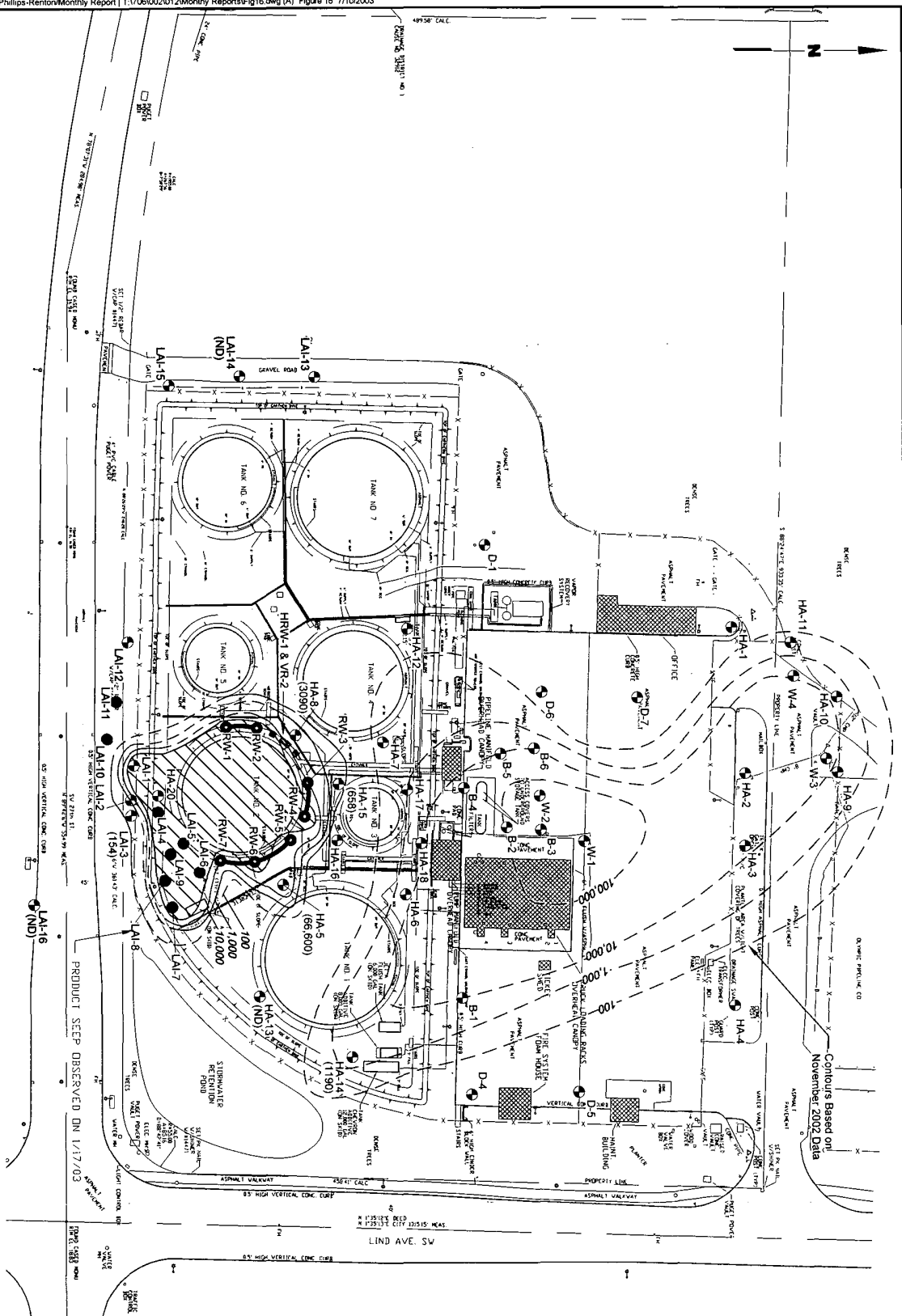






Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

TPH-Gasoline Isoconcentration  
Contours April 2003  
Groundwater Sampling Event

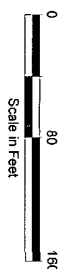


# Legend

- FRODO CATCH ROAD OR MON. AS NOTED
- SET 1/2" REBAR W/CAAP (HA-1) OR AS NOTED
- SET 1/2" IN LAMP PLUG
- MEAS. MEASURED
- CALC. CALCULATED
- SPH. FIRE HYDRANT
- △ AERIAL (WALL POINT)
- UTILITY POLE
- ⊙ STUDY BRAN. MANHOLE
- OH. MANHOLE
- DCS. CATCH BASIN
- TV. TOP WALL
- GR. GRADE
- 5. GUTTER
- TC. TOP CURB
- ★ LIGHT
- FENCE LINE
- △. SIGN
- W. WATER VALVE
- IE. INVERT ELEVATION
- Monitoring Well
- HA-14 TPH-Gasoline Concentration, µg/L (154)
- 100 Isoconcentration Contour for TPH-G, µg/L
- ND Analytical Results Below Reporting Limit
- Horizontal Vapor Recovery & Groundwater/Product Extraction Pipe Trench
- Horizontal Vapor Recovery Pipe Trench
- 4" Diameter Vertical Recovery Wells Installed in November, 2002
- 4" Diameter Vertical Recovery Wells Installed in January, 2003
- Estimated Extent of Free Product

## Note

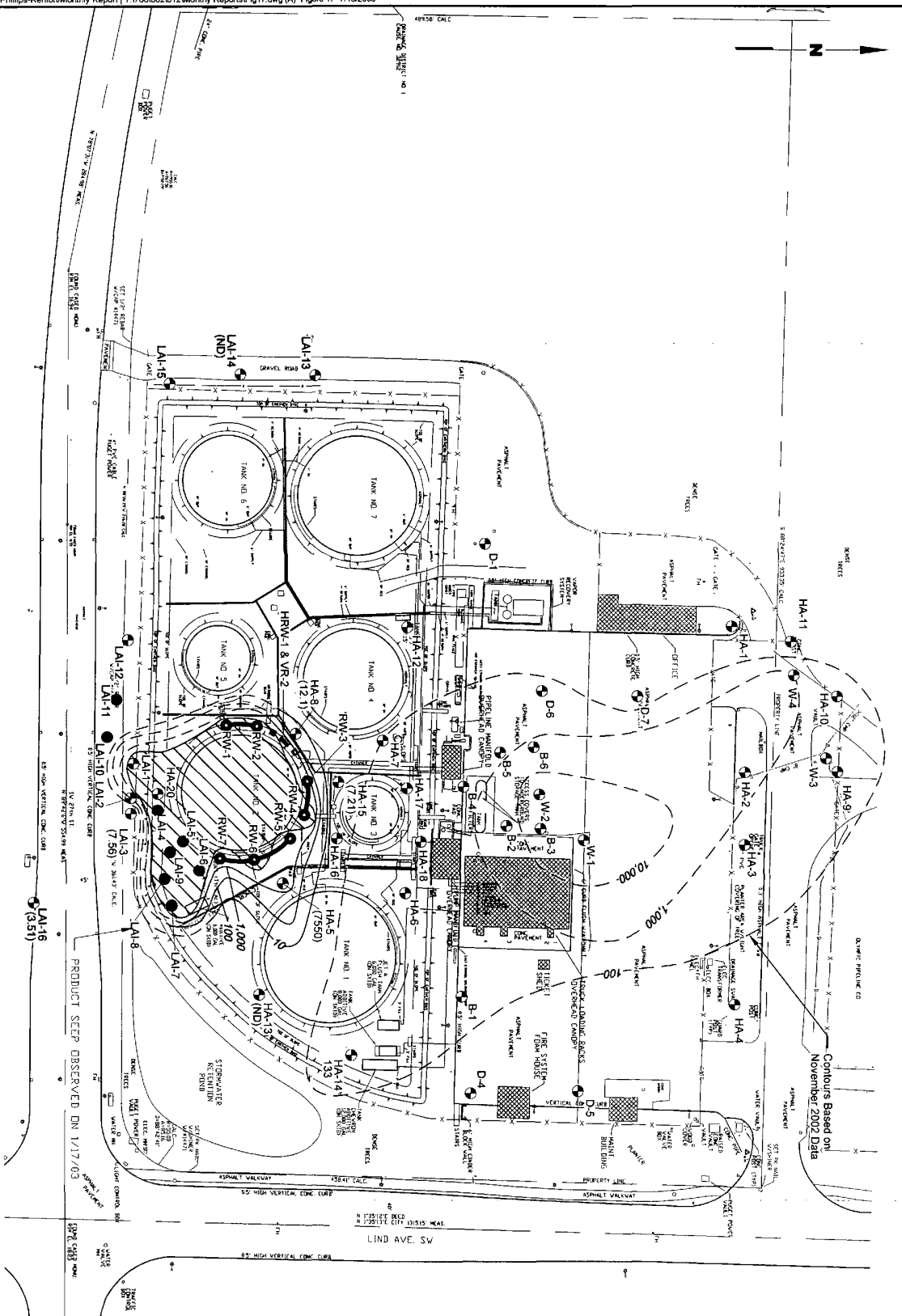
1. UPDATED FROM MARCH TECHNOLOGIES, INC. DRAWING 1005-2-15, DATED 11/29/91.



Base map source: Alpha Engineers and Construction, Inc. 1997  
 ConocoPhillips  
 2423 Lind Avenue SW  
 Renton, Washington

**Benzene Isocentration**  
 April 2003  
 Groundwater Sampling Event

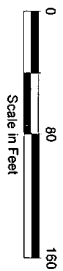
**Figure 17**



**Legend**

- 9 FOMD CAGED MON OR MON AS NOTED
- SET 1/2 REBAR W/CEP #1471 OR AS NOTED
- SET TRUCK IN LEAD PLUS
- MEAS. MEASURED
- CALC. CALCULATED
- 9TH FIRE HYDRANT
- ▲ AERIAL PANEL POINT
- UTILITY POLE
- STORM SEWER MANHOLE
- MANHOLE
- CATCH BASIN
- TIP WALK
- GRACK
- GUTTER
- TIP CLASH
- LIGHT
- FENCE LINE
- SIGN
- WATER VALVE
- INVERT ELEVATION
- Monitoring Well
- HA-14 Benzene Concentration, µg/L (756)
- Isocentration Contour for Benzene, µg/L
- ND Analytical Results Below Reporting Limit
- Horizontal Vapor Recovery & Groundwater/Product Extraction Pipe Trench
- Horizontal Vapor Recovery Pipe Trench
- 4" Diameter Vertical Recovery Wells Installed in November, 2002
- 4" Diameter Vertical Recovery Wells Installed in January, 2003
- Estimated Extent of Free Product

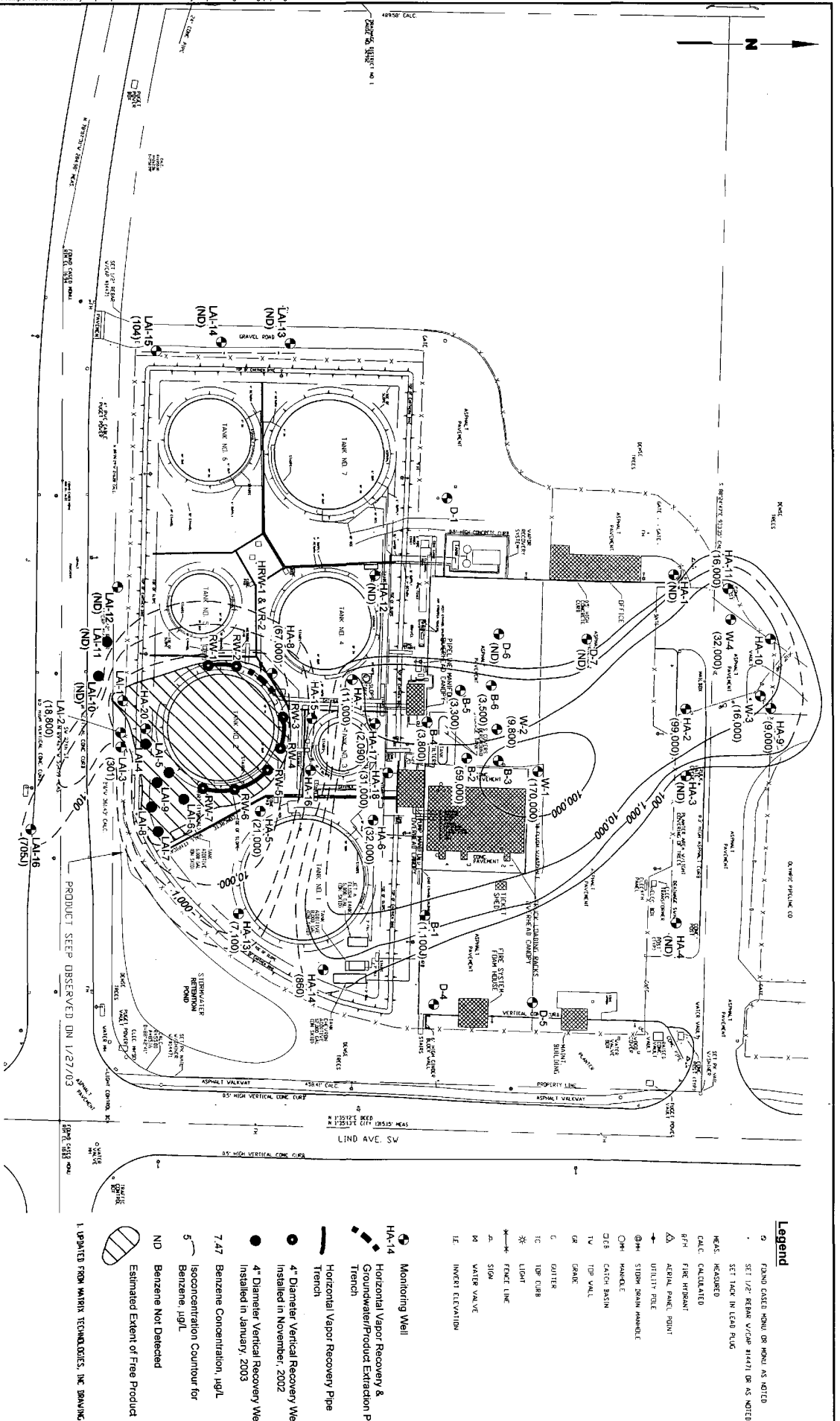
**Note**  
 1. UPDATED FROM WATER TECHNOLOGIES, INC. DRAWING 1003-7-15, DATED 10/6/01.

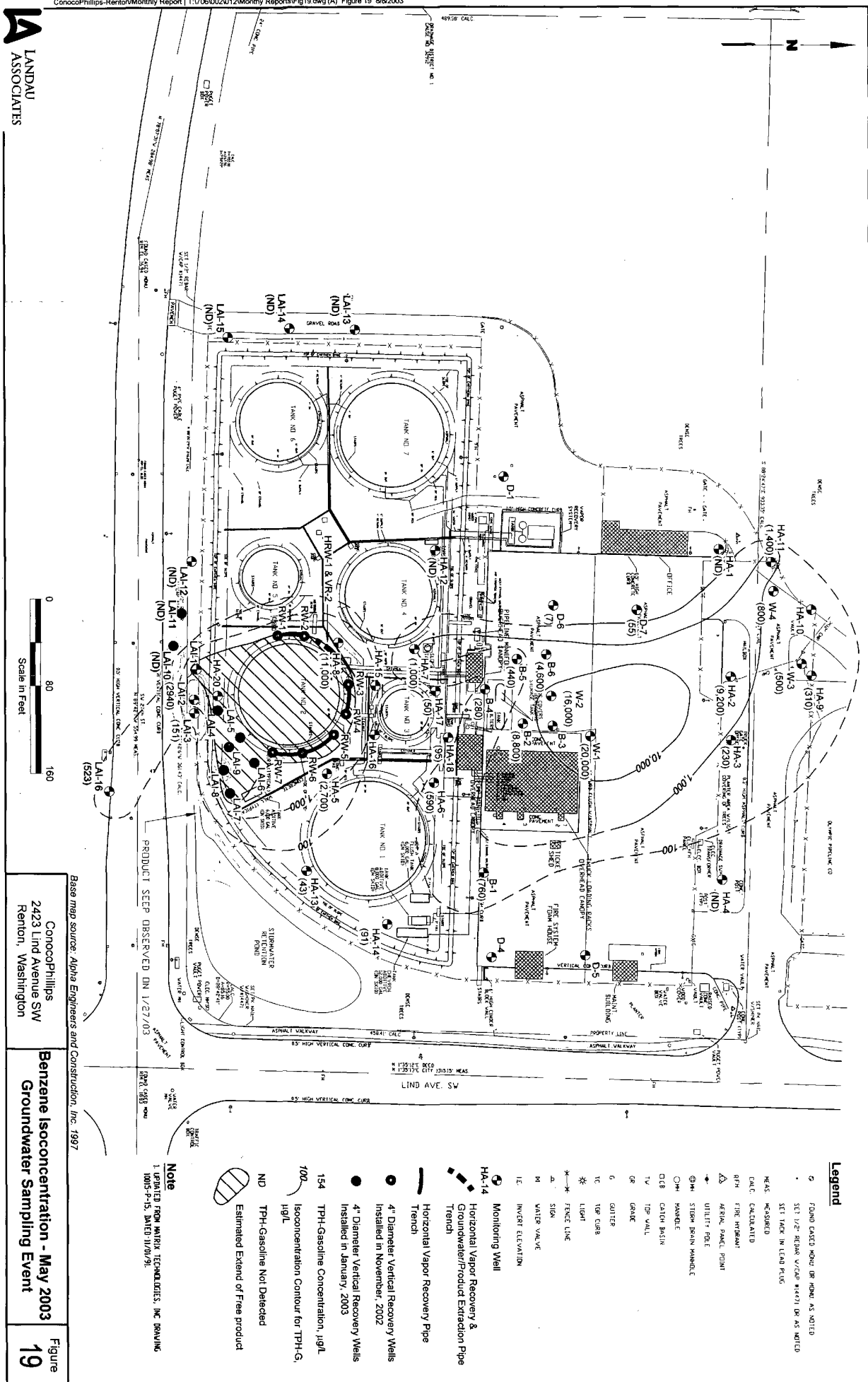


Base map source: Alpha Engineers and Construction, Inc. 1997  
ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

TPH-Gasoline Isocentration  
Contours May 2003  
Groundwater Sampling Event

Figure  
**18**





**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| HA-1 | 11/24/02 | 19.50                      | N/A                      | N/A                          | N/A                  | 5.71                    | 13.79                    | 13.79                       |
| HA-3 | 11/24/02 | 21.03                      | N/A                      | N/A                          | N/A                  | 9.42                    | 11.61                    | 11.61                       |
| HA-4 | 11/24/02 | 20.24                      | N/A                      | N/A                          | N/A                  | 8.78                    | 11.46                    | 11.46                       |
| HA-5 | 11/24/02 | 18.07                      | N/A                      | N/A                          | N/A                  | 6.80                    | 11.27                    | 11.27                       |
| HA-5 | 01/17/03 | 18.07                      | 4.37                     | 13.70                        | 0.00                 | 4.37                    | 13.70                    | 13.70                       |
| HA-5 | 01/20/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 4.58                    | 13.49                    | 13.49                       |
| HA-5 | 01/31/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 4.49                    | 13.58                    | 13.58                       |
| HA-5 | 02/07/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 4.46                    | 13.61                    | 13.61                       |
| HA-5 | 02/12/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 4.93                    | 13.14                    | 13.14                       |
| HA-5 | 02/18/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.30                    | 12.77                    | 12.77                       |
| HA-5 | 02/21/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.14                    | 12.93                    | 12.93                       |
| HA-5 | 02/24/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.23                    | 12.84                    | 12.84                       |
| HA-5 | 03/04/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.55                    | 12.52                    | 12.52                       |
| HA-5 | 03/12/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.24                    | 12.83                    | 12.83                       |
| HA-5 | 03/14/03 | 18.07                      | 5.25                     | 12.82                        | 0.01                 | 5.26                    | 12.81                    | 12.82                       |
| HA-5 | 03/26/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 4.41                    | 13.66                    | 13.66                       |
| HA-5 | 03/28/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 4.98                    | 13.09                    | 13.09                       |
| HA-5 | 04/02/02 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.00                    | 13.07                    | 13.07                       |
| HA-5 | 04/04/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.44                    | 12.63                    | 12.63                       |
| HA-5 | 04/08/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.49                    | 12.58                    | 12.58                       |
| HA-5 | 04/11/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.53                    | 12.54                    | 12.54                       |
| HA-5 | 04/15/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.06                    | 13.01                    | 13.01                       |
| HA-5 | 04/17/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.70                    | 12.37                    | 12.37                       |
| HA-5 | 04/22/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.54                    | 12.53                    | 12.53                       |
| HA-5 | 04/25/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.92                    | 12.15                    | 12.15                       |
| HA-5 | 05/02/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 5.98                    | 12.09                    | 12.09                       |
| HA-5 | 05/06/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 6.02                    | 12.05                    | 12.05                       |
| HA-5 | 05/09/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 6.34                    | 11.73                    | 11.73                       |
| HA-5 | 05/23/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 6.95                    | 11.12                    | 11.12                       |
| HA-5 | 05/28/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 6.85                    | 11.22                    | 11.22                       |
| HA-5 | 06/13/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 7.22                    | 10.85                    | 10.85                       |
| HA-5 | 06/18/03 | 18.07                      | N/A                      | N/A                          | N/A                  | 7.16                    | 10.91                    | 10.91                       |
| HA-6 | 11/24/02 | 18.16                      | N/A                      | N/A                          | N/A                  | 7.12                    | 11.04                    | 11.04                       |
| HA-7 | 11/24/02 | 18.44                      | N/A                      | N/A                          | N/A                  | 7.25                    | 11.19                    | 11.19                       |
| HA-8 | 11/24/02 | 18.88                      | N/A                      | N/A                          | N/A                  | 7.40                    | 11.48                    | 11.48                       |
| HA-8 | 01/31/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 4.04                    | 14.84                    | 14.84                       |
| HA-8 | 02/07/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 4.16                    | 14.72                    | 14.72                       |
| HA-8 | 02/12/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 4.71                    | 14.17                    | 14.17                       |
| HA-8 | 02/18/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 4.99                    | 13.89                    | 13.89                       |
| HA-8 | 02/21/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.16                    | 13.72                    | 13.72                       |
| HA-8 | 02/24/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.21                    | 13.67                    | 13.67                       |
| HA-8 | 03/04/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.89                    | 12.99                    | 12.99                       |
| HA-8 | 03/12/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.36                    | 13.52                    | 13.52                       |
| HA-8 | 03/14/03 | 18.88                      | 5.21                     | 13.67                        | 0.01                 | 5.22                    | 13.66                    | 13.67                       |
| HA-8 | 03/26/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 4.74                    | 14.14                    | 14.14                       |
| HA-8 | 03/28/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.21                    | 13.67                    | 13.67                       |
| HA-8 | 04/02/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.25                    | 13.63                    | 13.63                       |
| HA-8 | 04/04/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.57                    | 13.31                    | 13.31                       |
| HA-8 | 04/08/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.57                    | 13.31                    | 13.31                       |
| HA-8 | 04/11/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.77                    | 13.11                    | 13.11                       |
| HA-8 | 04/15/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.41                    | 13.47                    | 13.47                       |
| HA-8 | 04/17/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 5.91                    | 12.97                    | 12.97                       |
| HA-8 | 04/22/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 6.07                    | 12.81                    | 12.81                       |
| HA-8 | 04/25/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 6.37                    | 12.51                    | 12.51                       |
| HA-8 | 05/02/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 6.44                    | 12.44                    | 12.44                       |
| HA-8 | 05/06/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 6.62                    | 12.26                    | 12.26                       |
| HA-8 | 05/09/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 6.92                    | 11.96                    | 11.96                       |
| HA-8 | 05/23/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 7.38                    | 11.50                    | 11.50                       |
| HA-8 | 05/28/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 7.34                    | 11.54                    | 11.54                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well  | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|-------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| HA-8  | 06/13/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 7.66                    | 11.22                    | 11.22                       |
| HA-8  | 06/18/03 | 18.88                      | N/A                      | N/A                          | N/A                  | 7.60                    | 11.28                    | 11.28                       |
| HA-9  | 11/24/02 | 19.40                      | N/A                      | N/A                          | N/A                  | 8.20                    | 11.20                    | 11.20                       |
| HA-10 | 11/24/02 | 19.33                      | N/A                      | N/A                          | N/A                  | 8.49                    | 10.84                    | 10.84                       |
| HA-11 | 11/24/02 | 18.51                      | N/A                      | N/A                          | N/A                  | 8.33                    | 10.18                    | 10.18                       |
| HA-12 | 11/24/02 | 19.91                      | N/A                      | N/A                          | N/A                  | 7.43                    | 12.48                    | 12.48                       |
| HA-13 | 11/24/02 | 19.56                      | N/A                      | N/A                          | N/A                  | 8.60                    | 10.96                    | 10.96                       |
| HA-13 | 01/17/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.30                    | 13.26                    | 13.26                       |
| HA-13 | 01/31/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 4.49                    | 15.07                    | 15.07                       |
| HA-13 | 02/07/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.27                    | 13.29                    | 13.29                       |
| HA-13 | 02/12/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.78                    | 12.78                    | 12.78                       |
| HA-13 | 02/18/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.13                    | 12.43                    | 12.43                       |
| HA-13 | 02/21/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.99                    | 12.57                    | 12.57                       |
| HA-13 | 02/24/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.98                    | 12.58                    | 12.58                       |
| HA-13 | 03/04/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.49                    | 12.07                    | 12.07                       |
| HA-13 | 03/12/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.48                    | 13.08                    | 13.08                       |
| HA-13 | 03/14/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 5.16                    | 14.40                    | 14.40                       |
| HA-13 | 03/26/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 5.65                    | 13.91                    | 13.91                       |
| HA-13 | 03/28/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.34                    | 13.22                    | 13.22                       |
| HA-13 | 04/02/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.74                    | 12.82                    | 12.82                       |
| HA-13 | 04/04/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.08                    | 12.48                    | 12.48                       |
| HA-13 | 04/08/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.17                    | 12.39                    | 12.39                       |
| HA-13 | 04/11/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.31                    | 12.25                    | 12.25                       |
| HA-13 | 04/15/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.93                    | 12.63                    | 12.63                       |
| HA-13 | 04/17/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.32                    | 12.24                    | 12.24                       |
| HA-13 | 04/22/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.52                    | 12.04                    | 12.04                       |
| HA-13 | 04/25/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 7.81                    | 11.75                    | 11.75                       |
| HA-13 | 05/02/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 8.04                    | 11.52                    | 11.52                       |
| HA-13 | 05/06/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 8.13                    | 11.43                    | 11.43                       |
| HA-13 | 05/09/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 8.36                    | 11.20                    | 11.20                       |
| HA-13 | 05/23/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 8.93                    | 10.63                    | 10.63                       |
| HA-13 | 05/28/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 8.98                    | 10.58                    | 10.58                       |
| HA-13 | 06/13/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 6.08                    | 13.48                    | 13.48                       |
| HA-13 | 06/18/03 | 19.56                      | N/A                      | N/A                          | N/A                  | 9.12                    | 10.44                    | 10.44                       |
| HA-14 | 11/24/02 | 20.02                      | N/A                      | N/A                          | N/A                  | 9.67                    | 10.35                    | 10.35                       |
| HA-15 | 01/31/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 5.56                    | 13.56                    | 13.56                       |
| HA-15 | 02/07/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 5.31                    | 13.81                    | 13.81                       |
| HA-15 | 02/12/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 5.64                    | 13.48                    | 13.48                       |
| HA-15 | 02/18/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.09                    | 13.03                    | 13.03                       |
| HA-15 | 02/21/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 7.92                    | 11.20                    | 11.20                       |
| HA-15 | 02/24/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.04                    | 13.08                    | 13.08                       |
| HA-15 | 03/04/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.62                    | 12.50                    | 12.50                       |
| HA-15 | 03/12/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.02                    | 13.10                    | 13.10                       |
| HA-15 | 03/26/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 5.46                    | 13.66                    | 13.66                       |
| HA-15 | 03/28/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 5.96                    | 13.16                    | 13.16                       |
| HA-15 | 04/02/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 5.91                    | 13.21                    | 13.21                       |
| HA-15 | 04/04/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.22                    | 12.90                    | 12.90                       |
| HA-15 | 04/08/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.42                    | 12.70                    | 12.70                       |
| HA-15 | 04/11/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.63                    | 12.49                    | 12.49                       |
| HA-15 | 04/15/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.28                    | 12.84                    | 12.84                       |
| HA-15 | 04/17/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.49                    | 12.63                    | 12.63                       |
| HA-15 | 04/22/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 6.66                    | 12.46                    | 12.46                       |
| HA-15 | 04/25/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 7.07                    | 12.05                    | 12.05                       |
| HA-15 | 05/02/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 7.06                    | 12.06                    | 12.06                       |
| HA-15 | 05/06/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 7.32                    | 11.80                    | 11.80                       |
| HA-15 | 05/09/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 7.52                    | 11.60                    | 11.60                       |
| HA-15 | 05/23/03 | 19.12                      | N/A                      | N/A                          | N/A                  | 7.83                    | 11.29                    | 11.29                       |
| HA-15 | 05/28/03 | 19.12                      | N/A                      | N/A                          | N/A                  | Dry                     | Dry                      | Dry                         |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well  | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|-------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| HA-20 | 02/11/03 | 20.01                      | 6.18                     | 13.83                        | 2.39                 | 8.57                    | 11.44                    | 13.07                       |
| HA-20 | 02/18/03 | 20.01                      | 7.40                     | 12.61                        | 0.88                 | 8.28                    | 11.73                    | 12.33                       |
| HA-20 | 02/21/03 | 20.01                      | 7.34                     | 12.67                        | 0.73                 | 8.07                    | 11.94                    | 12.44                       |
| HA-20 | 02/26/03 | 20.01                      | 6.09                     | 13.92                        | 0.11                 | 6.20                    | 13.81                    | 13.88                       |
| HA-20 | 03/04/03 | 20.01                      | 7.47                     | 12.54                        | 1.87                 | 9.34                    | 10.67                    | 11.94                       |
| HA-20 | 03/12/03 | 20.01                      | 7.05                     | 12.96                        | 2.63                 | 9.68                    | 10.33                    | 12.12                       |
| HA-20 | 03/14/03 | 20.01                      | 7.14                     | 12.87                        | 2.27                 | 9.41                    | 10.60                    | 12.14                       |
| HA-20 | 03/26/03 | 20.01                      | 5.64                     | 14.37                        | 3.93                 | 9.57                    | 10.44                    | 13.11                       |
| HA-20 | 03/28/03 | 20.01                      | 6.91                     | 13.10                        | 2.50                 | 9.41                    | 10.60                    | 12.30                       |
| HA-20 | 04/02/03 | 20.01                      | 6.47                     | 13.54                        | 2.65                 | 9.12                    | 10.89                    | 12.69                       |
| HA-20 | 04/04/03 | 20.01                      | 7.01                     | 13.00                        | 2.13                 | 9.14                    | 10.87                    | 12.32                       |
| HA-20 | 04/08/03 | 20.01                      | 7.16                     | 12.85                        | 1.49                 | 8.65                    | 11.36                    | 12.37                       |
| HA-20 | 04/11/03 | 20.01                      | 7.21                     | 12.80                        | 1.66                 | 8.87                    | 11.14                    | 12.27                       |
| HA-20 | 04/15/03 | 20.01                      | 6.91                     | 13.10                        | 0.40                 | 7.31                    | 12.70                    | 12.97                       |
| HA-20 | 04/17/03 | 20.01                      | 7.71                     | 12.30                        | 1.00                 | 8.71                    | 11.30                    | 11.98                       |
| HA-20 | 04/22/03 | 20.01                      | 7.28                     | 12.73                        | 1.39                 | 8.67                    | 11.34                    | 12.29                       |
| HA-20 | 04/25/03 | 20.01                      | 7.72                     | 12.29                        | 1.24                 | 8.96                    | 11.05                    | 11.89                       |
| HA-20 | 05/02/03 | 20.01                      | 7.46                     | 12.55                        | 2.41                 | 9.87                    | 10.14                    | 11.78                       |
| HA-20 | 05/06/03 | 20.01                      | 7.38                     | 12.63                        | 2.49                 | 9.87                    | 10.14                    | 11.83                       |
| HA-20 | 05/09/03 | 20.01                      | 8.05                     | 11.96                        | 1.95                 | 10.00                   | 10.01                    | 11.34                       |
| HA-20 | 05/23/03 | 20.01                      | 8.69                     | 11.32                        | 1.76                 | 10.45                   | 9.56                     | 10.76                       |
| HA-20 | 05/28/03 | 20.01                      | 8.50                     | 11.51                        | 1.49                 | 9.99                    | 10.02                    | 11.03                       |
| HA-20 | 06/13/03 | 20.01                      | 8.75                     | 11.26                        | 1.46                 | 10.21                   | 9.80                     | 10.79                       |
| HA-20 | 06/18/03 | 20.01                      | 8.68                     | 11.33                        | 1.57                 | 10.25                   | 9.76                     | 10.83                       |
| LAI-1 | 01/17/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 4.17                    | 14.82                    | 14.82                       |
| LAI-1 | 01/20/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 4.18                    | 14.81                    | 14.81                       |
| LAI-1 | 01/31/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 4.28                    | 14.71                    | 14.71                       |
| LAI-1 | 02/07/03 | 18.99                      | 4.06                     | 14.93                        | 0.48                 | 4.54                    | 14.45                    | 14.78                       |
| LAI-1 | 02/12/03 | 18.99                      | 4.38                     | 14.61                        | 1.08                 | 5.46                    | 13.53                    | 14.26                       |
| LAI-1 | 02/18/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.40                    | 13.59                    | 13.59                       |
| LAI-1 | 02/21/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.52                    | 13.47                    | 13.47                       |
| LAI-1 | 02/24/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.96                    | 13.03                    | 13.03                       |
| LAI-1 | 03/03/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.76                    | 13.23                    | 13.23                       |
| LAI-1 | 03/12/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.48                    | 13.51                    | 13.51                       |
| LAI-1 | 03/14/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.09                    | 13.90                    | 13.90                       |
| LAI-1 | 03/26/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 4.76                    | 14.23                    | 14.23                       |
| LAI-1 | 03/28/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 4.86                    | 14.13                    | 14.13                       |
| LAI-1 | 04/02/03 | 18.99                      | 5.21                     | 13.78                        | 0.01                 | 5.22                    | 13.77                    | 13.78                       |
| LAI-1 | 04/04/03 | 18.99                      | 5.19                     | 13.80                        | 0.01                 | 5.20                    | 13.79                    | 13.80                       |
| LAI-1 | 04/08/03 | 18.99                      | 5.67                     | 13.32                        | 0.01                 | 5.68                    | 13.31                    | 13.32                       |
| LAI-1 | 04/11/03 | 18.99                      | 5.07                     | 13.92                        | 0.01                 | 5.08                    | 13.91                    | 13.92                       |
| LAI-1 | 04/15/03 | 18.99                      | 4.62                     | 14.37                        | 0.01                 | 4.63                    | 14.36                    | 14.37                       |
| LAI-1 | 04/17/03 | 18.99                      | 6.14                     | 12.85                        | 0.01                 | 6.15                    | 12.84                    | 12.85                       |
| LAI-1 | 04/22/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.21                    | 13.78                    | 13.78                       |
| LAI-1 | 04/25/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.43                    | 13.56                    | 13.56                       |
| LAI-1 | 05/02/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.53                    | 13.46                    | 13.46                       |
| LAI-1 | 05/06/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 5.66                    | 13.33                    | 13.33                       |
| LAI-1 | 05/09/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 6.15                    | 12.84                    | 12.84                       |
| LAI-1 | 05/16/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 6.40                    | 12.59                    | 12.59                       |
| LAI-1 | 05/23/03 | 18.99                      | 6.50                     | 12.49                        | 0.01                 | 6.51                    | 12.48                    | 12.49                       |
| LAI-1 | 05/28/03 | 18.99                      | 6.45                     | 12.54                        | 0.01                 | 6.46                    | 12.53                    | 12.54                       |
| LAI-1 | 06/13/03 | 18.99                      | 6.79                     | 12.20                        | 0.01                 | 6.80                    | 12.19                    | 12.20                       |
| LAI-1 | 06/18/03 | 18.99                      | N/A                      | N/A                          | N/A                  | 6.78                    | 12.21                    | 12.21                       |
| LAI-2 | 01/17/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.14                    | 14.81                    | 14.81                       |
| LAI-2 | 01/20/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.25                    | 14.70                    | 14.70                       |
| LAI-2 | 01/31/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.55                    | 14.40                    | 14.40                       |
| LAI-2 | 02/07/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.41                    | 14.54                    | 14.54                       |
| LAI-2 | 02/12/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.71                    | 14.24                    | 14.24                       |
| LAI-2 | 02/18/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.44                    | 13.51                    | 13.51                       |
| LAI-2 | 02/21/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.61                    | 13.34                    | 13.34                       |
| LAI-2 | 02/24/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.89                    | 13.06                    | 13.06                       |
| LAI-2 | 03/03/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.17                    | 13.78                    | 13.78                       |
| LAI-2 | 03/12/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.37                    | 13.58                    | 13.58                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well  | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|-------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-2 | 03/14/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.24                    | 13.71                    | 13.71                       |
| LAI-2 | 03/26/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.61                    | 14.34                    | 14.34                       |
| LAI-2 | 03/28/02 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.72                    | 14.23                    | 14.23                       |
| LAI-2 | 04/02/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.51                    | 13.44                    | 13.44                       |
| LAI-2 | 04/04/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.48                    | 13.47                    | 13.47                       |
| LAI-2 | 04/08/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.55                    | 13.40                    | 13.40                       |
| LAI-2 | 04/11/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.19                    | 13.76                    | 13.76                       |
| LAI-2 | 04/15/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 4.80                    | 14.15                    | 14.15                       |
| LAI-2 | 04/17/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.96                    | 12.99                    | 12.99                       |
| LAI-2 | 04/22/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.33                    | 13.62                    | 13.62                       |
| LAI-2 | 04/25/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.49                    | 13.46                    | 13.46                       |
| LAI-2 | 05/02/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.78                    | 13.17                    | 13.17                       |
| LAI-2 | 05/06/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 5.42                    | 13.53                    | 13.53                       |
| LAI-2 | 05/09/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 6.30                    | 12.65                    | 12.65                       |
| LAI-2 | 05/16/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 6.54                    | 12.41                    | 12.41                       |
| LAI-2 | 05/23/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 6.63                    | 12.32                    | 12.32                       |
| LAI-2 | 05/28/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 6.51                    | 12.44                    | 12.44                       |
| LAI-2 | 06/13/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 6.91                    | 12.04                    | 12.04                       |
| LAI-2 | 06/18/03 | 18.95                      | N/A                      | N/A                          | N/A                  | 6.86                    | 12.09                    | 12.09                       |
| LAI-3 | 01/17/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.37                    | 14.43                    | 14.43                       |
| LAI-3 | 01/20/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.28                    | 14.52                    | 14.52                       |
| LAI-3 | 01/31/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.94                    | 13.86                    | 13.86                       |
| LAI-3 | 02/07/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.41                    | 14.39                    | 14.39                       |
| LAI-3 | 02/12/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.70                    | 14.10                    | 14.10                       |
| LAI-3 | 02/18/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.21                    | 13.59                    | 13.59                       |
| LAI-3 | 02/21/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.58                    | 13.22                    | 13.22                       |
| LAI-3 | 02/24/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.66                    | 13.14                    | 13.14                       |
| LAI-3 | 03/03/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.13                    | 13.67                    | 13.67                       |
| LAI-3 | 03/12/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.32                    | 13.48                    | 13.48                       |
| LAI-3 | 03/14/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.16                    | 13.64                    | 13.64                       |
| LAI-3 | 03/26/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.65                    | 14.15                    | 14.15                       |
| LAI-3 | 03/28/02 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.75                    | 14.05                    | 14.05                       |
| LAI-3 | 04/02/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.57                    | 13.23                    | 13.23                       |
| LAI-3 | 04/04/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.53                    | 13.27                    | 13.27                       |
| LAI-3 | 04/08/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.69                    | 13.11                    | 13.11                       |
| LAI-3 | 04/11/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.15                    | 13.65                    | 13.65                       |
| LAI-3 | 04/15/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 4.75                    | 14.05                    | 14.05                       |
| LAI-3 | 04/17/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.08                    | 12.72                    | 12.72                       |
| LAI-3 | 04/22/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.27                    | 13.53                    | 13.53                       |
| LAI-3 | 04/25/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.45                    | 13.35                    | 13.35                       |
| LAI-3 | 05/02/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.76                    | 13.04                    | 13.04                       |
| LAI-3 | 05/06/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 5.61                    | 13.19                    | 13.19                       |
| LAI-3 | 05/09/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.30                    | 12.50                    | 12.50                       |
| LAI-3 | 05/16/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.53                    | 12.27                    | 12.27                       |
| LAI-3 | 05/23/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.57                    | 12.23                    | 12.23                       |
| LAI-3 | 05/28/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.44                    | 12.36                    | 12.36                       |
| LAI-3 | 06/13/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.85                    | 11.95                    | 11.95                       |
| LAI-3 | 06/18/03 | 18.80                      | N/A                      | N/A                          | N/A                  | 6.81                    | 11.99                    | 11.99                       |
| LAI-4 | 01/22/03 | 19.58                      | 6.87                     | 12.71                        | 0.43                 | 7.30                    | 12.28                    | 12.57                       |
| LAI-4 | 01/23/03 | 19.58                      | 7.48                     | 12.10                        | 0.20                 | 7.68                    | 11.90                    | 12.04                       |
| LAI-4 | 01/24/03 | 19.58                      | 6.72                     | 12.86                        | 0.67                 | 7.39                    | 12.19                    | 12.65                       |
| LAI-4 | 01/27/03 | 19.58                      | 4.47                     | 15.11                        | 4.67                 | 9.14                    | 10.44                    | 13.62                       |
| LAI-4 | 01/28/03 | 19.58                      | 4.97                     | 14.61                        | 4.43                 | 9.40                    | 10.18                    | 13.19                       |
| LAI-4 | 01/29/03 | 19.58                      | 7.40                     | 12.18                        | 0.05                 | 7.45                    | 12.13                    | 12.18                       |
| LAI-4 | 01/30/03 | 19.58                      | 7.88                     | 11.70                        | 0.06                 | 7.94                    | 11.64                    | 11.68                       |
| LAI-4 | 02/03/03 | 19.58                      | 6.25                     | 13.33                        | 2.16                 | 8.41                    | 11.17                    | 12.64                       |
| LAI-4 | 02/06/03 | 21.03                      | 6.28                     | 14.75                        | 1.04                 | 7.32                    | 13.71                    | 14.42                       |
| LAI-4 | 02/11/03 | 21.03                      | 7.54                     | 13.49                        | 1.44                 | 8.98                    | 12.05                    | 13.03                       |
| LAI-4 | 02/18/03 | 21.03                      | 9.28                     | 11.75                        | 0.17                 | 9.45                    | 11.58                    | 11.70                       |
| LAI-4 | 02/21/03 | 21.03                      | 9.11                     | 11.92                        | 0.09                 | 9.20                    | 11.83                    | 11.89                       |
| LAI-4 | 02/26/03 | 21.03                      | 8.37                     | 12.66                        | 1.35                 | 9.72                    | 11.31                    | 12.23                       |
| LAI-4 | 03/03/03 | 21.03                      | 8.57                     | 12.46                        | 0.86                 | 9.43                    | 11.60                    | 12.18                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well  | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|-------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-4 | 03/12/03 | 21.03                      | 8.80                     | 12.23                        | 0.14                 | 8.94                    | 12.09                    | 12.19                       |
| LAI-4 | 03/14/03 | 21.03                      | 8.68                     | 12.35                        | 0.14                 | 8.82                    | 12.21                    | 12.31                       |
| LAI-4 | 03/26/03 | 21.03                      | N/A                      | N/A                          | N/A                  | 9.06                    | 11.97                    | 11.97                       |
| LAI-4 | 03/28/02 | 21.03                      | N/A                      | N/A                          | N/A                  | 9.28                    | 11.75                    | 11.75                       |
| LAI-4 | 04/02/03 | 21.03                      | 8.21                     | 12.82                        | 0.08                 | 8.29                    | 12.74                    | 12.79                       |
| LAI-4 | 04/04/03 | 21.03                      | 8.58                     | 12.45                        | 0.04                 | 8.62                    | 12.41                    | 12.44                       |
| LAI-4 | 04/08/03 | 21.03                      | 8.51                     | 12.52                        | 0.13                 | 8.64                    | 12.39                    | 12.48                       |
| LAI-4 | 04/11/03 | 21.03                      | 8.78                     | 12.25                        | 0.14                 | 8.92                    | 12.11                    | 12.21                       |
| LAI-4 | 04/15/03 | 21.03                      | 7.86                     | 13.17                        | 0.95                 | 8.81                    | 12.22                    | 12.87                       |
| LAI-4 | 04/17/03 | 21.03                      | 9.19                     | 11.84                        | 0.02                 | 9.21                    | 11.82                    | 11.83                       |
| LAI-4 | 04/22/03 | 21.03                      | 6.61                     | 14.42                        | 0.19                 | 6.80                    | 14.23                    | 14.36                       |
| LAI-4 | 04/25/03 | 21.03                      | 8.96                     | 12.07                        | 0.25                 | 9.21                    | 11.82                    | 11.99                       |
| LAI-4 | 05/02/03 | 21.03                      | 9.06                     | 11.97                        | 0.10                 | 9.16                    | 11.87                    | 11.94                       |
| LAI-4 | 05/06/03 | 21.03                      | 8.56                     | 12.47                        | 1.85                 | 10.41                   | 10.62                    | 11.88                       |
| LAI-4 | 05/09/03 | 21.03                      | 10.96                    | 10.07                        | 0.02                 | 10.98                   | 10.05                    | 10.06                       |
| LAI-4 | 05/23/03 | 21.03                      | 10.17                    | 10.86                        | 0.02                 | 10.19                   | 10.84                    | 10.85                       |
| LAI-4 | 05/28/03 | 21.03                      | 9.81                     | 11.22                        | 0.03                 | 9.84                    | 11.19                    | 11.21                       |
| LAI-4 | 06/13/03 | 21.03                      | 10.09                    | 10.94                        | 0.03                 | 10.12                   | 10.91                    | 10.93                       |
| LAI-4 | 06/18/03 | 21.03                      | 10.05                    | 10.98                        | 0.08                 | 10.13                   | 10.90                    | 10.95                       |
| LAI-5 | 01/22/03 | 19.92                      | 6.55                     | 13.37                        | 4.18                 | 10.73                   | 9.19                     | 12.03                       |
| LAI-5 | 01/23/03 | 19.92                      | 6.54                     | 13.38                        | 4.02                 | 10.56                   | 9.36                     | 12.09                       |
| LAI-5 | 01/24/03 | 19.92                      | 6.40                     | 13.52                        | 3.92                 | 10.32                   | 9.60                     | 12.27                       |
| LAI-5 | 01/27/03 | 19.92                      | 5.51                     | 14.41                        | 3.66                 | 9.17                    | 10.75                    | 13.24                       |
| LAI-5 | 01/28/03 | 19.92                      | 6.85                     | 13.07                        | 0.55                 | 7.40                    | 12.52                    | 12.89                       |
| LAI-5 | 01/29/03 | 19.92                      | 6.20                     | 13.72                        | 4.20                 | 10.40                   | 9.52                     | 12.38                       |
| LAI-5 | 01/30/03 | 19.92                      | 8.31                     | 13.61                        | 4.04                 | 10.35                   | 9.57                     | 12.32                       |
| LAI-5 | 02/03/03 | 19.92                      | 6.36                     | 13.56                        | 3.29                 | 9.65                    | 10.27                    | 12.51                       |
| LAI-5 | 02/06/03 | 21.40                      | 7.18                     | 14.22                        | 3.57                 | 10.75                   | 10.65                    | 13.08                       |
| LAI-5 | 02/11/03 | 21.40                      | 7.53                     | 13.87                        | 3.64                 | 11.17                   | 10.23                    | 12.71                       |
| LAI-5 | 02/18/03 | 21.40                      | 6.50                     | 14.90                        | 4.75                 | 11.25                   | 10.15                    | 13.38                       |
| LAI-5 | 02/21/03 | 21.40                      | 8.21                     | 13.19                        | 3.30                 | 11.51                   | 9.89                     | 12.13                       |
| LAI-5 | 02/26/03 | 21.40                      | 7.78                     | 13.62                        | 3.23                 | 11.01                   | 10.39                    | 12.59                       |
| LAI-5 | 03/04/03 | 21.40                      | 7.78                     | 13.62                        | 3.23                 | 11.01                   | 10.39                    | 12.59                       |
| LAI-5 | 03/12/03 | 21.40                      | 8.32                     | 13.08                        | 3.36                 | 11.68                   | 9.72                     | 12.00                       |
| LAI-5 | 03/14/03 | 21.40                      | 8.36                     | 13.04                        | 3.08                 | 11.44                   | 9.96                     | 12.05                       |
| LAI-5 | 03/26/03 | 21.40                      | N/A                      | N/A                          | N/A                  | 10.01                   | 11.39                    | 11.39                       |
| LAI-5 | 03/28/02 | 21.40                      | N/A                      | N/A                          | N/A                  | 9.96                    | 11.44                    | 11.44                       |
| LAI-5 | 04/02/03 | 21.40                      | 8.52                     | 12.88                        | 0.83                 | 9.35                    | 12.05                    | 12.61                       |
| LAI-5 | 04/04/03 | 21.40                      | 8.90                     | 12.50                        | 0.68                 | 9.58                    | 11.82                    | 12.28                       |
| LAI-5 | 04/08/03 | 21.40                      | 8.96                     | 12.44                        | 0.55                 | 9.51                    | 11.89                    | 12.26                       |
| LAI-5 | 04/11/03 | 21.40                      | 8.72                     | 12.68                        | 1.62                 | 10.34                   | 11.06                    | 12.16                       |
| LAI-5 | 04/15/03 | 21.40                      | 8.01                     | 13.39                        | 2.43                 | 10.44                   | 10.96                    | 12.61                       |
| LAI-5 | 04/17/03 | 21.40                      | 9.60                     | 11.80                        | 0.16                 | 9.76                    | 11.64                    | 11.75                       |
| LAI-5 | 04/22/03 | 21.40                      | 9.04                     | 12.36                        | 0.39                 | 9.43                    | 11.97                    | 12.24                       |
| LAI-5 | 04/25/03 | 21.40                      | 9.05                     | 12.35                        | 2.10                 | 11.15                   | 10.25                    | 11.68                       |
| LAI-5 | 05/02/03 | 21.40                      | 9.48                     | 11.92                        | 0.24                 | 9.72                    | 11.68                    | 11.84                       |
| LAI-5 | 05/06/03 | 21.40                      | 8.94                     | 12.46                        | 2.24                 | 11.18                   | 10.22                    | 11.74                       |
| LAI-5 | 05/09/03 | 21.40                      | 10.28                    | 11.12                        | 0.07                 | 10.35                   | 11.05                    | 11.10                       |
| LAI-5 | 05/23/03 | 21.40                      | 10.65                    | 10.75                        | 0.02                 | 10.67                   | 10.73                    | 10.74                       |
| LAI-5 | 05/28/03 | 21.40                      | 10.36                    | 11.04                        | 0.09                 | 10.45                   | 10.85                    | 11.01                       |
| LAI-5 | 06/13/03 | 21.40                      | 10.58                    | 10.82                        | 0.05                 | 10.63                   | 10.77                    | 10.80                       |
| LAI-5 | 06/18/03 | 21.40                      | 10.51                    | 10.89                        | 0.01                 | 10.52                   | 10.88                    | 10.89                       |
| LAI-6 | 01/22/03 | 19.78                      | 6.67                     | 13.11                        | 3.78                 | 10.45                   | 9.33                     | 11.90                       |
| LAI-6 | 01/23/03 | 19.78                      | 6.45                     | 13.33                        | 3.85                 | 10.30                   | 9.48                     | 12.10                       |
| LAI-6 | 01/24/03 | 19.78                      | 6.32                     | 13.46                        | 4.00                 | 10.32                   | 9.46                     | 12.18                       |
| LAI-6 | 01/27/03 | 19.78                      | 5.68                     | 14.10                        | 3.37                 | 9.05                    | 10.73                    | 13.02                       |
| LAI-6 | 01/28/03 | 19.78                      | 6.91                     | 12.87                        | 0.93                 | 7.84                    | 11.94                    | 12.57                       |
| LAI-6 | 01/29/03 | 19.78                      | 6.51                     | 13.27                        | 2.53                 | 9.04                    | 10.74                    | 12.46                       |
| LAI-6 | 01/30/03 | 19.78                      | 6.36                     | 13.42                        | 3.60                 | 9.96                    | 9.82                     | 12.27                       |
| LAI-6 | 02/03/03 | 19.78                      | 6.27                     | 13.51                        | 3.69                 | 9.96                    | 9.82                     | 12.33                       |
| LAI-6 | 02/06/03 | 19.78                      | 5.79                     | 13.99                        | 3.79                 | 9.58                    | 10.20                    | 12.78                       |
| LAI-6 | 02/11/03 | 19.78                      | 6.03                     | 13.75                        | 3.61                 | 9.64                    | 10.14                    | 12.59                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well  | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|-------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-6 | 02/18/03 | 19.78                      | 7.98                     | 11.80                        | 0.42                 | 8.40                    | 11.38                    | 11.67                       |
| LAI-6 | 02/21/03 | 19.78                      | 7.57                     | 12.21                        | 0.54                 | 8.11                    | 11.67                    | 12.04                       |
| LAI-6 | 02/26/03 | 19.78                      | 7.15                     | 12.63                        | 0.47                 | 7.62                    | 12.16                    | 12.48                       |
| LAI-6 | 03/03/03 | 19.78                      | 8.01                     | 11.77                        | 0.45                 | 8.46                    | 11.32                    | 11.63                       |
| LAI-6 | 03/12/03 | 19.78                      | 7.46                     | 12.32                        | 0.23                 | 7.69                    | 12.09                    | 12.25                       |
| LAI-6 | 03/14/03 | 19.78                      | 7.72                     | 12.06                        | 0.19                 | 7.91                    | 11.87                    | 12.00                       |
| LAI-6 | 03/26/03 | 19.78                      | 6.37                     | 13.41                        | 1.45                 | 7.82                    | 11.96                    | 12.95                       |
| LAI-6 | 03/28/02 | 19.78                      | 7.10                     | 12.68                        | 1.65                 | 8.75                    | 11.03                    | 12.15                       |
| LAI-6 | 04/02/03 | 19.78                      | 6.65                     | 13.13                        | 2.15                 | 8.80                    | 10.98                    | 12.44                       |
| LAI-6 | 04/04/03 | 19.78                      | 7.06                     | 12.72                        | 1.74                 | 8.80                    | 10.98                    | 12.16                       |
| LAI-6 | 04/08/03 | 19.78                      | 7.13                     | 12.65                        | 1.70                 | 8.83                    | 10.95                    | 12.11                       |
| LAI-6 | 04/11/03 | 19.78                      | 7.22                     | 12.56                        | 0.88                 | 8.10                    | 11.68                    | 12.28                       |
| LAI-6 | 04/15/03 | 19.78                      | 6.56                     | 13.22                        | 1.82                 | 8.38                    | 11.40                    | 12.64                       |
| LAI-6 | 04/17/03 | 19.78                      | 7.61                     | 12.17                        | 1.74                 | 9.35                    | 10.43                    | 11.61                       |
| LAI-6 | 04/22/03 | 19.78                      | 7.16                     | 12.62                        | 1.65                 | 8.81                    | 10.97                    | 12.09                       |
| LAI-6 | 04/25/03 | 19.78                      | 7.70                     | 12.08                        | 0.83                 | 8.53                    | 11.25                    | 11.81                       |
| LAI-6 | 05/02/03 | 19.78                      | 7.61                     | 12.17                        | 1.65                 | 9.26                    | 10.52                    | 11.64                       |
| LAI-6 | 05/06/03 | 19.78                      | 8.45                     | 11.33                        | 0.99                 | 9.44                    | 10.34                    | 11.01                       |
| LAI-6 | 05/09/03 | 19.78                      | 8.00                     | 11.78                        | 1.95                 | 9.95                    | 9.83                     | 11.16                       |
| LAI-6 | 05/23/03 | 19.78                      | 8.41                     | 11.37                        | 2.00                 | 10.41                   | 9.37                     | 10.73                       |
| LAI-6 | 05/28/03 | 19.78                      | 8.23                     | 11.55                        | 1.78                 | 10.01                   | 9.77                     | 10.98                       |
| LAI-6 | 06/13/03 | 19.78                      | 8.50                     | 11.28                        | 2.11                 | 10.61                   | 9.17                     | 10.60                       |
| LAI-6 | 06/18/03 | 19.78                      | 8.46                     | 11.32                        | 2.10                 | 10.56                   | 9.22                     | 10.65                       |
|       |          |                            |                          |                              |                      |                         |                          |                             |
| LAI-7 | 01/22/03 | 19.76                      | 8.10                     | 11.66                        | 1.10                 | 9.20                    | 10.56                    | 11.31                       |
| LAI-7 | 01/23/03 | 19.76                      | 7.58                     | 12.18                        | 1.07                 | 8.65                    | 11.11                    | 11.84                       |
| LAI-7 | 01/24/03 | 19.76                      | 6.99                     | 12.77                        | 2.36                 | 9.35                    | 10.41                    | 12.01                       |
| LAI-7 | 01/27/03 | 19.76                      | 5.18                     | 14.58                        | 5.30                 | 10.48                   | 9.28                     | 12.88                       |
| LAI-7 | 01/28/03 | 19.76                      | 7.08                     | 12.68                        | 0.90                 | 7.98                    | 11.78                    | 12.39                       |
| LAI-7 | 01/29/03 | 19.76                      | 7.41                     | 12.35                        | 0.44                 | 7.85                    | 11.91                    | 12.21                       |
| LAI-7 | 01/30/03 | 19.76                      | 8.11                     | 11.65                        | 0.26                 | 8.37                    | 11.39                    | 11.57                       |
| LAI-7 | 02/03/03 | 19.76                      | 8.90                     | 10.86                        | 0.06                 | 8.96                    | 10.80                    | 10.84                       |
| LAI-7 | 02/06/03 | 21.22                      | 7.82                     | 13.40                        | 1.56                 | 9.38                    | 11.84                    | 12.90                       |
| LAI-7 | 02/11/03 | 21.22                      | 8.23                     | 12.99                        | 1.56                 | 9.79                    | 11.43                    | 12.49                       |
| LAI-7 | 02/18/03 | 21.22                      | 9.45                     | 11.77                        | 0.20                 | 9.65                    | 11.57                    | 11.71                       |
| LAI-7 | 02/21/03 | 21.22                      | 8.57                     | 12.65                        | 2.34                 | 10.91                   | 10.31                    | 11.90                       |
| LAI-7 | 02/26/03 | 21.22                      | 8.53                     | 12.69                        | 3.18                 | 11.71                   | 9.51                     | 11.67                       |
| LAI-7 | 03/03/03 | 21.22                      | 9.53                     | 11.69                        | 0.18                 | 9.71                    | 11.51                    | 11.63                       |
| LAI-7 | 03/12/03 | 21.22                      | 8.99                     | 12.23                        | 0.19                 | 9.18                    | 12.04                    | 12.17                       |
| LAI-7 | 03/26/03 | 21.22                      | N/A                      | N/A                          | N/A                  | 9.97                    | 11.25                    | 11.25                       |
| LAI-7 | 03/14/03 | 21.22                      | 9.18                     | 12.04                        | 0.18                 | 9.36                    | 11.86                    | 11.98                       |
| LAI-7 | 03/28/02 | 21.22                      | N/A                      | N/A                          | N/A                  | 9.95                    | 11.27                    | 11.27                       |
| LAI-7 | 04/02/03 | 21.22                      | 8.79                     | 12.43                        | 0.08                 | 8.87                    | 12.35                    | 12.40                       |
| LAI-7 | 04/04/03 | 21.22                      | 9.04                     | 12.18                        | 0.08                 | 9.12                    | 12.10                    | 12.15                       |
| LAI-7 | 04/08/03 | 21.22                      | 8.53                     | 12.69                        | 0.10                 | 8.63                    | 12.59                    | 12.66                       |
| LAI-7 | 04/11/03 | 21.22                      | 9.06                     | 12.16                        | 0.17                 | 9.23                    | 11.99                    | 12.11                       |
| LAI-7 | 04/15/03 | 21.22                      | 8.41                     | 12.81                        | 0.94                 | 9.35                    | 11.87                    | 12.51                       |
| LAI-7 | 04/17/03 | 21.22                      | 9.55                     | 11.67                        | 0.17                 | 9.72                    | 11.50                    | 11.62                       |
| LAI-7 | 04/22/03 | 21.22                      | 9.03                     | 12.19                        | 0.34                 | 9.37                    | 11.85                    | 12.08                       |
| LAI-7 | 04/25/03 | 21.22                      | 9.00                     | 12.22                        | 0.31                 | 9.31                    | 11.91                    | 12.12                       |
| LAI-7 | 05/02/03 | 21.22                      | 9.60                     | 11.62                        | 0.05                 | 9.65                    | 11.57                    | 11.60                       |
| LAI-7 | 05/06/03 | 21.22                      | 9.17                     | 12.05                        | 1.19                 | 10.36                   | 10.86                    | 11.67                       |
| LAI-7 | 05/09/03 | 21.22                      | 10.04                    | 11.18                        | 0.06                 | 10.10                   | 11.12                    | 11.16                       |
| LAI-7 | 05/23/03 | 21.22                      | 10.60                    | 10.62                        | 0.02                 | 10.62                   | 10.60                    | 10.61                       |
| LAI-7 | 05/28/03 | 21.22                      | 10.21                    | 11.01                        | 0.01                 | 10.22                   | 11.00                    | 11.01                       |
| LAI-7 | 06/13/03 | 21.22                      | 9.90                     | 11.32                        | 0.55                 | 10.45                   | 10.77                    | 11.14                       |
| LAI-7 | 06/18/03 | 21.22                      | 10.57                    | 10.65                        | 0.02                 | 10.59                   | 10.83                    | 10.64                       |
|       |          |                            |                          |                              |                      |                         |                          |                             |
| LAI-8 | 01/22/03 | 20.02                      | 8.10                     | 11.92                        | 0.91                 | 9.01                    | 11.01                    | 11.63                       |
| LAI-8 | 01/23/03 | 20.02                      | 7.72                     | 12.30                        | 0.88                 | 8.60                    | 11.42                    | 12.02                       |
| LAI-8 | 01/24/03 | 20.02                      | 7.50                     | 12.52                        | 1.55                 | 9.05                    | 10.97                    | 12.02                       |
| LAI-8 | 01/27/03 | 20.02                      | 5.34                     | 14.68                        | 5.08                 | 10.42                   | 9.60                     | 13.05                       |
| LAI-8 | 01/28/03 | 20.02                      | 6.90                     | 13.12                        | 1.75                 | 8.65                    | 11.37                    | 12.56                       |
| LAI-8 | 01/29/03 | 20.02                      | 7.99                     | 12.03                        | 0.31                 | 8.30                    | 11.72                    | 11.93                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well   | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|--------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-8  | 01/30/03 | 20.02                      | 7.90                     | 12.12                        | 0.69                 | 8.59                    | 11.43                    | 11.90                       |
| LAI-8  | 02/03/03 | 20.02                      | 8.47                     | 11.55                        | 0.01                 | 8.48                    | 11.54                    | 11.55                       |
| LAI-8  | 02/06/03 | 21.44                      | 6.46                     | 14.98                        | 2.95                 | 9.41                    | 12.03                    | 14.04                       |
| LAI-8  | 02/11/03 | 21.44                      | 8.45                     | 12.99                        | 1.22                 | 9.67                    | 11.77                    | 12.60                       |
| LAI-8  | 02/18/03 | 21.44                      | 6.85                     | 14.59                        | 5.75                 | 12.60                   | 8.84                     | 12.75                       |
| LAI-8  | 02/21/03 | 21.44                      | 8.49                     | 12.95                        | 3.16                 | 11.65                   | 9.79                     | 11.94                       |
| LAI-8  | 02/26/03 | 21.44                      | 7.92                     | 13.52                        | 4.02                 | 11.94                   | 9.50                     | 12.23                       |
| LAI-8  | 03/04/03 | 21.44                      | 7.46                     | 13.98                        | 5.02                 | 12.48                   | 8.96                     | 12.37                       |
| LAI-8  | 03/12/03 | 21.44                      | 8.67                     | 12.77                        | 3.03                 | 11.70                   | 9.74                     | 11.80                       |
| LAI-8  | 03/14/03 | 21.44                      | 8.88                     | 12.56                        | 2.53                 | 11.41                   | 10.03                    | 11.75                       |
| LAI-8  | 03/26/03 | 21.44                      | 8.63                     | 12.81                        | 0.88                 | 9.51                    | 11.93                    | 12.53                       |
| LAI-8  | 03/28/02 | 21.44                      | N/A                      | N/A                          | N/A                  | 9.48                    | 11.96                    | 11.96                       |
| LAI-8  | 04/02/03 | 21.44                      | 8.97                     | 12.47                        | 0.14                 | 9.11                    | 12.33                    | 12.43                       |
| LAI-8  | 04/04/03 | 21.44                      | 9.32                     | 12.12                        | 0.04                 | 9.36                    | 12.08                    | 12.11                       |
| LAI-8  | 04/08/03 | 21.44                      | 9.25                     | 12.19                        | 0.03                 | 9.28                    | 12.16                    | 12.18                       |
| LAI-8  | 04/11/03 | 21.44                      | 9.21                     | 12.23                        | 0.46                 | 9.67                    | 11.77                    | 12.08                       |
| LAI-8  | 04/15/03 | 21.44                      | 8.57                     | 12.87                        | 1.13                 | 9.70                    | 11.74                    | 12.51                       |
| LAI-8  | 04/17/03 | 21.44                      | 9.82                     | 11.82                        | 0.08                 | 9.90                    | 11.54                    | 11.59                       |
| LAI-8  | 04/22/03 | 21.44                      | 9.28                     | 12.16                        | 0.23                 | 9.51                    | 11.93                    | 12.09                       |
| LAI-8  | 04/25/03 | 21.44                      | 9.61                     | 11.83                        | 0.25                 | 9.86                    | 11.58                    | 11.75                       |
| LAI-8  | 05/02/03 | 21.44                      | 9.71                     | 11.73                        | 0.40                 | 10.11                   | 11.33                    | 11.60                       |
| LAI-8  | 05/06/03 | 21.44                      | 9.36                     | 12.08                        | 1.40                 | 10.76                   | 10.68                    | 11.63                       |
| LAI-8  | 05/09/03 | 21.44                      | N/A                      | N/A                          | N/A                  | 10.23                   | 11.21                    | 11.21                       |
| LAI-8  | 05/23/03 | 21.44                      | 10.80                    | 10.64                        | 0.01                 | 10.81                   | 10.63                    | 10.64                       |
| LAI-8  | 05/28/03 | 21.44                      | 10.51                    | 10.93                        | 0.03                 | 10.54                   | 10.90                    | 10.92                       |
| LAI-8  | 06/13/03 | 21.44                      | 10.20                    | 11.24                        | 1.56                 | 11.76                   | 9.68                     | 10.74                       |
| LAI-8  | 06/18/03 | 21.44                      | 10.35                    | 11.09                        | 1.85                 | 12.20                   | 9.24                     | 10.50                       |
| LAI-9  | 01/22/03 | 19.32                      | N/A                      | N/A                          | N/A                  | 7.90                    | 11.42                    | 11.42                       |
| LAI-9  | 01/23/03 | 19.32                      | N/A                      | N/A                          | N/A                  | 8.38                    | 10.94                    | 10.94                       |
| LAI-9  | 01/24/03 | 19.32                      | 7.10                     | 12.22                        | 0.04                 | 7.14                    | 12.18                    | 12.21                       |
| LAI-9  | 01/27/03 | 19.32                      | 5.32                     | 14.00                        | 1.54                 | 6.86                    | 12.46                    | 13.51                       |
| LAI-9  | 01/28/03 | 19.32                      | 5.90                     | 13.42                        | 1.50                 | 7.40                    | 11.92                    | 12.94                       |
| LAI-9  | 01/29/03 | 19.32                      | N/A                      | N/A                          | N/A                  | 8.44                    | 10.88                    | 10.88                       |
| LAI-9  | 01/30/03 | 19.32                      | N/A                      | N/A                          | N/A                  | 8.40                    | 10.92                    | 10.92                       |
| LAI-9  | 02/03/03 | 19.32                      | 6.57                     | 12.75                        | 0.70                 | 7.27                    | 12.05                    | 12.53                       |
| LAI-9  | 02/06/03 | 20.77                      | 7.53                     | 13.24                        | 0.15                 | 7.68                    | 13.09                    | 13.19                       |
| LAI-9  | 02/11/03 | 20.77                      | 7.93                     | 12.84                        | 0.11                 | 8.04                    | 12.73                    | 12.80                       |
| LAI-9  | 02/18/03 | 20.77                      | 5.50                     | 15.27                        | 2.50                 | 8.00                    | 12.77                    | 14.47                       |
| LAI-9  | 02/21/03 | 20.77                      | 7.63                     | 13.14                        | 3.68                 | 11.31                   | 9.46                     | 11.96                       |
| LAI-9  | 02/26/03 | 20.77                      | 6.94                     | 13.83                        | 3.54                 | 10.48                   | 10.29                    | 12.70                       |
| LAI-9  | 03/04/03 | 20.77                      | 6.98                     | 13.79                        | 3.94                 | 10.92                   | 9.85                     | 12.53                       |
| LAI-9  | 03/12/03 | 20.77                      | 7.82                     | 12.95                        | 3.39                 | 11.21                   | 9.56                     | 11.87                       |
| LAI-9  | 03/14/03 | 20.77                      | 8.09                     | 12.68                        | 2.21                 | 10.30                   | 10.47                    | 11.97                       |
| LAI-9  | 03/26/03 | 20.77                      | N/A                      | N/A                          | N/A                  | 8.95                    | 11.82                    | 11.82                       |
| LAI-9  | 03/28/02 | 20.77                      | N/A                      | N/A                          | N/A                  | 9.04                    | 11.73                    | 11.73                       |
| LAI-9  | 04/02/03 | 20.77                      | 8.08                     | 12.69                        | 0.32                 | 8.40                    | 12.37                    | 12.59                       |
| LAI-9  | 04/04/03 | 20.77                      | 8.34                     | 12.43                        | 0.48                 | 8.82                    | 11.95                    | 12.28                       |
| LAI-9  | 04/08/03 | 20.77                      | 8.10                     | 12.67                        | 0.49                 | 8.59                    | 12.18                    | 12.51                       |
| LAI-9  | 04/11/03 | 20.77                      | 8.36                     | 12.41                        | 0.49                 | 8.85                    | 11.92                    | 12.25                       |
| LAI-9  | 04/15/03 | 20.77                      | 7.81                     | 12.96                        | 0.21                 | 8.02                    | 12.75                    | 12.89                       |
| LAI-9  | 04/17/03 | 20.77                      | 9.11                     | 11.66                        | 0.13                 | 9.24                    | 11.53                    | 11.62                       |
| LAI-9  | 04/22/03 | 20.77                      | 8.41                     | 12.36                        | 0.35                 | 8.76                    | 12.01                    | 12.25                       |
| LAI-9  | 04/25/03 | 20.77                      | 8.32                     | 12.45                        | 0.80                 | 9.12                    | 11.65                    | 12.19                       |
| LAI-9  | 05/02/03 | 20.77                      | 8.99                     | 11.78                        | 0.01                 | 9.00                    | 11.77                    | 11.78                       |
| LAI-9  | 05/08/03 | 20.77                      | 8.66                     | 12.11                        | 0.85                 | 9.51                    | 11.26                    | 11.84                       |
| LAI-9  | 05/09/03 | 20.77                      | 9.75                     | 11.02                        | 0.02                 | 9.77                    | 11.00                    | 11.01                       |
| LAI-9  | 05/23/03 | 20.77                      | N/A                      | N/A                          | N/A                  | 10.10                   | 10.67                    | 10.67                       |
| LAI-9  | 05/28/03 | 20.77                      | 10.50                    | 10.27                        | 0.01                 | 10.51                   | 10.26                    | 10.27                       |
| LAI-9  | 06/13/03 | 20.77                      | 9.91                     | 10.86                        | 0.37                 | 10.28                   | 10.49                    | 10.74                       |
| LAI-9  | 06/18/03 | 20.77                      | 9.81                     | 10.96                        | 0.51                 | 10.32                   | 10.45                    | 10.80                       |
| LAI-10 | 01/31/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.34                    | 13.58                    | 13.58                       |
| LAI-10 | 02/12/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 3.93                    | 13.99                    | 13.99                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well   | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|--------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-10 | 02/18/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.51                    | 13.41                    | 13.41                       |
| LAI-10 | 02/21/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.50                    | 13.42                    | 13.42                       |
| LAI-10 | 02/24/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.48                    | 13.44                    | 13.44                       |
| LAI-10 | 03/03/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.38                    | 13.54                    | 13.54                       |
| LAI-10 | 03/12/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.31                    | 13.61                    | 13.61                       |
| LAI-10 | 03/14/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.08                    | 13.84                    | 13.84                       |
| LAI-10 | 03/26/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.78                    | 13.14                    | 13.14                       |
| LAI-10 | 03/28/02 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.82                    | 13.10                    | 13.10                       |
| LAI-10 | 04/02/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.25                    | 13.67                    | 13.67                       |
| LAI-10 | 04/04/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.21                    | 13.71                    | 13.71                       |
| LAI-10 | 04/08/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.50                    | 13.42                    | 13.42                       |
| LAI-10 | 04/11/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.48                    | 13.44                    | 13.44                       |
| LAI-10 | 04/15/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.09                    | 13.83                    | 13.83                       |
| LAI-10 | 04/17/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.50                    | 13.42                    | 13.42                       |
| LAI-10 | 04/22/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.45                    | 13.47                    | 13.47                       |
| LAI-10 | 04/25/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.58                    | 13.34                    | 13.34                       |
| LAI-10 | 05/02/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.23                    | 13.69                    | 13.69                       |
| LAI-10 | 05/06/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 4.86                    | 13.06                    | 13.06                       |
| LAI-10 | 05/09/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 5.10                    | 12.82                    | 12.82                       |
| LAI-10 | 05/16/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 5.38                    | 12.54                    | 12.54                       |
| LAI-10 | 05/23/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 6.50                    | 11.42                    | 11.42                       |
| LAI-10 | 05/28/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 5.55                    | 12.37                    | 12.37                       |
| LAI-10 | 06/13/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 6.17                    | 11.75                    | 11.75                       |
| LAI-10 | 06/18/03 | 17.92                      | N/A                      | N/A                          | N/A                  | 5.86                    | 12.06                    | 12.06                       |
| LAI-11 | 01/31/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 4.55                    | 14.11                    | 14.11                       |
| LAI-11 | 02/12/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 4.92                    | 13.74                    | 13.74                       |
| LAI-11 | 02/18/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.41                    | 13.25                    | 13.25                       |
| LAI-11 | 02/21/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.51                    | 13.15                    | 13.15                       |
| LAI-11 | 02/24/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.48                    | 13.18                    | 13.18                       |
| LAI-11 | 03/03/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.38                    | 13.28                    | 13.28                       |
| LAI-11 | 03/12/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.32                    | 13.34                    | 13.34                       |
| LAI-11 | 03/14/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.19                    | 13.47                    | 13.47                       |
| LAI-11 | 03/26/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 4.81                    | 13.85                    | 13.85                       |
| LAI-11 | 03/28/02 | 18.66                      | N/A                      | N/A                          | N/A                  | 4.89                    | 13.77                    | 13.77                       |
| LAI-11 | 04/02/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.28                    | 13.38                    | 13.38                       |
| LAI-11 | 04/04/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.33                    | 13.33                    | 13.33                       |
| LAI-11 | 04/08/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.41                    | 13.25                    | 13.25                       |
| LAI-11 | 04/11/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.42                    | 13.24                    | 13.24                       |
| LAI-11 | 04/15/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.08                    | 13.58                    | 13.58                       |
| LAI-11 | 04/17/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.46                    | 13.20                    | 13.20                       |
| LAI-11 | 04/22/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.47                    | 13.19                    | 13.19                       |
| LAI-11 | 04/25/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.67                    | 12.99                    | 12.99                       |
| LAI-11 | 05/02/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.12                    | 13.54                    | 13.54                       |
| LAI-11 | 05/06/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 5.81                    | 12.85                    | 12.85                       |
| LAI-11 | 05/09/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 6.00                    | 12.66                    | 12.66                       |
| LAI-11 | 05/16/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 6.30                    | 12.36                    | 12.36                       |
| LAI-11 | 05/23/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 6.58                    | 12.08                    | 12.08                       |
| LAI-11 | 05/28/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 6.44                    | 12.22                    | 12.22                       |
| LAI-11 | 06/13/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 6.70                    | 11.96                    | 11.96                       |
| LAI-11 | 06/18/03 | 18.66                      | N/A                      | N/A                          | N/A                  | 6.80                    | 11.86                    | 11.86                       |
| LAI-12 | 01/31/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 3.28                    | 15.12                    | 15.12                       |
| LAI-12 | 02/12/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 3.98                    | 14.42                    | 14.42                       |
| LAI-12 | 02/18/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.50                    | 13.90                    | 13.90                       |
| LAI-12 | 02/21/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.80                    | 13.60                    | 13.60                       |
| LAI-12 | 02/24/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.58                    | 13.82                    | 13.82                       |
| LAI-12 | 03/03/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.61                    | 13.79                    | 13.79                       |
| LAI-12 | 03/12/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.38                    | 14.02                    | 14.02                       |
| LAI-12 | 03/14/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.17                    | 14.23                    | 14.23                       |
| LAI-12 | 03/26/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.04                    | 14.36                    | 14.36                       |
| LAI-12 | 03/28/02 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.10                    | 14.30                    | 14.30                       |
| LAI-12 | 04/02/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.34                    | 14.06                    | 14.06                       |
| LAI-12 | 04/04/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.45                    | 13.95                    | 13.95                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well   | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|--------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-12 | 04/08/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.58                    | 13.82                    | 13.82                       |
| LAI-12 | 04/11/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.65                    | 13.75                    | 13.75                       |
| LAI-12 | 04/15/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.25                    | 14.15                    | 14.15                       |
| LAI-12 | 04/17/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.69                    | 13.71                    | 13.71                       |
| LAI-12 | 04/22/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.69                    | 13.71                    | 13.71                       |
| LAI-12 | 04/25/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.81                    | 13.59                    | 13.59                       |
| LAI-12 | 05/02/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 4.98                    | 13.42                    | 13.42                       |
| LAI-12 | 05/06/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 5.22                    | 13.18                    | 13.18                       |
| LAI-12 | 05/09/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 5.46                    | 12.94                    | 12.94                       |
| LAI-12 | 05/16/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 5.74                    | 12.66                    | 12.66                       |
| LAI-12 | 05/23/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 5.27                    | 13.13                    | 13.13                       |
| LAI-12 | 05/28/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 5.88                    | 12.52                    | 12.52                       |
| LAI-12 | 06/13/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 5.45                    | 12.95                    | 12.95                       |
| LAI-12 | 06/18/03 | 18.40                      | N/A                      | N/A                          | N/A                  | 6.18                    | 12.22                    | 12.22                       |
| LAI-13 | 01/31/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 5.25                    | 13.84                    | 13.84                       |
| LAI-13 | 02/12/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.28                    | 12.81                    | 12.81                       |
| LAI-13 | 02/18/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.15                    | 12.94                    | 12.94                       |
| LAI-13 | 02/21/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.29                    | 12.80                    | 12.80                       |
| LAI-13 | 02/24/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.65                    | 12.44                    | 12.44                       |
| LAI-13 | 03/03/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.88                    | 12.21                    | 12.21                       |
| LAI-13 | 03/12/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.87                    | 12.22                    | 12.22                       |
| LAI-13 | 03/14/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.62                    | 12.47                    | 12.47                       |
| LAI-13 | 03/26/03 | 19.09                      | 6.16                     | 12.93                        | 0.00                 | 6.16                    | 12.93                    | 12.93                       |
| LAI-13 | 03/28/02 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.21                    | 12.88                    | 12.88                       |
| LAI-13 | 04/02/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.25                    | 12.84                    | 12.84                       |
| LAI-13 | 04/04/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.25                    | 12.84                    | 12.84                       |
| LAI-13 | 04/08/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.69                    | 12.40                    | 12.40                       |
| LAI-13 | 04/11/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.69                    | 12.40                    | 12.40                       |
| LAI-13 | 04/15/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.61                    | 12.48                    | 12.48                       |
| LAI-13 | 04/17/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.66                    | 12.43                    | 12.43                       |
| LAI-13 | 04/22/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.87                    | 12.22                    | 12.22                       |
| LAI-13 | 04/25/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.92                    | 12.17                    | 12.17                       |
| LAI-13 | 05/02/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 6.71                    | 12.38                    | 12.38                       |
| LAI-13 | 05/06/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 7.25                    | 11.84                    | 11.84                       |
| LAI-13 | 05/09/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 7.36                    | 11.73                    | 11.73                       |
| LAI-13 | 05/16/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 7.63                    | 11.46                    | 11.46                       |
| LAI-13 | 05/23/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 7.78                    | 11.31                    | 11.31                       |
| LAI-13 | 05/28/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 7.80                    | 11.29                    | 11.29                       |
| LAI-13 | 06/13/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 8.01                    | 11.08                    | 11.08                       |
| LAI-13 | 06/18/03 | 19.09                      | N/A                      | N/A                          | N/A                  | 8.02                    | 11.07                    | 11.07                       |
| LAI-14 | 01/31/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 6.12                    | 13.17                    | 13.17                       |
| LAI-14 | 02/12/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.11                    | 12.18                    | 12.18                       |
| LAI-14 | 02/18/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.17                    | 12.12                    | 12.12                       |
| LAI-14 | 02/21/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.25                    | 12.04                    | 12.04                       |
| LAI-14 | 02/24/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.25                    | 12.04                    | 12.04                       |
| LAI-14 | 03/03/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.50                    | 11.79                    | 11.79                       |
| LAI-14 | 03/12/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.40                    | 11.89                    | 11.89                       |
| LAI-14 | 03/14/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.23                    | 12.06                    | 12.06                       |
| LAI-14 | 03/26/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.04                    | 12.25                    | 12.25                       |
| LAI-14 | 03/28/02 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.07                    | 12.22                    | 12.22                       |
| LAI-14 | 04/02/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.00                    | 12.29                    | 12.29                       |
| LAI-14 | 04/04/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.24                    | 12.05                    | 12.05                       |
| LAI-14 | 04/08/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.41                    | 11.88                    | 11.88                       |
| LAI-14 | 04/11/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.36                    | 11.93                    | 11.93                       |
| LAI-14 | 04/15/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.34                    | 11.95                    | 11.95                       |
| LAI-14 | 04/17/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.39                    | 11.90                    | 11.90                       |
| LAI-14 | 04/22/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.53                    | 11.76                    | 11.76                       |
| LAI-14 | 04/25/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.62                    | 11.67                    | 11.67                       |
| LAI-14 | 05/02/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.20                    | 12.09                    | 12.09                       |
| LAI-14 | 05/06/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.82                    | 11.47                    | 11.47                       |
| LAI-14 | 05/09/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 7.86                    | 11.43                    | 11.43                       |
| LAI-14 | 05/16/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 8.00                    | 11.29                    | 11.29                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well   | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|--------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| LAI-14 | 05/23/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 8.03                    | 11.26                    | 11.26                       |
| LAI-14 | 05/28/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 8.14                    | 11.15                    | 11.15                       |
| LAI-14 | 06/13/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 8.30                    | 10.99                    | 10.99                       |
| LAI-14 | 06/18/03 | 19.29                      | N/A                      | N/A                          | N/A                  | 8.33                    | 10.96                    | 10.96                       |
| LAI-15 | 01/31/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 6.13                    | 11.45                    | 11.45                       |
| LAI-15 | 02/12/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.23                    | 13.35                    | 13.35                       |
| LAI-15 | 02/18/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.51                    | 13.07                    | 13.07                       |
| LAI-15 | 02/21/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.72                    | 12.86                    | 12.86                       |
| LAI-15 | 02/24/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.74                    | 12.84                    | 12.84                       |
| LAI-15 | 03/03/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.96                    | 12.62                    | 12.62                       |
| LAI-15 | 03/12/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.81                    | 12.77                    | 12.77                       |
| LAI-15 | 03/14/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.14                    | 13.44                    | 13.44                       |
| LAI-15 | 03/26/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 3.82                    | 13.76                    | 13.76                       |
| LAI-15 | 03/28/02 | 17.58                      | N/A                      | N/A                          | N/A                  | 3.85                    | 13.73                    | 13.73                       |
| LAI-15 | 04/02/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.40                    | 13.18                    | 13.18                       |
| LAI-15 | 04/04/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.49                    | 13.09                    | 13.09                       |
| LAI-15 | 04/08/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.71                    | 12.87                    | 12.87                       |
| LAI-15 | 04/11/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.80                    | 12.78                    | 12.78                       |
| LAI-15 | 04/15/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.75                    | 12.83                    | 12.83                       |
| LAI-15 | 04/17/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.77                    | 12.81                    | 12.81                       |
| LAI-15 | 04/22/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.99                    | 12.59                    | 12.59                       |
| LAI-15 | 04/25/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 5.09                    | 12.49                    | 12.49                       |
| LAI-15 | 05/02/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 5.13                    | 12.45                    | 12.45                       |
| LAI-15 | 05/06/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 5.55                    | 12.03                    | 12.03                       |
| LAI-15 | 05/09/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 5.68                    | 11.90                    | 11.90                       |
| LAI-15 | 05/16/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 4.90                    | 12.68                    | 12.68                       |
| LAI-15 | 05/23/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 6.12                    | 11.46                    | 11.46                       |
| LAI-15 | 05/28/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 6.13                    | 11.45                    | 11.45                       |
| LAI-15 | 06/13/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 6.33                    | 11.25                    | 11.25                       |
| LAI-15 | 06/18/03 | 17.58                      | N/A                      | N/A                          | N/A                  | 6.35                    | 11.23                    | 11.23                       |
| LAI-16 | 01/31/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.28                    | 12.33                    | 12.33                       |
| LAI-16 | 02/12/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.65                    | 11.96                    | 11.96                       |
| LAI-16 | 02/18/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.70                    | 11.91                    | 11.91                       |
| LAI-16 | 02/21/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.73                    | 11.88                    | 11.88                       |
| LAI-16 | 02/24/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.74                    | 11.87                    | 11.87                       |
| LAI-16 | 03/03/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.86                    | 11.75                    | 11.75                       |
| LAI-16 | 03/12/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.52                    | 12.09                    | 12.09                       |
| LAI-16 | 03/14/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.39                    | 12.22                    | 12.22                       |
| LAI-16 | 03/26/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.48                    | 12.13                    | 12.13                       |
| LAI-16 | 03/28/02 | 18.61                      | N/A                      | N/A                          | N/A                  | 7.46                    | 11.15                    | 11.15                       |
| LAI-16 | 04/02/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.63                    | 11.98                    | 11.98                       |
| LAI-16 | 04/04/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.71                    | 11.90                    | 11.90                       |
| LAI-16 | 04/08/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.90                    | 11.71                    | 11.71                       |
| LAI-16 | 04/11/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.75                    | 11.86                    | 11.86                       |
| LAI-16 | 04/15/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.68                    | 11.93                    | 11.93                       |
| LAI-16 | 04/17/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.73                    | 11.88                    | 11.88                       |
| LAI-16 | 04/22/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.87                    | 11.74                    | 11.74                       |
| LAI-16 | 04/25/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.99                    | 11.62                    | 11.62                       |
| LAI-16 | 05/02/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 6.78                    | 11.83                    | 11.83                       |
| LAI-16 | 05/06/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 7.26                    | 11.35                    | 11.35                       |
| LAI-16 | 05/09/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 7.35                    | 11.26                    | 11.26                       |
| LAI-16 | 05/16/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 7.60                    | 11.01                    | 11.01                       |
| LAI-16 | 05/23/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 8.08                    | 10.53                    | 10.53                       |
| LAI-16 | 05/28/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 7.87                    | 10.74                    | 10.74                       |
| LAI-16 | 06/13/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 8.31                    | 10.30                    | 10.30                       |
| LAI-16 | 06/18/03 | 18.61                      | N/A                      | N/A                          | N/A                  | 8.45                    | 10.16                    | 10.16                       |
| R-1    | 11/24/02 | 16.94                      | N/A                      | N/A                          | N/A                  | 5.90                    | 11.04                    | 11.04                       |
| R-2    | 11/24/02 | 17.52                      | N/A                      | N/A                          | N/A                  | 6.69                    | 10.83                    | 10.83                       |
| RW-1   | 11/20/02 | 21.68                      | 8.25                     | 13.43                        | 0.95                 | 9.2                     | 12.48                    | 13.13                       |
| RW-1   | 11/21/02 | 21.68                      | 8.25                     | 13.43                        | 1.15                 | 9.4                     | 12.28                    | 13.06                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| RW-1 | 11/22/02 | 21.68                      | 8.22                     | 13.46                        | 1.20                 | 9.42                    | 12.26                    | 13.08                       |
| RW-1 | 11/24/02 | 21.68                      | 8.35                     | 13.33                        | 1.06                 | 9.41                    | 12.27                    | 12.99                       |
| RW-1 | 01/02/03 | 21.68                      | 5.61                     | 16.07                        | 0.21                 | 5.82                    | 15.86                    | 16.00                       |
| RW-1 | 01/03/03 | 21.68                      | 5.51                     | 16.17                        | 0.21                 | 5.72                    | 15.96                    | 16.10                       |
| RW-1 | 01/06/03 | 21.68                      | 5.35                     | 16.33                        | 0.29                 | 5.64                    | 16.04                    | 16.24                       |
| RW-1 | 01/07/03 | 21.68                      | 5.68                     | 16.00                        | 0.28                 | 5.96                    | 15.72                    | 15.91                       |
| RW-1 | 01/08/03 | 21.68                      | 5.95                     | 15.73                        | 0.28                 | 6.23                    | 15.45                    | 15.64                       |
| RW-1 | 01/09/03 | 21.68                      | 6.03                     | 15.65                        | 0.29                 | 6.32                    | 15.36                    | 15.56                       |
| RW-1 | 01/10/03 | 21.68                      | 6.20                     | 15.48                        | 0.30                 | 6.5                     | 15.18                    | 15.38                       |
| RW-1 | 01/13/03 | 21.68                      | 6.00                     | 15.68                        | 0.32                 | 6.32                    | 15.36                    | 15.58                       |
| RW-1 | 01/14/03 | 21.68                      | 5.72                     | 15.96                        | 0.73                 | 6.45                    | 15.23                    | 15.73                       |
| RW-1 | 01/15/03 | 21.68                      | 5.99                     | 15.69                        | 0.19                 | 6.18                    | 15.50                    | 15.63                       |
| RW-1 | 01/16/03 | 21.68                      | 6.10                     | 15.58                        | 0.30                 | 6.4                     | 15.28                    | 15.48                       |
| RW-1 | 01/17/03 | 21.68                      | 6.15                     | 15.53                        | 0.30                 | 6.45                    | 15.23                    | 15.43                       |
| RW-1 | 01/20/03 | 21.68                      | 6.34                     | 15.34                        | 0.35                 | 6.69                    | 14.99                    | 15.23                       |
| RW-1 | 01/22/03 | 21.68                      | 5.60                     | 16.08                        | 0.29                 | 5.89                    | 15.79                    | 15.99                       |
| RW-1 | 01/23/03 | 21.68                      | 5.80                     | 15.88                        | 0.35                 | 6.15                    | 15.53                    | 15.77                       |
| RW-1 | 01/24/03 | 21.68                      | 5.37                     | 16.31                        | 0.38                 | 5.75                    | 15.93                    | 16.19                       |
| RW-1 | 01/27/03 | 21.68                      | 4.68                     | 17.00                        | 0.47                 | 5.15                    | 16.53                    | 16.85                       |
| RW-1 | 01/28/03 | 21.68                      | 4.66                     | 17.02                        | 0.45                 | 5.11                    | 16.57                    | 16.88                       |
| RW-1 | 01/29/03 | 21.68                      | 4.67                     | 17.01                        | 0.46                 | 5.13                    | 16.55                    | 16.86                       |
| RW-1 | 01/30/03 | 21.68                      | 4.90                     | 16.78                        | 0.44                 | 5.34                    | 16.34                    | 16.64                       |
| RW-1 | 02/03/03 | 21.68                      | 5.65                     | 16.03                        | 0.41                 | 6.06                    | 15.62                    | 15.90                       |
| RW-1 | 02/06/03 | 21.32                      | 6.76                     | 14.56                        | 0.40                 | 7.16                    | 14.16                    | 14.43                       |
| RW-1 | 02/11/03 | 21.32                      | 7.35                     | 13.97                        | 0.42                 | 7.77                    | 13.55                    | 13.84                       |
| RW-1 | 02/18/03 | 21.32                      | N/A                      | N/A                          | N/A                  | 6.55                    | 14.77                    | 14.77                       |
| RW-1 | 02/21/03 | 21.32                      | 7.90                     | 13.42                        | 0.93                 | 8.83                    | 12.49                    | 13.12                       |
| RW-1 | 02/26/03 | 21.32                      | 7.70                     | 13.62                        | 0.81                 | 8.51                    | 12.81                    | 13.36                       |
| RW-1 | 03/04/03 | 21.32                      | 7.11                     | 14.21                        | 0.63                 | 7.74                    | 13.58                    | 14.01                       |
| RW-1 | 03/12/03 | 21.32                      | 7.30                     | 14.02                        | 0.46                 | 7.76                    | 13.56                    | 13.87                       |
| RW-1 | 03/14/03 | 21.32                      | 6.85                     | 14.47                        | N/A                  | 7.31                    | 14.01                    | 14.01                       |
| RW-1 | 03/26/03 | 21.32                      | 6.39                     | 14.93                        | 0.13                 | 6.52                    | 14.80                    | 14.89                       |
| RW-1 | 03/28/02 | 21.32                      | 7.41                     | 13.91                        | 0.15                 | 7.56                    | 13.76                    | 13.86                       |
| RW-1 | 04/02/03 | 21.32                      | 7.45                     | 13.87                        | 0.10                 | 7.55                    | 13.77                    | 13.84                       |
| RW-1 | 04/04/03 | 21.32                      | 7.70                     | 13.62                        | 0.05                 | 7.75                    | 13.57                    | 13.60                       |
| RW-1 | 04/08/03 | 21.32                      | 7.25                     | 14.07                        | 0.02                 | 7.27                    | 14.05                    | 14.06                       |
| RW-1 | 04/11/03 | 21.32                      | 7.15                     | 14.17                        | 0.03                 | 7.18                    | 14.14                    | 14.16                       |
| RW-1 | 04/15/03 | 21.32                      | 6.57                     | 14.75                        | 0.02                 | 6.59                    | 14.73                    | 14.74                       |
| RW-1 | 04/17/03 | 21.32                      | 7.52                     | 13.80                        | 0.02                 | 7.54                    | 13.78                    | 13.79                       |
| RW-1 | 04/22/03 | 21.32                      | 7.53                     | 13.79                        | 0.02                 | 7.55                    | 13.77                    | 13.78                       |
| RW-1 | 04/25/03 | 21.32                      | 7.42                     | 13.90                        | 0.01                 | 7.43                    | 13.89                    | 13.90                       |
| RW-1 | 05/02/03 | 21.32                      | 8.84                     | 12.48                        | 0.01                 | 8.85                    | 12.47                    | 12.48                       |
| RW-1 | 05/06/03 | 21.32                      | N/A                      | N/A                          | N/A                  | 9.02                    | 12.30                    | 12.30                       |
| RW-1 | 05/09/03 | 21.32                      | N/A                      | N/A                          | N/A                  | 9.21                    | 12.11                    | 12.11                       |
| RW-1 | 05/23/03 | 21.32                      | N/A                      | N/A                          | N/A                  | 9.26                    | 12.06                    | 12.06                       |
| RW-1 | 05/28/03 | 21.32                      | 9.35                     | 11.97                        | 0.01                 | 9.36                    | 11.96                    | 11.97                       |
| RW-1 | 06/13/03 | 21.32                      | 9.52                     | 11.80                        | 0.49                 | 10.01                   | 11.31                    | 11.64                       |
| RW-1 | 06/18/03 | 21.32                      | 9.22                     | 12.10                        | 0.91                 | 10.13                   | 11.19                    | 11.81                       |
|      |          |                            |                          |                              |                      |                         |                          |                             |
| RW-2 | 11/20/02 | 21.49                      | 8.05                     | 13.44                        | 1.35                 | 9.4                     | 12.09                    | 13.01                       |
| RW-2 | 11/21/02 | 21.49                      | 8.00                     | 13.49                        | 1.40                 | 9.4                     | 12.09                    | 13.04                       |
| RW-2 | 11/22/02 | 21.49                      | 8.00                     | 13.49                        | 1.41                 | 9.41                    | 12.08                    | 13.04                       |
| RW-2 | 11/24/02 | 21.49                      | 8.21                     | 13.28                        | 1.49                 | 9.70                    | 11.79                    | 12.80                       |
| RW-2 | 01/02/03 | 21.49                      | 6.11                     | 15.38                        | 2.27                 | 8.38                    | 13.11                    | 14.65                       |
| RW-2 | 01/06/03 | 21.49                      | 5.40                     | 16.09                        | 2.78                 | 8.18                    | 13.31                    | 15.20                       |
| RW-2 | 01/07/03 | 21.49                      | 6.41                     | 15.08                        | 0.54                 | 6.95                    | 14.54                    | 14.91                       |
| RW-2 | 01/08/03 | 21.49                      | 7.67                     | 13.82                        | 0.01                 | 7.68                    | 13.81                    | 13.82                       |
| RW-2 | 01/09/03 | 21.49                      | 8.72                     | 12.77                        | 0.01                 | 8.73                    | 12.76                    | 12.77                       |
| RW-2 | 01/10/03 | 21.49                      | 6.38                     | 15.11                        | 0.54                 | 6.92                    | 14.57                    | 14.94                       |
| RW-2 | 01/13/03 | 21.49                      | 8.42                     | 13.07                        | 0.10                 | 8.52                    | 12.97                    | 13.04                       |
| RW-2 | 01/14/03 | 21.49                      | 6.17                     | 15.32                        | 1.32                 | 7.49                    | 14.00                    | 14.90                       |
| RW-2 | 01/15/03 | 21.49                      | 5.95                     | 15.54                        | 0.85                 | 6.80                    | 14.69                    | 15.27                       |
| RW-2 | 01/16/03 | 21.49                      | 6.51                     | 14.98                        | 1.00                 | 7.51                    | 13.98                    | 14.66                       |
| RW-2 | 01/17/03 | 21.49                      | 6.40                     | 15.09                        | 1.12                 | 7.52                    | 13.97                    | 14.73                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| RW-2 | 01/20/03 | 21.49                      | 6.35                     | 15.14                        | 1.59                 | 7.94                    | 13.55                    | 14.63                       |
| RW-2 | 01/22/03 | 21.49                      | 5.86                     | 15.63                        | 2.74                 | 8.60                    | 12.89                    | 14.75                       |
| RW-2 | 01/23/03 | 21.49                      | 5.92                     | 15.57                        | 3.23                 | 9.15                    | 12.34                    | 14.54                       |
| RW-2 | 01/24/03 | 21.49                      | 5.37                     | 16.12                        | 0.62                 | 5.99                    | 15.50                    | 15.92                       |
| RW-2 | 01/27/03 | 21.49                      | 4.69                     | 16.80                        | 0.53                 | 5.22                    | 16.27                    | 16.63                       |
| RW-2 | 01/28/03 | 21.49                      | 4.83                     | 16.66                        | 3.71                 | 8.54                    | 12.95                    | 15.47                       |
| RW-2 | 01/29/03 | 21.49                      | 4.82                     | 16.67                        | 3.66                 | 8.48                    | 13.01                    | 15.50                       |
| RW-2 | 01/30/03 | 21.49                      | 4.95                     | 16.54                        | 0.94                 | 5.89                    | 15.60                    | 16.24                       |
| RW-2 | 02/03/03 | 21.49                      | 5.29                     | 16.20                        | 3.82                 | 9.11                    | 12.38                    | 14.98                       |
| RW-2 | 02/06/03 | 21.10                      | 6.16                     | 14.94                        | 3.48                 | 9.64                    | 11.46                    | 13.83                       |
| RW-2 | 02/11/03 | 21.10                      | 6.61                     | 14.49                        | 3.17                 | 9.78                    | 11.32                    | 13.48                       |
| RW-2 | 02/18/03 | 21.10                      | 7.46                     | 13.64                        | 2.72                 | 10.18                   | 10.92                    | 12.77                       |
| RW-2 | 02/21/03 | 21.10                      | 7.40                     | 13.70                        | 2.76                 | 10.16                   | 10.94                    | 12.82                       |
| RW-2 | 02/26/03 | 21.10                      | 7.66                     | 13.44                        | 0.69                 | 8.35                    | 12.75                    | 13.22                       |
| RW-2 | 03/04/03 | 21.10                      | 7.15                     | 13.95                        | 1.42                 | 8.57                    | 12.53                    | 13.50                       |
| RW-2 | 03/12/03 | 21.10                      | 7.60                     | 13.50                        | 0.02                 | 7.62                    | 13.48                    | 13.49                       |
| RW-2 | 03/14/03 | 21.10                      | 7.38                     | 13.72                        | 1.61                 | 8.99                    | 12.11                    | 13.20                       |
| RW-2 | 03/26/03 | 21.10                      | 6.85                     | 14.25                        | 0.70                 | 7.55                    | 13.55                    | 14.03                       |
| RW-2 | 03/28/02 | 21.10                      | 7.48                     | 13.62                        | 0.87                 | 8.35                    | 12.75                    | 13.34                       |
| RW-2 | 04/02/03 | 21.10                      | 7.55                     | 13.55                        | 0.86                 | 8.41                    | 12.69                    | 13.27                       |
| RW-2 | 04/04/03 | 21.10                      | 7.95                     | 13.15                        | 0.56                 | 8.51                    | 12.59                    | 12.97                       |
| RW-2 | 04/08/03 | 21.10                      | 8.02                     | 13.08                        | 0.03                 | 8.05                    | 13.05                    | 13.07                       |
| RW-2 | 04/11/03 | 21.10                      | 8.22                     | 12.88                        | 0.01                 | 8.23                    | 12.87                    | 12.88                       |
| RW-2 | 04/15/03 | 21.10                      | NA                       | N/A                          | N/A                  | 7.68                    | 13.42                    | 13.42                       |
| RW-2 | 04/17/03 | 21.10                      | 8.34                     | 12.76                        | 0.06                 | 8.40                    | 12.70                    | 12.74                       |
| RW-2 | 04/22/03 | 21.10                      | 8.36                     | 12.74                        | 0.16                 | 8.52                    | 12.58                    | 12.69                       |
| RW-2 | 04/25/03 | 21.10                      | 8.30                     | 12.80                        | 0.11                 | 8.41                    | 12.69                    | 12.76                       |
| RW-2 | 05/02/03 | 21.10                      | 8.75                     | 12.35                        | 0.31                 | 9.06                    | 12.04                    | 12.25                       |
| RW-2 | 05/06/03 | 21.10                      | 8.82                     | 12.28                        | 0.61                 | 9.43                    | 11.67                    | 12.08                       |
| RW-2 | 05/09/03 | 21.10                      | 9.16                     | 11.94                        | 0.62                 | 9.78                    | 11.32                    | 11.74                       |
| RW-2 | 05/23/03 | 21.10                      | 9.15                     | 11.95                        | 1.42                 | 10.57                   | 10.53                    | 11.50                       |
| RW-2 | 05/28/03 | 21.10                      | 8.95                     | 12.15                        | 1.49                 | 10.44                   | 10.66                    | 11.67                       |
| RW-2 | 06/13/03 | 21.10                      | 9.24                     | 11.86                        | 1.35                 | 10.59                   | 10.51                    | 11.43                       |
| RW-2 | 06/18/03 | 21.10                      | 9.20                     | 11.90                        | 1.31                 | 10.51                   | 10.59                    | 11.48                       |
|      |          |                            |                          |                              |                      |                         |                          |                             |
| RW-3 | 11/20/02 | 20.00                      | 8.45                     | 11.55                        | 0.80                 | 9.25                    | 10.75                    | 11.29                       |
| RW-3 | 11/21/02 | 20.00                      | 8.27                     | 11.73                        | 1.20                 | 9.47                    | 10.53                    | 11.35                       |
| RW-3 | 11/22/02 | 20.00                      | 8.18                     | 11.82                        | 1.28                 | 9.46                    | 10.54                    | 11.41                       |
| RW-3 | 11/24/02 | 20.00                      | 7.94                     | 12.06                        | 1.68                 | 9.62                    | 10.38                    | 11.52                       |
| RW-3 | 01/02/03 | 20.00                      | 6.52                     | 13.48                        | 0.04                 | 5.56                    | 13.44                    | 13.47                       |
| RW-3 | 01/03/03 | 20.00                      | 6.38                     | 13.62                        | 0.23                 | 6.61                    | 13.39                    | 13.55                       |
| RW-3 | 01/06/03 | 20.00                      | 5.92                     | 14.08                        | 0.03                 | 5.95                    | 14.05                    | 14.07                       |
| RW-3 | 01/07/03 | 20.00                      | 5.81                     | 14.19                        | 0.04                 | 5.85                    | 14.15                    | 14.18                       |
| RW-3 | 01/08/03 | 20.00                      | 5.74                     | 14.26                        | 0.05                 | 5.79                    | 14.21                    | 14.24                       |
| RW-3 | 01/09/03 | 20.00                      | 5.78                     | 14.22                        | 0.05                 | 5.83                    | 14.17                    | 14.20                       |
| RW-3 | 01/10/03 | 20.00                      | 5.88                     | 14.12                        | 0.05                 | 5.93                    | 14.07                    | 14.10                       |
| RW-3 | 01/13/03 | 20.00                      | 6.02                     | 13.98                        | 0.08                 | 6.10                    | 13.90                    | 13.95                       |
| RW-3 | 01/14/03 | 20.00                      | 5.97                     | 14.03                        | 0.09                 | 6.06                    | 13.94                    | 14.00                       |
| RW-3 | 01/15/03 | 20.00                      | 5.87                     | 14.13                        | 0.12                 | 5.99                    | 14.01                    | 14.09                       |
| RW-3 | 01/16/03 | 20.00                      | 5.89                     | 14.11                        | 0.09                 | 5.98                    | 14.02                    | 14.08                       |
| RW-3 | 01/17/03 | 20.00                      | 5.85                     | 14.15                        | 0.07                 | 5.92                    | 14.08                    | 14.13                       |
| RW-3 | 01/20/03 | 20.00                      | 5.98                     | 14.02                        | 0.13                 | 6.11                    | 13.89                    | 13.98                       |
| RW-3 | 01/22/03 | 20.00                      | 5.91                     | 14.09                        | 0.09                 | 6.00                    | 14.00                    | 14.06                       |
| RW-3 | 01/23/03 | 20.00                      | 6.20                     | 13.80                        | 0.49                 | 6.69                    | 13.31                    | 13.64                       |
| RW-3 | 01/24/03 | 20.00                      | 6.02                     | 13.98                        | 0.24                 | 6.26                    | 13.74                    | 13.90                       |
| RW-3 | 01/27/03 | 20.00                      | 5.57                     | 14.43                        | 0.08                 | 5.65                    | 14.35                    | 14.40                       |
| RW-3 | 01/28/03 | 20.00                      | 5.55                     | 14.45                        | 0.07                 | 5.62                    | 14.38                    | 14.43                       |
| RW-3 | 01/29/03 | 20.00                      | 5.44                     | 14.56                        | 0.06                 | 5.50                    | 14.50                    | 14.54                       |
| RW-3 | 01/30/03 | 20.00                      | 5.56                     | 14.44                        | 0.06                 | 5.62                    | 14.38                    | 14.42                       |
| RW-3 | 02/03/03 | 20.00                      | 5.75                     | 14.25                        | 0.10                 | 5.85                    | 14.15                    | 14.22                       |
| RW-3 | 02/06/03 | 20.82                      | 6.44                     | 14.38                        | 0.12                 | 6.56                    | 14.26                    | 14.34                       |
| RW-3 | 02/11/03 | 20.82                      | 6.81                     | 14.01                        | 0.32                 | 7.13                    | 13.69                    | 13.91                       |
| RW-3 | 02/18/03 | 20.82                      | 7.29                     | 13.53                        | 0.88                 | 8.17                    | 12.65                    | 13.25                       |
| RW-3 | 02/21/03 | 20.82                      | 7.19                     | 13.63                        | 0.75                 | 7.94                    | 12.88                    | 13.39                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| RW-3 | 02/26/03 | 20.82                      | 6.73                     | 14.09                        | 0.31                 | 7.04                    | 13.78                    | 13.99                       |
| RW-3 | 03/04/03 | 20.82                      | 6.83                     | 13.99                        | 0.34                 | 7.17                    | 13.65                    | 13.88                       |
| RW-3 | 03/12/03 | 20.82                      | 7.38                     | 13.44                        | 0.06                 | 7.44                    | 13.38                    | 13.42                       |
| RW-3 | 03/14/03 | 20.82                      | 7.21                     | 13.61                        | 0.07                 | 7.28                    | 13.54                    | 13.59                       |
| RW-3 | 03/26/03 | 20.82                      | 6.52                     | 14.30                        | 0.01                 | 6.53                    | 14.29                    | 14.30                       |
| RW-3 | 03/28/02 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.09                    | 13.73                    | 13.73                       |
| RW-3 | 04/02/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.05                    | 13.77                    | 13.77                       |
| RW-3 | 04/04/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.26                    | 13.56                    | 13.56                       |
| RW-3 | 04/08/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 6.90                    | 13.92                    | 13.92                       |
| RW-3 | 04/11/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.51                    | 13.31                    | 13.31                       |
| RW-3 | 04/15/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 6.67                    | 14.15                    | 14.15                       |
| RW-3 | 04/17/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.61                    | 13.21                    | 13.21                       |
| RW-3 | 04/22/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.61                    | 13.21                    | 13.21                       |
| RW-3 | 04/25/03 | 20.82                      | N/A                      | N/A                          | N/A                  | 7.22                    | 13.60                    | 13.60                       |
| RW-3 | 05/02/03 | 20.82                      | 8.21                     | 12.61                        | 0.25                 | 8.46                    | 12.36                    | 12.53                       |
| RW-3 | 05/06/03 | 20.82                      | 8.51                     | 12.31                        | 0.24                 | 8.75                    | 12.07                    | 12.23                       |
| RW-3 | 05/09/03 | 20.82                      | 8.71                     | 12.11                        | 0.12                 | 8.83                    | 11.99                    | 12.07                       |
| RW-3 | 05/23/03 | 20.82                      | 9.74                     | 11.08                        | 0.03                 | 9.77                    | 11.05                    | 11.07                       |
| RW-3 | 05/28/03 | 20.82                      | 8.75                     | 12.07                        | 0.01                 | 8.76                    | 12.06                    | 12.07                       |
| RW-3 | 06/13/03 | 20.82                      | 9.19                     | 11.63                        | 0.02                 | 9.21                    | 11.61                    | 11.62                       |
| RW-3 | 06/18/03 | 20.82                      | 9.16                     | 11.66                        | 0.06                 | 9.22                    | 11.60                    | 11.64                       |
|      |          |                            |                          |                              |                      |                         |                          |                             |
| RW-4 | 11/20/02 | 19.92                      | 7.50                     | 12.42                        | 2.64                 | 10.14                   | 9.78                     | 11.58                       |
| RW-4 | 11/21/02 | 19.92                      | 7.50                     | 12.42                        | 2.64                 | 10.14                   | 9.78                     | 11.58                       |
| RW-4 | 11/22/02 | 19.92                      | 8.37                     | 11.55                        | 0.77                 | 9.14                    | 10.78                    | 11.30                       |
| RW-4 | 11/24/02 | 19.92                      | 7.57                     | 12.35                        | 2.52                 | 10.09                   | 9.83                     | 11.54                       |
| RW-4 | 01/03/03 | 19.92                      | 6.31                     | 13.61                        | 0.50                 | 6.81                    | 13.11                    | 13.45                       |
| RW-4 | 01/06/03 | 19.92                      | 6.02                     | 13.90                        | 0.04                 | 6.06                    | 13.86                    | 13.89                       |
| RW-4 | 01/07/03 | 19.92                      | 5.74                     | 14.18                        | 0.18                 | 5.92                    | 14.00                    | 14.12                       |
| RW-4 | 01/08/03 | 19.92                      | 5.67                     | 14.25                        | 0.14                 | 5.81                    | 14.11                    | 14.21                       |
| RW-4 | 01/09/03 | 19.92                      | 5.67                     | 14.25                        | 0.19                 | 5.86                    | 14.06                    | 14.19                       |
| RW-4 | 01/10/03 | 19.92                      | 5.76                     | 14.16                        | 0.25                 | 6.01                    | 13.91                    | 14.08                       |
| RW-4 | 01/13/03 | 19.92                      | 5.80                     | 14.12                        | 0.35                 | 6.15                    | 13.77                    | 14.01                       |
| RW-4 | 01/14/03 | 19.92                      | 5.85                     | 14.07                        | 0.29                 | 6.14                    | 13.78                    | 13.98                       |
| RW-4 | 01/15/03 | 19.92                      | 5.05                     | 14.87                        | 1.80                 | 6.85                    | 13.07                    | 14.29                       |
| RW-4 | 01/16/03 | 19.92                      | 5.78                     | 14.14                        | 0.27                 | 6.05                    | 13.87                    | 14.05                       |
| RW-4 | 01/17/03 | 19.92                      | 5.72                     | 14.20                        | 0.27                 | 5.99                    | 13.93                    | 14.11                       |
| RW-4 | 01/20/03 | 19.92                      | 5.84                     | 14.08                        | 0.30                 | 6.14                    | 13.78                    | 13.98                       |
| RW-4 | 01/22/03 | 19.92                      | 5.82                     | 14.10                        | 0.34                 | 6.16                    | 13.76                    | 13.99                       |
| RW-4 | 01/23/03 | 19.92                      | 6.12                     | 13.80                        | 0.58                 | 6.70                    | 13.22                    | 13.61                       |
| RW-4 | 01/24/03 | 19.92                      | 5.97                     | 13.95                        | 0.38                 | 6.35                    | 13.57                    | 13.83                       |
| RW-4 | 01/27/03 | 19.92                      | 5.51                     | 14.41                        | 0.13                 | 5.64                    | 14.28                    | 14.37                       |
| RW-4 | 01/28/03 | 19.92                      | 5.50                     | 14.42                        | 0.10                 | 5.60                    | 14.32                    | 14.39                       |
| RW-4 | 01/29/03 | 19.92                      | 5.36                     | 14.56                        | 0.07                 | 5.43                    | 14.49                    | 14.54                       |
| RW-4 | 01/30/03 | 19.92                      | 5.45                     | 14.47                        | 0.13                 | 5.58                    | 14.34                    | 14.43                       |
| RW-4 | 02/03/03 | 19.92                      | 5.66                     | 14.26                        | 0.21                 | 5.87                    | 14.05                    | 14.19                       |
| RW-4 | 02/06/03 | 20.68                      | 6.35                     | 14.33                        | 0.28                 | 6.63                    | 14.05                    | 14.24                       |
| RW-4 | 02/11/03 | 20.68                      | 6.75                     | 13.93                        | 0.39                 | 7.14                    | 13.54                    | 13.81                       |
| RW-4 | 02/18/03 | 20.68                      | 7.22                     | 13.46                        | 1.07                 | 8.29                    | 12.39                    | 13.12                       |
| RW-4 | 02/21/03 | 20.68                      | 7.10                     | 13.58                        | 0.97                 | 8.07                    | 12.61                    | 13.27                       |
| RW-4 | 02/26/03 | 20.68                      | 6.74                     | 13.94                        | 0.84                 | 7.58                    | 13.10                    | 13.67                       |
| RW-4 | 03/04/03 | 20.68                      | 7.08                     | 13.60                        | 0.14                 | 7.22                    | 13.46                    | 13.56                       |
| RW-4 | 03/12/03 | 20.68                      | 7.34                     | 13.34                        | 0.41                 | 7.75                    | 12.93                    | 13.21                       |
| RW-4 | 03/14/03 | 20.68                      | 7.20                     | 13.48                        | 0.64                 | 7.84                    | 12.84                    | 13.28                       |
| RW-4 | 03/26/03 | 20.68                      | 6.61                     | 14.07                        | 0.40                 | 7.01                    | 13.67                    | 13.94                       |
| RW-4 | 03/28/02 | 20.68                      | 7.15                     | 13.53                        | 0.47                 | 7.62                    | 13.06                    | 13.38                       |
| RW-4 | 04/02/03 | 20.68                      | 7.21                     | 13.47                        | 0.24                 | 7.45                    | 13.23                    | 13.39                       |
| RW-4 | 04/04/03 | 20.68                      | 7.52                     | 13.16                        | 0.15                 | 7.67                    | 13.01                    | 13.11                       |
| RW-4 | 04/08/03 | 20.68                      | N/A                      | N/A                          | N/A                  | 7.26                    | 13.42                    | 13.42                       |
| RW-4 | 04/11/03 | 20.68                      | 7.72                     | 12.96                        | 0.03                 | 7.75                    | 12.93                    | 12.95                       |
| RW-4 | 04/15/03 | 20.68                      | 7.14                     | 13.54                        | 0.06                 | 7.20                    | 13.48                    | 13.52                       |
| RW-4 | 04/17/03 | 20.68                      | 7.82                     | 12.86                        | 0.08                 | 7.90                    | 12.78                    | 12.83                       |
| RW-4 | 04/22/03 | 20.68                      | 7.87                     | 12.81                        | 0.08                 | 7.95                    | 12.73                    | 12.78                       |
| RW-4 | 04/25/03 | 20.68                      | 7.91                     | 12.77                        | 0.11                 | 8.02                    | 12.66                    | 12.73                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| RW-4 | 05/02/03 | 20.68                      | 8.32                     | 12.36                        | 0.13                 | 8.45                    | 12.23                    | 12.32                       |
| RW-4 | 05/06/03 | 20.68                      | 8.50                     | 12.18                        | 0.31                 | 8.81                    | 11.87                    | 12.08                       |
| RW-4 | 05/09/03 | 20.68                      | 8.72                     | 11.96                        | 0.36                 | 9.08                    | 11.60                    | 11.84                       |
| RW-4 | 05/23/03 | 20.68                      | 8.92                     | 11.76                        | 1.11                 | 10.03                   | 10.65                    | 11.40                       |
| RW-4 | 05/28/03 | 20.68                      | 8.80                     | 11.88                        | 0.02                 | 8.82                    | 11.86                    | 11.87                       |
| RW-4 | 06/13/03 | 20.68                      | 8.90                     | 11.78                        | 1.72                 | 10.62                   | 10.06                    | 11.23                       |
| RW-4 | 06/18/03 | 20.68                      | 8.85                     | 11.83                        | 1.96                 | 10.81                   | 9.87                     | 11.20                       |
| RW-5 | 11/20/02 | 20.64                      | 8.65                     | 11.99                        | 0.02                 | 8.67                    | 11.97                    | 11.98                       |
| RW-5 | 11/21/02 | 20.64                      | 8.30                     | 12.34                        | 0.10                 | 8.4                     | 12.24                    | 12.31                       |
| RW-5 | 11/22/02 | 20.64                      | 8.46                     | 12.18                        | 0.06                 | 8.52                    | 12.12                    | 12.16                       |
| RW-5 | 11/24/02 | 20.64                      | 8.63                     | 12.01                        | 0.28                 | 8.91                    | 11.73                    | 11.92                       |
| RW-5 | 01/02/03 | 20.64                      | 6.87                     | 13.77                        | 0.04                 | 6.91                    | 13.73                    | 13.76                       |
| RW-5 | 01/03/03 | 20.64                      | 6.77                     | 13.87                        | 0.03                 | 6.8                     | 13.84                    | 13.86                       |
| RW-5 | 01/06/03 | 20.64                      | 6.46                     | 14.18                        | 0.04                 | 6.5                     | 14.14                    | 14.17                       |
| RW-5 | 01/07/03 | 20.64                      | 6.36                     | 14.28                        | 0.06                 | 6.42                    | 14.22                    | 14.26                       |
| RW-5 | 01/08/03 | 20.64                      | 6.13                     | 14.51                        | 0.03                 | 6.16                    | 14.48                    | 14.50                       |
| RW-5 | 01/09/03 | 20.64                      | 6.25                     | 14.39                        | 0.03                 | 6.28                    | 14.36                    | 14.38                       |
| RW-5 | 01/10/03 | 20.64                      | 6.43                     | 14.21                        | 0.04                 | 6.47                    | 14.17                    | 14.20                       |
| RW-5 | 01/13/03 | 20.64                      | 6.48                     | 14.16                        | 0.03                 | 6.51                    | 14.13                    | 14.15                       |
| RW-5 | 01/14/03 | 20.64                      | 6.44                     | 14.20                        | 0.05                 | 6.49                    | 14.15                    | 14.18                       |
| RW-5 | 01/15/03 | 20.64                      | 6.37                     | 14.27                        | 0.04                 | 6.41                    | 14.23                    | 14.26                       |
| RW-5 | 01/16/03 | 20.64                      | 6.40                     | 14.24                        | 0.02                 | 6.42                    | 14.22                    | 14.23                       |
| RW-5 | 01/17/03 | 20.64                      | 6.37                     | 14.27                        | 0.04                 | 6.41                    | 14.23                    | 14.26                       |
| RW-5 | 01/20/03 | 20.64                      | 6.57                     | 14.07                        | 0.05                 | 6.62                    | 14.02                    | 14.05                       |
| RW-5 | 01/22/03 | 20.64                      | 6.60                     | 14.04                        | 0.08                 | 6.68                    | 13.96                    | 14.01                       |
| RW-5 | 01/23/03 | 20.64                      | 6.83                     | 13.81                        | 0.07                 | 6.90                    | 13.74                    | 13.79                       |
| RW-5 | 01/24/03 | 20.64                      | 6.69                     | 13.95                        | 0.03                 | 6.72                    | 13.92                    | 13.94                       |
| RW-5 | 01/27/03 | 20.64                      | 5.97                     | 14.67                        | 0.06                 | 6.03                    | 14.61                    | 14.65                       |
| RW-5 | 01/28/03 | 20.64                      | 5.95                     | 14.69                        | 0.09                 | 6.04                    | 14.60                    | 14.66                       |
| RW-5 | 01/29/03 | 20.64                      | 5.82                     | 14.82                        | 0.12                 | 5.94                    | 14.70                    | 14.78                       |
| RW-5 | 01/30/03 | 20.64                      | 5.90                     | 14.74                        | 0.10                 | 6.00                    | 14.64                    | 14.71                       |
| RW-5 | 02/03/03 | 20.64                      | 6.34                     | 14.30                        | 0.07                 | 6.41                    | 14.23                    | 14.28                       |
| RW-5 | 02/06/03 | 21.38                      | 7.12                     | 14.26                        | 0.06                 | 7.18                    | 14.20                    | 14.24                       |
| RW-5 | 02/11/03 | 21.38                      | 7.63                     | 13.75                        | 0.07                 | 7.70                    | 13.68                    | 13.73                       |
| RW-5 | 02/18/03 | 21.38                      | 8.11                     | 13.27                        | 0.14                 | 8.25                    | 13.13                    | 13.23                       |
| RW-5 | 02/21/03 | 21.38                      | 7.99                     | 13.39                        | 0.03                 | 8.02                    | 13.36                    | 13.38                       |
| RW-5 | 02/26/03 | 21.38                      | 7.74                     | 13.64                        | 0.01                 | 7.75                    | 13.63                    | 13.64                       |
| RW-5 | 03/04/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.59                    | 13.79                    | 13.79                       |
| RW-5 | 03/12/03 | 21.38                      | 8.04                     | 13.34                        | 0.01                 | 8.05                    | 13.33                    | 13.34                       |
| RW-5 | 03/14/03 | 21.38                      | 7.84                     | 13.54                        | 0.01                 | 7.85                    | 13.53                    | 13.54                       |
| RW-5 | 03/26/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.19                    | 14.19                    | 14.19                       |
| RW-5 | 03/28/02 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.71                    | 13.67                    | 13.67                       |
| RW-5 | 04/02/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.85                    | 13.53                    | 13.53                       |
| RW-5 | 04/04/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 8.16                    | 13.22                    | 13.22                       |
| RW-5 | 04/08/03 | 21.38                      | 7.71                     | 13.67                        | 0.00                 | 7.72                    | 13.67                    | 13.67                       |
| RW-5 | 04/11/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.78                    | 13.60                    | 13.60                       |
| RW-5 | 04/15/03 | 21.38                      | 7.44                     | 13.94                        | 0.01                 | 7.45                    | 13.93                    | 13.94                       |
| RW-5 | 04/17/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.91                    | 13.47                    | 13.47                       |
| RW-5 | 04/22/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.75                    | 13.63                    | 13.63                       |
| RW-5 | 04/25/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 7.84                    | 13.54                    | 13.54                       |
| RW-5 | 05/02/03 | 21.38                      | N/A                      | N/A                          | N/A                  | 8.78                    | 12.60                    | 12.60                       |
| RW-5 | 05/06/03 | 21.38                      | 9.05                     | 12.33                        | 0.01                 | 9.06                    | 12.32                    | 12.33                       |
| RW-5 | 05/09/03 | 21.38                      | 9.06                     | 12.32                        | 0.05                 | 9.11                    | 12.27                    | 12.30                       |
| RW-5 | 05/23/03 | 21.38                      | 9.08                     | 12.30                        | 0.01                 | 9.09                    | 12.29                    | 12.30                       |
| RW-5 | 05/28/03 | 21.38                      | 9.27                     | 12.11                        | 0.01                 | 9.28                    | 12.10                    | 12.11                       |
| RW-5 | 06/13/03 | 21.38                      | 9.85                     | 11.53                        | 0.06                 | 9.91                    | 11.47                    | 11.51                       |
| RW-5 | 06/18/03 | 21.38                      | 9.81                     | 11.57                        | 0.08                 | 9.89                    | 11.49                    | 11.54                       |
| RW-6 | 11/20/02 | 20.34                      | 8.05                     | 12.29                        | 2.05                 | 10.1                    | 10.24                    | 11.63                       |
| RW-6 | 11/21/02 | 20.34                      | 8.40                     | 11.94                        | 0.15                 | 8.55                    | 11.79                    | 11.89                       |
| RW-6 | 11/22/02 | 20.34                      | 8.45                     | 11.89                        | 0.24                 | 8.69                    | 11.65                    | 11.81                       |
| RW-6 | 11/24/02 | 20.34                      | 8.65                     | 11.69                        | 0.33                 | 8.98                    | 11.36                    | 11.58                       |
| RW-6 | 01/02/03 | 20.34                      | 6.70                     | 13.64                        | 0.87                 | 7.57                    | 12.77                    | 13.36                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date     | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|----------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| RW-6 | 01/07/03 | 20.34                      | 6.50                     | 13.84                        | 0.26                 | 6.76                    | 13.58                    | 13.76                       |
| RW-6 | 01/08/03 | 20.34                      | 6.09                     | 14.25                        | 0.51                 | 6.6                     | 13.74                    | 14.09                       |
| RW-6 | 01/09/03 | 20.34                      | 6.28                     | 14.06                        | 0.38                 | 6.66                    | 13.68                    | 13.94                       |
| RW-6 | 01/10/03 | 20.34                      | 6.42                     | 13.92                        | 0.23                 | 6.65                    | 13.69                    | 13.85                       |
| RW-6 | 01/13/03 | 20.34                      | 8.16                     | 12.18                        | 0.07                 | 8.23                    | 12.11                    | 12.16                       |
| RW-6 | 01/14/03 | 20.34                      | 6.73                     | 13.61                        | 0.20                 | 6.93                    | 13.41                    | 13.55                       |
| RW-6 | 01/15/03 | 20.34                      | 6.30                     | 14.04                        | 0.60                 | 6.90                    | 13.44                    | 13.85                       |
| RW-6 | 01/16/03 | 20.34                      | 6.28                     | 14.06                        | 0.65                 | 6.93                    | 13.41                    | 13.85                       |
| RW-6 | 01/17/03 | 20.34                      | 6.29                     | 14.05                        | 0.00                 | 6.29                    | 14.05                    | 14.05                       |
| RW-6 | 01/20/03 | 20.34                      | 6.31                     | 14.03                        | 0.63                 | 6.94                    | 13.40                    | 13.83                       |
| RW-6 | 01/22/03 | 20.34                      | 6.41                     | 13.93                        | 0.75                 | 7.16                    | 13.18                    | 13.69                       |
| RW-6 | 01/23/03 | 20.34                      | 6.60                     | 13.74                        | 0.80                 | 7.40                    | 12.94                    | 13.48                       |
| RW-6 | 01/24/03 | 20.34                      | 6.45                     | 13.89                        | 0.76                 | 7.21                    | 13.13                    | 13.65                       |
| RW-6 | 01/27/03 | 20.34                      | 5.82                     | 14.52                        | 0.62                 | 6.44                    | 13.90                    | 14.32                       |
| RW-6 | 01/28/03 | 20.34                      | 5.90                     | 14.44                        | 0.39                 | 6.29                    | 14.05                    | 14.32                       |
| RW-6 | 01/29/03 | 20.34                      | 5.81                     | 14.53                        | 0.35                 | 6.16                    | 14.18                    | 14.42                       |
| RW-6 | 01/30/03 | 20.34                      | 5.92                     | 14.42                        | 0.28                 | 6.20                    | 14.14                    | 14.33                       |
| RW-6 | 02/03/03 | 20.34                      | 6.25                     | 14.09                        | 0.19                 | 6.44                    | 13.90                    | 14.03                       |
| RW-6 | 02/06/03 | 21.09                      | 6.96                     | 14.13                        | 0.18                 | 7.14                    | 13.95                    | 14.07                       |
| RW-6 | 02/11/03 | 21.09                      | 7.44                     | 13.65                        | 0.31                 | 7.75                    | 13.34                    | 13.55                       |
| RW-6 | 02/18/03 | 21.09                      | 7.90                     | 13.19                        | 0.51                 | 8.41                    | 12.68                    | 13.03                       |
| RW-6 | 02/21/03 | 21.09                      | 7.86                     | 13.23                        | 0.47                 | 8.33                    | 12.76                    | 13.08                       |
| RW-6 | 02/26/03 | 21.09                      | 7.76                     | 13.33                        | 0.01                 | 7.77                    | 13.32                    | 13.33                       |
| RW-6 | 03/04/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.46                    | 13.63                    | 13.63                       |
| RW-6 | 03/12/03 | 21.09                      | 8.01                     | 13.08                        | 0.01                 | 8.02                    | 13.07                    | 13.08                       |
| RW-6 | 03/14/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.81                    | 13.28                    | 13.28                       |
| RW-6 | 03/26/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.02                    | 14.07                    | 14.07                       |
| RW-6 | 03/28/02 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.62                    | 13.47                    | 13.47                       |
| RW-6 | 04/02/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.74                    | 13.35                    | 13.35                       |
| RW-6 | 04/04/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 8.07                    | 13.02                    | 13.02                       |
| RW-6 | 04/08/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.69                    | 13.40                    | 13.40                       |
| RW-6 | 04/11/03 | 21.09                      | 7.61                     | 13.48                        | 0.01                 | 7.62                    | 13.47                    | 13.48                       |
| RW-6 | 04/15/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.29                    | 13.80                    | 13.80                       |
| RW-6 | 04/17/03 | 21.09                      | 7.78                     | 13.31                        | 0.01                 | 7.79                    | 13.30                    | 13.31                       |
| RW-6 | 04/22/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.81                    | 13.28                    | 13.28                       |
| RW-6 | 04/25/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 7.75                    | 13.34                    | 13.34                       |
| RW-6 | 05/02/03 | 21.09                      | N/A                      | N/A                          | N/A                  | 8.66                    | 12.43                    | 12.43                       |
| RW-6 | 05/06/03 | 21.09                      | 8.84                     | 12.25                        | 0.28                 | 9.12                    | 11.97                    | 12.16                       |
| RW-6 | 05/09/03 | 21.09                      | 8.82                     | 12.27                        | 0.43                 | 9.25                    | 11.84                    | 12.13                       |
| RW-6 | 05/23/03 | 21.09                      | 8.85                     | 12.24                        | 0.86                 | 9.71                    | 11.38                    | 11.96                       |
| RW-6 | 05/28/03 | 21.09                      | 8.93                     | 12.16                        | 1.08                 | 10.01                   | 11.08                    | 11.81                       |
| RW-6 | 06/13/03 | 21.09                      | 9.28                     | 11.81                        | 0.81                 | 10.09                   | 11.00                    | 11.55                       |
| RW-6 | 06/18/03 | 21.09                      | 9.22                     | 11.87                        | 1.53                 | 10.75                   | 10.34                    | 11.38                       |
|      |          |                            |                          |                              |                      |                         |                          |                             |
| RW-7 | 11/20/02 | 19.95                      | 7.65                     | 12.30                        | 2.46                 | 10.11                   | 9.84                     | 11.51                       |
| RW-7 | 11/21/02 | 19.95                      | 7.60                     | 12.35                        | 2.51                 | 10.11                   | 9.84                     | 11.55                       |
| RW-7 | 11/22/02 | 19.95                      | 8.03                     | 11.92                        | 1.75                 | 9.78                    | 10.17                    | 11.36                       |
| RW-7 | 11/24/02 | 19.95                      | 8.23                     | 11.72                        | 1.26                 | 9.49                    | 10.46                    | 11.32                       |
| RW-7 | 01/02/03 | 19.95                      | 6.44                     | 13.51                        | 0.40                 | 6.84                    | 13.11                    | 13.38                       |
| RW-7 | 01/03/03 | 19.95                      | 6.28                     | 13.67                        | 0.40                 | 6.68                    | 13.27                    | 13.54                       |
| RW-7 | 01/06/03 | 19.95                      | 5.93                     | 14.02                        | 0.12                 | 6.05                    | 13.90                    | 13.98                       |
| RW-7 | 01/07/03 | 19.95                      | 5.84                     | 14.11                        | 0.20                 | 6.04                    | 13.91                    | 14.05                       |
| RW-7 | 01/08/03 | 19.95                      | 5.66                     | 14.29                        | 0.20                 | 5.86                    | 14.09                    | 14.23                       |
| RW-7 | 01/09/03 | 19.95                      | 5.72                     | 14.23                        | 0.33                 | 6.05                    | 13.90                    | 14.12                       |
| RW-7 | 01/10/03 | 19.95                      | 5.90                     | 14.05                        | 0.25                 | 6.15                    | 13.80                    | 13.97                       |
| RW-7 | 01/13/03 | 19.95                      | 5.98                     | 13.97                        | 0.37                 | 6.35                    | 13.60                    | 13.85                       |
| RW-7 | 01/14/03 | 19.95                      | 5.97                     | 13.98                        | 0.27                 | 6.24                    | 13.71                    | 13.89                       |
| RW-7 | 01/15/03 | 19.95                      | 5.95                     | 14.00                        | 0.30                 | 6.25                    | 13.70                    | 13.90                       |
| RW-7 | 01/16/03 | 19.95                      | 5.84                     | 14.11                        | 0.41                 | 6.25                    | 13.70                    | 13.98                       |
| RW-7 | 01/17/03 | 19.95                      | 5.85                     | 14.10                        | 0.35                 | 6.20                    | 13.75                    | 13.99                       |
| RW-7 | 01/20/03 | 19.95                      | 6.02                     | 13.93                        | 0.53                 | 6.55                    | 13.40                    | 13.76                       |
| RW-7 | 01/22/03 | 19.95                      | 6.11                     | 13.84                        | 0.80                 | 6.91                    | 13.04                    | 13.58                       |
| RW-7 | 01/23/03 | 19.95                      | 6.25                     | 13.70                        | 1.05                 | 7.30                    | 12.65                    | 13.36                       |
| RW-7 | 01/24/03 | 19.95                      | 6.16                     | 13.79                        | 1.03                 | 7.19                    | 12.76                    | 13.46                       |

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well | Date       | Top of Casing<br>Elevation | Depth to Free<br>Product | Elevation of<br>Free Product | Product<br>Thickness | Depth to<br>Groundwater | Groundwater<br>Elevation | Potentiometric<br>Elevation |
|------|------------|----------------------------|--------------------------|------------------------------|----------------------|-------------------------|--------------------------|-----------------------------|
| RW-7 | 01/27/03   | 19.95                      | 5.60                     | 14.35                        | 0.58                 | 6.18                    | 13.77                    | 14.16                       |
| RW-7 | 01/28/03   | 19.95                      | 5.65                     | 14.30                        | 0.63                 | 6.28                    | 13.67                    | 14.10                       |
| RW-7 | 01/29/03   | 19.95                      | 5.55                     | 14.40                        | 0.65                 | 6.20                    | 13.75                    | 14.19                       |
| RW-7 | 01/30/03   | 19.95                      | 5.65                     | 14.30                        | 0.67                 | 6.32                    | 13.63                    | 14.09                       |
| RW-7 | 02/03/03   | 19.95                      | 5.91                     | 14.04                        | 0.76                 | 6.67                    | 13.28                    | 13.80                       |
| RW-7 | 02/06/03   | 20.72                      | 6.55                     | 14.17                        | 0.79                 | 7.34                    | 13.38                    | 13.92                       |
| RW-7 | 02/11/03   | 20.72                      | 6.99                     | 13.73                        | 1.08                 | 8.07                    | 12.65                    | 13.38                       |
| RW-7 | 02/21/03   | 20.72                      | 7.42                     | 13.30                        | 0.99                 | 8.41                    | 12.31                    | 12.98                       |
| RW-7 | 02/26/03   | 20.72                      | 7.24                     | 13.48                        | 0.04                 | 7.28                    | 13.44                    | 13.47                       |
| RW-7 | 03/04/03   | 20.72                      | N/A                      | N/A                          | N/A                  | 6.96                    | 13.76                    | 13.76                       |
| RW-7 | 03/12/03   | 19.95                      | Trace                    | N/A                          | N/A                  | 7.71                    | 12.24                    | 12.24                       |
| RW-7 | 03/14/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.51                    | 12.44                    | 12.44                       |
| RW-7 | 03/26/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 6.68                    | 13.27                    | 13.27                       |
| RW-7 | 03/28/02   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.25                    | 12.70                    | 12.70                       |
| RW-7 | 04/02/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.42                    | 12.53                    | 12.53                       |
| RW-7 | 04/04/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.64                    | 12.31                    | 12.31                       |
| RW-7 | 04/08/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.22                    | 12.73                    | 12.73                       |
| RW-7 | 04/11/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.16                    | 12.79                    | 12.79                       |
| RW-7 | 04/15/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 6.81                    | 13.14                    | 13.14                       |
| RW-7 | 04/17/03   | 19.95                      | N/A                      | N/A                          | N/A                  | 7.38                    | 12.57                    | 12.57                       |
| RW-7 | 04/22/2003 | 19.95                      | N/A                      | N/A                          | N/A                  | 7.34                    | 12.61                    | 12.61                       |
| RW-7 | 04/25/2003 | 19.95                      | N/A                      | N/A                          | N/A                  | 7.21                    | 12.74                    | 12.74                       |
| RW-7 | 05/02/03   | 19.95                      | 8.30                     | 11.65                        | 0.03                 | 8.33                    | 11.62                    | 11.64                       |
| RW-7 | 05/06/03   | 19.95                      | 8.52                     | 11.43                        | 0.08                 | 8.6                     | 11.35                    | 11.40                       |
| RW-7 | 05/09/03   | 19.95                      | 8.54                     | 11.41                        | 0.03                 | 8.57                    | 11.38                    | 11.40                       |
| RW-7 | 05/23/03   | 19.95                      | 8.55                     | 11.40                        | 1.03                 | 9.58                    | 10.37                    | 11.07                       |
| RW-7 | 05/28/03   | 19.95                      | 8.57                     | 11.38                        | 1.55                 | 10.12                   | 9.83                     | 10.88                       |
| RW-7 | 06/13/03   | 19.95                      | 8.92                     | 11.03                        | 1.64                 | 10.56                   | 9.39                     | 10.51                       |
| RW-7 | 06/18/03   | 19.95                      | 8.88                     | 11.07                        | 1.87                 | 10.75                   | 9.20                     | 10.47                       |
| W-1  | 11/24/02   | 18.86                      | N/A                      | N/A                          | N/A                  | 7.95                    | 10.91                    | 10.91                       |
| W-2  | 11/24/02   | 18.28                      | N/A                      | N/A                          | N/A                  | 7.39                    | 10.89                    | 10.89                       |
| W-3  | 11/24/02   | 17.10                      | N/A                      | N/A                          | N/A                  | 6.05                    | 11.05                    | 11.05                       |
| W-4  | 11/24/02   | 18.03                      | 7.44                     | 10.59                        | 0.01                 | 7.45                    | 10.58                    | 10.59                       |
| B-1  | 11/24/02   | 18.62                      | N/A                      | N/A                          | N/A                  | 7.85                    | 10.77                    | 10.77                       |
| B-2  | 11/24/02   | 18.60                      | N/A                      | N/A                          | N/A                  | 7.86                    | 10.74                    | 10.74                       |
| B-3  | 11/24/02   | 18.73                      | 8.18                     | 10.55                        | 2.63                 | 10.81                   | 7.92                     | 9.71                        |
| B-4  | 11/24/02   | 18.09                      | N/A                      | N/A                          | N/A                  | 7.22                    | 10.87                    | 10.87                       |
| B-5  | 11/24/02   | 17.97                      | N/A                      | N/A                          | N/A                  | 6.93                    | 11.04                    | 11.04                       |
| B-6  | 11/24/02   | 17.94                      | N/A                      | N/A                          | N/A                  | 7.53                    | 10.41                    | 10.41                       |
| D-1  | 11/24/02   | 18.03                      | N/A                      | N/A                          | N/A                  | 6.27                    | 11.76                    | 11.76                       |
| D-2  | 11/24/02   | 19.14                      | ---                      | ---                          | ---                  | ---                     | ---                      | ---                         |
| D-4  | 11/24/02   | 17.82                      | ---                      | ---                          | ---                  | ---                     | ---                      | ---                         |
| D-5  | 11/24/02   | 18.12                      | N/A                      | N/A                          | N/A                  | DRY                     | DRY                      | DRY                         |
| D-6  | 11/24/02   | 17.74                      | N/A                      | N/A                          | N/A                  | 6.55                    | 11.19                    | 11.19                       |
| D-7  | 11/24/02   | 17.69                      | N/A                      | N/A                          | N/A                  | 6.93                    | 10.76                    | 10.76                       |

N/A No free product available

**TABLE 2**  
**WELL HEADSPACE**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well<br>Identification | Date     | PID Headspace<br>(ppm) |
|------------------------|----------|------------------------|
| HA-5                   | 01/31/03 | 146                    |
| HA-5                   | 02/07/03 | 98.2                   |
| HA-5                   | 02/12/03 | 87.6                   |
| HA-5                   | 02/20/03 | 70.3                   |
| HA-5                   | 03/12/03 | 56.0                   |
| HA-5                   | 03/26/03 | 11.0                   |
| HA-5                   | 04/04/03 | 19.9                   |
| HA-5                   | 04/11/03 | 345.0                  |
| HA-5                   | 04/17/03 | 10.5                   |
| HA-5                   | 04/25/03 | 12.8                   |
| HA-5                   | 05/02/03 | 0.2                    |
| HA-5                   | 05/09/03 | 0(a)                   |
| HA-5                   | 05/28/03 | 20.2                   |
| HA-8                   | 01/31/03 | 9.5                    |
| HA-8                   | 02/07/03 | 0.0                    |
| HA-8                   | 02/12/03 | 0.0                    |
| HA-8                   | 02/20/03 | 0.0                    |
| HA-8                   | 03/12/03 | 96.0                   |
| HA-8                   | 03/26/03 | 9.0                    |
| HA-8                   | 04/04/03 | 1.6                    |
| HA-8                   | 04/11/03 | 1.4                    |
| HA-8                   | 04/17/03 | 12.1                   |
| HA-8                   | 04/25/03 | 5.8                    |
| HA-8                   | 05/02/03 | 13.5                   |
| HA-8                   | 05/09/03 | 10.8(a)                |
| HA-8                   | 05/28/03 | 59.3                   |
| HA-13                  | 01/31/03 | 2.5                    |
| HA-13                  | 02/07/03 | 0.0                    |
| HA-13                  | 02/12/03 | 18.4                   |
| HA-13                  | 02/20/03 | 0.0                    |
| HA-13                  | 03/12/03 | 30.0                   |
| HA-13                  | 03/26/03 | 11.5                   |
| HA-13                  | 04/04/03 | 6.1                    |
| HA-13                  | 04/11/03 | 1.4                    |
| HA-13                  | 04/17/03 | 4.4                    |
| HA-13                  | 04/25/03 | 5.0                    |
| HA-13                  | 05/02/03 | 0.3                    |
| HA-13                  | 05/09/03 | 0(a)                   |
| HA-13                  | 05/28/03 | N/A                    |
| HA-15                  | 01/31/03 | 15                     |
| HA-15                  | 02/07/03 | 10.2                   |
| HA-15                  | 02/12/03 | 0.0                    |
| HA-15                  | 02/20/03 | 31.3                   |
| HA-15                  | 03/12/03 | 26.0                   |
| HA-15                  | 03/26/03 | 47.3                   |
| HA-15                  | 04/04/03 | 96.1                   |
| HA-15                  | 04/11/03 | 53.9                   |
| HA-15                  | 04/17/03 | 18.1                   |
| HA-15                  | 04/25/03 | 45.3                   |
| HA-15                  | 05/02/03 | 7.9                    |
| HA-15                  | 05/09/03 | 1.4(a)                 |
| HA-20                  | 01/27/03 | >2,000                 |
| HA-20                  | 03/12/03 | 27.0                   |
| HA-20                  | 03/26/03 | >2,000                 |
| HA-20                  | 04/04/03 | >2,000                 |
| HA-20                  | 04/11/03 | >2,000                 |

**TABLE 2**  
**WELL HEADSPACE**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well<br>Identification | Date     | PID Headspace<br>(ppm) |
|------------------------|----------|------------------------|
| HA-20                  | 04/17/03 | >2,000                 |
| HA-20                  | 04/25/03 | >2,000                 |
| HA-20                  | 05/02/03 | >2,000                 |
| HA-20                  | 05/09/03 | 0.0(a)                 |
| HA-20                  | 05/28/03 | >2000                  |
| LAI-1                  | 01/31/03 | 1,924                  |
| LAI-1                  | 02/07/03 | 1,831                  |
| LAI-1                  | 02/12/03 | >2,000                 |
| LAI-1                  | 02/20/03 | 10.2                   |
| LAI-1                  | 03/12/03 | 25.0                   |
| LAI-1                  | 03/26/03 | 175.0                  |
| LAI-1                  | 04/04/03 | 198.0                  |
| LAI-1                  | 04/11/03 | 1080.0                 |
| LAI-1                  | 04/17/03 | 1082.0                 |
| LAI-1                  | 04/25/03 | 849.0                  |
| LAI-1                  | 05/02/03 | 125.0                  |
| LAI-1                  | 05/09/03 | NA                     |
| LAI-1                  | 05/28/03 | 175.0                  |
| LAI-2                  | 01/31/03 | 35.6                   |
| LAI-2                  | 02/07/03 | 36.5                   |
| LAI-2                  | 02/12/03 | 0.0                    |
| LAI-2                  | 02/20/03 | 1.8                    |
| LAI-2                  | 03/12/03 | 0.0                    |
| LAI-2                  | 03/26/03 | 0.0                    |
| LAI-2                  | 04/04/03 | 0.0                    |
| LAI-2                  | 04/11/03 | 220.0                  |
| LAI-2                  | 04/17/03 | 345.0                  |
| LAI-2                  | 04/25/03 | 128.0                  |
| LAI-2                  | 05/02/03 | 128.0                  |
| LAI-2                  | 05/09/03 | 128.0                  |
| LAI-2                  | 05/02/03 | 65.0                   |
| LAI-2                  | 05/09/03 | NA                     |
| LAI-2                  | 05/28/03 | 62.0                   |
| LAI-3                  | 01/31/03 | 47.3                   |
| LAI-3                  | 02/07/03 | 43.2                   |
| LAI-3                  | 02/12/03 | 1.3                    |
| LAI-3                  | 02/20/03 | 3.6                    |
| LAI-3                  | 03/12/03 | 0.0                    |
| LAI-3                  | 03/26/03 | 0.0                    |
| LAI-3                  | 04/04/03 | 0.0                    |
| LAI-3                  | 04/11/03 | 8.6                    |
| LAI-3                  | 04/17/03 | 0.2                    |
| LAI-3                  | 04/25/03 | 0.0                    |
| LAI-3                  | 05/02/03 | 0.0                    |
| LAI-3                  | 05/09/03 | 0.0(a)                 |
| LAI-3                  | 05/28/03 | 0.0                    |
| LAI-4                  | 01/27/03 | 1,750                  |
| LAI-5                  | 01/27/03 | 1,800                  |
| LAI-6                  | 01/27/03 | 850                    |
| LAI-7                  | 01/27/03 | 1,325                  |
| LAI-8                  | 01/27/03 | 1,750                  |

**TABLE 2**  
**WELL HEADSPACE**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Well Identification | Date     | PID Headspace (ppm) |
|---------------------|----------|---------------------|
| LAI-9               | 01/27/03 | 1,076               |
| LAI-10              | 02/12/03 | 0.0                 |
| LAI-11              | 02/12/03 | 0.0                 |
| LAI-12              | 02/12/03 | 0.0                 |
| RW-1                | 01/27/03 | 133                 |
| RW-2                | 01/27/03 | 1,415               |
| RW-3                | 01/27/03 | >2,000              |
| RW-4                | 01/27/03 | >2,000              |
| RW-5                | 01/27/03 | >2,000              |
| RW-6                | 01/27/03 | 1,850               |
| RW-7                | 01/27/03 | >2,000              |

a) Possible erroneous data related to malfunctioning field meter

N/A: Data not available

PID = Photoionization detector.

ppm = Parts per million.

**TABLE 3**  
**WATER ANALYTICAL RESULTS**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Location                | Lab ID     | Date Collected | BETX (µg/L)<br>Method 8021B |         |              | NWTPH-Gx (µg/L) |          | NWTPH-Dx (mg/L) |          |
|-------------------------|------------|----------------|-----------------------------|---------|--------------|-----------------|----------|-----------------|----------|
|                         |            |                | Benzene                     | Toluene | Ethylbenzene | Xylenes (total) | Gasoline | Diesel          | Lube Oil |
| B2                      | B2K0572-16 | 11/25/2002     | 9850                        | 1780    | 1280         | 9220            | 60500    | 13.2            | 0.500 U  |
| B3                      | B2K0572-15 | 11/25/2002     | NA                          | NA      | NA           | NA              | NA       | NA              | NA       |
| B4                      | B2K0572-09 | 11/25/2002     | 519                         | 295     | 2180         | 10500           | 41700    | 5.46            | 0.500 U  |
| B5                      | B2K0572-10 | 11/25/2002     | 126                         | 4.31    | 37.4         | 67.4            | 2270     | 1.06            | 0.500 U  |
| B6                      | B2K0619-05 | 11/26/2002     | 5230                        | 5410    | 525          | 5460            | 43000    | 5.31 J          | 2.51 J   |
| Dup of B6 (B17)         | B2K0619-06 | 11/26/2002     | 4850                        | 5010    | 464          | 5430            | 43500    | 7.04 J          | 3.63 J   |
| D1                      | B2K0619-04 | 11/26/2002     | 0.500 U                     | 1.12    | 0.500 U      | 2.16            | 185      | 0.434           | 1.01     |
| D6                      | B2K0619-11 | 11/26/2002     | 121                         | 10.7    | 1.20         | 5.59            | 385      | 0.250 U         | 0.500 U  |
| D7                      | B2K0619-07 | 11/26/2002     | 2.82                        | 0.614   | 0.500 U      | 1.12            | 50.0 U   | 0.435           | 1.26     |
| HA1                     | B2K0619-08 | 11/26/2002     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U   | 0.250 U         | 0.500 U  |
| HA5                     | B2K0471-01 | 11/19/2002     | 3.39                        | 5.63    | 0.581        | 5.87            | 223      | NA              | NA       |
| HA5                     | B2K0572-08 | 11/25/2002     | 2.94                        | 1.67    | 0.500 U      | 4.22            | 236      | 0.250 U         | 0.500 U  |
| Dup of HA5 (HA5-021122) | B2K0572-17 | 11/25/2002     | 2.78                        | 1.51    | 0.500 U      | 3.81            | 243      | 0.250 U         | 0.500 U  |
| HA5                     | B3A0300-06 | 01/14/2003     | 3380                        | 2870    | 43.6         | 151             | 14300    | NA              | NA       |
| HA5                     | B3B0527-01 | 02/24/2003     | 8620                        | 17200   | 685          | 3260            | 65000    | 0.476           | 0.500 U  |
| HA5                     | B3C0615-05 | 03/25/2003     | 6550                        | 14700   | 657          | 2900            | 54700    | 0.388           | 0.500 U  |
| HA5                     | B3D0437-08 | 04/18/2003     | 7550                        | 16800   | 857          | 3960            | 66600    | 0.250 U         | 0.500 U  |
| HA6                     | B2K0572-07 | 11/25/2002     | 637                         | 181     | 1320         | 5620            | 25600    | 1.43            | 0.500 U  |
| HA7                     | B2K0471-02 | 11/19/2002     | 587                         | 31.3    | 259          | 324             | 5510     | NA              | NA       |
| HA7                     | B2K0572-05 | 11/25/2002     | 811                         | 41.1    | 402          | 580             | 7840     | 2.67            | 0.500 U  |
| HA7                     | B3A0300-03 | 01/14/2003     | 421                         | 56.2    | 261          | 2350            | 13700    | NA              | NA       |
| HA8                     | B2K0471-03 | 11/19/2002     | 2.07                        | 4.11    | 1.76         | 7.42            | 135      | NA              | NA       |
| HA8                     | B2K0572-04 | 11/24/2002     | 5.78                        | 16.9    | 12.6         | 57.8            | 579      | 0.250 U         | 0.500 U  |
| HA8                     | B3A0300-04 | 01/14/2003     | 4.02                        | 16.5    | 16.3         | 207             | 633      | NA              | NA       |
| HA8                     | B3B0527-02 | 02/24/2003     | 14.6                        | 74.5    | 232          | 1570            | 5720     | 0.767           | 0.500 U  |
| HA8                     | B3C0615-06 | 03/25/2003     | 6.17                        | 22.0    | 73.0         | 445             | 1950     | 0.544           | 0.500 U  |
| HA8                     | B3D0437-10 | 04/18/2003     | 12.1                        | 35.9    | 160          | 708             | 3040     | 0.250 U         | 0.500 U  |
| Dup of HA8              | B3D0437-06 | 04/18/2003     | 11.9                        | 41.1    | 164          | 762             | 3650     | 0.257           | 0.500 U  |

**TABLE 3**  
**WATER ANALYTICAL RESULTS**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Location               | Lab ID                | Date Collected | BETX (µg/L)<br>Method 8021B |         |              |                 | NWTPH-Gx (µg/L) |          | NWTPH-Dx (mg/L) |  |
|------------------------|-----------------------|----------------|-----------------------------|---------|--------------|-----------------|-----------------|----------|-----------------|--|
|                        |                       |                | Benzene                     | Toluene | Ethylbenzene | Xylenes (total) | Gasoline        | Diesel   | Lube Oil        |  |
| HA9                    | B2K0619-10            | 11/26/2002     | 249                         | 3.55    | 349          | 187             | 6110 J          | NA       | NA              |  |
| HA12                   | B2K0572-06            | 11/25/2002     | 0.957                       | 3.85    | 1.52         | 10.8            | 93.7            | 0.250 U  | 0.500 U         |  |
| HA13                   | B2K0572-12/B2K0619-02 | 11/25/2002     | 0.569                       | 1.80    | 0.667        | 5.74            | 50.0 U          | 0.250 U  | 0.500 U         |  |
| HA13                   | B3B0527-03            | 02/24/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.08            | 50.0 U          | 0.250 U  | 0.500 U         |  |
| HA13                   | B3C0615-07            | 03/25/2003     | 0.500 U                     | 0.580   | 0.500 U      | 1.00 U          | 98.4            | 0.250 U  | 0.500 U         |  |
| HA13                   | B3D0437-07            | 04/18/2003     | 0.500 U                     | 0.500 U | 0.500        | 1.00 U          | 50.0 U          | 0.250 U  | 0.500 U         |  |
| HA14                   | B2K0572-13/B2K0619-03 | 11/25/2002     | 141                         | 15.7    | 169          | 48.1            | 939             | 0.250 U  | 0.500 U         |  |
| HA14                   | B3D0437-13            | 04/18/2003     | 133                         | 8.87    | 228          | 23.7            | 1190            | 0.250 U  | 0.500 U         |  |
| HA15                   | B3A0300-05            | 01/14/2003     | 3.34                        | 0.672   | 0.500 U      | 2.51            | 344             | NA       | NA              |  |
| HA15                   | B3B0527-04            | 02/24/2003     | 12.9                        | 5.57    | 9.80         | 69.6            | 1250            | 0.481    | 0.500 U         |  |
| HA15                   | B3C0615-08            | 03/25/2003     | 7.47                        | 1.55    | 1.12         | 3.99            | 910             | 0.486    | 0.500 U         |  |
| HA15                   | B3D0437-09            | 04/18/2003     | 7.21                        | 1.88    | 0.716        | 6.47            | 658             | 0.250 U  | 0.500 U         |  |
| HA17                   | B3A0300-02            | 01/14/2003     | 10.2                        | 1.25 U  | 1.55         | 2.61            | 548             | NA       | NA              |  |
| HA17                   | B3E0729-10            | 05/29/2003     | 50.0                        | 129     | 80.1         | 322             | 2090            | 0.250 UJ | 0.500 UJ        |  |
| HA18                   | B3A0300-01            | 01/14/2003     | 40.3                        | 75.9    | 810          | 2220            | 11400           | NA       | NA              |  |
| HA18                   | B3E0729-11            | 05/29/2003     | 95.0                        | 157     | 2440         | 7840            | 31000           | 7.51     | 0.500 U         |  |
| LAI-1                  | B3A0300-07            | 01/15/2003     | 728                         | 935     | 22.8         | 120             | 4120            | NA       | NA              |  |
| LAI-1                  | B3B0527-05            | 02/26/2003     | 2150                        | 3680    | 116          | 979             | 15100           | 1.02     | 0.500 U         |  |
| LAI-1                  | B3C0577-01            | 03/24/2003     | 7970                        | 15000   | 739          | 4250            | 47500           | 1.49     | 0.500 U         |  |
| LAI-2                  | B3A0300-08            | 01/15/2003     | 2.78                        | 2.20 J  | 1.10 J       | 9.33 J          | 72.6 J          | NA       | NA              |  |
| Dup of LAI-2 (LAI-12)  | B3A0300-10            | 01/15/2003     | 3.39                        | 3.36 J  | 1.68 J       | 15.1 J          | 103 J           | NA       | NA              |  |
| LAI-2                  | B3E0729-12            | 05/29/2003     | 2940                        | 6100    | 235          | 1680            | 18100           | 0.250 U  | 0.500 U         |  |
| Dup of LAI-2 (LAI-20)  | B3E0729-09            | 05/29/2003     | 2840                        | 6320    | 235          | 1680            | 18800           | 0.299 J  | 0.500 U         |  |
| LAI-3                  | B3A0300-09            | 01/15/2003     | 0.500 U                     | 3.19    | 1.36         | 8.45            | 66.6            | NA       | NA              |  |
| LAI-3                  | B3B0527-06            | 02/26/2003     | 70.1                        | 159     | 6.42         | 32.6            | 558             | 0.250 U  | 0.500 U         |  |
| LAI-3                  | B3C0615-01            | 03/25/2003     | 61.6                        | 176     | 8.43         | 39.5            | 573             | 0.250 U  | 0.500 U         |  |
| LAI-3                  | B3D0437-05            | 04/17/2003     | 7.56                        | 24.5    | 4.00         | 29.4            | 154             | 0.250 U  | 0.500 U         |  |
| LAI-3                  | B3E0729-13            | 05/29/2003     | 151                         | 40.7    | 0.951        | 4.6             | 301             | 0.250 U  | 0.500 U         |  |
| LAI-10                 | B3B0527-07            | 02/26/2003     | 0.500 U                     | 0.991   | 0.500 U      | 1.37            | 50.0 U          | 0.250 U  | 0.500 U         |  |
| Dup of LAI-10 (LAI-17) | B3B0527-12            | 02/26/2003     | 0.500 U                     | 0.757   | 0.500 U      | 1.18            | 50.0 U          | 0.250 U  | 0.500 U         |  |
| LAI-10                 | B3C0577-02            | 03/24/2003     | 1.35                        | 2.87    | 0.500 U      | 1.36            | 50.0 U          | 0.250 UJ | 0.500 U         |  |
| LAI-10                 | B3D0437-02            | 04/17/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U  | 0.500 U         |  |
| LAI-10                 | B3E0729-08            | 05/28/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U  | 0.500 U         |  |

**TABLE 3**  
**WATER ANALYTICAL RESULTS**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Location               | Lab ID     | Date Collected | BETX (µg/L)<br>Method 8021B |         |              |                 | NWTPH-Gx (µg/L) |         | NWTPH-Dx (mg/L) |  |
|------------------------|------------|----------------|-----------------------------|---------|--------------|-----------------|-----------------|---------|-----------------|--|
|                        |            |                | Benzene                     | Toluene | Ethylbenzene | Xylenes (total) | Gasoline        | Diesel  | Lube Oil        |  |
| LAI-11                 | B3B0527-08 | 02/26/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.401   | 0.500 U         |  |
| LAI-11                 | B3C0577-03 | 03/24/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.429   | 0.500 U         |  |
| LAI-11                 | B3D0437-03 | 04/17/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-11                 | B3E0729-02 | 05/28/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-12                 | B3E0729-03 | 05/28/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.81            | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-13                 | B3E0729-06 | 05/28/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-14                 | B3B0527-09 | 02/25/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0            | 0.269   | 0.500 U         |  |
| LAI-14                 | B3C0615-02 | 03/25/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 66.3            | 0.250 U | 0.500 U         |  |
| LAI-14                 | B3D0437-11 | 04/18/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-14                 | B3E0729-05 | 05/28/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-15                 | B3E0729-04 | 05/28/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 104             | 0.250 U | 0.500 U         |  |
| LAI-16                 | B3B0527-10 | 02/25/2003     | 0.500 U                     | 0.679   | 0.500 U      | 1.09            | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-16                 | B3C0615-03 | 03/25/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.288   | 0.500 U         |  |
| Dup of LAI-16 (LAI-26) | B3C0615-04 | 03/25/2003     | 0.500 U                     | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.330   | 0.500 U         |  |
| LAI-16                 | B3D0437-04 | 04/17/2003     | 3.51                        | 0.500 U | 0.500 U      | 1.00 U          | 50.0 U          | 0.250 U | 0.500 U         |  |
| LAI-16                 | B3E0729-07 | 05/28/2003     | 523                         | 14.9    | 1.00 U       | 2.25            | 705 J           | 0.250 U | 0.500 U         |  |
| W1                     | B2K0572-14 | 11/25/2002     | 17600                       | 24800   | 2950         | 19500           | 155000          | 16.7    | 0.500 U         |  |
| W2                     | B2K0572-11 | 11/25/2002     | 15300                       | 15800   | 1960         | 11700           | 104000          | 14.7    | 1.91            |  |
| W3                     | B2K0619-09 | 11/26/2002     | 455                         | 156     | 463          | 1570            | 14100           | 4.89    | 0.500 U         |  |
| W4                     | B2K0619-01 | 11/25/2002     | 1830                        | 38.2    | 2550         | 4220            | 39900           | 19.2    | 0.648           |  |

NA = Not analyzed.

U = Not detected above reporting limit.

J = Indicates that the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

**TABLE 4**  
**INFLUENT AND EFFLUENT AIR ANALYTICAL RESULTS - DPVE SYSTEM**  
**CONOCOPHILLIPS RENTON TERMINAL**

|                         | TO-14 BTEX + From February through April 2003 (ppmV) |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|-------------------------|------------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | Influent                                             | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   | Influent   | Effluent   |
|                         | 203134-01                                            | 203134-02  | 203145-01  | 203145-02  | 203249-01  | 203249-02  | 203284-01  | 203284-02  | 203284-01  | 203284-02  | 203284-01  | 203284-02  | 203284-01  | 203284-02  | 203284-01  | 203284-02  | 203284-01  | 203284-02  | 203284-01  | 203284-02  |
|                         | 02/13/2003                                           | 02/13/2003 | 02/24/2003 | 02/24/2003 | 04/08/2003 | 04/08/2003 | 04/17/2003 | 04/17/2003 | 04/17/2003 | 04/17/2003 | 06/20/2003 | 06/20/2003 | 06/20/2003 | 06/20/2003 | 06/20/2003 | 06/20/2003 | 07/11/2003 | 07/11/2003 | 07/11/2003 | 07/11/2003 |
| Benzene                 | 9.162                                                | 0.002 U    | 62.322     | NA         | 28.845     | 0.002 U    | 34.874     | 0.002 U    | 84.0       | 0.0640     | 80.5       | 0.641      |            |            |            |            |            |            |            |            |
| Toluene                 | 14.379                                               | 0.002      | 226.045    | NA         | 106.648    | 0.001 U    | 153.375    | 0.001 U    | 189        | 0.0261 U   | 101        | 0.0861     |            |            |            |            |            |            |            |            |
| Ethylbenzene            | 0.598                                                | 0.001 U    | 17.387     | NA         | 10.811     | 0.001 U    | 16.712     | 0.001 U    | 17.1       | 0.0227 U   | 17.5       | 0.0227 U   |            |            |            |            |            |            |            |            |
| m-xylene (p-xylene)     | 1.869                                                | 0.003      | 61.785     | NA         | 44.347     | 0.002 U    | 73.891     | 0.002 U    | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| o-Xylene                | 0.595                                                | 0.002 U    | 22.020     | NA         | 17.856     | 0.002 U    | 30.883     | 0.003 U    | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Xylenes, total          | NA                                                   | NA         | NA         | NA         | NA         | NA         | NA         | NA         | 93.5       | 0.0454 U   | 81.6       | 0.0454 U   |            |            |            |            |            |            |            |            |
| TPH as Gasoline         | 708.443                                              | 0.023      | 1859.643   | NA         | 1124.341   | 0.022      | 1551.199   | NA         | 1860       | 2.36 U     | 1900       | 2.36 U     |            |            |            |            |            |            |            |            |
| TPH as Diesel           | NA                                                   | NA         | 867.833    | NA         | 524.692    | 0.013 U    | 723.893    | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| TO-15 (ppbV)            |                                                      |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Methyl tert butyl ether | NA                                                   | NA         | NA         | 0.3 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Benzene                 | NA                                                   | NA         | NA         | 0.3        | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Toluene                 | NA                                                   | NA         | NA         | 1.4        | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Ethylbenzene            | NA                                                   | NA         | NA         | 0.3        | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| m & p-Xylene            | NA                                                   | NA         | NA         | 1.2        | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| o-Xylene                | NA                                                   | NA         | NA         | 0.4        | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Naphthalene             | NA                                                   | NA         | NA         | 2.8 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Tetraethyl Lead         | NA                                                   | NA         | NA         | 1.7 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Isocetane               | NA                                                   | NA         | NA         | 1.7 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Phenol                  | NA                                                   | NA         | NA         | 1.7 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Methanol                | NA                                                   | NA         | NA         | 1.7 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Cumene                  | NA                                                   | NA         | NA         | 1.7 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |
| Hexane                  | NA                                                   | NA         | NA         | 1.7 U      | NA         | NA         | NA         | NA         | NA         | NA         | NA         | NA         |            |            |            |            |            |            |            |            |

U = Not detected above the listed reporting limit.  
 NA = Not analyzed.

**TABLE 5**  
**TANK WATER ANALYTICAL RESULTS**  
**CONOCOPHILLIPS RENTON TERMINAL**

|                             | BK-1       | Baker Tank | Baker Tank | Baker Tank | Baker Tank | Baker Tank |
|-----------------------------|------------|------------|------------|------------|------------|------------|
|                             | B2L0677-01 | B3A0665-01 | B3B0527-13 | B3C0615-09 | B3D0437-12 |            |
|                             | 12/20/2002 | 01/31/2003 | 02/26/2003 | 03/25/2003 | 04/18/2003 |            |
| <b>BETX (µg/L)</b>          |            |            |            |            |            |            |
| <b>Method 8021B</b>         |            |            |            |            |            |            |
| Benzene                     | 26,900     | 29,400     | 10,400     | 39,800     | 39,100     |            |
| Toluene                     | 94,300     | 97,500     | 64,800     | 79,600     | 80,000     |            |
| Ethylbenzene                | 6,680      | 9,150      | 7,300      | 4,690      | 4,050      |            |
| Xylenes (total)             | 36,000     | 48,800     | 41,900     | 24,900     | 24,300     |            |
| <b>NWTPH-Gx (µg/L)</b>      |            |            |            |            |            |            |
| Gasoline                    | 342,000    | 380,000    | 320,000    | 354,000    | 287,000    |            |
| <b>NWTPH-Dx (mg/L)</b>      |            |            |            |            |            |            |
| Diesel Range Hydrocarbons   | 28         | NA         | 58.4       | 20.0       | 1.59       |            |
| Lube Oil Range Hydrocarbons | 10 U       | NA         | 5.00 U     | 5.00 U     | 0.562 U    |            |

NA = Not analyzed.

U = Not detected at or above the reporting limit.

**TABLE 6**  
**ESTIMATED DPVE MASS REMOVAL SUMMARY**  
**CONOCOPHILLIPS RENTON TERMINAL**

| Date       | PID (ppm) | TPH-G&D (ppmv) | Benzene (ppmv) | Toluene (ppmv) | Ethylbenzene (ppmv) | Xylenes (b) (ppmv) | Flow Rate (scfm) | Removal Rate  |                   |                        | Duration of Operation (days) | Mass Removed    |                     |                     |                         |
|------------|-----------|----------------|----------------|----------------|---------------------|--------------------|------------------|---------------|-------------------|------------------------|------------------------------|-----------------|---------------------|---------------------|-------------------------|
|            |           |                |                |                |                     |                    |                  | TPH (lbs/day) | Benzene (lbs/day) | Panel Hour Meter (hrs) |                              | Total TPH (lbs) | Total Benzene (lbs) | Total TPH (Gallons) | Total Benzene (Gallons) |
| 02/12/2003 | 330       | NC             | NC             | NC             | NC                  | NC                 | 300              | NC            | NC                | 21590.5                | 0                            | 0               | 0                   | 0                   | 0                       |
| 02/13/2003 | 200       | 708.44 (a)     | 9.16           | 14.38          | 0.60                | 2.46               | 300              | 77            | 1                 | 21609.5                | 0.8                          | 0               | 0                   | 0                   | 0                       |
| 02/24/2003 | 942       | 2727.48        | 62.32          | 226.05         | 17.39               | 83.81              | 300              | 397           | 6                 | 21875.0                | 11.9                         | 4396            | 61                  | 687                 | 10                      |
| 04/08/2003 | NR        | 1649.03        | 28.85          | 106.65         | 10.81               | 62.20              | 290              | 232           | 2                 | 22609.8                | 42.5                         | 11506           | 137                 | 1798                | 21                      |
| 04/17/2003 | 801       | 2275.09        | 34.87          | 153.38         | 16.71               | 104.77             | 290              | 320           | 3                 | 22822.6                | 51.3                         | 14347           | 164                 | 2242                | 26                      |
| 06/20/2003 | 1479      | 1860.00 (a)    | 84.00          | 189.00         | 17.10               | 93.50              | 290              | 206           | 7                 | 23802.0                | 92.1                         | 22751           | 455                 | 3555                | 71                      |
| 07/11/2003 | 1099      | 1900.00        | 80.50          | 101.00         | 17.50               | 81.60              | 270              | 196           | 6                 | 24039.5                | 102.0                        | 24691           | 518                 | 3858                | 81                      |

**Notes:**

TPH-G & D = Gasoline and Diesel Range Total Petroleum Hydrocarbons

ppmv = parts per million by volume

mg/m<sup>3</sup> = milligrams per cubic meter (assuming 60 degrees F and 1 atmosphere of pressure)

mg/m<sup>3</sup> concentration for TPH based on a molecular weight of 92 g/g-mol

NC = Not Collected

(a) Only TPH-G analyzed

(b) Combined total reported for m, p, and o-xylenes

Analytical results prior to June 20, 2003 reported from TO-14/15 analysis using Suma canisters.

Analytical results from June 20, 2003 forward reported from NWTPH Modified Method analysis using tedar bags.

**TABLE 1**  
**MONITORING WELL DATA SUMMARY AND GROUNDWATER SAMPLE RESULTS - GASOLINE, DIESEL and BTEX**  
**MOBIL RENTON BULK PLANT**  
**FORMER MOBIL OIL LOCATION No. 46-080**  
**RENTON, WASHINGTON**

| Well Number<br>Elevation [1]<br>Diameter [3] | Sample<br>Date | Depth to<br>Ground-<br>water<br>(feet) [2] | Product<br>Thickness<br>(feet) [5] | Ground-<br>water<br>Elevation<br>(feet) [4] | NWTPH-Gx<br>(ug/L) [6] | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) [7] | NWTPH-Dx<br>Heavy Oil Range<br>(C24-C40)<br>(mg/L) [7] | Benzene<br>(ug/L) [8] | Toluene<br>(ug/L) [8] | Ethyl<br>Benzene<br>(ug/L) [8] | Total<br>Xylenes<br>(ug/L) [8] |
|----------------------------------------------|----------------|--------------------------------------------|------------------------------------|---------------------------------------------|------------------------|-----------------------------------------------------|--------------------------------------------------------|-----------------------|-----------------------|--------------------------------|--------------------------------|
| <b>B1</b><br>18.62<br>2                      | 1/27/1993      | 5.56                                       | --                                 | 13.07                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1993      | 6.84                                       | --                                 | 11.98                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/14/1993      | 5.65                                       | --                                 | 12.97                                       | <b>18,000</b>          | --                                                  | --                                                     | <b>1,300</b>          | <b>17</b>             | <b>450</b>                     | <b>2,200</b>                   |
|                                              | 6/30/1993      | 6.81                                       | --                                 | 11.81                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 12/15/1993     | 7.82                                       | --                                 | 10.80                                       | <b>7,800</b>           | --                                                  | --                                                     | <b>590</b>            | <b>75</b>             | <b>15</b>                      | <b>370</b>                     |
|                                              | 11/4/1994      | 8.80                                       | --                                 | 9.82                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/22/1995      | 4.54                                       | --                                 | 14.08                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/15/1995      | 6.25                                       | --                                 | 12.37                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/16/1995      | 7.00                                       | --                                 | 11.62                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 10/20/1995     | 7.75                                       | --                                 | 10.87                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/4/1996       | 5.13                                       | --                                 | 13.49                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/16/1996      | 4.93                                       | --                                 | 13.69                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/10/1996      | 4.73                                       | --                                 | 13.89                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/15/1996      | 4.73                                       | --                                 | 13.89                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/22/1996      | 5.03                                       | --                                 | 13.59                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/5/1996       | 5.88                                       | --                                 | 12.74                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/24/1996      | 6.80                                       | --                                 | 11.82                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/15/1996      | 7.48                                       | --                                 | 11.14                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 1/3/1997       | 3.55                                       | --                                 | 15.07                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1997      | 4.62                                       | --                                 | 14.00                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/2/1997       | 4.93                                       | --                                 | 13.69                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/1/1997       | 5.52                                       | --                                 | 13.10                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/19/1997      | 7.51                                       | --                                 | 11.11                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/17/1997      | 6.80                                       | --                                 | 11.82                                       | <b>475</b>             | <b>9.98</b>                                         | <b>25.5</b>                                            | <b>84.6</b>           | <b>2.63</b>           | <b>6.43</b>                    | <b>21.6</b>                    |
|                                              | 5/1/1998       | 6.42                                       | --                                 | 12.20                                       | <b>560</b>             | <b>5.5</b>                                          | <b>13</b>                                              | <b>300</b>            | <b>10</b>             | <b>24</b>                      | <b>94</b>                      |
|                                              | 5/23/2000      | 8.53                                       | --                                 | 12.09                                       | <b>1,800</b>           | <b>23.0</b>                                         | <b>52</b>                                              | <b>1,000</b>          | <b>14</b>             | <b>170</b>                     | <b>160</b>                     |
|                                              | 5/24/2001      | 6.85                                       | --                                 | 11.97                                       | <b>2,800</b>           | <b>5.5</b>                                          | <b>8.3</b>                                             | <b>1,300</b>          | <b>25</b>             | <b>410</b>                     | <b>220</b>                     |
|                                              | 6/5/2002       | 6.52                                       | --                                 | 12.10                                       | <b>86J</b>             | <b>17</b>                                           | <b>29</b>                                              | <b>37</b>             | <b>0.66J</b>          | <b>6.8</b>                     | <b>6.9</b>                     |
|                                              | 5/29/2003      | 6.81                                       | --                                 | 11.81                                       | <b>1,100J</b>          | <b>4.7</b>                                          | <b>8.3</b>                                             | <b>760</b>            | <b>26</b>             | <b>180</b>                     | <b>65</b>                      |
| <b>B2</b><br>18.6<br>2                       | 1/27/1993      | 6.20                                       | 1.08                               | 13.19                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1993      | 8.15                                       | 0.24                               | 10.63                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/14/1993      | 8.82                                       | 1.25                               | 10.69                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/30/1993      | 8.47                                       | 0.75                               | 10.68                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 12/15/1993     | 8.62                                       | 0.21                               | 10.13                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/8/1994       | 8.83                                       | 0.50                               | 12.34                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/8/1994       | 8.95                                       | --                                 | 9.65                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/12/1994      | 9.34                                       | --                                 | 9.28                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/21/1994      | 9.70                                       | 0.10                               | 8.97                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 11/4/1994      | 9.68                                       | 0.12                               | 9.01                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 12/23/1994     | 5.18                                       | --                                 | 13.42                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/3/1995       | NM                                         | NM                                 | NM                                          | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/22/1995      | 6.03                                       | 0.03                               | 12.59                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/15/1995      | 6.46                                       | 0.04                               | 12.17                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/16/1995      | 6.92                                       | --                                 | 11.68                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 10/20/1995     | 8.10                                       | --                                 | 10.50                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/4/1996       | 5.40                                       | 0.83                               | 13.81                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/16/1996      | 4.80                                       | --                                 | 13.80                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/10/1996      | 4.88                                       | 0.43                               | 14.03                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/15/1996      | 4.85                                       | 0.42                               | 14.06                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/22/1996      | 7.14                                       | 0.05                               | 11.50                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/5/1996       | 5.62                                       | --                                 | 12.98                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/24/1996      | 8.17                                       | --                                 | 10.43                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/15/1996      | 8.65                                       | --                                 | 9.95                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/23/1996      | 9.08                                       | --                                 | 9.52                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/18/1996      | 9.33                                       | --                                 | 9.27                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 1/3/1997       | 3.91                                       | --                                 | 14.69                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1997      | 7.05                                       | --                                 | 11.55                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/2/1997       | 7.15                                       | --                                 | 11.45                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/1/1997       | 7.49                                       | --                                 | 11.11                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/8/1997       | 6.03                                       | 0.02                               | 12.58                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/19/1997      | 8.43                                       | --                                 | 10.17                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/26/1997      | 8.52                                       | --                                 | 10.08                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/18/1997      | 7.70                                       | --                                 | 10.90                                       | <b>1,880,000</b>       | <b>74.2</b>                                         | <b>7.89</b>                                            | <b>11,200</b>         | <b>10,800</b>         | <b>1,310</b>                   | <b>22,200</b>                  |
|                                              | 4/28/1998      | 6.47                                       | --                                 | 12.13                                       | <b>83,000</b>          | <b>19.0</b>                                         | <b>4.30</b>                                            | <b>16,000</b>         | <b>13,000</b>         | <b>800</b>                     | <b>11,000</b>                  |
|                                              | 7/30/1999      | 7.00                                       | --                                 | 11.60                                       | <b>86,000</b>          | <b>18</b>                                           | <b>&lt;2.0</b>                                         | <b>11,000</b>         | <b>7,900</b>          | <b>700</b>                     | <b>9,700</b>                   |
|                                              | 5/23/2000      | 6.67                                       | --                                 | 11.93                                       | <b>59,000</b>          | <b>32</b>                                           | <b>&lt;5.0</b>                                         | <b>16,000</b>         | <b>6,200</b>          | <b>670</b>                     | <b>9,300</b>                   |
|                                              | 5/24/2001      | 8.24                                       | 0.14                               | 10.46                                       | FP                     | FP                                                  | FP                                                     | FP                    | FP                    | FP                             | FP                             |
|                                              | 6/5/2002       | 6.56                                       | 0.31                               | 12.04                                       | FP                     | FP                                                  | FP                                                     | FP                    | FP                    | FP                             | FP                             |
|                                              | 5/29/2003      | 7.75                                       | --                                 | 10.85                                       | <b>59,000</b>          | <b>36</b>                                           | <b>2.7J</b>                                            | <b>8,800</b>          | <b>2,200</b>          | <b>900</b>                     | <b>9,600</b>                   |

**CLEANUP LEVELS:** (1) Mean Sea Level Elevation in feet, surveyed to top of PVC well casing. (2) Depth in feet, measured from top of PVC well casing. (3) Diameter in inches. (4) Mean Sea Level Elevation in feet, corrected for floating product, if applicable. (5) Non-aqueous phase floating product thickness in feet. (6) Northwest Method Total Petroleum Hydrocarbons - Gasoline range. (7) Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica gel). (8) EPA Method 8020. (9) MTCA Method A Cleanup Levels.

(mg/L) - Micrograms per Liter, parts per billion.  
(mg/L) - Milligrams per Liter, parts per million.  
(<) - Concentration less than laboratory detection limit listed (non-detected).  
(-) - Not Analyzed.  
Bold and underlined data indicates concentrations above action levels.  
(\*) - Water not detected, this is the measurement to the bottom of the well.  
(a) - Quantitation limits were raised due to sample dilution.  
(J) - Estimated value (see lab report, Appendix B)  
FP - Free Product

[illegible]

[1] Mean Sea Level Elevation in feet, surveyed to top of PVC well casing

[2] Depth in feet, measured from top of PVC well casing

[3] Diameter in inches

[4] Mean Sea Level Elevation in feet, corrected for floating product, if applicable.

[3] Non-aqueous phase floating product thickness in feet

[6] Northwest Method Total Petroleum Hydrocarbons - Gasoline range

[7] Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica on)

[8] EPA Method 8020

[9] MTCA Method A Cleanup Levels.

(mg/L) • Micrograms per Liter, parts per billion

[mg/L] - Milligrams per liter, parts per million.

( $<$ ) - Concentration less than laboratory detection limit listed (non-detect).

(-) - Not Analyzed

**Bold and underlined data indicates concentrations above action levels.**

(\*) - Water not detected, this is the measurement to the bottom of the water column.

(a) - Quantitation limits were raised due to sample dilution

(J) - Estimated value (see lab report, Appendix B)

FP - Free Product

RENTON, WASHINGTON

| Well Number<br>Elevation [ft]<br>Diameter [in] | Sample<br>Date | Depth to<br>Ground-<br>water<br>(feet) [ft] | Product<br>Thickness<br>(feet)<br>[ft] | Ground-<br>water<br>Elevation<br>(feet) [ft] | NWTPH-Gx<br>(ug/L) [g] | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) [g] | NWTPH-Dx<br>Heavy Oil Range<br>(C25-C40)<br>(mg/L) [g] | Benzene<br>(ug/L) [g] | Toluene<br>(ug/L) [g] | Ethyl<br>Benzene<br>(ug/L) [g] | Total<br>Xylenes<br>(ug/L) [g] |
|------------------------------------------------|----------------|---------------------------------------------|----------------------------------------|----------------------------------------------|------------------------|-----------------------------------------------------|--------------------------------------------------------|-----------------------|-----------------------|--------------------------------|--------------------------------|
| B5<br>17.07<br>2                               | 12/7/1993      | 4.48                                        | --                                     | 13.49                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 3/12/1993      | 7.98                                        | --                                     | 9.99                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 4/14/1993      | 7.64                                        | --                                     | 10.33                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 6/30/1993      | 7.03                                        | --                                     | 10.84                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 12/15/1993     | 7.35                                        | --                                     | 10.82                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 2/8/1994       | 5.40                                        | 0.03                                   | 12.59                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 7/8/1994       | 8.58                                        | 0.05                                   | 9.43                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 8/12/1994      | 8.78                                        | 0.01                                   | 9.20                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 9/21/1994      | 9.02                                        | 0.06                                   | 8.99                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 11/4/1994      | 8.96                                        | 0.07                                   | 9.06                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 12/23/1994     | 4.23                                        | 0.01                                   | 13.75                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 2/3/1995       | 4.30                                        | 0.04                                   | 13.70                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 2/22/1995      | 5.74                                        | 0.34                                   | 12.48                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 3/24/1995      | 5.93                                        | 0.78                                   | 12.61                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 4/27/1995      | 6.00                                        | 0.90                                   | 12.63                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 5/15/1995      | 6.30                                        | 0.90                                   | 12.33                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 6/16/1995      | 6.73                                        | 0.84                                   | 11.85                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 8/25/1995      | 6.87                                        | 0.07                                   | 11.15                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 10/20/1995     | 7.39                                        | --                                     | 10.58                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 4/4/1996       | 4.24                                        | --                                     | 13.73                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 4/16/1996      | 3.85                                        | --                                     | 14.12                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 5/10/1996      | 3.63                                        | --                                     | 14.34                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 5/15/1996      | 3.80                                        | --                                     | 14.37                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 5/22/1996      | 7.46                                        | --                                     | 10.51                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 6/5/1996       | 7.77                                        | 0.01                                   | 10.21                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 6/24/1996      | 7.57                                        | --                                     | 10.40                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 7/15/1996      | 8.35                                        | --                                     | 9.82                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 8/23/1996      | 8.62                                        | --                                     | 9.35                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 9/18/1996      | 8.75                                        | --                                     | 9.22                                         | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 1/3/1997       | 2.95                                        | --                                     | 15.02                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 3/12/1997      | 7.38                                        | --                                     | 10.59                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 4/2/1997       | 7.43                                        | --                                     | 10.54                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 5/1/1997       | 7.68                                        | --                                     | 10.29                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 8/19/1997      | 7.56                                        | --                                     | 10.41                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 8/26/1997      | 7.88                                        | --                                     | 10.09                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                | 9/17/1997      | 7.53                                        | --                                     | 10.44                                        | 38,900                 | 28.1                                                | 8.98                                                   | 2,810                 | 3,750                 | 631                            | 5,180                          |
|                                                | 4/29/1998      | 5.61                                        | --                                     | 12.36                                        | 28,000                 | 81                                                  | 17                                                     | 1,600                 | 1,100                 | 460                            | 4,600                          |
|                                                | 7/29/1999      | 6.09                                        | --                                     | 11.88                                        | 21,000                 | 18                                                  | <2.0                                                   | 1,200                 | 240                   | 330                            | 2,600                          |
|                                                | 5/23/2000      | 5.95                                        | --                                     | 12.02                                        | 11,000                 | 15                                                  | 4.0J                                                   | 690                   | 59                    | 230                            | 960                            |
|                                                | 5/23/2001      | 7.95                                        | --                                     | 10.02                                        | 10,000                 | 13                                                  | 3.5J                                                   | 2,000                 | 120                   | 320                            | 2,100                          |
|                                                | 6/6/2002       | 5.27                                        | --                                     | 12.70                                        | 4,300                  | 16                                                  | 4.8J                                                   | 940                   | 23                    | 230                            | 560                            |
|                                                | 5/29/2003      | 6.82                                        | sheen                                  | 11.15                                        | 3,300                  | 4.3                                                 | 1.6J                                                   | 440                   | 26                    | 260                            | 260                            |
| B6<br>17.94<br>2.00                            | 12/7/1993      | 6.15                                        | --                                     | 11.79                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                                |                |                                             |                                        |                                              |                        |                                                     |                                                        |                       |                       |                                |                                |

(8) EPA Method 8020.

(J) - Estimated value (see lab report, Appendix B)

[illegible]

26620.06T.203.xls

TABLE 1(continued)  
MONITORING WELL DATA SUMMARY AND GROUNDWATER SAMPLE RESULTS; GASOLINE, DIESEL and BTEX  
MOBIL RENTON BULK PLANT  
FORMER MOBIL OIL LOCATION No. 46-080  
RENTON, WASHINGTON

| Well Number<br>Elevation [']<br>Diameter ["] | Sample<br>Date | Depth to<br>Ground-<br>water<br>(feet) [2] | Product<br>Thickness<br>(feet)<br>[3] | Ground-<br>water<br>Elevation<br>(feet) [6] | NWTPH-Gx<br>(ug/L)<br>[8] | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) [7] | NWTPH-Dx<br>Heavy Oil Range<br>(C25-C40)<br>(mg/L) [7] | Benzene<br>(ug/L)<br>[8] | Toluene<br>(ug/L)<br>[8] | Ethyl<br>Benzene<br>(ug/L)<br>[9] | Total<br>Xylenes<br>(ug/L)<br>[8] |
|----------------------------------------------|----------------|--------------------------------------------|---------------------------------------|---------------------------------------------|---------------------------|-----------------------------------------------------|--------------------------------------------------------|--------------------------|--------------------------|-----------------------------------|-----------------------------------|
| D7<br>17.69<br>2                             | 1/27/1993      | 5.07                                       | --                                    | 12.62                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/12/1993      | 6.38                                       | --                                    | 11.31                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/14/1993      | 6.36                                       | --                                    | 11.31                                       | 77                        | --                                                  | --                                                     | 1,300                    | 21                       | 420                               | 2,200                             |
|                                              | 12/15/1993     | 7.37                                       | --                                    | 10.32                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 7/8/1994       | 7.14                                       | --                                    | 10.55                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/12/1994      | 7.14                                       | --                                    | 10.55                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/21/1994      | NM                                         | NM                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 11/4/1994      | 7.94                                       | --                                    | 9.75                                        | 210                       | --                                                  | --                                                     | 88                       | 2.1                      | 4.7                               | 13                                |
|                                              | 12/23/1994     | 7.14                                       | --                                    | 10.55                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 2/3/1995       | 4.59                                       | --                                    | 13.10                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 2/22/1995      | 5.31                                       | --                                    | 12.38                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/24/1995      | 5.35                                       | --                                    | 12.34                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/27/1995      | 5.18                                       | --                                    | 12.51                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/15/1995      | 5.50                                       | --                                    | 12.19                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/16/1995      | 5.95                                       | --                                    | 11.74                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/25/1995      | 8.59                                       | --                                    | 11.10                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 10/20/1995     | 6.00                                       | --                                    | 11.69                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/24/1996      | 5.35                                       | --                                    | 12.34                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/4/1996       | 4.30                                       | --                                    | 13.39                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/18/1996      | 4.01                                       | --                                    | 13.68                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/2/1997       | 6.04                                       | --                                    | 11.65                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/1/1997       | 6.30                                       | --                                    | 11.39                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/17/1997      | --                                         | --                                    | --                                          | 453                       | 7.99                                                | 22.4                                                   | 150                      | 13.5                     | 7.04                              | 35.5                              |
|                                              | 4/30/1998      | 5.85                                       | --                                    | 11.84                                       | 170                       | 3.3                                                 | 6.2                                                    | 63                       | 5.0                      | 0.9                               | 7                                 |
| HA1<br>19.50<br>2                            | 5/23/2000      | 6.11                                       | --                                    | 11.58                                       | 120J                      | 4.6J                                                | 19.0                                                   | 480                      | 7.2                      | 1.8                               | 13                                |
|                                              | 5/23/2001      | 6.85                                       | --                                    | 10.84                                       | 130J                      | 4.1J                                                | 17.0                                                   | 410                      | 8.7                      | 1.8                               | 18                                |
|                                              | 6/4/2002       | 5.51                                       | --                                    | 12.18                                       | 70J                       | 9.3                                                 | 31.0                                                   | 180                      | 6.7                      | 0.72J                             | 8.1                               |
|                                              | 7/27/2003      | 6.36                                       | --                                    | 11.33                                       | <48                       | 15.0                                                | 62.0                                                   | 55                       | 0.7J                     | 0.4J                              | 2.0J                              |
|                                              | 1/27/1993      | 5.94                                       | --                                    | 13.56                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/12/1993      | 8.54                                       | --                                    | 10.96                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/14/1993      | 6.47                                       | --                                    | 13.03                                       | 80                        | --                                                  | --                                                     | <0.50                    | <0.50                    | <0.50                             | <1.0                              |
|                                              | 12/15/1993     | 5.54                                       | --                                    | 13.96                                       | <50                       | --                                                  | --                                                     | <0.50                    | <0.50                    | <0.50                             | <1.0                              |
|                                              | 11/4/1994      | 10.30                                      | --                                    | 9.20                                        | <50                       | --                                                  | --                                                     | <0.50                    | 1.3                      | 0.61                              | 2.2                               |
|                                              | 2/22/1995      | 5.11                                       | --                                    | 14.39                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/18/1995      | 8.33                                       | --                                    | 11.17                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 10/20/1995     | 5.48                                       | --                                    | 14.02                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/4/1996       | 5.81                                       | --                                    | 13.69                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/18/1996      | 5.78                                       | --                                    | 13.72                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/1/1997       | 5.59                                       | --                                    | 13.91                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
| HA2<br>18.17<br>2                            | 9/17/1997      | 5.50                                       | --                                    | 14.00                                       | <50                       | <0.25                                               | <0.50                                                  | <0.50                    | <0.50                    | <0.50                             | <1.0                              |
|                                              | 4/2            |                                            |                                       |                                             |                           |                                                     |                                                        |                          |                          |                                   |                                   |

(1) Mean Sea Level Elevation in feet, surveyed to top of PVC well casing. (mg/L) - Micrograms per Liter, parts per billion.  
(2) Depth in feet, measured from top of PVC well casing. (mg/L) - Milligrams per liter, parts per million.  
(3) Diameter in inches. (-) - Concentration less than laboratory detection limit listed (non-detected).  
(4) Mean Sea Level Elevation in feet, corrected for floating product, if applicable. (-) - Not Analyzed  
(5) Non-aqueous phase floating product thickness in feet. Bold and underlined data indicates concentrations above action levels  
(6) Northwest Method Total Petroleum Hydrocarbons - Gasoline range. (-) - Water not detected, this is the measurement to the bottom of the well  
(7) Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica gel) (a) - Quantitation limits for spiked dual to sample dilution  
(8) EPA Method 8020. (J) - Estimated value (see lab report, Appendix B)  
(9) MTCA Method A Cleanup Levels. FP - Free Product.



TABLE 1 (continued)  
MONITORING WELL DATA SUMMARY AND GROUNDWATER SAMPLE RESULTS: GASOLINE, DIESEL and BTEX  
MOBIL RENTON BULK PLANT  
FORMER MOBIL OIL LOCATION No. 46-080  
RENTON, WASHINGTON

| Well Number<br>Elevation [1]<br>Diameter [3] | Sample<br>Date | Depth to<br>Ground-<br>water (feet) [2] | Product<br>Thickness<br>(feet) [4] | Ground-<br>water<br>Elevation<br>(feet) [4] | NWTPH-Gx<br>(ug/L) [5] | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) [7] | NWTPH-Dx<br>Heavy Oil Range<br>(C24-C44)<br>(mg/L) [7] | Benzene<br>(ug/L) [8] | Toluene<br>(ug/L) [8] | Ethyl<br>Benzene<br>(ug/L) [8] | Total<br>Xylenes<br>(ug/L) [8] |
|----------------------------------------------|----------------|-----------------------------------------|------------------------------------|---------------------------------------------|------------------------|-----------------------------------------------------|--------------------------------------------------------|-----------------------|-----------------------|--------------------------------|--------------------------------|
| HA7<br>18.44<br>2                            | 1/27/1993      | 6.33                                    | 2.22                               | 13.73                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1993      | 7.30                                    | 0.61                               | 11.59                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/14/1993      | 7.00                                    | 1.23                               | 12.34                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/30/1993      | 7.36                                    | 0.84                               | 11.69                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 12/15/99       | 7.80                                    | 0.55                               | 11.04                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/8/1994       | 6.14                                    | 0.50                               | 12.67                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/12/1994      | 9.09                                    | 0.53                               | 9.74                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/21/1994      | 9.39                                    | 0.47                               | 9.39                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 11/4/1994      | 9.15                                    | 0.51                               | 9.66                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 12/23/1994     | 4.07                                    | 0.19                               | 14.51                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/3/1995       | 3.94                                    | 0.40                               | 14.79                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 2/22/1995      | 4.75                                    | 0.48                               | 14.04                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/24/1995      | 5.30                                    | 0.45                               | 13.47                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/27/1995      | 5.85                                    | 0.50                               | 12.96                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/15/1995      | 6.44                                    | 0.55                               | 12.40                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/16/1995      | 7.16                                    | 0.58                               | 11.70                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/25/1995      | 7.72                                    | 0.42                               | 11.03                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 10/20/1995     | 7.45                                    | 0.40                               | 11.28                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/4/1996       | 5.38                                    | 0.63                               | 13.52                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/16/1996      | 5.17                                    | 0.62                               | 13.72                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/10/1996      | 4.89                                    | 0.64                               | 14.02                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/15/1996      | 4.62                                    | 0.63                               | 14.28                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/22/1996      | 6.35                                    | 0.86                               | 12.72                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/5/1996       | 6.82                                    | 0.72                               | 12.05                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/24/1996      | 7.72                                    | 0.67                               | 11.21                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/15/1996      | 8.32                                    | 0.57                               | 10.54                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/23/1996      | 8.90                                    | 0.55                               | 9.94                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/18/1996      | 9.19                                    | 0.57                               | 9.67                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 1/3/1997       | 3.67                                    | 0.66                               | 15.25                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1997      | 5.86                                    | 0.83                               | 13.19                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/2/1997       | 6.17                                    | 0.78                               | 12.84                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/1/1997       | 6.58                                    | 0.83                               | 12.47                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/8/1997       | 5.67                                    | 0.06                               | 12.81                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/19/1997      | 7.62                                    | --                                 | 10.82                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/26/1997      | 7.93                                    | 0.05                               | 10.55                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/18/1997      | 8.70                                    | 0.06                               | 9.78                                        | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/30/1998      | 6.07                                    | 0.08                               | 12.43                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 7/29/1999      | 6.82                                    | --                                 | 11.62                                       | 17,000                 | 16                                                  | <10                                                    | 1,200                 | 69                    | 890                            | 1,200                          |
|                                              | 5/22/2000      | 6.18                                    | --                                 | 12.26                                       | 7,000                  | 9.2                                                 | <4.0                                                   | 480                   | 31                    | 510                            | 580                            |
|                                              | 5/22/2001      | 6.74                                    | --                                 | 11.70                                       | 4,700                  | 7.1                                                 | <2.0                                                   | 290                   | 25                    | 350                            | 470                            |
|                                              | 6/5/2002       | 6.11                                    | --                                 | 12.33                                       | 8,800                  | 4.1                                                 | <0.47                                                  | 1,500                 | 73                    | 760                            | 1,000                          |
|                                              | 5/28/2003      | 7.08                                    | sheen                              | 11.36                                       | 11,000                 | 9                                                   | <0.96                                                  | 1,000                 | 100                   | 820                            | 1,300                          |
| HA8<br>18.88<br>2                            | 1/27/1993      | 4.60                                    | --                                 | 14.28                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1993      | 6.79                                    | --                                 | 12.09                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/14/1993      | 5.20                                    | --                                 | 13.68                                       | 8,100                  | --                                                  | --                                                     | 140                   | 150                   | 200                            | 1,100                          |
|                                              | 12/15/1993     | 7.18                                    | --                                 | 11.70                                       | 3,200                  | --                                                  | --                                                     | 100                   | 68                    | 11                             | 390                            |
|                                              | 11/4/1994      | 8.85                                    | --                                 | 10.03                                       | 610                    | --                                                  | --                                                     | 25                    | 2.9                   | 15                             | 54                             |
|                                              | 2/22/1995      | 4.03                                    | --                                 | 14.85                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/16/1995      | 7.13                                    | --                                 | 11.75                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 10/20/1995     | 7.09                                    | --                                 | 11.79                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/4/1996       | 5.32                                    | --                                 | 13.56                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/16/1996      | 5.18                                    | --                                 | 13.70                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/1/1997       | 5.01                                    | --                                 | 13.87                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 8/26/1997      | 7.99                                    | --                                 | 10.89                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/18/1997      | 6.90                                    | --                                 | 11.98                                       | 2,840                  | 5.78                                                | 2.38                                                   | 29.2                  | 11.9                  | 19.8                           | 239                            |
|                                              | 5/1/1998       | 6.25                                    | --                                 | 12.63                                       | 4,300                  | 14                                                  | 19                                                     | 110                   | 130                   | 190                            | 600                            |
|                                              | 7/29/1999      | 7.93                                    | --                                 | 10.95                                       | 6,000                  | 2.2                                                 | <0.20                                                  | 37                    | 30                    | 140                            | 1,000                          |
|                                              | 5/22/2000      | 6.10                                    | --                                 | 12.78                                       | 1,100                  | 0.81                                                | 0.7                                                    | 13                    | 9.7                   | 28                             | 170                            |
|                                              | 5/22/2001      | 6.65                                    | --                                 | 12.23                                       | 650                    | 0.80                                                | 0.35J                                                  | 15                    | 3.8                   | 26                             | 95                             |
|                                              | 6/5/2002       | 6.54                                    | --                                 | 12.34                                       | 1,200                  | 3.00                                                | 1.1                                                    | 8.8                   | 4.4                   | 31                             | 160                            |
|                                              | 5/28/2003      | 7.30                                    | --                                 | 11.58                                       | 67,000                 | 1.80                                                | 0.53                                                   | 11,000                | 16,000                | 1,100                          | 5,400                          |
| HA9<br>19.40<br>2                            | 1/27/1993      | 7.00                                    | --                                 | 12.40                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 3/12/1993      | 7.95                                    | --                                 | 11.45                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/14/1993      | 7.74                                    | --                                 | 11.66                                       | 74,000                 | --                                                  | --                                                     | 1,700                 | 2,000                 | 2,100                          | 14,000                         |
|                                              | 12/15/1993     | 7.82                                    | --                                 | 11.58                                       | 50,000                 | --                                                  | --                                                     | 990                   | 1,300                 | 130                            | 9,300                          |
|                                              | 11/4/1994      | 9.75                                    | --                                 | 9.65                                        | 55,000                 | --                                                  | --                                                     | 570                   | 91                    | 1,200                          | 8,200                          |
|                                              | 2/22/1995      | 7.61                                    | --                                 | 11.79                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 6/16/1995      | 8.17                                    | --                                 | 11.23                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 10/20/1995     | 8.08                                    | --                                 | 11.32                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/4/1996       | 7.30                                    | --                                 | 12.10                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/16/1996      | 7.28                                    | --                                 | 12.12                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 4/2/1997       | 7.76                                    | --                                 | 11.64                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/1/1997       | 7.78                                    | --                                 | 11.62                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 9/18/1997      | 7.95                                    | --                                 | 11.45                                       | 21,800                 | 6.1                                                 | <1.0                                                   | 142                   | 22.8                  | 372                            | 2,460                          |
|                                              | 4/29/1998      | 7.99                                    | --                                 | 11.41                                       | 32,000                 | 44                                                  | <25                                                    | 410                   | 60                    | 1,200                          | 4,500                          |
|                                              | 7/28/1999      | 8.23                                    | --                                 | 11.17                                       | --                     | --                                                  | --                                                     | --                    | --                    | --                             | --                             |
|                                              | 5/24/2000      | 9.25                                    | --                                 | 10.15                                       | 7,400                  | 12                                                  | 3.40                                                   | 310                   | 21                    | 320                            | 380                            |
|                                              | 5/23/2001      | 7.92                                    | --                                 | 11.48                                       | 3,400                  | 15                                                  | <2.0                                                   | 290                   | 15                    | 290                            | 490                            |
|                                              | 6/4/2002       | 8.01                                    | --                                 | 11.39                                       | 12,000                 | 5.3                                                 | 1J                                                     | 530                   | 13                    | 810                            | 910                            |
|                                              | 5/28/2003      | 8.05                                    | sheen                              | 11.35                                       | 9,500                  | 3.8                                                 | <1.1                                                   | 310                   | 6.3                   | 610                            | 190                            |

(1) Mean Sea Level Elevation in feet, surveyed to top of PVC well casing.  
(2) Depth in feet, measured from top of PVC well casing.  
(3) Diameter in inches.  
(4) Mean Sea Level Elevation in feet, corrected for floating product, if applicable.  
(5) Non-aqueous phase floating product thickness in feet.  
(6) Northwest Method Total Petroleum Hydrocarbons - Gasoline range.  
(7) Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica gel).  
(8) EPA Method 8020.  
(9) MTCA Method A Cleanup Levels.  
(mg/L) - Micrograms per Liter, parts per billion.  
(mg/L) - Milligrams per liter, parts per million.  
(-) - Concentration less than laboratory detection limit listed (non-detect).  
(-) - Not Analyzed.  
Bold and underlined data indicates concentrations above action levels.  
(\*) - Water not detected, this is the measurement to the bottom of the well.  
(a) - Quantitation limits were raised due to sample dilution.  
(J) - Estimated value (see lab report, Appendix B)  
FP - Free Product



TABLE 1(continued)  
MONITORING WELL DATA SUMMARY AND GROUNDWATER SAMPLE RESULTS: GASOLINE, DIESEL and BTEX  
MOBIL RENTON BULK PLANT  
FORMER MOBIL OIL LOCATION No. 46-080  
RENTON, WASHINGTON

| Well Number<br>Elevation [1]<br>Diameter [3]    | Sample<br>Date | Depth to<br>Ground-<br>water<br>(feet) [2] | Product<br>Thickness<br>(feet) [5] | Ground-<br>water<br>Elevation<br>(feet) [4] | NWTPH-Gx<br>(ug/L) [6] | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) [7] | NWTPH-Dx<br>Heavy Oil Range<br>(C24-C46)<br>(mg/L) [7] | Benzene<br>(ug/L)<br>[8] | Toluene<br>(ug/L)<br>[8] | Ethyl<br>Benzene<br>(ug/L)<br>[8] | Total<br>Xylenes<br>(ug/L)<br>[8] |
|-------------------------------------------------|----------------|--------------------------------------------|------------------------------------|---------------------------------------------|------------------------|-----------------------------------------------------|--------------------------------------------------------|--------------------------|--------------------------|-----------------------------------|-----------------------------------|
| HA14<br>20.02<br>2                              | 1/27/1993      | 6.10                                       | --                                 | 13.92                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 3/12/1993      | 8.80                                       | --                                 | 11.22                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 4/14/1993      | 7.04                                       | --                                 | 12.98                                       | 5,300                  | --                                                  | --                                                     | 400                      | 22                       | 290                               | 1,000                             |
|                                                 | 12/15/1993     | 8.56                                       | --                                 | 11.46                                       | <50                    | --                                                  | --                                                     | <0.50                    | <0.50                    | <0.50                             | <1.0                              |
|                                                 | 11/4/1994      | 8.35                                       | --                                 | 11.67                                       | 180                    | --                                                  | --                                                     | 5                        | 1.6                      | 3.9                               | 11                                |
|                                                 | 2/22/1995      | 5.10                                       | --                                 | 14.92                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 6/16/1995      | 9.51                                       | --                                 | 10.51                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 10/20/1995     | 8.77                                       | --                                 | 11.25                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 4/4/1996       | 7.52                                       | --                                 | 12.50                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 4/16/1996      | 6.01                                       | --                                 | 14.01                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 5/1/1997       | 6.92                                       | --                                 | 13.10                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 9/18/1997      | 8.17                                       | --                                 | 11.85                                       | 324                    | 0.972                                               | 0.752                                                  | 6.45                     | 1.08                     | 7.88                              | 9.17                              |
|                                                 | 4/30/1998      | 9.05                                       | --                                 | 10.97                                       | 1,800                  | 0.46                                                | <0.50                                                  | 210                      | 15                       | 190                               | 100                               |
|                                                 | 7/29/1999      | 9.49                                       | --                                 | 10.53                                       | 4,700                  | 1.1                                                 | <0.20                                                  | 450                      | 38                       | 710                               | 120                               |
|                                                 | 5/22/2000      | 9.22                                       | --                                 | 10.80                                       | 3,700                  | 1.1                                                 | 0.52J                                                  | 470                      | 28                       | 750                               | 63                                |
|                                                 | 5/22/2001      | 9.03                                       | --                                 | 10.99                                       | 890                    | 0.43                                                | 0.23J                                                  | 120                      | 5.5                      | 200                               | 10                                |
| 6/4/2002                                        | 8.41           | --                                         | 11.61                              | 2,200                                       | 1.40                   | 1.00                                                | 380                                                    | 16.0                     | 470                      | 32                                |                                   |
| 5/27/2003                                       | 9.48           | --                                         | 10.54                              | 860                                         | 0.30                   | 0.22J                                               | 91                                                     | 2.7                      | 140                      | 11                                |                                   |
| HB1                                             | 12/7/1993      | --                                         | --                                 | --                                          | 61                     | --                                                  | --                                                     | <0.50                    | <0.50                    | 0.14                              | 0.12                              |
| DISCONTINUED SAMPLING                           |                |                                            |                                    |                                             |                        |                                                     |                                                        |                          |                          |                                   |                                   |
| HB2                                             | 12/7/1993      | --                                         | --                                 | --                                          | 68                     | --                                                  | --                                                     | 0.092                    | <0.50                    | 0.17                              | 0.13                              |
| DISCONTINUED SAMPLING                           |                |                                            |                                    |                                             |                        |                                                     |                                                        |                          |                          |                                   |                                   |
| R1<br>16.94<br>16                               | 1/27/1993      | 5.22                                       | 0.05                               | 11.78                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 3/12/1993      | 11.80                                      | 0.10                               | 5.21                                        | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 6/30/1993      | 6.88                                       | 0.01                               | 10.07                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 12/15/1993     | NM                                         | NA                                 | NM                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 2/8/1994       | NM                                         | NA                                 | NM                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 7/8/1994       | NM                                         | NA                                 | NM                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 8/12/1994      | NM                                         | NA                                 | NM                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 9/21/1994      | NM                                         | NA                                 | NM                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 11/4/1994      | NM                                         | NA                                 | NM                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 12/23/1994     | 3.43                                       | --                                 | 13.51                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 2/3/1995       | 4.10                                       | 0.10                               | 12.91                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 2/22/1995      | 5.28                                       | 0.13                               | 11.75                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 3/24/1995      | 5.55                                       | 0.40                               | 11.68                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 4/27/1995      | 5.62                                       | 0.32                               | 11.55                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 5/15/1995      | 4.81                                       | 0.47                               | 12.37                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 9/16/1995      | 5.29                                       | 0.44                               | 11.97                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 8/25/1995      | 5.85                                       | 0.20                               | 11.24                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 9/26/1995      | 7.67                                       | 0.19                               | 8.41                                        | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 10/20/1995     | 6.17                                       | 0.02                               | 10.78                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 4/4/1996       | 3.82                                       | 0.15                               | 13.23                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 4/16/1996      | 3.14                                       | 0.14                               | 13.90                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 5/10/1996      | 2.72                                       | 0.11                               | 14.30                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 5/15/1996      | 2.67                                       | 0.06                               | 14.31                                       | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 5/22/1996      | 7.83                                       | --                                 | 9.11                                        | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 6/5/1996       | 8.62                                       | --                                 | 8.32                                        | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 6/24/1996      | 8.50                                       | --                                 | 8.44                                        | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                                 | 7/15/1996      | 8.63                                       | --                                 | 8.31                                        | --                     | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
| 8/23/1996                                       | 8.53           | --                                         | 8.41                               | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 9/18/1996                                       | 8.34           | --                                         | 8.60                               | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 1/3/1997                                        | 3.11           | --                                         | 13.83                              | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 3/12/1997                                       | 8.91           | --                                         | 8.03                               | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 4/2/1997                                        | 11.04          | 0.05                                       | 5.84                               | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 7/8/1997                                        | 5.71           | --                                         | 11.23                              | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 8/26/1997                                       | 11.02          | --                                         | 5.92                               | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 9/17/1997                                       | 10.84          | --                                         | 8.10                               | 3,360,000                                   | 206                    | 23.50                                               | 7,620                                                  | 3,460                    | 1,460                    | 9,460                             |                                   |
| 4/30/1998                                       | 4.60           | 0.02                                       | 12.35                              | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 5/24/2001                                       | 10.75          | --                                         | 6.19                               | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 6/5/2002                                        | NM             | NM                                         | NM                                 | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| 5/27/2003                                       | NM             | NM                                         | NM                                 | --                                          | --                     | --                                                  | --                                                     | --                       | --                       | --                                |                                   |
| CLEANUP LEVELS: 1000 0.5 0.5 1000 700 1000 1000 |                |                                            |                                    |                                             |                        |                                                     |                                                        |                          |                          |                                   |                                   |

(1) Mean Sea Level Elevation in feet, surveyed to top of PVC well casing.  
 (2) Depth in feet, measured from top of PVC well casing.  
 (3) Diameter in inches.  
 (4) Mean Sea Level Elevation in feet, corrected for floating product, if applicable.  
 (5) Non-aqueous phase floating product thickness in feet.  
 (6) Northwest Method Total Petroleum Hydrocarbons - Gasoline range.  
 (7) Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica gel).  
 (8) EPA Method 8020.  
 (9) MTCA Method A Cleanup Levels.  
 (mg/L) - Micrograms per Liter, parts per billion.  
 (mg/L) - Milligrams per liter, parts per million.  
 (-) - Concentration less than laboratory detection limit listed (non-detect).  
 (-) - Not Analyzed.  
 Bold and underlined data indicates concentrations above action levels.  
 (7) - Where not detected, this is the measurement to the bottom of the well.  
 (a) - Quantitation limit was raised to sample dilution.  
 (J) - Estimated value (see lab report, Appendix B).  
 FP - Free Product.

TABLE 1(continued)  
 MONITORING WELL DATA SUMMARY AND GROUNDWATER SAMPLE RESULTS: GASOLINE, DIESEL and BTEX  
 MOBIL RENTON BULK PLANT  
 FORMER MOBIL OIL LOCATION No. 46-080  
 RENTON, WASHINGTON

| Well Number<br>Elevation (1)<br>Diameter (3) | Sample<br>Date | Depth to<br>Ground-<br>water<br>(feet) (2) | Product<br>Thickness<br>(feet)<br>(4) | Ground-<br>water<br>Elevation<br>(feet) (4) | NWTPH-Gx<br>(ug/L)<br>(5) | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) (7) | NWTPH-Dx<br>Heavy Oil Range<br>(C24-C40)<br>(mg/L) (7) | Benzene<br>(ug/L)<br>(8) | Toluene<br>(ug/L)<br>(8) | Ethyl<br>Benzene<br>(ug/L)<br>(8) | Total<br>Xylenes<br>(ug/L)<br>(8) |
|----------------------------------------------|----------------|--------------------------------------------|---------------------------------------|---------------------------------------------|---------------------------|-----------------------------------------------------|--------------------------------------------------------|--------------------------|--------------------------|-----------------------------------|-----------------------------------|
| R2<br>17.52<br>18                            | 1/27/1993      | 8.15                                       |                                       | 11.37                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/12/1993      | 7.20                                       |                                       | 10.32                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 12/15/1993     | NM                                         | NA                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 11/4/1994      | NM                                         | NA                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 2/22/1995      | 7.66                                       | --                                    | 9.86                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/15/1995      | 7.87                                       | --                                    | 9.65                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/16/1995      | 7.51                                       | 0.01                                  | 10.02                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/26/1995      | 7.81                                       | 0.01                                  | 9.72                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 10/20/1995     | 7.63                                       | 0.06                                  | 9.93                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/4/1996       | 5.55                                       | --                                    | 11.97                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/18/1996      | 5.29                                       | --                                    | 12.23                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/10/1996      | 5.21                                       | --                                    | 12.31                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/15/1996      | 5.10                                       | --                                    | 12.42                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/22/1996      | 7.59                                       | 0.02                                  | 9.94                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/5/1996       | 7.80                                       | 0.18                                  | 9.85                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/24/1996      | 7.72                                       | 0.03                                  | 9.82                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 7/15/1996      | 7.60                                       | 0.04                                  | 9.95                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/23/1996      | 7.77                                       | 0.02                                  | 9.76                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/18/1996      | 7.87                                       | 0.04                                  | 9.68                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 1/3/1997       | 4.25                                       | --                                    | 13.27                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/12/1997      | 8.02                                       | 0.02                                  | 9.51                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/2/1997       | 7.72                                       | 0.11                                  | 9.88                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 7/8/1997       | 6.47                                       | --                                    | 11.05                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/19/1997      | 7.76                                       | 0.02                                  | 9.77                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/17/1997      | 7.67                                       | --                                    | 9.85                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/30/1998      | 6.43                                       | 0.03                                  | 11.11                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/24/2001      | 8.25                                       | 0.35                                  | 9.53                                        | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/5/2002       | NM                                         | NM                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/27/2003      | NM                                         | NM                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
| W1<br>18.88                                  | 1/27/1993      | 5.71                                       | 0.19                                  | 13.29                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/12/1993      | 8.24                                       | 0.08                                  | 10.56                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/14/1993      | 8.22                                       | --                                    | 10.64                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/30/1993      | 8.25                                       | 0.08                                  | 10.67                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 12/15/1993     | 8.60                                       | --                                    | 10.26                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 2/8/1994       | 8.51                                       | 0.13                                  | 12.44                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 7/8/1994       | 8.64                                       | --                                    | 10.22                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/12/1994      | 8.63                                       | --                                    | 10.23                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/21/1994      | NM                                         | NM                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 11/4/1994      | NM                                         | NM                                    | NM                                          | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 12/23/1994     | 5.48                                       | --                                    | 13.38                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 2/3/1995       | 5.24                                       | --                                    | 13.62                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 2/22/1995      | 7.13                                       | 0.03                                  | 11.75                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/24/1995      | 7.04                                       | 0.14                                  | 11.92                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/27/1995      | 6.75                                       | --                                    | 12.11                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/15/1995      | 6.88                                       | 0.39                                  | 12.26                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/18/1995      | 7.34                                       | 0.45                                  | 11.85                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/25/1995      | 7.89                                       | 0.18                                  | 11.10                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 10/20/1995     | 8.60                                       | 0.12                                  | 10.35                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/4/1996       | 5.81                                       | 0.07                                  | 13.10                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/16/1996      | 5.07                                       | 0.12                                  | 13.86                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/10/1996      | 4.75                                       | 0.09                                  | 14.18                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/15/1996      | 4.74                                       | 0.11                                  | 14.20                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/22/1996      | 8.08                                       | 0.07                                  | 10.83                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/5/1996       | 8.12                                       | 0.02                                  | 10.75                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/24/1996      | 8.28                                       | 0.01                                  | 10.59                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 7/15/1996      | 8.52                                       | 0.08                                  | 10.40                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 8/23/1996      | 8.63                                       | --                                    | 10.23                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/18/1996      | 8.63                                       | --                                    | 10.23                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 1/3/1997       | 4.87                                       | --                                    | 13.89                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 3/12/1997      | 8.08                                       | --                                    | 10.78                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/2/1997       | 8.14                                       | 0.03                                  | 10.74                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/1/1997       | 8.18                                       | --                                    | 10.68                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 6/19/1997      | 8.57                                       | --                                    | 10.29                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 9/17/1997      | 8.20                                       | --                                    | 10.66                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 4/30/1998      | 6.70                                       | 0.08                                  | 12.22                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 7/28/1999      | 7.18                                       | 0.12                                  | 11.77                                       | --                        | --                                                  | --                                                     | --                       | --                       | --                                | --                                |
|                                              | 5/23/2000      | 6.91                                       | --                                    | 11.95                                       | 190,000                   | 160                                                 | <100                                                   | 34,000                   | 42,000                   | 3,600                             | 23,000                            |
|                                              | 5/24/2001      | 8.45                                       | 0.01                                  | 10.42                                       | FP                        | FP                                                  | FP                                                     | FP                       | FP                       | FP                                | FP                                |
|                                              | 6/5/2002       | 8.42                                       | --                                    | 12.44                                       | 130,000                   | 78                                                  | <9.4                                                   | 17,000                   | 27,000                   | 2,700                             | 19,000                            |
|                                              | 5/29/2003      | 7.91                                       | sheen                                 | 10.95                                       | 170,000                   | 79                                                  | <4.8                                                   | 20,000                   | 25,000                   | 3,400                             | 23,000                            |

CLEANUP LEVELS: (1) Mean Sea Level Elevation in feet, surveyed to top of PVC well casing. (2) Depth in feet, measured from top of PVC well casing. (3) Diameter in inches. (4) Mean Sea Level Elevation in feet, corrected for floating product, if applicable. (5) Non-aqueous phase floating product thickness in feet. (6) Northwest Method Total Petroleum Hydrocarbons - Gasoline range. (7) Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica gel). (8) EPA Method 8020. (9) MTCA Method A Cleanup Levels.

(mg/L) - Micrograms per Liter, parts per billion.  
 (mg/L) - Milligrams per liter, parts per million.  
 (<) - Concentration less than laboratory detection limit listed (non-detect).  
 (--) - Not Analyzed.  
 Bold and underlined data indicates concentrations above action levels.  
 (\*) - Water not detected, this is the measurement to the bottom of the well.  
 (a) - Quantitation limits were raised due to sample dilution.  
 (J) - Estimated value (see lab report, Appendix B)  
 FP - Free Product



TABLE 1(continued)  
 MONITORING WELL DATA SUMMARY AND GROUNDWATER SAMPLE RESULTS: GASOLINE, DIESEL and BTEX  
 MOBIL RENTON BULK PLANT  
 FORMER MOBIL OIL LOCATION No. 46-080  
 RENTON, WASHINGTON

| Well Number<br>Elevation (1)<br>Diameter (3)                                                                                                   | Sample<br>Date                                                                                                                                                                                                                                                                                                                | Depth to<br>Ground-<br>water<br>(feet) (2)                                                                                                                                                        | Product<br>Thickness<br>(feet)<br>(5)                                                                                              | Ground-<br>water<br>Elevation<br>(feet) (4)                                                                                                                                                                              | NWTPH-Gx<br>(ug/L)<br>(6)                                                                                                                                                  | NWTPH-Dx<br>Diesel Range<br>(C12-C24)<br>(mg/L) (7)                                                                                    | NWTPH-Dx<br>Heavy Oil Range<br>(C24-C40)<br>(mg/L) (7)                                                                                     | Benzene<br>(ug/L)<br>(8)                                                                                                                                       | Toluene<br>(ug/L)<br>(8)                                                                                                                           | Ethyl<br>Benzene<br>(ug/L)<br>(8)                                                                                                                                 | Total<br>Xylenes<br>(ug/L)<br>(8)                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| W4<br>18.03<br>2                                                                                                                               | 1/27/1993<br>3/12/1993<br>4/14/1993<br>12/15/1993<br>11/4/1994<br>2/22/1995<br>6/16/1995<br>10/20/1995<br>4/4/1996<br>4/16/1996<br>5/10/1996<br>5/15/1996<br>5/22/1996<br>6/5/1996<br>6/24/1996<br>7/15/1996<br>1/3/1997<br>4/2/1997<br>5/1/1997<br>9/17/1997<br>4/29/1998<br>7/30/1998<br>5/23/2001<br>6/4/2002<br>5/28/2003 | 4.43<br>7.43<br>7.32<br>6.59<br>8.20<br>7.17<br>7.55<br>7.67<br>6.12<br>5.74<br>5.99<br>5.67<br>7.20<br>7.41<br>7.49<br>7.73<br>4.80<br>7.37<br>7.34<br>—<br>6.84<br>7.30<br>7.71<br>6.84<br>7.68 | —<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>sheen | 13.60<br>10.60<br>10.71<br>11.44<br>9.83<br>10.86<br>10.48<br>10.36<br>11.91<br>12.29<br>12.04<br>12.36<br>10.83<br>10.62<br>10.54<br>10.30<br>13.23<br>10.66<br>10.69<br>—<br>11.19<br>10.73<br>10.34<br>11.19<br>10.35 | —<br>—<br>130,000<br>180,000<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>114,000<br>84,000<br>53,000<br>FP<br>35,000<br>32,000 | —<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>276<br>250<br>42<br>FP<br>59<br>26 | —<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>0.5 | —<br>—<br>2,600<br>3,200<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>1,750<br>2,400<br>2,100<br>FP<br>2,300<br>800 | —<br>—<br>7,800<br>2,700<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>120<br>100<br>FP<br>32<br>22 | —<br>—<br>2,800<br>11,000<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>1,480<br>1,600<br>1,900<br>FP<br>1,800<br>1,500 | —<br>—<br>20,000<br>18,000<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>—<br>8,490<br>8,000<br>6,300<br>FP<br>3,500<br>1,000 |
| CLEANUP LEVELS: (1) 18.03 ft, (2) 4.43 ft, (3) 2 in, (4) 13.60 ft, (5) 0.03 ft, (6) 114,000 ug/L, (7) 276 mg/L, (8) 1,750 ug/L, (9) 1,480 ug/L |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                   |                                                                                                                                    |                                                                                                                                                                                                                          |                                                                                                                                                                            |                                                                                                                                        |                                                                                                                                            |                                                                                                                                                                |                                                                                                                                                    |                                                                                                                                                                   |                                                                                                                                                                         |

- (1) Mean Sea Level Elevation in feet, surveyed to top of PVC well casing.  
 (2) Depth in feet, measured from top of PVC well casing.  
 (3) Diameter in inches.  
 (4) Mean Sea Level Elevation in feet, corrected for floating product, if applicable.  
 (5) Non-aqueous phase floating product thickness in feet.  
 (6) Northwest Method Total Petroleum Hydrocarbons - Gasoline range.  
 (7) Northwest Method Total Petroleum Hydrocarbons - Diesel and Heavy Oil range (without acid/silica gel).  
 (8) EPA Method 8020.  
 (9) MTCA Method A Cleanup Levels.

- (mg/L) - Micrograms per Liter, parts per billion.  
 (mg/L) - Milligrams per liter, parts per million.  
 (<) - Concentration less than laboratory detection limit listed (non-detect).  
 (—) - Not Analyzed.  
 Bold and underlined data indicates concentrations above action levels.  
 (\*) - Water not detected, this is the measurement to the bottom of the well.  
 (a) - Quantitation limits were raised due to sample dilution.  
 (J) - Estimated value (see lab report, Appendix B).  
 FP - Free Product.

APPENDIX B

## Laboratory Analytical Data



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



26 June 2003

Martin Powers  
Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129  
RE: Conoco Phillips - Renton

Enclosed are the results of analyses for samples received by the laboratory on 06/20/03 13:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

*Jeanne Garthwaite*

Jeanne Garthwaite  
Project Manager



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

**Reported:**  
06/26/03 09:12

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID       | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------------|---------------|--------|----------------|----------------|
| INFLUENT-062003 | B3F0471-01    | Air    | 06/20/03 11:00 | 06/20/03 13:20 |
| EFFLUENT-062003 | B3F0471-02    | Air    | 06/20/03 11:10 | 06/20/03 13:20 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 5



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/26/03 09:12

# Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B North Creek Analytical - Bothell

| Analyte                                                                                  | Result | Reporting Limit | Units                 | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|------------------------------------------------------------------------------------------|--------|-----------------|-----------------------|----------|---------|----------|----------|----------------|-------|
| <b>INFLUENT-062003 (B3F0471-01) Air Sampled: 06/20/03 11:00 Received: 06/20/03 13:20</b> |        |                 |                       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                              | 7890   | 250             | mg/m <sup>3</sup> Air | 25       | 3F20013 | 06/22/03 | 06/22/03 | NWTPH Modified |       |
| Benzene                                                                                  | 273    | 2.50            | "                     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                  | 531    | 10.0            | "                     | 100      | "       | "        | 06/22/03 | "              |       |
| Ethylbenzene                                                                             | 75.6   | 2.50            | "                     | 25       | "       | "        | 06/22/03 | "              |       |
| Xylenes (total)                                                                          | 412    | 5.00            | "                     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                   | 103 %  | 65-132          |                       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                   | 89.6 % | 75-136          |                       |          | "       | "        | "        | "              |       |
| Gasoline Range Hydrocarbons (v/v)                                                        | 1860   | 59.0            | ppmv                  | 25       | "       | "        | "        | "              |       |
| Benzene (v/v)                                                                            | 84.0   | 0.770           | "                     | "        | "       | "        | "        | "              |       |
| Toluene (v/v)                                                                            | 189    | 0.652           | "                     | "        | "       | "        | "        | "              |       |
| Ethylbenzene (v/v)                                                                       | 17.1   | 0.568           | "                     | "        | "       | "        | "        | "              |       |
| Xylenes, total (v/v)                                                                     | 93.5   | 1.14            | "                     | "        | "       | "        | "        | "              |       |
| <b>EFFLUENT-062003 (B3F0471-02) Air Sampled: 06/20/03 11:10 Received: 06/20/03 13:20</b> |        |                 |                       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                              | ND     | 10.0            | mg/m <sup>3</sup> Air | 1        | 3F20013 | 06/22/03 | 06/22/03 | NWTPH Modified |       |
| Benzene                                                                                  | 0.208  | 0.100           | "                     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                  | ND     | 0.100           | "                     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                             | ND     | 0.100           | "                     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                          | ND     | 0.200           | "                     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                   | 84.2 % | 65-132          |                       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                   | 97.3 % | 75-136          |                       |          | "       | "        | "        | "              |       |
| Gasoline Range Hydrocarbons (v/v)                                                        | ND     | 2.36            | ppmv                  | "        | "       | "        | "        | "              |       |
| Benzene (v/v)                                                                            | 0.0640 | 0.0308          | "                     | "        | "       | "        | "        | "              |       |
| Toluene (v/v)                                                                            | ND     | 0.0261          | "                     | "        | "       | "        | "        | "              |       |
| Ethylbenzene (v/v)                                                                       | ND     | 0.0227          | "                     | "        | "       | "        | "        | "              |       |
| Xylenes, total (v/v)                                                                     | ND     | 0.0454          | "                     | "        | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/26/03 09:12

**Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3F20013: Prepared 06/22/03 Using EPA 5030B (P/T)**

**Blank (3F20013-BLK1)**

|                                   |      |        |                       |      |  |      |        |  |  |  |
|-----------------------------------|------|--------|-----------------------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons       | ND   | 10.0   | mg/m <sup>3</sup> Air |      |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons (v/v) | ND   | 2.36   | ppmv                  |      |  |      |        |  |  |  |
| Benzene                           | ND   | 0.100  | mg/m <sup>3</sup> Air |      |  |      |        |  |  |  |
| Benzene (v/v)                     | ND   | 0.0308 | ppmv                  |      |  |      |        |  |  |  |
| Toluene                           | ND   | 0.100  | mg/m <sup>3</sup> Air |      |  |      |        |  |  |  |
| Toluene (v/v)                     | ND   | 0.0261 | ppmv                  |      |  |      |        |  |  |  |
| Ethylbenzene                      | ND   | 0.100  | mg/m <sup>3</sup> Air |      |  |      |        |  |  |  |
| Ethylbenzene (v/v)                | ND   | 0.0227 | ppmv                  |      |  |      |        |  |  |  |
| Xylenes (total)                   | ND   | 0.200  | mg/m <sup>3</sup> Air |      |  |      |        |  |  |  |
| Xylenes, total (v/v)              | ND   | 0.0454 | ppmv                  |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)            | 8.49 |        | mg/m <sup>3</sup> Air | 9.60 |  | 88.4 | 65-132 |  |  |  |
| Surrogate: 4-BFB (PID)            | 9.32 |        | "                     | 9.60 |  | 97.1 | 75-136 |  |  |  |

**LCS (3F20013-BS1)**

|                             |      |      |                       |      |  |      |        |  |  |  |
|-----------------------------|------|------|-----------------------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 67.3 | 10.0 | mg/m <sup>3</sup> Air | 100  |  | 67.3 | 50-150 |  |  |  |
| Surrogate: 4-BFB (FID)      | 8.75 |      | "                     | 9.60 |  | 91.1 | 65-132 |  |  |  |

**LCS (3F20013-BS2)**

|                        |      |       |                       |      |  |      |        |  |  |  |
|------------------------|------|-------|-----------------------|------|--|------|--------|--|--|--|
| Benzene                | 1.54 | 0.100 | mg/m <sup>3</sup> Air | 2.00 |  | 77.0 | 50-150 |  |  |  |
| Toluene                | 1.64 | 0.100 | "                     | 2.00 |  | 82.0 | 50-150 |  |  |  |
| Ethylbenzene           | 1.55 | 0.100 | "                     | 1.96 |  | 79.1 | 50-150 |  |  |  |
| Xylenes (total)        | 4.82 | 0.200 | "                     | 6.00 |  | 80.3 | 50-150 |  |  |  |
| Surrogate: 4-BFB (PID) | 9.59 |       | "                     | 9.60 |  | 99.9 | 75-136 |  |  |  |

**LCS Dup (3F20013-BSD1)**

|                             |      |      |                       |      |  |      |        |      |    |  |
|-----------------------------|------|------|-----------------------|------|--|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 56.1 | 10.0 | mg/m <sup>3</sup> Air | 100  |  | 56.1 | 50-150 | 18.2 | 50 |  |
| Surrogate: 4-BFB (FID)      | 8.92 |      | "                     | 9.60 |  | 92.9 | 65-132 |      |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 5



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/26/03 09:12

**Gasoline Hydrocarbons (Benzene to Napthalene) and BTEX in Air by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte                                                       | Result | Reporting Limit | Units                 | Spike Level | Source Result             | %REC | %REC Limits | RPD  | RPD Limit | Notes |
|---------------------------------------------------------------|--------|-----------------|-----------------------|-------------|---------------------------|------|-------------|------|-----------|-------|
| <b>Batch 3F20013: Prepared 06/22/03 Using EPA 5030B (P/T)</b> |        |                 |                       |             |                           |      |             |      |           |       |
| <b>LCS Dup (3F20013-BSD2)</b>                                 |        |                 |                       |             |                           |      |             |      |           |       |
| Benzene                                                       | 1.65   | 0.100           | mg/m <sup>3</sup> Air | 2.00        |                           | 82.5 | 50-150      | 6.90 | 50        |       |
| Toluene                                                       | 1.71   | 0.100           | "                     | 2.00        |                           | 85.5 | 50-150      | 4.18 | 50        |       |
| Ethylbenzene                                                  | 1.66   | 0.100           | "                     | 1.96        |                           | 84.7 | 50-150      | 6.85 | 50        |       |
| Xylenes (total)                                               | 5.15   | 0.200           | "                     | 6.00        |                           | 85.8 | 50-150      | 6.62 | 50        |       |
| Surrogate: 4-BFB (PID)                                        | 9.58   |                 | "                     | 9.60        |                           | 99.8 | 75-136      |      |           |       |
| <b>Duplicate (3F20013-DUP1)</b>                               |        |                 |                       |             |                           |      |             |      |           |       |
|                                                               |        |                 |                       |             | <b>Source: B3F0445-03</b> |      |             |      |           |       |
| Gasoline Range Hydrocarbons                                   | ND     | 10.0            | mg/m <sup>3</sup> Air |             | 3.02                      |      |             | 46.5 | 30        | Q-05  |
| Surrogate: 4-BFB (FID)                                        | 7.81   |                 | "                     | 9.60        |                           | 81.4 | 65-132      |      |           |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 5



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

**Reported:**  
06/26/03 09:12

### Notes and Definitions

Q-05 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 5





May 15, 2003  
Reference Number: 203249

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed are the *revised* analytical results for the following project received by Environmental Analytical Service on April 14, 2003:

Project Name: Renton Terminal  
Project Number: 706002.012T-014

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

Steve Hoy  
Laboratory Director

SS/jd  
Enclosures

# METHOD BLANK REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



SDG: LABQC

Laboratory Number: B05133

Analytical Method: TO-14 BTEX, TPH by GC/FID

File: B05133A.D

Date Sampled:

Time:

Client:

Date Received:

Description: METHOD BLANK

Date Analyzed: 05/13/03

Time:

Sam\_Type: MB

Can#:

QC\_Batch: 051303-GC1

Analyst: KB

QC\_Level: C

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.001 |      | ND            | ND            |
| Toluene             | 0.001 |      | ND            | ND            |
| Ethylbenzene        | 0.001 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.002 |      | ND            | ND            |
| o-Xylene            | 0.002 |      | ND            | ND            |
| TPH as Gasoline     | 0.010 |      | ND            | ND            |
| TPH as Diesel       | 0.010 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).



## LABORATORY CONTROL SPIKE / CONTROL SPIKE DUPLICATE REPORT

Spike: QC03193  
Spike Dup: QC03193DUP  
QC Lot: 051303-GC1

Method: GC/FID

| Compound            | Theo. Conc<br>ppmV | Spike<br>ppmV | Spike Dup<br>ppmV | % Recov.<br>Spike | %Recov.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|---------------------|--------------------|---------------|-------------------|-------------------|-----------------------|------|------------------|
| Benzene             | 0.98               | 1.114         | 0.921             | 114               | 94                    | 19   | 70-130%          |
| Toluene             | 16.20              | 19.296        | 16.068            | 119               | 99                    | 18   | 70-130%          |
| Ethylbenzene        | 3.12               | 3.915         | 3.277             | 125               | 105                   | 18   | 70-130%          |
| m-xylene (p-xylene) | 12.09              | 15.514        | 12.994            | 128               | 108                   | 18   | 70-130%          |
| o-xylene            | 5.29               | 6.723         | 5.658             | 127               | 107                   | 17   | 70-130%          |
| MTBE                | 9.11               | 9.994         | 8.481             | 110               | 93                    | 16   | 70-130%          |
| TPH(g)              | 231.97             | 230.11        | 201.981           | 99                | 87                    | 13   | 70-130%          |

RPD limit:  $\leq 35\%$

# ANALYTICAL REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203249

**Analytical Method:** TO-14 BTEX, TPH by GC/FID

Laboratory Number: 02

File: 0324902B.D

Date Sampled: 04/08/03

Time:

Client: Landau Associates

Date Received: 04/14/03

Description: DPREEFF040803

Date Analyzed: 05/13/03

Time:

Sam\_Type: SA

Can#: 328

QC\_Batch: 051303-GC1

Analyst: KB

QC\_Level: C

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.002 |      | ND            | ND            |
| Toluene             | 0.001 |      | ND            | ND            |
| Ethylbenzene        | 0.001 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.002 |      | ND            | ND            |
| o-Xylene            | 0.002 |      | ND            | ND            |
| TPH as Gasoline     | 0.013 |      | 0.022         | 0.089         |
| TPH as Diesel       | 0.013 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



26 March 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 03/25/03 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite

Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/26/03 16:08

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| Influent   | B3C0609-01    | Water  | 03/25/03 09:10 | 03/25/03 17:10 |
| Effluent 1 | B3C0609-02    | Water  | 03/25/03 09:15 | 03/25/03 17:10 |
| Effluent 2 | B3C0609-03    | Water  | 03/25/03 14:45 | 03/25/03 17:10 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/26/03 16:08

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>Influent (B3C0609-01) Water</b> Sampled: 03/25/03 09:10 Received: 03/25/03 17:10   |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | 177000 | 10000           | ug/l  | 200      | 3C25010 | 03/25/03 | 03/25/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | 28500  | 500             | "     | 1000     | "       | "        | 03/25/03 | "              |       |
| Toluene                                                                               | 45500  | 500             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | 2320   | 100             | "     | 200      | "       | "        | 03/25/03 | "              |       |
| Xylenes (total)                                                                       | 18000  | 200             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 104 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 115 %  | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>Effluent 1 (B3C0609-02) Water</b> Sampled: 03/25/03 09:15 Received: 03/25/03 17:10 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | 25700  | 5000            | ug/l  | 100      | 3C25010 | 03/25/03 | 03/25/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | 706    | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | 2200   | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | 269    | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | 1810   | 100             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 104 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 114 %  | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>Effluent 2 (B3C0609-03) Water</b> Sampled: 03/25/03 14:45 Received: 03/25/03 17:10 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | 24000  | 1250            | ug/l  | 25       | 3C25024 | 03/25/03 | 03/26/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | 343    | 12.5            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | 1000   | 12.5            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | 191    | 12.5            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | 1290   | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 119 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 104 %  | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/26/03 16:08

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------------------|-----|-----------|-------|

**Batch 3C25010: Prepared 03/25/03 Using EPA 5030B (MeOH)**

**Blank (3C25010-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 42.8 |       | "    | 48.0 |  | 89.2 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 52.4 |       | "    | 48.0 |  | 109  | 62-120 |  |  |

**LCS (3C25010-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 492  | 50.0  | ug/l | 500  |  | 98.4 | 80-120 |  |  |
| Benzene                     | 7.28 | 0.500 | "    | 6.65 |  | 109  | 80-120 |  |  |
| Toluene                     | 36.2 | 0.500 | "    | 37.0 |  | 97.8 | 80-120 |  |  |
| Ethylbenzene                | 9.53 | 0.500 | "    | 8.55 |  | 111  | 80-120 |  |  |
| Xylenes (total)             | 46.5 | 1.00  | "    | 43.0 |  | 108  | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 53.0 |       | "    | 48.0 |  | 110  | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 54.4 |       | "    | 48.0 |  | 113  | 62-120 |  |  |

**LCS Dup (3C25010-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 498  | 50.0  | ug/l | 500  |  | 99.6 | 80-120 | 1.21  | 25 |
| Benzene                     | 7.17 | 0.500 | "    | 6.65 |  | 108  | 80-120 | 1.52  | 40 |
| Toluene                     | 35.9 | 0.500 | "    | 37.0 |  | 97.0 | 80-120 | 0.832 | 40 |
| Ethylbenzene                | 9.45 | 0.500 | "    | 8.55 |  | 111  | 80-120 | 0.843 | 40 |
| Xylenes (total)             | 46.0 | 1.00  | "    | 43.0 |  | 107  | 80-120 | 1.08  | 40 |
| Surrogate: 4-BFB (FID)      | 53.8 |       | "    | 48.0 |  | 112  | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 54.0 |       | "    | 48.0 |  | 112  | 62-120 |       |    |

**Matrix Spike (3C25010-MS1)**

Source: B3C0478-01

|                             |      |       |      |      |        |      |        |  |  |
|-----------------------------|------|-------|------|------|--------|------|--------|--|--|
| Gasoline Range Hydrocarbons | 427  | 50.0  | ug/l | 500  | 12.8   | 82.8 | 70-130 |  |  |
| Benzene                     | 7.05 | 0.500 | "    | 6.65 | ND     | 106  | 80-134 |  |  |
| Toluene                     | 35.1 | 0.500 | "    | 37.0 | 0.153  | 94.5 | 68-114 |  |  |
| Ethylbenzene                | 9.14 | 0.500 | "    | 8.55 | 0.0996 | 106  | 72-128 |  |  |
| Xylenes (total)             | 43.9 | 1.00  | "    | 43.0 | 0.318  | 101  | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 50.8 |       | "    | 48.0 |        | 106  | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 55.8 |       | "    | 48.0 |        | 116  | 62-120 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/26/03 16:08

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|--------------|-------|

**Batch 3C25010: Prepared 03/25/03 Using EPA 5030B (MeOH)**

**Matrix Spike Dup (3C25010-MSD1)**

Source: B3C0478-01

|                             |      |       |      |      |        |      |        |       |    |
|-----------------------------|------|-------|------|------|--------|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 424  | 50.0  | ug/l | 500  | 12.8   | 82.2 | 70-130 | 0.705 | 25 |
| Benzene                     | 7.42 | 0.500 | "    | 6.65 | ND     | 112  | 80-134 | 5.11  | 40 |
| Toluene                     | 36.6 | 0.500 | "    | 37.0 | 0.153  | 98.5 | 68-114 | 4.18  | 40 |
| Ethylbenzene                | 9.49 | 0.500 | "    | 8.55 | 0.0996 | 110  | 72-128 | 3.76  | 40 |
| Xylenes (total)             | 45.0 | 1.00  | "    | 43.0 | 0.318  | 104  | 67-125 | 2.47  | 40 |
| Surrogate: 4-BFB (FID)      | 49.7 |       | "    | 48.0 |        | 104  | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 55.8 |       | "    | 48.0 |        | 116  | 62-120 |       |    |

**Batch 3C25024: Prepared 03/25/03 Using EPA 5030B (MeOH)**

**Blank (3C25024-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 46.7 |       | "    | 48.0 |  | 97.3 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 48.3 |       | "    | 48.0 |  | 101  | 62-120 |  |  |

**LCS (3C25024-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 485  | 50.0  | ug/l | 500  |  | 97.0 | 80-120 |  |  |
| Benzene                     | 6.03 | 0.500 | "    | 6.65 |  | 90.7 | 80-120 |  |  |
| Toluene                     | 33.5 | 0.500 | "    | 37.0 |  | 90.5 | 80-120 |  |  |
| Ethylbenzene                | 8.68 | 0.500 | "    | 8.55 |  | 102  | 80-120 |  |  |
| Xylenes (total)             | 41.2 | 1.00  | "    | 43.0 |  | 95.8 | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 50.8 |       | "    | 48.0 |  | 106  | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 46.0 |       | "    | 48.0 |  | 95.8 | 62-120 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/26/03 16:08

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3C25024: Prepared 03/25/03 Using EPA 5030B (MeOH)**

**LCS Dup (3C25024-BSD1)**

|                             |      |       |      |      |  |      |        |      |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 470  | 50.0  | ug/l | 500  |  | 94.0 | 80-120 | 3.14 | 25 |  |
| Benzene                     | 6.16 | 0.500 | "    | 6.65 |  | 92.6 | 80-120 | 2.13 | 40 |  |
| Toluene                     | 34.4 | 0.500 | "    | 37.0 |  | 93.0 | 80-120 | 2.65 | 40 |  |
| Ethylbenzene                | 8.90 | 0.500 | "    | 8.55 |  | 104  | 80-120 | 2.50 | 40 |  |
| Xylenes (total)             | 42.4 | 1.00  | "    | 43.0 |  | 98.6 | 80-120 | 2.87 | 40 |  |
| Surrogate: 4-BFB (FID)      | 51.0 |       | "    | 48.0 |  | 106  | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 47.9 |       | "    | 48.0 |  | 99.8 | 62-120 |      |    |  |

**Matrix Spike (3C25024-MS1)**

Source: B3C0549-01

|                             |      |       |      |      |       |      |        |  |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 458  | 50.0  | ug/l | 500  | ND    | 91.6 | 70-130 |  |  |  |
| Benzene                     | 6.28 | 0.500 | "    | 6.65 | ND    | 94.4 | 80-134 |  |  |  |
| Toluene                     | 35.1 | 0.500 | "    | 37.0 | 0.167 | 94.4 | 68-114 |  |  |  |
| Ethylbenzene                | 8.98 | 0.500 | "    | 8.55 | ND    | 105  | 72-128 |  |  |  |
| Xylenes (total)             | 42.3 | 1.00  | "    | 43.0 | ND    | 98.4 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 49.4 |       | "    | 48.0 |       | 103  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 47.7 |       | "    | 48.0 |       | 99.4 | 62-120 |  |  |  |

**Matrix Spike Dup (3C25024-MSD1)**

Source: B3C0549-01

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 441  | 50.0  | ug/l | 500  | ND    | 88.2 | 70-130 | 3.78  | 25 |  |
| Benzene                     | 6.26 | 0.500 | "    | 6.65 | ND    | 94.1 | 80-134 | 0.319 | 40 |  |
| Toluene                     | 34.8 | 0.500 | "    | 37.0 | 0.167 | 93.6 | 68-114 | 0.858 | 40 |  |
| Ethylbenzene                | 8.88 | 0.500 | "    | 8.55 | ND    | 104  | 72-128 | 1.12  | 40 |  |
| Xylenes (total)             | 41.4 | 1.00  | "    | 43.0 | ND    | 96.3 | 67-125 | 2.15  | 40 |  |
| Surrogate: 4-BFB (FID)      | 50.4 |       | "    | 48.0 |       | 105  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 48.8 |       | "    | 48.0 |       | 102  | 62-120 |       |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 6



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
03/26/03 16:08

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 6 of 6



April 24, 2003

Sample Delivery Group (SDG): 203249



Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed is the analytical report for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

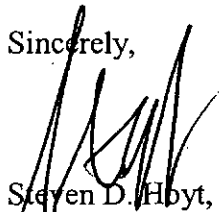
Project Name: Renton Terminal  
Project Number: 706002.012T-014

The report consists of the following sections:

- I. Sample Description
- II. Laboratory Narrative and Chain of Custody Forms
- III. Laboratory Certification
- IV. Quality Control Reports
- V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steven D. Hoyt, Ph.D.  
Laboratory Director

SDH/lms

173 Cross Street  
San Luis Obispo  
CA  
93401-7597  
805.781.3585

Fax 805.541.4550

# Analytical Report

# ENVIRONMENTAL

Analytical Service, Inc.



**SDG Number** 203249

**Client:** Landau Associates

**Date Received:** 4/14/2003

## I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

| Client Sample No. | EAS Lab No | Analysis Requested                  | Date Sample Rec | Pressure (torr) |       |
|-------------------|------------|-------------------------------------|-----------------|-----------------|-------|
|                   |            |                                     |                 | Rec             | Final |
| DPEINF040803      | 203249 1   | EPA TO-14 BTEX, TPH gas, TPH diesel | 4/8/2003        | 812             | 953   |
| DPEEFF040803      | 203249 2   | EPA TO-14 BTEX, TPH gas, TPH diesel | 4/8/2003        | 753             | 955   |

## II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Number: 203249  
Analysis performed for: Landau Associates, Inc.

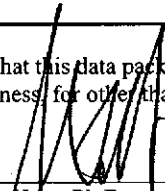
---

All laboratory quality control criteria were met for the samples in this report.

## III. LABORATORY CERTIFICATION

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

  
\_\_\_\_\_  
Steven D. Hoyt, Ph.D.  
Laboratory Director

~~☐~~Seattle (Edmonds) (425) 778-0907

☐ Tacoma (253) 926-2493

☐ **Spokane (509) 327-9737**

**Portland (Tigard) (503) 443-6010**

**LANDAU ASSOCIATES**

# Chain-of-Custody Record

Date April 9, 2003

Page 1 of 1[illegible]

Rev. 6/02

**PINK COPY - Client Representative**

**WEI LAW GROUP, P.C.**

~~WHITE COPY - Destroyed~~

11



#### **IV. QUALITY CONTROL REPORT**

SDG Number: 203249  
Client: Landau Associates, Inc.

#### **LABORATORY QC REPORT**

---

##### **QC NARRATIVE**

This report was run with the standard laboratory QC.

##### **STANDARD LABORATORY QC REPORT**

Unless project specific QC was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

##### **METHOD BLANK**

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of the batch blank is included with the report.

##### **DUPLICATE CONTROL SAMPLES**

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{[\% \text{ Recovery Test 1} - \% \text{ Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$

# METHOD BLANK REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



Analytical Method: TO-14 BTEX, TPH by GC/FID

SDG: LABQC  
Laboratory Number: B04153

File: B04153A.D  
Client:  
Description: METHOD BLANK  
Sam\_Type: MB  
QC\_Batch: 041503-GC1

Date Sampled:  
Date Received:  
Date Analyzed: 04/15/03  
Dilution Factor: 1.00  
Analyst: KB

Time:  
Time:  
Can#:  
QC Level: C

| Compound            | MDL    | Flag | Concentration | Concentration |
|---------------------|--------|------|---------------|---------------|
|                     | ppmV   |      | ppmV          | mg/m3         |
| Benzene             | 2.600  |      | ND            | ND            |
| Toluene             | 2.000  |      | ND            | ND            |
| Ethylbenzene        | 2.000  |      | ND            | ND            |
| m-xylene (p-xylene) | 3.600  |      | ND            | ND            |
| o-Xylene            | 3.800  |      | ND            | ND            |
| TPH as Gasoline     | 20.000 |      | ND            | ND            |
| TPH as Diesel       | 20.000 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).

# METHOD BLANK REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



Analytical Method: TO-14 BTEX, TPH by GC/FID  
 SDG: LABQC  
 Laboratory Number: B04163

File: B04163A.D Date Sampled: Time:  
 Client: Date Received:  
 Description: METHOD BLANK Date Analyzed: 04/16/03 Time:  
 Sam\_Type: MB Dilution Factor: 1.00 Can#:  
 GC\_Batch: 041603-GC1 Analyst: KB QC\_Level: C

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.260 |      | ND            | ND            |
| Toluene             | 0.200 |      | ND            | ND            |
| Ethylbenzene        | 0.200 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.360 |      | ND            | ND            |
| Xylene              | 0.380 |      | ND            | ND            |
| TPH as Gasoline     | 2.000 |      | ND            | ND            |
| TPH as Diesel       | 2.000 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).



## LABORATORY CONTROL SPIKE / CONTROL SPIKE DUPLICATE REPORT

Spike: QC03193

Spike Dup: QC03193DUP

QC Lot: 041503-GC1

Method: GC/FID

| Compound            | Theo. Conc<br>ppmV | Spike<br>ppmV | Spike Dup<br>ppmV | % Recov.<br>Spike | %Recov.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|---------------------|--------------------|---------------|-------------------|-------------------|-----------------------|------|------------------|
| Benzene             | 0.98               | 1.114         | 0.921             | 114               | 94                    | 19   | 70-130%          |
| Toluene             | 16.20              | 19.296        | 16.068            | 119               | 99                    | 18   | 70-130%          |
| Ethylbenzene        | 3.12               | 3.915         | 3.277             | 125               | 105                   | 18   | 70-130%          |
| m-xylene (p-xylene) | 12.09              | 15.514        | 12.994            | 128               | 108                   | 18   | 70-130%          |
| o-xylene            | 5.29               | 6.723         | 5.658             | 127               | 107                   | 17   | 70-130%          |
| MTBE                | 9.11               | 9.994         | 8.481             | 110               | 93                    | 16   | 70-130%          |
| TPH(g)              | 231.97             | 230.11        | 201.981           | 99                | 87                    | 13   | 70-130%          |

RPD limit:  $\leq 35\%$



## LABORATORY CONTROL SPIKE / CONTROL SPIKE DUPLICATE REPORT

Spike: QC03193  
Spike Dup: QC03193DUP  
QC Lot: 041603-GC1

Method: GC/FID

| Compound            | Theo. Conc<br>ppmV | Spike<br>ppmV | Spike Dup<br>ppmV | % Recov.<br>Spike | %Recov.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|---------------------|--------------------|---------------|-------------------|-------------------|-----------------------|------|------------------|
| Benzene             | 0.98               | 1.114         | 0.921             | 114               | 94                    | 19   | 70-130%          |
| Toluene             | 16.20              | 19.296        | 16.068            | 119               | 99                    | 18   | 70-130%          |
| Ethylbenzene        | 3.12               | 3.915         | 3.277             | 125               | 105                   | 18   | 70-130%          |
| m-xylene (p-xylene) | 12.09              | 15.514        | 12.994            | 128               | 108                   | 18   | 70-130%          |
| o-xylene            | 5.29               | 6.723         | 5.658             | 127               | 107                   | 17   | 70-130%          |
| MTBE                | 9.11               | 9.994         | 8.481             | 110               | 93                    | 16   | 70-130%          |
| TPH(g)              | 231.97             | 230.11        | 201.981           | 99                | 87                    | 13   | 70-130%          |

RPD limit:  $\leq 35\%$

## V. ANALYTICAL RESULTS

SDG Number: 203249  
Client: Landau Associates, Inc.

---

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

### ppbV, ppmV, Percent

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

### ug/m3, mg/m3

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m3} = \frac{\text{ppbV} \times \text{MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

### ppbC, ppmC

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV} \times \text{number of carbons in compound}$$

# ANALYTICAL REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203249

Analytical Method: TO-14 BTEX, TPH by GC/FID

Laboratory Number: 01

|              |                   |                  |          |           |     |
|--------------|-------------------|------------------|----------|-----------|-----|
| File:        | 0324901A.D        | Date Sampled:    | 04/08/03 | Time:     |     |
| Client:      | Landau Associates | Date Received:   | 04/14/03 |           |     |
| Description: | DPEINF040803      | Date Analyzed:   | 04/15/03 | Time:     |     |
| Sam_Type:    | SA                | Dilution Factor: | 1.17     | Can#:     | 302 |
| C_Batch:     | 041503-GC1        | Analyst:         | KB       | QC_Level: | C   |

| Compound            | MDL    | Flag | Concentration | Concentration |
|---------------------|--------|------|---------------|---------------|
|                     | ppmV   |      | ppmV          | mg/m3         |
| Benzene             | 2.600  |      | 28.845        | 95.146        |
| Toluene             | 2.000  |      | 106.648       | 414.974       |
| Ethylbenzene        | 2.000  |      | 10.811        | 48.394        |
| m-xylene (p-xylene) | 3.600  |      | 44.347        | 198.511       |
| Xylene              | 3.800  |      | 17.856        | 79.932        |
| TPH as Gasoline     | 20.000 |      | 1124.341      | 4510.657      |
| TPH as Diesel       | 20.000 |      | 524.692       | 4387.207      |

Notes: ND = not detected above the method detection limit (MDL).

# ANALYTICAL REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203249

**Analytical Method:** TO-14 BTEX, TPH by GC/FID

Laboratory Number: 02

|              |                   |                  |          |           |     |
|--------------|-------------------|------------------|----------|-----------|-----|
| File:        | 0324902B.D        | Date Sampled:    | 04/08/03 | Time:     |     |
| Client:      | Landau Associates | Date Received:   | 04/14/03 |           |     |
| Description: | DPEEFF040803      | Date Analyzed:   | 04/16/03 | Time:     |     |
| Sam_Type:    | SA                | Dilution Factor: | 1.27     | Can#:     | 328 |
| QC_Batch:    | 041603-GC1        | Analyst:         | KB       | QC_Level: | C   |

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.330 |      | 33.359        | 110.035       |
| Toluene             | 0.254 |      | 116.854       | 454.684       |
| Ethylbenzene        | 0.254 |      | 10.492        | 46.966        |
| m-xylene (p-xylene) | 0.457 |      | 41.800        | 187.113       |
| o-Xylene            | 0.483 |      | 16.219        | 72.604        |
| TPH as Gasoline     | 2.540 |      | 1268.232      | 5087.925      |
| TPH as Diesel       | 2.540 |      | 591.842       | 4948.677      |

Notes: ND = not detected above the method detection limit (MDL).



## DATA QUALIFIERS AND ABBREVIATIONS

- \* See Case Narrative
- B This compound was also detected in the blank
- D This report was calculated from a secondary dilution factor
- E Compound exceeds the calibration range and is an estimated value
- J The amount reported is an estimated value as it is below the reported MDL
- F Higher detection limit due to sample matrix
- G Higher detection limit due to limited sample size
- Q Compound ion ratio qualifiers are outside the standard acceptance criteria
- R Compound retention time (RT) is outside the acceptance criteria for the method
- MDL** Minimum Detection Limit – Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). Generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL, which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula:

$$MDL = 3.14 * S$$

- ND** Not Detected – a reported limit
- U** Not Detected – a reported limit
- NA** Not Applicable
- RPD** Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following formula:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

- RSD** Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$\text{RSD(\%)} = \frac{S * 100}{\text{Average}}$$

## DEFINITIONS

$$\text{ppbV} = \frac{\# \text{ nanomoles cmpd}}{\# \text{ moles air}} = \frac{\text{ppbC}}{\# \text{ carbons in cmpd}}$$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

$$\text{ug/m}^3 = \text{ppbV} \times \frac{\text{MW compound}}{23.68}$$

Compound is reported as ug of a compound in a m<sup>3</sup> of air

23.68 is the molar volume of a gas at 60 ° F and 1 atm pressure

MW = molecular weight

**This unit is temperature dependent**

$$\text{ppbC} = \text{ppbV} \times \# \text{ carbons in compound}$$

# ENVIRONMENTAL

Analytical Service, Inc.

2/27/2003 9:45:17 AM

## SAMPLE RECEIPT NOTIFICATION

|             |                   |             |                |
|-------------|-------------------|-------------|----------------|
| Attention   | Martin Powers     |             |                |
| Company     | Landau Associates |             |                |
| Location    | Edmonds           | WA          |                |
| FAX         | (425) 778-6409    | Phone       | (425) 778-0907 |
| Fax Sent By | Lesley Wise       | Total Pages | 3              |

Enclosed is a copy of the Laboratory Work Order and the Chain of Custody forms for the samples you submitted to Environmental Analytical Service. Each batch of samples received is assigned a Sample Delivery Group (SDG) number for reference. Please check to make sure all of the information and analysis are listed correctly.

### Turn Around Time Note:

Normal Turn Around Time for reports is 10 working days from date of receipt, and if requested we will fax preliminary results in about 5 to 7 working days. Based on your requested TAT on the Quotation and our current sample load we have provided an estimated date that preliminary results and the report will be available. Please contact Customer Service if you have any questions or need your data on a different schedule..

### SUMMA Canister Holding Time:

EAS uses the method specified holding time. EPA TO-14A specifies a holding time for SUMMA canisters of 30 days for most normal sampling situations. EAS pressurizes subambient canisters as soon as they are received so they will qualify for the 30 day holding time. EAS will use the method holding time of 30 days for all SUMMA canisters. If your project specifies a holding time that is shorter than the method holding time please notify Customer Service as soon as possible so we can accomodate your request.

If you have any questions regarding your samples, special project requirements, or would like the preliminary results faxed to you when available, please contact Customer Service at (805) 781-3585 or fax back a copy of this form with your requests or any corrections to (805) 541-4550. For technical questions contact Dr. Steven Hoyt at the same number.

173 Cross Street, San Luis Obispo, CA 93401 (805) 781-3585 Fax (805) 541-4550

# LABORATORY WORK ORDER

## INFORMATION

SDG Number: 203145

Date Sampled: See List Below

Client: Landau Associates

Date Received: 2/26/2003

The Turn-Around-Time from the Date Received and the preliminary report due date are shown on the right. If you have any question on these please contact Sample Control.

TAT: 10

Due Date: 3/12/2003

## SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

| Client Sample No. | EAS Lab No. | Analysis Requested                  | Date Sampled | Pressure (torr) |       |        |
|-------------------|-------------|-------------------------------------|--------------|-----------------|-------|--------|
|                   |             |                                     |              | Rec             | Final | Factor |
| INF022403         | 203145 1    | EPA TO-14 BTEX, TPH gas, TPH die    | 2/24/2003    | 868             | 1018  | 1.17   |
| EFF022403         | 203145 2    | EPA TO-14 H.S. for 4 of the compoun | 2/24/2003    | 898             | 1000  | 1.11   |
| EFF022403         | 203145 2    | EPA TO-15 Library Search for Phenol | 2/24/2003    | 898             | 1000  | 1.11   |
| EFF022403         | 203145 2    | EPA TO-15 Special Target            | 2/24/2003    | 898             | 1000  | 1.11   |

Date 2-24-03  
Page 1 of 1

## Testing Parameters

Supplier's Name M. Powers

Project Contact M. Powers

Send Results To M. Powers

Sample I.D.

051

Time

## Matrix Containers

No. of  
Containers

TO-14 BTEX; TPH-G; TPH-D  
TO-15 (See List)\*

33

Observations/Comments

### Turnaround Time

**X Standard**

☐ Accelerated

|             |          |         |      |     |
|-------------|----------|---------|------|-----|
| LINE 022403 | CON #375 | 2-24-03 | 0905 | Air |
| EFF 022403  | 38       | 2-24-03 | 0900 | Air |

203145-1

$$\frac{868}{898} \div \frac{1018}{1000}$$

5/11/50

[illegible]

Relinquished by

இருந்தால்

Martin Powers  
Printed Name

LA  
Company

Date 2-24-03 Time 15:15

Received by

Signature \_\_\_\_\_

Printed Name Emily Proctor

EA  
Company

Date 8/26/03 Time 11:20am

Relinquished by

**Sigilature**

Printed Name:

Company

Date \_\_\_\_\_ TIME \_\_\_\_\_

Received by

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Company

Date \_\_\_\_\_ Time \_\_\_\_\_

三、

## Proj

YELLOW COPY LABORATORY

**PINK COPY - Client Representative**

Mr. AUC



March 27, 2003  
Reference Number: 203145

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

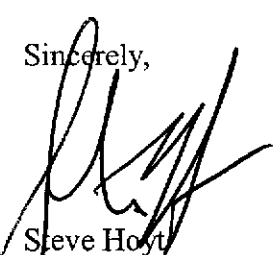
Dear Martin:

Enclosed are your *revised* analytical results done by Environmental Analytical Service Inc. for the following project.

Project Name: Conoco Phillips Renton  
Project Number: 706002.012

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steve Hoyt  
Laboratory Director

SS/jd  
Enclosures

## ANALYTICAL REPORT

ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203145

Analytical Method: EPA TO-15

Laboratory Number: 02

File: 0314502B.D

Date Sampled: 02/24/03

Time:

Client: LANDAU ASSOCIATES

Date Received: 02/26/03

Description: EFF022403 CAN# 381 200ML

Date Analyzed: 03/04/03

Time:

Sam\_Type: SA

Dilution Factor: 2.78

Can#: 381

QC\_Batch: 030403-MS1

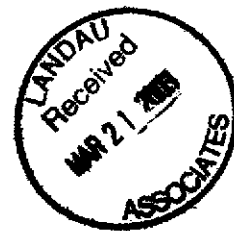
Analyst: AT

| CAS #     | Compound                | MDL  | Amount | MDL    | Amount | Flag |
|-----------|-------------------------|------|--------|--------|--------|------|
|           |                         | ppbV | ppbV   | ug/m3* | ug/m3* |      |
| 1634-04-4 | Methyl tert butyl ether | 0.3  | ND     | 1.0    | ND     | U    |
| 71-43-2   | Benzene                 | 0.3  | 0.3    | 0.9    | 1.1    |      |
| 108-88-3  | Toluene                 | 0.3  | 1.4    | 1.1    | 5.4    |      |
| 100-41-4  | Ethylbenzene            | 0.3  | 0.3    | 1.2    | 1.4    |      |
| 108-38-3  | m & p-Xylene            | 0.3  | 1.2    | 1.2    | 5.3    |      |
| 95-47-6   | o-Xylene                | 0.3  | 0.4    | 1.2    | 2.0    |      |
| 91-20-3   | Napthalene              | 2.8  | ND     | 15.0   | ND     | U    |
| 78-00-2   | Tetraethyl Lead         | 1.7  | ND     | NA     | ND     | U    |
|           | Isooctane               | 1.7  | ND     | NA     | ND     | U    |
|           | Phenol                  | 1.7  | ND     | NA     | ND     | U    |
|           | Methanol                | 1.7  | ND     | NA     | ND     | U    |
|           | Cumene                  | 1.7  | ND     | NA     | ND     | U    |
|           | Hexane                  | 1.7  | ND     | NA     | ND     | U    |

Notes: ND = Not detected at or above the listed minimum detection limit (MDL).

Reported results are to be interpreted to two significant figures.

\*ug/m3 calculated assuming conditions at 60 F and 1 atm.



March 19, 2003  
Sample Delivery Group (SDG): 203145

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed is the analytical report for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

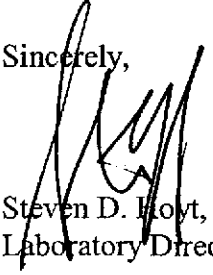
Project Name: Conoco Phillips Renton  
Project Number: 706002.012

The report consists of the following sections:

- I. Sample Description
- II. Laboratory Narrative and Chain of Custody Forms
- III. Laboratory Certification
- IV. Quality Control Reports
- V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steven D. Hoyt, Ph.D.  
Laboratory Director

SDH/lms

173 Cross Street  
San Luis Obispo  
CA  
93401-7597  
805.781.3585  
Fax 805.541.4550

# Analytical Report

# ENVIRONMENTAL

Analytical Service, Inc.



**SDG Number** 203145

**Client:** Landau Associates

**Date Received:** 2/26/2003

## I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

| Client Sample No. | EAS Lab No | Analysis Requested                    | Pressure (torr) |       |      |
|-------------------|------------|---------------------------------------|-----------------|-------|------|
|                   |            |                                       | Date Sample Rec | Final |      |
| INF022403         | 203145 1   | EPA TO-14 BTEX, TPH gas, TPH diesel   | 2/24/2003       | 868   | 1018 |
| EFF022403         | 203145 2   | EPA TO-14 H.S. for 4 of the compounds | 2/24/2003       | 898   | 1000 |
| EFF022403         | 203145 2   | EPA TO-15 Library Search for Phenol   | 2/24/2003       | 898   | 1000 |
| EFF022403         | 203145 2   | EPA TO-15 Special Target              | 2/24/2003       | 898   | 1000 |

## II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Number: 203145  
Analysis performed for: Landau Associates, Inc.

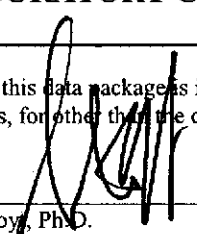
---

All laboratory quality control criteria were met for the samples in this report.

## III. LABORATORY CERTIFICATION

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

  
\_\_\_\_\_  
Steven D. Hoy, Ph.D.  
Laboratory Director

#### **IV. QUALITY CONTROL REPORT**

SDG Number: 203145  
Client: Landau Associates, Inc.

#### **LABORATORY QC REPORT**

---

##### **QC NARRATIVE**

This report was run with the standard laboratory QC.

##### **STANDARD LABORATORY QC REPORT**

Unless project specific QC was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

##### **METHOD BLANK**

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of the batch blank is included with the report.

##### **DUPLICATE CONTROL SAMPLES**

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{[\% \text{ Recovery Test 1} - \% \text{ Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$



## METHOD BLANK REPORT

BTXE by EPA-18 GC/FID

Laboratory Number: B02283

File: B02283A.D

Date Sampled:

Client:

Date Analyzed: 02/28/03

Description: METHOD BLANK

Analyst: KB

Can#:

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.260 |      | ND            | ND            |
| Toluene             | 0.200 |      | 0.217         | 0.846         |
| Ethylbenzene        | 0.200 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.360 |      | ND            | ND            |
| o-Xylene            | 0.380 |      | ND            | ND            |
| TPH as Gasoline     | 2.000 |      | 2.068         | 8.298         |
| TPH as Diesel       | 2.000 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).

# METHOD BLANK REPORT

# ENVIRONMENTAL

Analytical Service, Inc.



|                              |                         |                           |  |
|------------------------------|-------------------------|---------------------------|--|
| Analytical Method: EPA TO-15 |                         | SDG: LABQC                |  |
| File: B03043B.D              |                         | Laboratory Number: B03043 |  |
| Client:                      | Date Sampled:           | Time:                     |  |
| Description: METHOD BLANK    | Date Received:          |                           |  |
| Sam_Type: MB                 | Date Analyzed: 03/04/03 | Time:                     |  |
| QC_Batch: 030403-MS1         | Dilution Factor: 2.50   | Can#:                     |  |
| Analyst: AT                  |                         |                           |  |

| CAS #     | Compound                | MDL<br>ppbV | Amount<br>ppbV | MDL<br>ug/m3* | Amount<br>ug/m3* | Flag |
|-----------|-------------------------|-------------|----------------|---------------|------------------|------|
| 1634-04-4 | Methyl tert butyl ether | 0.3         | ND             | 0.9           | ND               | U    |
| 71-43-2   | Benzene                 | 0.3         | ND             | 0.8           | ND               | U    |
| 108-88-3  | Toluene                 | 0.3         | ND             | 1.0           | ND               | U    |
| 100-41-4  | Ethylbenzene            | 0.3         | ND             | 1.1           | ND               | U    |
| 108-38-3  | m & p-Xylene            | 0.3         | ND             | 1.1           | ND               | U    |
| 95-47-6   | o-Xylene                | 0.3         | ND             | 1.1           | ND               | U    |
| 91-20-3   | Napthalene              | 2.5         | ND             | 13.5          | ND               | U    |

Notes: ND = Not detected at or above the listed minimum detection limit (MDL).

Reported results are to be interpreted to two significant figures.

\*ug/m3 calculated assuming conditions at 60 F and 1 atm.

Form I-AAVC

Page 1 of 1



## LABORATORY CONTROL SPIKE / CONTROL SPIKE DUPLICATE REPORT

Spike: QC02213

Spike Dup: QC02213DUP

QC Lot: 022803-GC1

Method: GC/FID

| Compound            | Theo. Conc<br>ppmV | Spike<br>ppmV | Spike Dup<br>ppmV | % Recov.<br>Spike | %Recov.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|---------------------|--------------------|---------------|-------------------|-------------------|-----------------------|------|------------------|
| Benzene             | 0.98               | 1.140         | 0.999             | 117               | 102                   | 13   | 80-120%          |
| Toluene             | 16.20              | 17.452        | 15.052            | 108               | 93                    | 15   | 80-120%          |
| Ethylbenzene        | 3.12               | 3.130         | 2.599             | 100               | 83                    | 19   | 80-120%          |
| m-xylene (p-xylene) | 12.09              | 12.216        | 10.183            | 101               | 84                    | 18   | 80-120%          |
| o-xylene            | 5.29               | 5.300         | 4.410             | 100               | 83                    | 18   | 80-120%          |
| MTBE                | 9.11               | 9.500         | 8.535             | 104               | 94                    | 11   | 80-120%          |
| TPH(g)              | 231.97             | 200.61        | 174.721           | 86                | 75                    | 14   | 80-120%          |

RPD limit:  $\leq 35\%$



## LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

SDG: LABQC

Laboratory Number: QA03043

## Analytical Method TO-14

Spike: QC03043 Spike Dup.: QC03043DUP

Client:

Client ID S-030403-1

Date Analyzed: 03/04/03

Sam\_Type: LCS LCD

Dilution Factor: 1.0

QC Batch: 030403-MS1

Method: Full Scan GC/MS

| Compound              | Theoretical<br>Conc. ppbv | Spike<br>ppbv | Spike Dup.<br>ppbv | % Rec.<br>Spike | % Rec.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|-----------------------|---------------------------|---------------|--------------------|-----------------|----------------------|------|------------------|
| Vinyl chloride        | 0.58                      | 0.57          | 0.56               | 99              | 97                   | 3    | 70-130           |
| 1,1-Dichloroethene    | 0.45                      | 0.46          | 0.43               | 102             | 95                   | 7    | 70-140           |
| Methylene chloride    | 0.57                      | 0.56          | 0.54               | 98              | 95                   | 4    | 70-130           |
| 1,1-Dichloroethane    | 0.53                      | 0.53          | 0.48               | 100             | 90                   | 10   | 70-130           |
| Chloroform            | 0.51                      | 0.50          | 0.48               | 98              | 94                   | 5    | 70-130           |
| 1,1,1-Trichloroethane | 0.65                      | 0.62          | 0.59               | 96              | 92                   | 4    | 70-130           |
| 1,2-Dichloroethane    | 0.40                      | 0.38          | 0.38               | 96              | 95                   | 1    | 70-130           |
| Benzene               | 0.99                      | 0.71          | 0.89               | 72              | 90                   | 23   | 70-130           |
| Carbon tetrachloride  | 0.61                      | 0.58          | 0.61               | 96              | 100                  | 4    | 70-130           |
| Trichloroethene       | 0.99                      | 0.76          | 0.96               | 77              | 97                   | 23   | 70-130           |
| Toluene               | 0.52                      | 0.50          | 0.48               | 96              | 93                   | 4    | 70-130           |
| 1,2-Dibromoethane     | 0.95                      | 0.75          | 0.89               | 79              | 93                   | 17   | 70-130           |
| Tetrachloroethene     | 0.57                      | 0.51          | 0.60               | 89              | 104                  | 15   | 70-130           |
| Chlorobenzene         | 0.52                      | 0.51          | 0.48               | 98              | 92                   | 7    | 70-130           |
| Ethylbenzene          | 0.47                      | 0.46          | 0.43               | 99              | 92                   | 7    | 70-130           |
| m,p-Xylene            | 0.96                      | 0.95          | 0.87               | 99              | 90                   | 9    | 70-130           |
| o-Xylene              | 0.46                      | 0.46          | 0.42               | 100             | 91                   | 9    | 70-130           |

\* %RPD QC Limits are  $\leq$  30%.

## V. ANALYTICAL RESULTS

SDG Number: 203145  
Client: Landau Associates, Inc.

---

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

### **ppbV, ppmV, Percent**

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

### **ug/m3, mg/m3**

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m3} = \frac{\text{ppbV} \times \text{MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

### **ppbC, ppmC**

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV} \times \text{number of carbons in compound}$$



## ANALYTICAL REPORT

## BTXE by EPA-18 GC/FID

Laboratory Number: 203145-1

File: 0314501A.D  
Client: Landau Associates  
Description: INFO22403  
Can#: 375

Date Sampled: 02/24/03  
Date Analyzed: 02/28/03  
Analyst: KB

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.304 |      | 62.322        | 205.573       |
| Toluene             | 0.234 | B    | 226.045       | 879.550       |
| Ethylbenzene        | 0.234 |      | 17.387        | 77.832        |
| m-xylene (p-xylene) | 0.421 |      | 61.785        | 276.572       |
| o-Xylene            | 0.445 |      | 22.020        | 98.570        |
| TPH as Gasoline     | 2.340 | B    | 1859.643      | 7460.561      |
| TPH as Diesel       | 2.340 |      | 867.833       | 7256.377      |

Notes: ND = not detected above the method detection limit (MDL).

## ANALYTICAL REPORT

ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203145

Analytical Method: EPA TO-15

Laboratory Number: 02

File: 0314502B.D

Date Sampled: 02/24/03

Time:

Client: LANDAU ASSOCIATES

Date Received: 02/26/03

Description: EFF022403 CAN# 381 200ML

Date Analyzed: 03/04/03

Time:

Sam\_Type: SA

Dilution Factor: 2.78

Can#: 381

QC\_Batch: 030403-MS1

Analyst: AT

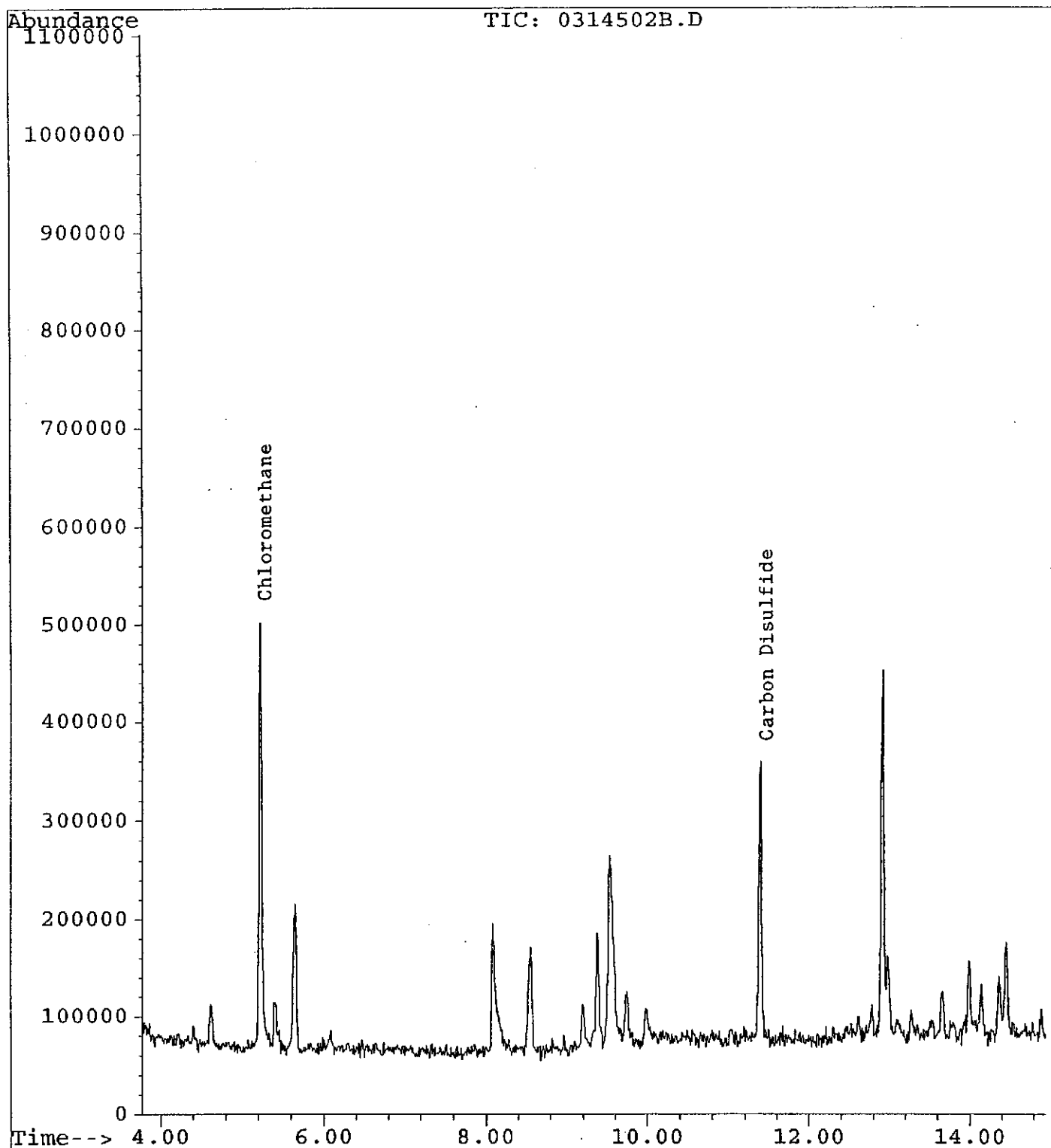
| CAS #     | Compound                | MDL<br>ppbV | Amount<br>ppbV | MDL<br>ug/m3* | Amount<br>ug/m3* | Flag |
|-----------|-------------------------|-------------|----------------|---------------|------------------|------|
| 1634-04-4 | Methyl tert butyl ether | 0.3         | ND             | 1.0           | ND               | U    |
| 71-43-2   | Benzene                 | 0.3         | 0.3            | 0.9           | 1.1              |      |
| 108-88-3  | Toluene                 | 0.3         | 1.4            | 1.1           | 5.4              |      |
| 100-41-4  | Ethylbenzene            | 0.3         | 0.3            | 1.2           | 1.4              |      |
| 108-38-3  | m & p-Xylene            | 0.3         | 1.2            | 1.2           | 5.3              |      |
| 95-47-6   | o-Xylene                | 0.3         | 0.4            | 1.2           | 2.0              |      |
| 91-20-3   | Napthalene              | 2.8         | ND             | 15.0          | ND               | U    |

Notes: ND = Not detected at or above the listed minimum detection limit (MDL).

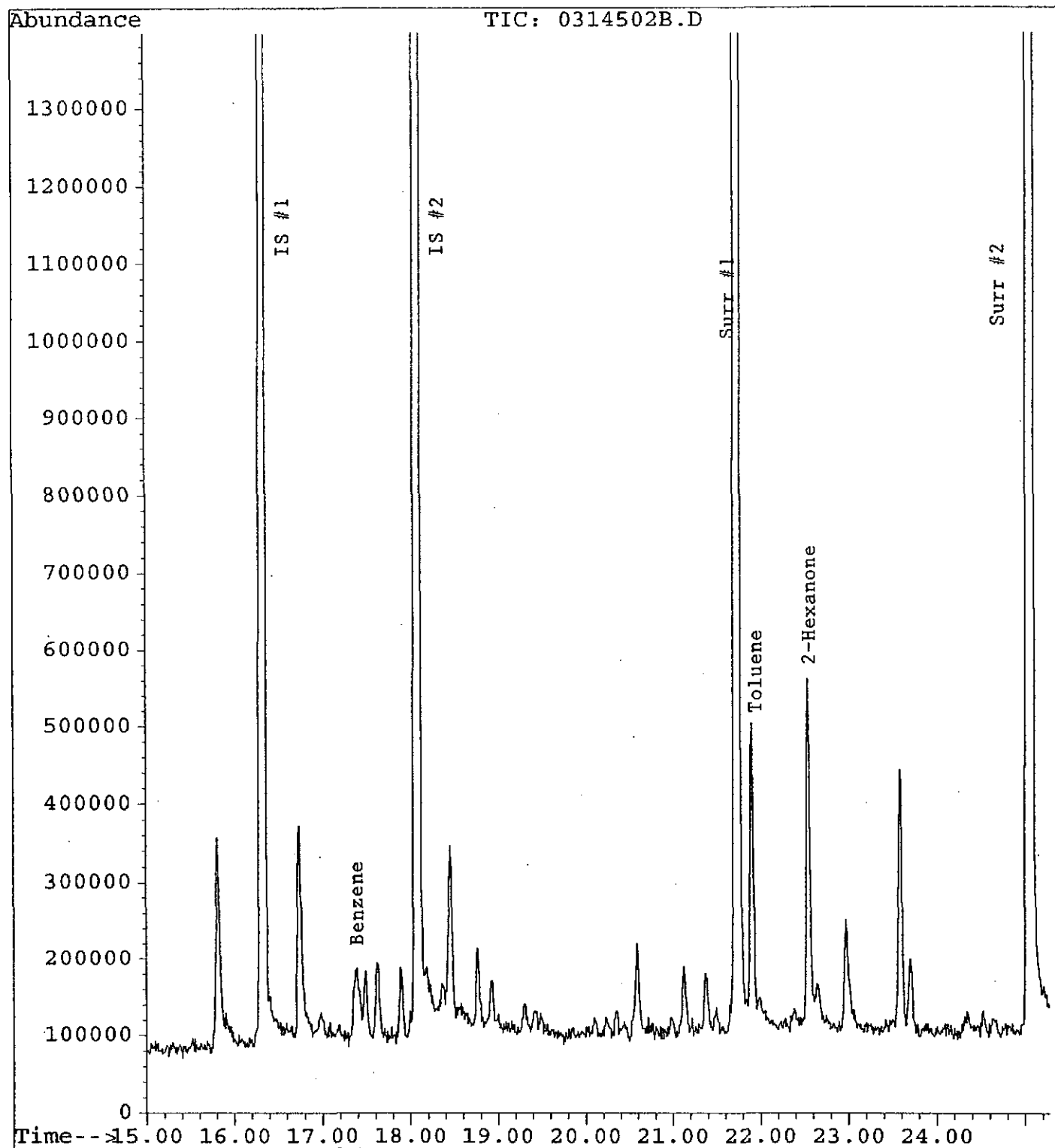
Reported results are to be interpreted to two significant figures.

\*ug/m3 calculated assuming conditions at 60 F and 1 atm.

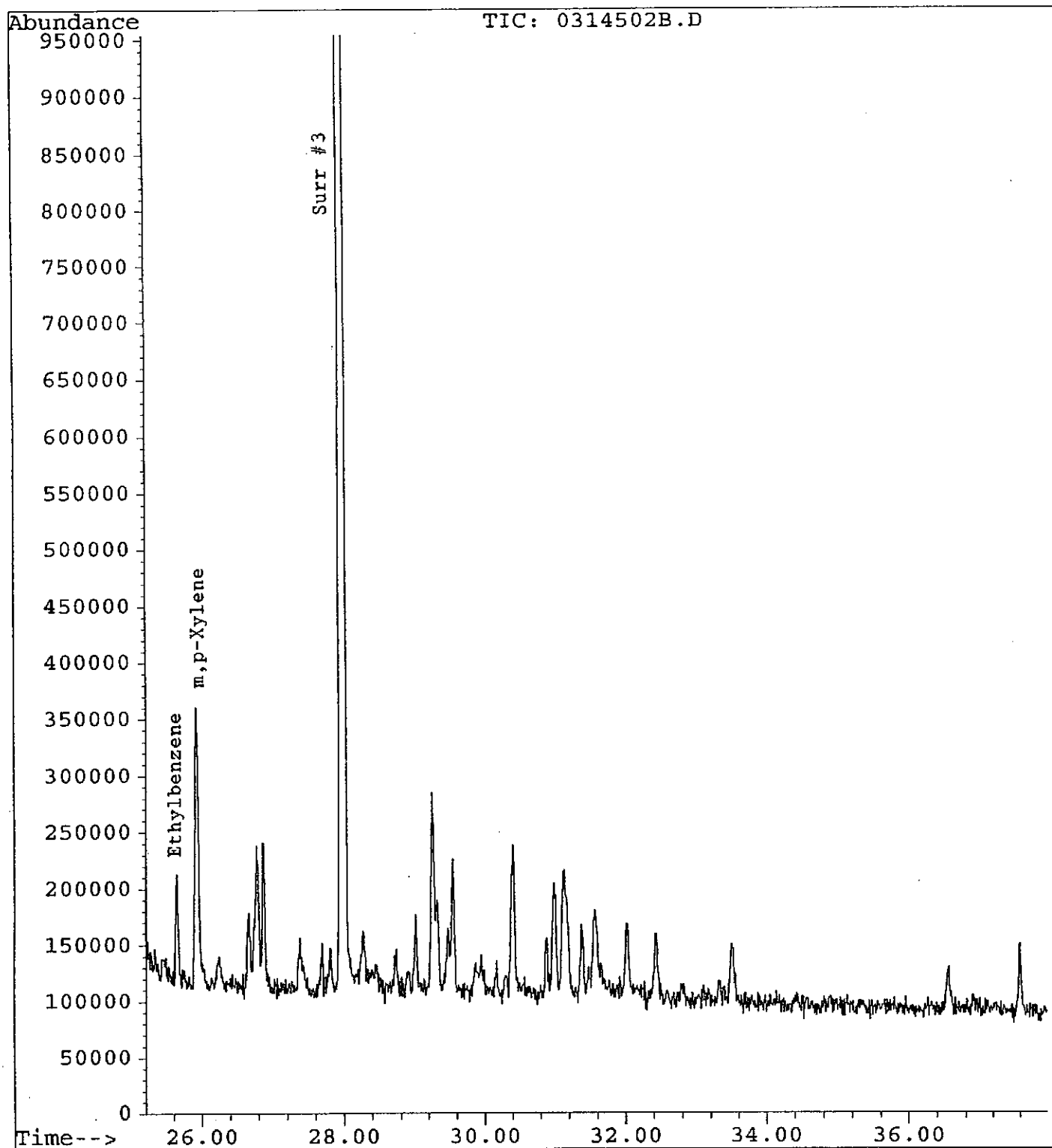
File : C:\MSCHEM\1\DATA\03043MS1\0314502B.D  
Operator : AT  
Acquired : 4 Mar 103 9:40 pm using AcqMethod BARSTOWF.M  
Instrument : 5970 - In  
Sample Name: EFF022403 CAN# 381 200ML  
Misc Info : LANDAU ASSOCIATES  
Vial Number: 1



File : C:\MSCHEM\1\DATA\03043MS1\0314502B.D  
Operator : AT  
Acquired : 4 Mar 103 9:40 pm using AcqMethod BARSTOWF.M  
Instrument : 5970 - In  
Sample Name: EFF022403 CAN# 381 200ML  
Misc Info : LANDAU ASSOCIATES  
Vial Number: 1



File : C:\MSCHEM\1\DATA\03043MS1\0314502B.D  
Operator : AT  
Acquired : 4 Mar 103 9:40 pm using AcqMethod BARSTOWF.M  
Instrument : 5970 - In  
Sample Name: EFF022403 CAN# 381 200ML  
Misc Info : LANDAU ASSOCIATES  
Vial Number: 1





## DATA QUALIFIERS AND ABBREVIATIONS

- \* See Case Narrative
- B This compound was also detected in the blank
- D This report was calculated from a secondary dilution factor
- E Compound exceeds the calibration range and is an estimated value
- J The amount reported is an estimated value as it is below the reported MDL
- F Higher detection limit due to sample matrix
- G Higher detection limit due to limited sample size
- Q Compound ion ratio qualifiers are outside the standard acceptance criteria
- R Compound retention time (RT) is outside the acceptance criteria for the method
- MDL Minimum Detection Limit – Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). Generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL, which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula:

$$MDL = 3.14 * S$$

- ND Not Detected – a reported limit
- U Not Detected – a reported limit
- NA Not Applicable
- RPD Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following formula:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

- RSD Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$\text{RSD(\%)} = \frac{S * 100}{\text{Average}}$$

## DEFINITIONS

$$\text{ppbV} = \frac{\# \text{ nanomoles cmpd}}{\# \text{ moles air}} = \frac{\text{ppbC}}{\# \text{ carbons in cmpd}}$$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

$$\text{ug/m}^3 = \text{ppbV} \times \frac{\text{MW compound}}{23.68}$$

Compound is reported as ug of a compound in a m<sup>3</sup> of air

23.68 is the molar volume of a gas at 60 ° F and 1 atm pressure

MW = molecular weight

**This unit is temperature dependent**

$$\text{ppbC} = \text{ppbV} \times \# \text{ carbons in compound}$$





# COPY

**ENVIRONMENTAL**  
ANALYTICAL SERVICE, INC

**FAX  
TRANSMISSION**

3/27/2003 1:22:29 PM

|             |                   |             |                |
|-------------|-------------------|-------------|----------------|
| Attention   | Martin Powers     |             |                |
| Company     | Landau Associates |             |                |
| Location    | Edmonds           | WA          |                |
| FAX         | (425) 778-6409    | Phone       | (425) 778-0907 |
| Fax Sent By | Judy Daly         | Total Pages | 2              |

## MESSAGE

The following are revised analytical results for your Conoco Phillips Renton project sampled on 2/24/03 (EAS ID 203145-2). Hard copy to follow.

# ANALYTICAL REPORT

SDG: 203145

Analytical Method: EPA TO-15

Laboratory Number: 02

File: 0314502B.D

Date Sampled: 02/24/03

Time:

Client: LANDAU ASSOCIATES

Date Received: 02/26/03

Description: EFF022403 CAN# 381 200ML

Date Analyzed: 03/04/03

Time:

Sam\_Type: SA

Dilution Factor: 2.78

Can#: 381

QC\_Batch: 030403-MS1

Analyst: AT

| CAS #     | Compound                | MDL<br>ppbV | Amount<br>ppbV | MDL<br>ug/m3* | Amount<br>ug/m3* | Flag |
|-----------|-------------------------|-------------|----------------|---------------|------------------|------|
| 1634-04-4 | Methyl tert butyl ether | 0.3         | ND             | 1.0           | ND               | U    |
| 71-43-2   | Benzene                 | 0.3         | 0.3            | 0.9           | 1.1              |      |
| 108-88-3  | Toluene                 | 0.3         | 1.4            | 1.1           | 5.4              |      |
| 100-41-4  | Ethylbenzene            | 0.3         | 0.3            | 1.2           | 1.4              |      |
| 108-38-3  | m & p-Xylene            | 0.3         | 1.2            | 1.2           | 5.3              |      |
| 95-47-6   | o-Xylene                | 0.3         | 0.4            | 1.2           | 2.0              |      |
| 91-20-3   | Napthalene              | 2.8         | ND             | 15.0          | ND               | U    |
| 78-00-2   | Tetraethyl Lead         | 1.7         | ND             | NA            | ND               | U    |
|           | Isooctane               | 1.7         | ND             | NA            | ND               | U    |
|           | Phenol                  | 1.7         | ND             | NA            | ND               | U    |
|           | Methanol                | 1.7         | ND             | NA            | ND               | U    |
|           | Cumene                  | 1.7         | ND             | NA            | ND               | U    |
|           | Hexane                  | 1.7         | ND             | NA            | ND               | U    |

Notes: ND = Not detected at or above the listed minimum detection limit (MDL)

Reported results are to be interpreted to two significant figures.

\*ug/m3 calculated assuming conditions at 60 F and 1 atm.

Form I-AAVC

Page 1 of 1



PROJECT  
FILE

No. \_\_\_\_\_

ENVIRONMENTAL

Analytical Services



April 7, 2003  
Reference Number: 203191

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed is the *TPH revision* and *additional report* for your Conoco Phillips Renton project sampled on 3/11/03.

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steve Hoyt  
Laboratory Director

SS/jd  
Enclosures

173 Cross Street  
San Luis Obispo  
CA  
93401-7597  
805.781.3585  
Fax 805.541.4550



## ANALYTICAL REPORT

SDG: 203191

Laboratory Number: 01

## BTXE by EPA-18 GC/FID

File: 0319101A.D  
Client: Landau Associates  
Description: ASEFF-031103  
Can#: 385

Date Sampled: 03/11/03  
Date Analyzed: 04/04/03  
Analyst: KB  
QC Batch: 040403-GC1

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 3.458 |      | 46.515        | 153.431       |
| Toluene             | 2.660 |      | 55.824        | 217.212       |
| Ethylbenzene        | 2.660 |      | 4.017         | 17.980        |
| m-xylene (p-xylene) | 4.788 |      | 18.080        | 80.931        |
| o-Xylene            | 5.054 |      | 8.282         | 37.074        |
| MTBE                | 5.054 |      | ND            | ND            |
| Methanol            | 5.320 |      | ND            | ND            |
| Hexane              | 5.320 |      | ND            | ND            |
| Isooctane           | 5.320 |      | ND            | ND            |
| Cumene              | 5.320 |      | ND            | ND            |
| Phenol              | 5.320 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).

# ANALYSIS REPORT SHEET

## ENVIRONMENTAL

Analytical Service, Inc.



### TPH by GC/MS

|          |                   |                |                        |           |
|----------|-------------------|----------------|------------------------|-----------|
| Client:  | Landau Associates | Date Sampled:  | 03/11/03               |           |
| Analyst: | Kristin Beckley   | Date Analyzed: | 03/24/03               |           |
| Lab #:   | Site ID:          | MDL(PPBV)      | Concentration in ppbv  | ug/m3     |
| B03243   | Method Blank      | 10000.0        | ND                     | ND        |
| 203191-1 | ASEFF-031103      | 10000.0        | 346521.4 (As gasoline) | 1390183.1 |
| 203191-1 | ASEFF-031103      | 10000.0        | 645624.1 (As diesel)   | 4825822.3 |



March 31, 2003  
Sample Delivery Group (SDG): 203191

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed is the analytical report for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

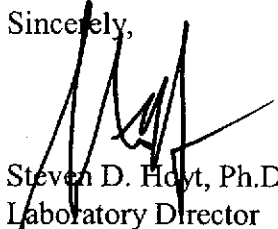
Project Name: Conoco Phillips Renton  
Project Number: 706002.012

The report consists of the following sections:

- I. Sample Description
- II. Laboratory Narrative and Chain of Custody Forms
- III. Laboratory Certification
- IV. Quality Control Reports
- V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steven D. Hoyt, Ph.D.  
Laboratory Director

SDH/lms

# Analytical Report

**ENVIRONMENTAL**

Analytical Service, Inc.



**SDG Number** 203191

**Client:** Landau Associates

**Date Received:** 3/18/2003

## I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

| Client Sample No. | EAS Lab No | Analysis Requested                  | Pressure (torr) |     |       |
|-------------------|------------|-------------------------------------|-----------------|-----|-------|
|                   |            |                                     | Date Sample Rec | Rec | Final |
| ASEFF-031103      | 203191 1   | EPA TO-14 H.S. for 4 of the targets | 3/11/2003       | 772 | 1028  |
| ASEFF-031103      | 203191 1   | EPA TO-15 Library Search for Phenol | 3/11/2003       | 772 | 1028  |
| ASEFF-031103      | 203191 1   | EPA TO-15 Special Target            | 3/11/2003       | 772 | 1028  |

## II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Number: 203191  
Analysis performed for: Landau Associates, Inc.

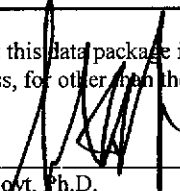
---

All laboratory quality control criteria were met for the samples in this report.

## III. LABORATORY CERTIFICATION

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

  
\_\_\_\_\_  
Steven D. Hoyt, Ph.D.  
Laboratory Director





#### **IV. QUALITY CONTROL REPORT**

SDG Number: 203191  
Client: Landau Associates, Inc.

#### **LABORATORY QC REPORT**

---

##### **QC NARRATIVE**

This report was run with the standard laboratory QC.

##### **STANDARD LABORATORY QC REPORT**

Unless project specific QC was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

##### **METHOD BLANK**

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of the batch blank is included with the report.

##### **DUPLICATE CONTROL SAMPLES**

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{[\% \text{ Recovery Test 1} - \% \text{ Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$

# METHOD BLANK REPORT

# ENVIRONMENTAL

Analytical Service, Inc.



Analytical Method: EPA TO-15

SDG: LABQC  
Laboratory Number: B03243

File: B03243A.D

Date Sampled:

Time:

Client:

Date Received:

Description: METHOD BLANK

Date Analyzed: 03/24/03

Time:

Sam\_Type: MB

Dilution Factor: 5000.00

Can#:

QC\_Batch: 032403-MS2

Analyst: AT

| CAS #     | Compound                | MDL<br>ppbV | Amount<br>ppbV | MDL<br>ug/m3* | Amount<br>ug/m3* | Flag |
|-----------|-------------------------|-------------|----------------|---------------|------------------|------|
| 1634-04-4 | methyl tert butyl ether | 500.0       | ND             | 1861.3        | ND               | U    |
| 71-43-2   | Benzene                 | 500.0       | ND             | 1649.3        | ND               | U    |
| 108-88-3  | Toluene                 | 500.0       | ND             | 1945.5        | ND               | U    |
| 100-41-4  | Ethylbenzene            | 500.0       | ND             | 2241.8        | ND               | U    |
| 108-38-3  | m & p-Xylene            | 500.0       | ND             | 2241.8        | ND               | U    |
| 95-47-6   | o-Xylene                | 500.0       | ND             | 2241.8        | ND               | U    |
| 91-20-3   | Napthalene              | 5000.0      | ND             | 27062.9       | ND               | U    |
| 78-00-2   | Tetraethyl Lead         | 3000.0      | ND             | NA            | ND               | U    |
|           | Isooctane               | 3000.0      | ND             | NA            | ND               | U    |
|           | Phenol                  | 3000.0      | ND             | NA            | ND               | U    |
|           | Methanol                | 3000.0      | ND             | NA            | ND               | U    |
|           | Cumene                  | 3000.0      | ND             | NA            | ND               | U    |
|           | Hexane                  | 3000.0      | ND             | NA            | ND               | U    |

Notes: ND = Not detected at or above the listed minimum detection limit (MDL).

Reported results are to be interpreted to two significant figures.

\*ug/m3 calculated assuming conditions at 60 F and 1 atm.

Form I-AAVC

Page 1 of 1

# QC REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



SDG: LABQC

Laboratory Number: QA03243

### Analytical Method TO-14

Spike: QC03243 Spike Dup.: QC03243DUP

Laboratory Control Spike and Duplicate Report

Client:

Client ID S-020403-1

Date Analyzed: 03/24/03

Sam\_Type: LCS LCD

Dilution Factor: 1.0

QC Batch: 032403-MS2

Method: Full Scan GC/MS

| Compound              | Theoretical<br>Conc. ppbv | Spike<br>ppbv | Spike Dup.<br>ppbv | % Rec.<br>Spike | % Rec.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|-----------------------|---------------------------|---------------|--------------------|-----------------|----------------------|------|------------------|
| Vinyl chloride        | 0.33                      | 0.36          | 0.32               | 110             | 98                   | 12   | 70-130           |
| 1,1-Dichloroethene    | 0.50                      | 0.61          | 0.48               | 122             | 95                   | 24   | 70-130           |
| Methylene chloride    | 0.44                      | 0.54          | 0.42               | 123             | 95                   | 26   | 70-130           |
| 1,1-Dichloroethane    | 0.48                      | 0.55          | 0.47               | 115             | 98                   | 16   | 70-130           |
| Chloroform            | 0.49                      | 0.53          | 0.50               | 109             | 104                  | 5    | 70-130           |
| 1,1,1-Trichloroethane | 0.50                      | 0.57          | 0.49               | 114             | 98                   | 15   | 70-130           |
| 1,2-Dichloroethane    | 0.34                      | 0.47          | 0.33               | 140             | 98                   | 35   | 70-130           |
| Benzene               | 0.51                      | 0.59          | 0.50               | 115             | 99                   | 15   | 70-130           |
| Carbon tetrachloride  | 0.59                      | 0.68          | 0.56               | 116             | 96                   | 19   | 70-130           |
| Trichloroethene       | 0.56                      | 0.68          | 0.61               | 121             | 109                  | 11   | 70-130           |
| Toluene               | 0.48                      | 0.46          | 0.47               | 95              | 99                   | 3    | 70-130           |
| 1,2-Dibromoethane     | 0.31                      | 0.29          | 0.29               | 93              | 93                   | 0    | 70-130           |
| Tetrachloroethene     | 0.48                      | 0.44          | 0.45               | 91              | 94                   | 3    | 70-130           |
| Chlorobenzene         | 0.43                      | 0.40          | 0.40               | 92              | 94                   | 2    | 70-130           |
| Ethylbenzene          | 0.45                      | 0.44          | 0.45               | 97              | 98                   | 1    | 70-130           |
| m,p-Xylene            | 0.98                      | 0.87          | 0.89               | 89              | 91                   | 3    | 70-130           |
| o-Xylene              | 0.50                      | 0.40          | 0.44               | 80              | 88                   | 10   | 70-130           |

\* %RPD QC Limits are  $\leq 30\%$ .

## V. ANALYTICAL RESULTS

SDG Number: 203191  
Client: Landau Associates, Inc.

---

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

### ppbV, ppmV, Percent

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

### ug/m3, mg/m3

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m}^3 = \frac{\text{ppbV} \times \text{MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

### ppbC, ppmC

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV} \times \text{number of carbons in compound}$$

# ANALYSIS REPORT SHEET

ENVIRONMENTAL

Analytical Service, Inc.



TPH by GC/MS

|          |                   |                |                        |
|----------|-------------------|----------------|------------------------|
| Client:  | Landau Associates | Date Sampled:  | 03/11/03               |
| Analyst: | Kristin Beckley   | Date Analyzed: | 03/24/03               |
| Lab #:   | Site ID:          | MDL(PPBV)      | Concentration in ppbv  |
| B03243   | Method Blank      | 10000.0        | ND                     |
| 203191-1 | ASEFF-031103      | 10000.0        | 346521.4 (As gasoline) |
| 203191-1 | ASEFF-031103      | 10000.0        | 645624.1 (As diesel)   |

## ANALYTICAL REPORT

ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203191

Analytical Method: EPA TO-15

Laboratory Number: 01

File: 0319101D.D

Date Sampled: 03/11/03

Time:

Client: LANDAU ASSOCIATES

Date Received: 03/18/03

Description: ASEFF-031103 CAN# 385 0.1ML

Date Analyzed: 03/24/03

Time:

Sam\_Type: SA

Dilution Factor: 6650.00

Can#: 385

QC\_Batch: 032403-MS2

Analyst: AT

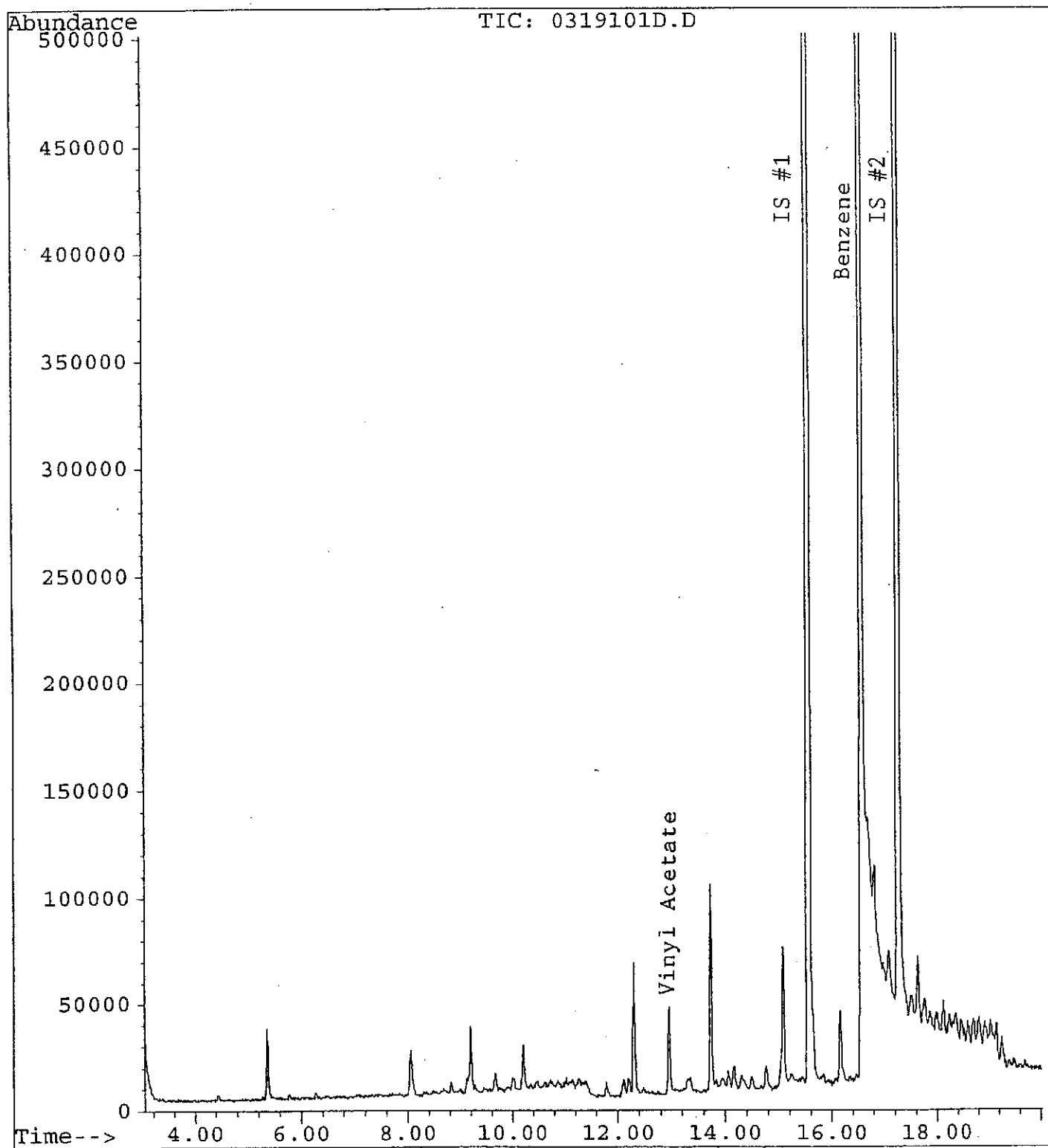
| CAS #     | Compound                | MDL<br>ppbV | Amount<br>ppbV | MDL<br>ug/m3* | Amount<br>ug/m3* | Flag |
|-----------|-------------------------|-------------|----------------|---------------|------------------|------|
| 1634-04-4 | methyl tert butyl ether | 665.0       | ND             | 2475.5        | ND               | U    |
| 71-43-2   | Benzene                 | 665.0       | 180876.9       | 2193.5        | 596634           |      |
| 108-88-3  | Toluene                 | 665.0       | 111736.0       | 2587.5        | 434770           |      |
| 100-41-4  | Ethylbenzene            | 665.0       | 3388.9         | 2981.5        | 15194            |      |
| 108-38-3  | m & p-Xylene            | 665.0       | 14016.6        | 2981.5        | 62844            |      |
| 95-47-6   | o-Xylene                | 665.0       | 6577.5         | 2981.5        | 29490            |      |
| 91-20-3   | Napthalene              | 6650.0      | ND             | 35993.7       | ND               | U    |
| 78-00-2   | Tetraethyl Lead         | 3990.0      | ND             | NA            | ND               | U    |
|           | Isooctane               | 3990.0      | ND             | NA            | ND               | U    |
|           | Phenol                  | 3990.0      | ND             | NA            | ND               | U    |
|           | Methanol                | 3990.0      | ND             | NA            | ND               | U    |
|           | Cumene                  | 3990.0      | ND             | NA            | ND               | U    |
|           | Hexane                  | 3990.0      | ND             | NA            | ND               | U    |

Notes: ND = Not detected at or above the listed minimum detection limit (MDL).

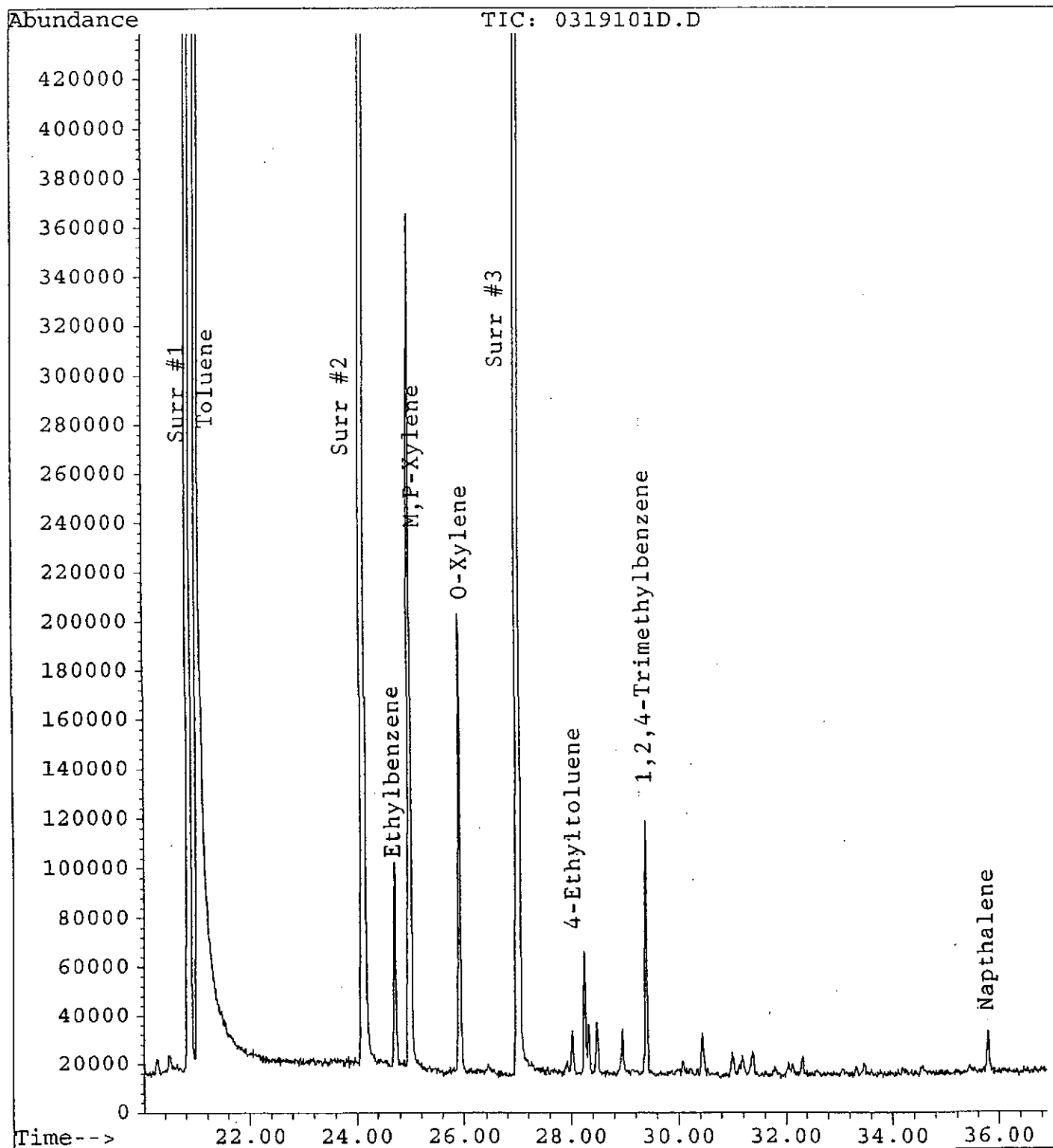
Reported results are to be interpreted to two significant figures.

\*ug/m3 calculated assuming conditions at 60 F and 1 atm.

File : C:\MSCHEM\1\DATA\03243MS2\0319101D.D  
Operator : AT  
Acquired : 24 Mar 103 3:47 pm using AcqMethod TO15\_E.M  
Instrument : 5971 - In  
Sample Name: ASEFF-031103 CAN# 385 0.01ML  
Misc Info : LANDAU ASSOCIATES  
Vial Number: 1



File : C:\MSCHEM\1\DATA\03243MS2\0319101D.D  
Operator : AT  
Acquired : 24 Mar 103 3:47 pm using AcqMethod T015\_E.M  
Instrument : 5971 - In  
Sample Name: ASEFF-031103 CAN# 385 0.01ML  
Misc Info : LANDAU ASSOCIATES  
Vial Number: 1





## DATA QUALIFIERS AND ABBREVIATIONS

- \* See Case Narrative
- B This compound was also detected in the blank
- D This report was calculated from a secondary dilution factor
- E Compound exceeds the calibration range and is an estimated value
- J The amount reported is an estimated value as it is below the reported MDL
- F Higher detection limit due to sample matrix
- G Higher detection limit due to limited sample size
- Q Compound ion ratio qualifiers are outside the standard acceptance criteria
- R Compound retention time (RT) is outside the acceptance criteria for the method
- MDL Minimum Detection Limit – Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). Generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL, which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula:

$$MDL = 3.14 * S$$

- ND Not Detected – a reported limit
- U Not Detected – a reported limit
- NA Not Applicable
- RPD Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following formula:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

- RSD Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$\text{RSD}(\%) = \frac{S * 100}{\text{Average}}$$

## DEFINITIONS

$$\text{ppbV} = \frac{\# \text{ nanomoles cmpd}}{\# \text{ moles air}} = \frac{\text{ppbC}}{\# \text{ carbons in cmpd}}$$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

$$\text{ug/m}^3 = \text{ppbV} \times \frac{\text{MW compound}}{23.68}$$

Compound is reported as ug of a compound in a m<sup>3</sup> of air

23.68 is the molar volume of a gas at 60 ° F and 1 atm pressure

MW = molecular weight

This unit is temperature dependent

$$\text{ppbC} = \text{ppbV} \times \# \text{ carbons in compound}$$



February 26, 2003  
Sample Delivery Group (SDG): 203134

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed is the analytical report for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

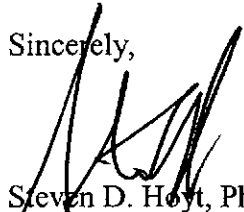
Project Name: Conoco Phillips Renton  
Project Number: 706002.012

The report consists of the following sections:

- I. Sample Description
- II. Laboratory Narrative and Chain of Custody Forms
- III. Laboratory Certification
- IV. Quality Control Reports
- V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steven D. Hoyt, Ph.D.  
Laboratory Director

SDH/lms

## Analytical Report

**ENVIRONMENTAL**

Analytical Service, Inc.



**SDG Number** 203134

**Client:** Landau Associates

**Date Received:** 2/21/2003

### I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

| Client Sample No. | EAS Lab No | Analysis Requested      | Pressure (torr) |       |      |
|-------------------|------------|-------------------------|-----------------|-------|------|
|                   |            |                         | Date Sample Rec | Final |      |
| INF021303         | 203134 1   | EPA TO-14 BTEX, TPH gas | 2/13/2003       | 817   | 1035 |
| EFF021303         | 203134 2   | EPA TO-14 BTEX, TPH gas | 2/13/2003       | 804   | 1013 |

## II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Number: 203134  
Analysis performed for: Landau Associates, Inc.

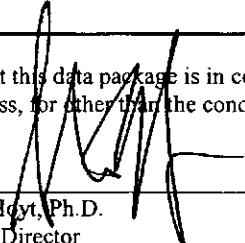
---

All laboratory quality control criteria were met for the samples in this report.

## III. LABORATORY CERTIFICATION

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

  
\_\_\_\_\_  
Steven D. Hoyt, Ph.D.  
Laboratory Director



#### **IV. QUALITY CONTROL REPORT**

SDG Number: 203134  
Client: Landau Associates, Inc.

#### **LABORATORY QC REPORT**

---

##### **QC NARRATIVE**

This report was run with the standard laboratory QC.

##### **STANDARD LABORATORY QC REPORT**

Unless project specific QC was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

##### **METHOD BLANK**

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of the batch blank is included with the report.

##### **DUPLICATE CONTROL SAMPLES**

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{[\% \text{ Recovery Test 1} - \% \text{ Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$



## METHOD BLANK REPORT

SDG: LABQC

Laboratory Number: B02213

BTXE by EPA-18 GC/FID

File: B02213B.D

Date Sampled:

Client:

Date Analyzed: 02/21/03

Description: METHOD BLANK

Analyst: KB

Can#:

QC Batch: 022103-GC1

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.001 |      | ND            | ND            |
| Toluene             | 0.001 |      | 0.002         | 0.007         |
| Ethylbenzene        | 0.001 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.002 |      | 0.003         | 0.011         |
| o-Xylene            | 0.002 |      | ND            | ND            |
| TPH as Gasoline     | 0.010 |      | 0.013         | 0.053         |

Notes: ND = not detected above the method detection limit (MDL).



## LABORATORY CONTROL SPIKE / CONTROL SPIKE DUPLICATE REPORT

Spike: QC02213  
Spike Dup: QC02213DUP  
QC Lot: 022103-GC1

Method: GC/FID

| Compound            | Theo. Conc<br>ppmV | Spike<br>ppmV | Spike Dup<br>ppmV | % Recov.<br>Spike | %Recov.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|---------------------|--------------------|---------------|-------------------|-------------------|-----------------------|------|------------------|
| Benzene             | 0.98               | 1.140         | 0.999             | 117               | 102                   | 13   | 80-120%          |
| Toluene             | 16.20              | 17.452        | 15.052            | 108               | 93                    | 15   | 80-120%          |
| Ethylbenzene        | 3.12               | 3.130         | 2.599             | 100               | 83                    | 19   | 80-120%          |
| m-xylene (p-xylene) | 12.09              | 12.216        | 10.183            | 101               | 84                    | 18   | 80-120%          |
| o-xylene            | 5.29               | 5.300         | 4.410             | 100               | 83                    | 18   | 80-120%          |
| MTBE                | 9.11               | 9.500         | 8.535             | 104               | 94                    | 11   | 80-120%          |
| TPH(g)              | 231.97             | 200.61        | 174.721           | 86                | 75                    | 14   | 80-120%          |

RPD limit:  $\leq 35\%$

## V. ANALYTICAL RESULTS

SDG Number: 203134  
Client: Landau Associates, Inc.

---

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

### **ppbV, ppmV, Percent**

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

### **ug/m3, mg/m3**

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m3} = \frac{\text{ppbV} \times \text{MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

### **ppbC, ppmC**

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV} \times \text{number of carbons in compound}$$



## ANALYTICAL REPORT

SDG: 203134

Laboratory Number: 01

BTXE by EPA-18 GC/FID

Sample ID: 0313401B.D  
Client: Landau Associates  
Description: INFO21303  
Sample #: 313

Date Sampled: 02/13/03  
Date Analyzed: 02/21/03  
Analyst: KB  
QC\_Batch: 022103-GC1

| Compound            | MDL   |      | Concentration |          |
|---------------------|-------|------|---------------|----------|
|                     | ppmV  | Flag | ppmV          | mg/m3    |
| Benzene             | 0.066 |      | 9.162         | 30.221   |
| Toluene             | 0.051 | B    | 14.379        | 55.948   |
| Ethylbenzene        | 0.051 |      | 0.598         | 2.679    |
| m-xylene (p-xylene) | 0.091 | B    | 1.869         | 8.368    |
| o-xylene            | 0.097 |      | 0.595         | 2.663    |
| TPH as Gasoline     | 0.508 | B    | 708.443       | 2842.147 |

Notes: ND = not detected above the method detection limit (MDL).



## ANALYTICAL REPORT

SDG: 203134

## BTXE by EPA-18 GC/FID

Laboratory Number: 02

File: 0313402A.D  
Client: Landau Associates  
Description: EFF021303  
Can#: 347

Date Sampled: 02/13/03  
Date Analyzed: 02/21/03  
Analyst: KB  
QC Batch: 022103-GC1

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.002 |      | ND            | ND            |
| Toluene             | 0.001 | B    | 0.002         | 0.008         |
| Ethylbenzene        | 0.001 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.002 | B    | 0.003         | 0.015         |
| o-Xylene            | 0.002 |      | ND            | ND            |
| TPH as Gasoline     | 0.013 | B    | 0.023         | 0.094         |

Notes: ND = not detected above the method detection limit (MDL).



## DATA QUALIFIERS AND ABBREVIATIONS

- \* See Case Narrative
- B This compound was also detected in the blank
- D This report was calculated from a secondary dilution factor
- E Compound exceeds the calibration range and is an estimated value
- J The amount reported is an estimated value as it is below the reported MDL
- F Higher detection limit due to sample matrix
- G Higher detection limit due to limited sample size
- Q Compound ion ratio qualifiers are outside the standard acceptance criteria
- R Compound retention time (RT) is outside the acceptance criteria for the method
- MDL Minimum Detection Limit – Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). Generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL, which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula:

$$MDL = 3.14 * S$$

- ND Not Detected – a reported limit
- U Not Detected – a reported limit
- NA Not Applicable
- RPD Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following formula:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

- RSD Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$\text{RSD}(\%) = \frac{S * 100}{\text{Average}}$$

## DEFINITIONS

$$\text{ppbV} = \frac{\# \text{ nanomoles cmpd}}{\# \text{ moles air}} = \frac{\text{ppbC}}{\# \text{ carbons in cmpd}}$$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

$$\text{ug/m}^3 = \text{ppbV} \times \frac{\text{MW compound}}{23.68}$$

Compound is reported as ug of a compound in a m<sup>3</sup> of air

23.68 is the molar volume of a gas at 60 ° F and 1 atm pressure

MW = molecular weight

**This unit is temperature dependent**

$$\text{ppbC} = \text{ppbV} \times \# \text{ carbons in compound}$$

**LA**  
LANDAU  
ASSOCIATES

# Chain-of-Custody Record

Project Name Township of Phillipsburg Project No. 00-00000000  
Project Location/Event Dike System  
Sampler's Name M. Powers  
Project Contact M. Powers  
Send Results To M. Powers

## Testing Parameters

Turnaround Time

☒ Standard

☐ Accelerated

☐

Observations/Comments

| Sample I.D. | Date | Time | Matrix | No. of Containers |
|-------------|------|------|--------|-------------------|
|-------------|------|------|--------|-------------------|

Special Shipment/Handling  
or Storage Requirements

Method of Shipment

## Relinquished by

Received by

Relinquished by

Received by

Signature \_\_\_\_\_

**Signature**

**Signature**

Signature

Printed Name

Printed Name \_\_\_\_\_

Printed Name

Printed Name \_\_\_\_\_

Company

Company

Company

Company

Date 1-22-02 Time 12:30

Date \_\_\_\_\_ Time \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_



May 5, 2003  
Sample Delivery Group (SDG): 203284

Martin Powers  
Landau Associates, Inc.  
130 2<sup>nd</sup> Avenue South  
Edmonds, WA 98020

Dear Martin:

Enclosed is the analytical report for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

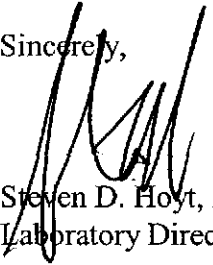
Project Name: Conoco Phillips  
Project Number: 706002

The report consists of the following sections:

- I. Sample Description
- II. Laboratory Narrative and Chain of Custody Forms
- III. Laboratory Certification
- IV. Quality Control Reports
- V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

  
Steven D. Hoyt, Ph.D.  
Laboratory Director

SDH/lms

# Analytical Report

**ENVIRONMENTAL**

Analytical Service, Inc.



**SDG Number** 203284

**Client:** Landau Associates

**Date Received:** 4/24/2003

## I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

| Client Sample No. | EAS Lab No | Analysis Requested                  | Pressure (torr) |       |     |
|-------------------|------------|-------------------------------------|-----------------|-------|-----|
|                   |            |                                     | Date Sample Rec | Final |     |
| Influent          | 203284 1   | EPA TO-14 BTEX, TPH gas, TPH diesel | 4/18/2003       | 679   | 990 |
| Effluent          | 203284 2   | EPA TO-14 BTEX                      | 4/18/2003       | 751   | 998 |

## II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Number: 203284  
Analysis performed for: Landau Associates, Inc.

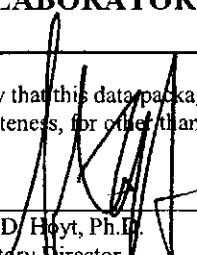
---

All laboratory quality control criteria were met for the samples in this report.

## III. LABORATORY CERTIFICATION

---

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

  
\_\_\_\_\_  
Steven D. Hoyt, Ph.D.  
Laboratory Director



#### **IV. QUALITY CONTROL REPORT**

SDG Number: 203284  
Client: Landau Associates, Inc.

#### **LABORATORY QC REPORT**

---

##### **QC NARRATIVE**

This report was run with the standard laboratory QC.

##### **STANDARD LABORATORY QC REPORT**

Unless project specific QC was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

##### **METHOD BLANK**

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of the batch blank is included with the report.

##### **DUPLICATE CONTROL SAMPLES**

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{[\% \text{ Recovery Test 1} - \% \text{ Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$

# METHOD BLANK REPORT

ENVIRONMENTAL

Analytical Service, Inc.



SDG: LABQC

Analytical Method: TO-14 BTEX, TPH by GC/FID

Laboratory Number: B04283

File: B04283A.D

Date Sampled:

Time:

Client:

Date Received:

Description: METHOD BLANK

Date Analyzed: 04/28/03

Time:

Sam\_Type: MB

Dilution Factor: 1.00

Can#:

QC\_Batch: 042803-GC1

Analyst: KB

QC\_Level: C

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.001 |      | ND            | ND            |
| Toluene             | 0.001 |      | ND            | ND            |
| Ethylbenzene        | 0.001 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.002 |      | ND            | ND            |
| o-Xylene            | 0.002 |      | ND            | ND            |
| TPH as Gasoline     | 0.010 |      | ND            | ND            |
| TPH as Diesel       | 0.011 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).

# QC REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



Spike: QC04213  
Spike Dup: QC04213DUP  
QC Lot: 042803-GC1

Method: GC/FID

| Compound            | Theo. Conc.<br>ppmV | Spike<br>ppmV | Spike Dup<br>ppmV | % Recov.<br>Spike | %Recov.<br>Spike Dup. | %RPD | % Rec.<br>Limits |
|---------------------|---------------------|---------------|-------------------|-------------------|-----------------------|------|------------------|
| Benzene             | 0.74                | 0.830         | 0.674             | 113               | 92                    | 21   | 70-130%          |
| Toluene             | 15.27               | 16.820        | 14.373            | 110               | 94                    | 16   | 70-130%          |
| Ethylbenzene        | 3.19                | 3.497         | 2.980             | 109               | 93                    | 16   | 70-130%          |
| m-xylene (p-xylene) | 12.75               | 14.107        | 11.874            | 111               | 93                    | 17   | 70-130%          |
| o-xylene            | 5.97                | 6.581         | 5.542             | 110               | 93                    | 17   | 70-130%          |
| MTBE                | 4.56                | 4.955         | 4.299             | 109               | 94                    | 14   | 70-130%          |
| TPH(g)              | 203.87              | 216.90        | 192.206           | 106               | 94                    | 12   | 70-130%          |

RPD limit:  $\leq 35\%$

## V. ANALYTICAL RESULTS

SDG Number: 203284  
Client: Landau Associates, Inc.

---

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

### **ppbV, ppmV, Percent**

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

### **ug/m3, mg/m3**

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m3} = \frac{\text{ppbV} \times \text{MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

### **ppbC, ppmC**

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV} \times \text{number of carbons in compound}$$

## ANALYTICAL REPORT

ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203284

Analytical Method: TO-14 BTEX, TPH by GC/FID

Laboratory Number: 01

|              |                   |                  |          |           |     |
|--------------|-------------------|------------------|----------|-----------|-----|
| File:        | 0328401B.D        | Date Sampled:    | 04/18/03 | Time:     |     |
| Client:      | Landau Associates | Date Received:   | 04/24/03 | Time:     |     |
| Description: | Influent          | Date Analyzed:   | 04/28/03 | Can#:     | 842 |
| Sam_Type:    | SA                | Dilution Factor: | 1.46     | QC_Level: | C   |
| C_Batch:     | 042803-GC1        | Analyst:         | KB       |           |     |

| Compound            | MDL    | Flag | Concentration | Concentration |
|---------------------|--------|------|---------------|---------------|
|                     | ppmV   |      | ppmV          | mg/m3         |
| Benzene             | 3.796  |      | 34.874        | 115.032       |
| Toluene             | 2.920  |      | 153.375       | 596.790       |
| Ethylbenzene        | 2.920  |      | 16.712        | 74.808        |
| p-xylene (p-xylene) | 5.256  |      | 73.891        | 330.760       |
| m-Xylene            | 5.548  |      | 30.883        | 138.244       |
| TPH as Gasoline     | 29.200 |      | 1551.199      | 6223.139      |
| TPH as Diesel       | 32.120 |      | 723.893       | 6052.822      |

Notes: ND = not detected above the method detection limit (MDL).

# ANALYTICAL REPORT

## ENVIRONMENTAL

Analytical Service, Inc.



SDG: 203284

**Analytical Method:** TO-14 BTEX, TPH by GC/FID

Laboratory Number: 02

|              |                   |                  |          |           |     |
|--------------|-------------------|------------------|----------|-----------|-----|
| File:        | 0328402B.D        | Date Sampled:    | 04/18/03 | Time:     |     |
| Client:      | Landau Associates | Date Received:   | 04/24/03 |           |     |
| Description: | Effluent          | Date Analyzed:   | 04/28/03 | Time:     |     |
| Sam_Type:    | SA                | Dilution Factor: | 1.33     | Can#:     | 361 |
| QC_Batch:    | 042803-GC1        | Analyst:         | KB       | QC_Level: | C   |

| Compound            | MDL   | Flag | Concentration | Concentration |
|---------------------|-------|------|---------------|---------------|
|                     | ppmV  |      | ppmV          | mg/m3         |
| Benzene             | 0.002 |      | ND            | ND            |
| Toluene             | 0.001 |      | ND            | ND            |
| Ethylbenzene        | 0.001 |      | ND            | ND            |
| m-xylene (p-xylene) | 0.002 |      | ND            | ND            |
| o-Xylene            | 0.003 |      | ND            | ND            |

Notes: ND = not detected above the method detection limit (MDL).



## DATA QUALIFIERS AND ABBREVIATIONS

- \* See Case Narrative
- B This compound was also detected in the blank
- D This report was calculated from a secondary dilution factor
- E Compound exceeds the calibration range and is an estimated value
- J The amount reported is an estimated value as it is below the reported MDL
- F Higher detection limit due to sample matrix
- G Higher detection limit due to limited sample size
- Q Compound ion ratio qualifiers are outside the standard acceptance criteria
- R Compound retention time (RT) is outside the acceptance criteria for the method
- MDL Minimum Detection Limit – Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). Generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL, which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula:

$$MDL = 3.14 * S$$

- ND Not Detected – a reported limit
- U Not Detected – a reported limit
- NA Not Applicable
- RPD Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following formula:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

- RSD Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$\text{RSD}(\%) = \frac{S * 100}{\text{Average}}$$

## DEFINITIONS

$$\text{ppbV} = \frac{\# \text{ nanomoles cmpd}}{\# \text{ moles air}} = \frac{\text{ppbC}}{\# \text{ carbons in cmpd}}$$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

$$\text{ug/m}^3 = \text{ppbV} \times \frac{\text{MW compound}}{23.68}$$

Compound is reported as ug of a compound in a m<sup>3</sup> of air

23.68 is the molar volume of a gas at 60 ° F and 1 atm pressure

MW = molecular weight

This unit is temperature dependent

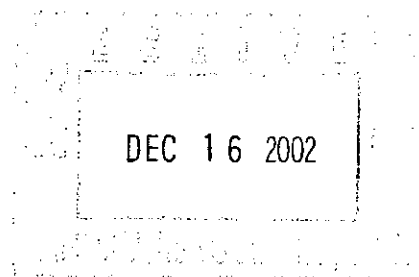
$$\text{ppbC} = \text{ppbV} \times \# \text{ carbons in compound}$$



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

11 December 2002

Jerry Ninteman  
Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129  
RE: Tosco Terminal



Enclosed are the results of analyses for samples received by the laboratory on 11/25/02 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeanne Garthwaite  
Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID   | Laboratory ID | Matrix    | Date Sampled   | Date Received  |
|-------------|---------------|-----------|----------------|----------------|
| RW1-021124  | B2K0572-01    | Other wet | 11/24/02 14:40 | 11/25/02 17:40 |
| RW4-021124  | B2K0572-02    | Other wet | 11/24/02 15:15 | 11/25/02 17:40 |
| RW7-021124  | B2K0572-03    | Other wet | 11/24/02 15:25 | 11/25/02 17:40 |
| HA8-021124  | B2K0572-04    | Water     | 11/24/02 16:20 | 11/25/02 17:40 |
| HA7-021125  | B2K0572-05    | Water     | 11/25/02 08:50 | 11/25/02 17:40 |
| HA12-021125 | B2K0572-06    | Water     | 11/25/02 09:15 | 11/25/02 17:40 |
| HA6-021125  | B2K0572-07    | Water     | 11/25/02 09:45 | 11/25/02 17:40 |
| HA5-021125  | B2K0572-08    | Water     | 11/25/02 10:55 | 11/25/02 17:40 |
| B4-021125   | B2K0572-09    | Water     | 11/25/02 12:10 | 11/25/02 17:40 |
| B5-021125   | B2K0572-10    | Water     | 11/25/02 12:30 | 11/25/02 17:40 |
| W2-021125   | B2K0572-11    | Water     | 11/25/02 16:00 | 11/25/02 17:40 |
| HA13-021125 | B2K0572-12    | Water     | 11/25/02 15:20 | 11/25/02 17:40 |
| HA14-021125 | B2K0572-13    | Water     | 11/25/02 15:00 | 11/25/02 17:40 |
| W1-021125   | B2K0572-14    | Water     | 11/25/02 14:35 | 11/25/02 17:40 |
| B3-021125   | B2K0572-15    | Other wet | 11/25/02 13:10 | 11/25/02 17:40 |
| B2-021125   | B2K0572-16    | Water     | 11/25/02 13:50 | 11/25/02 17:40 |
| HA5-021122  | B2K0572-17    | Water     | 11/22/02 11:00 | 11/25/02 17:40 |
| Trip Blanks | B2K0572-18    | Water     | 11/25/02 12:00 | 11/25/02 17:40 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

### Hydrocarbon Identification by Washington DOE Method NWTPH-HCID

#### North Creek Analytical - Bothell

| Analyte                                                                            | Result | Reporting Limit | Units     | Dilution | Batch   | Prepared | Analyzed | Method     | Notes |
|------------------------------------------------------------------------------------|--------|-----------------|-----------|----------|---------|----------|----------|------------|-------|
| RW1-021124 (B2K0572-01) Other wet Sampled: 11/24/02 14:40 Received: 11/25/02 17:40 |        |                 |           |          |         |          |          |            |       |
| Gx Range Hydrocarbons                                                              | DET    | 4000            | mg/kg wet | 20       | 2K27005 | 11/27/02 | 11/27/02 | NWTPH-HCID |       |
| Kerosene Range Hydrocarbons                                                        | ND     | 10000           | "         | "        | "       | "        | "        | "          |       |
| Diesel Range Hydrocarbons                                                          | ND     | 10000           | "         | "        | "       | "        | "        | "          |       |
| Insulating Oil Range Hydrocarbons                                                  | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Heavy Fuel Oil Range Hydrocarbons                                                  | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Lube Oil Range Hydrocarbons                                                        | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Surrogate: 2-FBP                                                                   | %      | 50-150          |           |          | "       | "        | "        | "          | S-01  |
| Surrogate: Octacosane                                                              | %      | 50-150          |           |          | "       | "        | "        | "          | S-01  |
| RW4-021124 (B2K0572-02) Other wet Sampled: 11/24/02 15:15 Received: 11/25/02 17:40 |        |                 |           |          |         |          |          |            |       |
| Gx Range Hydrocarbons                                                              | DET    | 4000            | mg/kg wet | 20       | 2K27005 | 11/27/02 | 11/27/02 | NWTPH-HCID |       |
| Kerosene Range Hydrocarbons                                                        | ND     | 10000           | "         | "        | "       | "        | "        | "          |       |
| Diesel Range Hydrocarbons                                                          | ND     | 10000           | "         | "        | "       | "        | "        | "          |       |
| Insulating Oil Range Hydrocarbons                                                  | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Heavy Fuel Oil Range Hydrocarbons                                                  | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Lube Oil Range Hydrocarbons                                                        | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Surrogate: 2-FBP                                                                   | %      | 50-150          |           |          | "       | "        | "        | "          | S-01  |
| Surrogate: Octacosane                                                              | %      | 50-150          |           |          | "       | "        | "        | "          | S-01  |
| RW7-021124 (B2K0572-03) Other wet Sampled: 11/24/02 15:25 Received: 11/25/02 17:40 |        |                 |           |          |         |          |          |            |       |
| Gx Range Hydrocarbons                                                              | DET    | 4000            | mg/kg wet | 20       | 2K27005 | 11/27/02 | 11/27/02 | NWTPH-HCID |       |
| Kerosene Range Hydrocarbons                                                        | ND     | 10000           | "         | "        | "       | "        | "        | "          |       |
| Diesel Range Hydrocarbons                                                          | ND     | 10000           | "         | "        | "       | "        | "        | "          |       |
| Insulating Oil Range Hydrocarbons                                                  | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Heavy Fuel Oil Range Hydrocarbons                                                  | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Lube Oil Range Hydrocarbons                                                        | ND     | 20000           | "         | "        | "       | "        | "        | "          |       |
| Surrogate: 2-FBP                                                                   | %      | 50-150          |           |          | "       | "        | "        | "          | S-01  |
| Surrogate: Octacosane                                                              | %      | 50-150          |           |          | "       | "        | "        | "          | S-01  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID**  
**North Creek Analytical - Bothell**

| Analyte                                                                                 | Result | Reporting<br>Limit | Units     | Dilution | Batch   | Prepared | Analyzed | Method     | Notes |
|-----------------------------------------------------------------------------------------|--------|--------------------|-----------|----------|---------|----------|----------|------------|-------|
| B3-021125 (B2K0572-15) Other wet    Sampled: 11/25/02 13:10    Received: 11/25/02 17:40 |        |                    |           |          |         |          |          |            |       |
| Gx Range Hydrocarbons                                                                   | DET    | 4000               | mg/kg wet | 20       | 2K27005 | 11/27/02 | 11/27/02 | NWTPH-HCID |       |
| Kerosene Range Hydrocarbons                                                             | ND     | 10000              | "         | "        | "       | "        | "        | "          |       |
| Diesel Range Hydrocarbons                                                               | DET    | 10000              | "         | "        | "       | "        | "        | "          |       |
| Insulating Oil Range Hydrocarbons                                                       | ND     | 20000              | "         | "        | "       | "        | "        | "          |       |
| Heavy Fuel Oil Range Hydrocarbons                                                       | ND     | 20000              | "         | "        | "       | "        | "        | "          |       |
| Lube Oil Range Hydrocarbons                                                             | ND     | 20000              | "         | "        | "       | "        | "        | "          |       |
| Surrogate: 2-FBP                                                                        | %      | 50-150             |           |          | "       | "        | "        | "          | S-01  |
| Surrogate: Octacosane                                                                   | %      | 50-150             |           |          | "       | "        | "        | "          | S-01  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 16



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

**Reported:**  
12/11/02 16:56

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                                | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|----------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>HA8-021124 (B2K0572-04) Water Sampled: 11/24/02 16:20 Received: 11/25/02 17:40</b>  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                            | 579    | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                                | 5.78   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                | 16.9   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                           | 12.6   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                        | 57.8   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                 | 90.8 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                 | 80.8 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>HA7-021125 (B2K0572-05) Water Sampled: 11/25/02 08:50 Received: 11/25/02 17:40</b>  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                            | 7840   | 1000            | ug/l  | 20       | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                                | 811    | 10.0            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                | 41.1   | 10.0            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                           | 402    | 10.0            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                        | 580    | 20.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                 | 86.9 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                 | 82.1 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>HA12-021125 (B2K0572-06) Water Sampled: 11/25/02 09:15 Received: 11/25/02 17:40</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                            | 93.7   | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                                | 0.957  | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                | 3.85   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                           | 1.52   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                        | 10.8   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                 | 82.9 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                 | 79.6 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 4 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                        | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|--------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------------|-------|
| HA6-021125 (B2K0572-07) Water Sampled: 11/25/02 09:45 Received: 11/25/02 17:40 |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                    | 25600  | 2500               | ug/l  | 50       | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                        | 637    | 25.0               | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                        | 181    | 25.0               | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                   | 1320   | 25.0               | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                | 5620   | 50.0               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                         | 91.5 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                         | 84.0 % | 62-120             |       |          | "       | "        | "        | "              |       |
| HA5-021125 (B2K0572-08) Water Sampled: 11/25/02 10:55 Received: 11/25/02 17:40 |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                    | 236    | 50.0               | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                        | 2.94   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                        | 1.67   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                   | ND     | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                | 4.22   | 1.00               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                         | 86.7 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                         | 82.7 % | 62-120             |       |          | "       | "        | "        | "              |       |
| B4-021125 (B2K0572-09) Water Sampled: 11/25/02 12:10 Received: 11/25/02 17:40  |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                    | 41700  | 5000               | ug/l  | 100      | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                        | 519    | 50.0               | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                        | 295    | 50.0               | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                   | 2180   | 50.0               | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                | 10500  | 100                | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                         | 88.8 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                         | 82.3 % | 62-120             |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanné Garthwaite*

Jeanné Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

#### North Creek Analytical - Bothell

| Analyte                                                                         | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| B5-021125 (B2K0572-10) Water Sampled: 11/25/02 12:30 Received: 11/25/02 17:40   |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 2270   | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 126    | 2.50            | "     | 5        | "       | "        | 12/04/02 | "              |       |
| Toluene                                                                         | 4.31   | 0.500           | "     | 1        | "       | "        | 12/04/02 | "              |       |
| Ethylbenzene                                                                    | 37.4   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | 67.4   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 108 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 79.0 % | 62-120          |       |          | "       | "        | "        | "              |       |
| W2-021125 (B2K0572-11) Water Sampled: 11/25/02 16:00 Received: 11/25/02 17:40   |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 104000 | 5000            | ug/l  | 100      | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 15300  | 100             | "     | 200      | "       | "        | 12/04/02 | "              |       |
| Toluene                                                                         | 15800  | 100             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | 1960   | 50.0            | "     | 100      | "       | "        | 12/04/02 | "              |       |
| Xylenes (total)                                                                 | 11700  | 100             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 90.0 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 80.8 % | 62-120          |       |          | "       | "        | "        | "              |       |
| HA13-021125 (B2K0572-12) Water Sampled: 11/25/02 15:20 Received: 11/25/02 17:40 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | ND     | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 0.569  | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | 1.80   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | 0.667  | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | 5.74   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 85.4 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 82.1 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                                | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|----------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>HA14-021125 (B2K0572-13) Water</b> Sampled: 11/25/02 15:00 Received: 11/25/02 17:40 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                            | 939    | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                                | 141    | 2.50            | "     | 5        | "       | "        | 12/05/02 | "              |       |
| Toluene                                                                                | 15.7   | 0.500           | "     | 1        | "       | "        | 12/04/02 | "              |       |
| Ethylbenzene                                                                           | 169    | 2.50            | "     | 5        | "       | "        | 12/05/02 | "              |       |
| Xylenes (total)                                                                        | 48.1   | 1.00            | "     | 1        | "       | "        | 12/04/02 | "              |       |
| Surrogate: 4-BFB (FID)                                                                 | 100 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                 | 88.3 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>W1-021125 (B2K0572-14) Water</b> Sampled: 11/25/02 14:35 Received: 11/25/02 17:40   |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                            | 155000 | 5000            | ug/l  | 100      | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                                | 17600  | 250             | "     | 500      | "       | "        | 12/05/02 | "              |       |
| Toluene                                                                                | 24800  | 250             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                           | 2950   | 50.0            | "     | 100      | "       | "        | 12/04/02 | "              |       |
| Xylenes (total)                                                                        | 19500  | 100             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                 | 93.1 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                 | 83.5 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>B2-021125 (B2K0572-16) Water</b> Sampled: 11/25/02 13:50 Received: 11/25/02 17:40   |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                            | 60500  | 10000           | ug/l  | 200      | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                                | 9850   | 100             | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                | 1780   | 100             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                           | 1280   | 100             | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                        | 9220   | 200             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                 | 87.1 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                 | 80.6 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                         | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| HA5-021122 (B2K0572-17) Water Sampled: 11/22/02 11:00 Received: 11/25/02 17:40  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 243    | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 2.78   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | 1.51   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | 3.81   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 92.9 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 83.1 % | 62-120          |       |          | "       | "        | "        | "              |       |
| Trip Blanks (B2K0572-18) Water Sampled: 11/25/02 12:00 Received: 11/25/02 17:40 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | ND     | 50.0            | ug/l  | 1        | 2L04008 | 12/04/02 | 12/04/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 82.5 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 79.0 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 8 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                                | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|----------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>HA8-021124 (B2K0572-04) Water</b> Sampled: 11/24/02 16:20 Received: 11/25/02 17:40  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | ND     | 0.250           | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 68.2 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 85.8 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>HA7-021125 (B2K0572-05) Water</b> Sampled: 11/25/02 08:50 Received: 11/25/02 17:40  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | 2.67   | 0.250           | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 81.1 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 86.1 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>HA12-021125 (B2K0572-06) Water</b> Sampled: 11/25/02 09:15 Received: 11/25/02 17:40 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | ND     | 0.250           | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 62.9 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 78.8 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>HA6-021125 (B2K0572-07) Water</b> Sampled: 11/25/02 09:45 Received: 11/25/02 17:40  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | 1.43   | 0.250           | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 97.0 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 89.1 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>HA5-021125 (B2K0572-08) Water</b> Sampled: 11/25/02 10:55 Received: 11/25/02 17:40  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | ND     | 0.250           | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 66.2 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 81.5 % | 43-126          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 9 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|--------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>B4-021125 (B2K0572-09) Water Sampled: 11/25/02 12:10 Received: 11/25/02 17:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 5.46   | 0.500           | mg/l  | 2        | 2K27024 | 11/27/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | 1        | "       | "        | 12/02/02 | "        |       |
| Surrogate: 2-FBP                                                                     | 90.4 % | 36-119          |       |          | "       | "        | 12/03/02 | "        |       |
| Surrogate: Octacosane                                                                | 78.8 % | 43-126          |       |          | "       | "        | 12/02/02 | "        |       |
| <b>B5-021125 (B2K0572-10) Water Sampled: 11/25/02 12:30 Received: 11/25/02 17:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 1.06   | 0.250           | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 75.5 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 85.8 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>W2-021125 (B2K0572-11) Water Sampled: 11/25/02 16:00 Received: 11/25/02 17:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 14.7   | 2.50            | mg/l  | 10       | 2K27024 | 11/27/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | 1.91   | 0.500           | "     | 1        | "       | "        | 12/02/02 | "        |       |
| Surrogate: 2-FBP                                                                     | 43.4 % | 36-119          |       |          | "       | "        | 12/03/02 | "        |       |
| Surrogate: Octacosane                                                                | 77.2 % | 43-126          |       |          | "       | "        | 12/02/02 | "        |       |
| <b>W1-021125 (B2K0572-14) Water Sampled: 11/25/02 14:35 Received: 11/25/02 17:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 16.7   | 2.50            | mg/l  | 10       | 2K27024 | 11/27/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | 1        | "       | "        | 12/02/02 | "        |       |
| Surrogate: 2-FBP                                                                     | 48.3 % | 36-119          |       |          | "       | "        | 12/03/02 | "        |       |
| Surrogate: Octacosane                                                                | 78.5 % | 43-126          |       |          | "       | "        | 12/02/02 | "        |       |
| <b>B2-021125 (B2K0572-16) Water Sampled: 11/25/02 13:50 Received: 11/25/02 17:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 13.2   | 2.50            | mg/l  | 10       | 2K27024 | 11/27/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | 1        | "       | "        | 12/02/02 | "        |       |
| Surrogate: 2-FBP                                                                     | 33.1 % | 36-119          |       |          | "       | "        | 12/03/02 | "        | S-01  |
| Surrogate: Octacosane                                                                | 83.4 % | 43-126          |       |          | "       | "        | 12/02/02 | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 10 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Reporting |        | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|--------------------------------------------------------------------------------------|-----------|--------|-------|----------|---------|----------|----------|----------|-------|
|                                                                                      | Result    | Limit  |       |          |         |          |          |          |       |
| HA5-021122 (B2K0572-17) Water    Sampled: 11/22/02 11:00    Received: 11/25/02 17:40 |           |        |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND        | 0.250  | mg/l  | 1        | 2K27024 | 11/27/02 | 12/02/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND        | 0.500  | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 67.9 %    | 36-119 |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 84.4 %    | 43-126 |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 11 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 2K27005: Prepared 11/27/02 Using HCID (WA)**

**Blank (2K27005-BLK1)**

|                                   |    |      |       |
|-----------------------------------|----|------|-------|
| Gx Range Hydrocarbons             | ND | 20.0 | mg/kg |
| Kerosene Range Hydrocarbons       | ND | 50.0 | "     |
| Diesel Range Hydrocarbons         | ND | 50.0 | "     |
| Insulating Oil Range Hydrocarbons | ND | 100  | "     |
| Heavy Fuel Oil Range Hydrocarbons | ND | 100  | "     |
| Lube Oil Range Hydrocarbons       | ND | 100  | "     |

|                       |     |   |     |      |        |
|-----------------------|-----|---|-----|------|--------|
| Surrogate: 2-FBP      | DET | " | 160 | 81.2 | 50-150 |
| Surrogate: Octacosane | DET | " | 160 | 96.9 | 50-150 |

**Duplicate (2K27005-DUP1)**

Source: B2K0555-08

|                                   |     |      |           |      |       |    |
|-----------------------------------|-----|------|-----------|------|-------|----|
| Gx Range Hydrocarbons             | DET | 20.0 | mg/kg dry | 150  | 24.7  | 50 |
| Kerosene Range Hydrocarbons       | ND  | 50.0 | "         | 0.00 |       | 50 |
| Diesel Range Hydrocarbons         | DET | 50.0 | "         | 63.2 | 0.635 | 50 |
| Insulating Oil Range Hydrocarbons | ND  | 100  | "         | 44.4 | 1.12  | 50 |
| Heavy Fuel Oil Range Hydrocarbons | ND  | 100  | "         | 0.00 |       | 50 |
| Lube Oil Range Hydrocarbons       | ND  | 100  | "         | 0.00 |       | 50 |

|                       |     |   |     |      |        |
|-----------------------|-----|---|-----|------|--------|
| Surrogate: 2-FBP      | DET | " | 217 | 86.2 | 50-150 |
| Surrogate: Octacosane | DET | " | 217 | 98.2 | 50-150 |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 12 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 2L04008: Prepared 12/04/02 Using EPA 5030B (P/T)**

**Blank (2L04008-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 39.5 |       | "    | 48.0 |  | 82.3 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 39.9 |       | "    | 48.0 |  | 83.1 | 62-120 |  |  |  |

**LCS (2L04008-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 483  | 50.0  | ug/l | 502  |  | 96.2 | 80-120 |  |  |  |
| Benzene                     | 6.09 | 0.500 | "    | 6.20 |  | 98.2 | 80-120 |  |  |  |
| Toluene                     | 32.5 | 0.500 | "    | 38.1 |  | 85.3 | 80-120 |  |  |  |
| Ethylbenzene                | 8.28 | 0.500 | "    | 8.94 |  | 92.6 | 80-120 |  |  |  |
| Xylenes (total)             | 39.2 | 1.00  | "    | 44.0 |  | 89.1 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 43.6 |       | "    | 48.0 |  | 90.8 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 37.0 |       | "    | 48.0 |  | 77.1 | 62-120 |  |  |  |

**LCS Dup (2L04008-BSD1)**

|                             |      |       |      |      |  |      |        |      |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 468  | 50.0  | ug/l | 502  |  | 93.2 | 80-120 | 3.15 | 25 |  |
| Benzene                     | 5.92 | 0.500 | "    | 6.20 |  | 95.5 | 80-120 | 2.83 | 40 |  |
| Toluene                     | 31.7 | 0.500 | "    | 38.1 |  | 83.2 | 80-120 | 2.49 | 40 |  |
| Ethylbenzene                | 7.99 | 0.500 | "    | 8.94 |  | 89.4 | 80-120 | 3.56 | 40 |  |
| Xylenes (total)             | 38.0 | 1.00  | "    | 44.0 |  | 86.4 | 80-120 | 3.11 | 40 |  |
| Surrogate: 4-BFB (FID)      | 43.2 |       | "    | 48.0 |  | 90.0 | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 37.0 |       | "    | 48.0 |  | 77.1 | 62-120 |      |    |  |

**Matrix Spike (2L04008-MS1)**

**Source: B2K0572-06**

|                             |      |       |      |      |       |      |        |  |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 531  | 50.0  | ug/l | 502  | 93.7  | 87.1 | 70-130 |  |  |  |
| Benzene                     | 7.00 | 0.500 | "    | 6.20 | 0.957 | 97.5 | 80-134 |  |  |  |
| Toluene                     | 36.4 | 0.500 | "    | 38.1 | 3.85  | 85.4 | 68-114 |  |  |  |
| Ethylbenzene                | 9.62 | 0.500 | "    | 8.94 | 1.52  | 90.6 | 72-128 |  |  |  |
| Xylenes (total)             | 49.5 | 1.00  | "    | 44.0 | 10.8  | 88.0 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 42.7 |       | "    | 48.0 |       | 89.0 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 36.3 |       | "    | 48.0 |       | 75.6 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 13 of 16



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

**Reported:**  
12/11/02 16:56

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 2L04008: Prepared 12/04/02 Using EPA 5030B (P/T)**

**Matrix Spike Dup (2L04008-MSD1)**

**Source: B2K0572-06**

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 510  | 50.0  | ug/l | 502  | 93.7  | 82.9 | 70-130 | 4.03  | 25 |  |
| Benzene                     | 7.11 | 0.500 | "    | 6.20 | 0.957 | 99.2 | 80-134 | 1.56  | 40 |  |
| Toluene                     | 37.3 | 0.500 | "    | 38.1 | 3.85  | 87.8 | 68-114 | 2.44  | 40 |  |
| Ethylbenzene                | 9.68 | 0.500 | "    | 8.94 | 1.52  | 91.3 | 72-128 | 0.622 | 40 |  |
| Xylenes (total)             | 50.0 | 1.00  | "    | 44.0 | 10.8  | 89.1 | 67-125 | 1.01  | 40 |  |
| Surrogate: 4-BFB (FID)      | 41.6 |       | "    | 48.0 |       | 86.7 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 36.8 |       | "    | 48.0 |       | 76.7 | 62-120 |       |    |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 14 of 16



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte                                                 | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD    | RPD<br>Limit | Notes |
|---------------------------------------------------------|--------|--------------------|-------|----------------|------------------|----------------|--------|--------------|-------|
| <b>Batch 2K27024: Prepared 11/27/02 Using EPA 3520C</b> |        |                    |       |                |                  |                |        |              |       |
| <b>Blank (2K27024-BLK1)</b>                             |        |                    |       |                |                  |                |        |              |       |
| Diesel Range Hydrocarbons                               | ND     | 0.250              | mg/l  |                |                  |                |        |              |       |
| Lube Oil Range Hydrocarbons                             | ND     | 0.500              | "     |                |                  |                |        |              |       |
| Surrogate: 2-FBP                                        | 0.272  |                    | "     | 0.320          |                  | 85.0           | 36-119 |              |       |
| Surrogate: Octacosane                                   | 0.294  |                    | "     | 0.320          |                  | 91.9           | 43-126 |              |       |
| <b>LCS (2K27024-BS1)</b>                                |        |                    |       |                |                  |                |        |              |       |
| Diesel Range Hydrocarbons                               | 1.54   | 0.250              | mg/l  | 2.00           |                  | 77.0           | 45-105 |              |       |
| Surrogate: 2-FBP                                        | 0.271  |                    | "     | 0.320          |                  | 84.7           | 36-119 |              |       |
| <b>LCS Dup (2K27024-BSD1)</b>                           |        |                    |       |                |                  |                |        |              |       |
| Diesel Range Hydrocarbons                               | 1.74   | 0.250              | mg/l  | 2.00           |                  | 87.0           | 45-105 | 12.2         | 50    |
| Surrogate: 2-FBP                                        | 0.305  |                    | "     | 0.320          |                  | 95.3           | 36-119 |              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 15 of 16



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: 706002.010.011  
Project Manager: Jerry Ninteman

Reported:  
12/11/02 16:56

### Notes and Definitions

S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 16 of 16



Revised Chain of Custody

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223  
 East 11115 Montgomery, Suite B, Spokane, WA 98206-4776  
 9405 S W Nimbus Avenue, Beaverton, OR 97008-7132  
 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 420-9210  
 (509) 924-9200 FAX 924-9290  
 (503) 906-9200 FAX 906-9210  
 (541) 383-9310 FAX 382-7588

# TOSCO CHAIN OF CUSTODY REPORT B2K0572

**TOSCO INFORMATION**

Facility Number: \_\_\_\_\_

Site Address: 2423 Lind \_\_\_\_\_

City, State, ZIP: Renton, WA \_\_\_\_\_

Project/AWO Code: \_\_\_\_\_

Tosco Manager: \_\_\_\_\_

FACILITY TYPE: (check one) ☐ BP ☒ Terminal/Bulk Plant

☐ Brown Bear ☐ Former 76 Site ☐ Other

**CONSULTANT INFORMATION**

Firm: Landon Assoc Inc. Project# 70002.010.011

Address: 13020 Ave 30  
 Edmonds, WA 98020

Phone: (425) 778-0907 Fax: (425) 778-6409

Project Manager: J. Nintemq IE-mail: \_\_\_\_\_

Sample Collection by: JES/PLG

Quality Assurance Data Level: ☐ A ☒ B

A: Standard Summary

B: Standard + Chromatograms

Laboratory Turnaround Days: ☐ 10 ☐ 5 ☐ 3 ☐ 2 ☐ 1

10 Day - Standard

| SAMPLE IDENTIFICATION | SAMPLING DATE / TIME | MATRIX (W.S.O) | # OF CON-TAINERS |
|-----------------------|----------------------|----------------|------------------|
| 1. W2-02-1125         | 11/24/02-1600        | W              | 2                |
| 2. HA13-02-1125       | 1520                 | W              | 3                |
| 3. HA14-02-1125       | 1500                 | W              | 3                |
| 4. W1-02-1125         | 1435                 | W              | 4                |
| 5. B3-02-1125         | 1310                 | W              | 1                |
| 6. B3-02-1125         | 1350                 | W              | 4                |
| 7. HA5-02-1125        | 11/28/02-1100        | W              | 4                |
| 8. Trip Blanks        | —                    | W              | 2                |
| 9. _____              | _____                | _____          | _____            |
| 10. _____             | _____                | _____          | _____            |

| CO                 | OR | WA | AK | NW | Series | ID |
|--------------------|----|----|----|----|--------|----|
| TPH-HCID           |    |    |    |    |        |    |
| TPH-Gas            |    |    |    |    |        |    |
| BTEX Mod           |    |    |    |    |        |    |
| EPA 8021 Mod       |    |    |    |    |        |    |
| TPH-Gas + BTEX     |    |    |    |    |        |    |
| TPH-Diesel         |    |    |    |    |        |    |
| TPH-Diesel-Ext     |    |    |    |    |        |    |
| W/SG Cleanup       |    |    |    |    |        |    |
| Hoggen Volatiles   |    |    |    |    |        |    |
| Pesticides/PCBs    |    |    |    |    |        |    |
| GC/MS Volatiles    |    |    |    |    |        |    |
| GC/MS Semi Vols    |    |    |    |    |        |    |
| EPA 8270           |    |    |    |    |        |    |
| PAH's              |    |    |    |    |        |    |
| 8270 SIM or 8310   |    |    |    |    |        |    |
| Lead               |    |    |    |    |        |    |
| Total or Dissolved |    |    |    |    |        |    |
| TCLP or RCRA       |    |    |    |    |        |    |
| Metals (8)         |    |    |    |    |        |    |

NCA SAMPLE NUMBER

B2K0572 - 11 -

12 -

13 -

14 -

15 -

16 -

17 -

18 -

Receipt

**Relinquish by:** \_\_\_\_\_

**Firm:** LAR

**Date & Time:** 11/25/02-1655

**Received by:** \_\_\_\_\_

**Firm:** NCA

**Date & Time:** 11/25/02-1740

**Comments:**

Samples were not @ 2-6C upon

**Revised Chain of Custody**



North Creek Analytical, Inc.  
Environmental Laboratory Network  
www.nclabs.com

7720 North Creek Parkway, Suite 100, Bothell, WA 98011  
(206) 485-0920 FAX 485-0920  
(509) 924-9200 FAX 924-9290  
(503) 906-9200 FAX 906-9210  
(541) 383-9310 FAX 382-7588

# TOSCO CHAIN OF CUSTODY REPORT

B2K0572

**TOSCO INFORMATION**

Facility Number: \_\_\_\_\_

Site Address: 2423 Lind \_\_\_\_\_

City, State, ZIP: Renton, WA \_\_\_\_\_

Project/AWO Code \_\_\_\_\_

Tosco Manager: \_\_\_\_\_

FACILITY TYPE: (check one) ☐ BP ☒ Terminal/Bulk Plant

☐ Brown Bear ☐ Former 76 Site ☐ Other

**CONSULTANT INFORMATION**

Firm: Landon Assoc. Inc. Project# 70002.010.011

Address: 130 2nd Ave SE  
Edmonds, WA 98020

Phone: (425) 778-0907 Fax: (425) 778-0409

Project Manager: Jerry Nintevic E-mail: \_\_\_\_\_

Sample Collection by: JPS/PLG

Quality Assurance Data Level: ☐ A ☒ B

A: Standard Summary  
B: Standard + Chromatograms

Laboratory Turnaround Days: ☒ 10 ☐ 5 ☐ 3 ☐ 2 ☐ 1

10 Day - Standard

| SAMPLE IDENTIFICATION | SAMPLING DATE / TIME | MATRIX (W.S.O) | # OF CON-TAINERS |
|-----------------------|----------------------|----------------|------------------|
| 1. W2-021125          | 11/25/02-1600        | W              | 3                |
| 2. HA13-021125        | 1530                 | W              | 3                |
| 3. HA14-021125        | 1500                 | W              | 3                |
| 4. W1-021125          | 1435                 | W              | 4                |
| 5. B3-021125          | 1310                 | W              | 1                |
| 6. B2-021125          | 1350                 | W              | 4                |
| 7. _____              | _____                | _____          | _____            |
| 8. _____              | _____                | _____          | _____            |
| 9. _____              | _____                | _____          | _____            |
| 10. _____             | _____                | _____          | _____            |

| OR                 | WA | AK | NW | Series | ID |
|--------------------|----|----|----|--------|----|
| TPH-HClD           |    |    |    |        |    |
| TPH-Gas            |    |    |    |        |    |
| BTEX               |    |    |    |        |    |
| EPA 8021 Mod       |    |    |    |        |    |
| TPH-Gas + BTEX     | X  |    |    |        |    |
| TPH-Diesel         |    |    |    |        |    |
| Extended           |    |    |    |        |    |
| TPH-Diesel-Ext.    |    |    |    |        |    |
| w/SG Cleanup       |    |    |    |        |    |
| Halogen, Volatiles |    |    |    |        |    |
| EPA 8021           |    |    |    |        |    |
| Pesticides/PCBs    |    |    |    |        |    |
| GC/MS Volatiles    |    |    |    |        |    |
| EPA 8260           |    |    |    |        |    |
| GC/MS Semi Vols.   |    |    |    |        |    |
| EPA 8270           |    |    |    |        |    |
| PAH's              |    |    |    |        |    |
| 8270 SIM or 8310   |    |    |    |        |    |
| Lead:              |    |    |    |        |    |
| Total or Dissolved |    |    |    |        |    |
| TCLP or RCRA       |    |    |    |        |    |
| Metals (8)         |    |    |    |        |    |

NCA SAMPLE NUMBER

B2K0572

19  
15  
14  
15  
16

↓

Receipt

**Relinquished by:** \_\_\_\_\_ **Firm:** LAR **Date & Time:** 11/25/02 1655

**Received by:** \_\_\_\_\_ **Firm:** NCA **Date & Time:** 11/25/02 1740

3.

**Comments:**

Samples were not @ 250 upon Receipt

86 D/O



**nca**<sup>TM</sup>

(425) 420-9200 FAX 420-9210  
(509) 924-9200 FAX 924-9290  
(503) 906-9200 FAX 906-9210  
(541) 383-9310 FAX 382-7588

132 KOS 72

| CONSULTANT INFORMATION                             |                          |
|----------------------------------------------------|--------------------------|
| Firm: Landau Associates                            | Project# 706002, 010.011 |
| Address: 130 2nd Avenue South<br>Edmonds, WA 98020 |                          |
| Phone: 425-778-0907                                | Fax: 425-778-6409        |
| Project Manager: J Ninteman                        | E-mail:                  |
| Sample Collection by: J Swartz / P Glenn           |                          |

Quality Assurance Data Level:

☐ A ☐ B

A: Standard Summary

B: Standard + Chromatograms

Laboratory Turnaround Days:

☐ 5 ☐ 3 ☐ 2 ☐ 1

~~10 Day - Standard~~

[illegible]

|                                                 |                   |            |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------|-------------------|------------|----|----|----|----|----|----|----|----|----|
| Please let<br>settle<br>decant<br>upper portion | NCA SAMPLE NUMBER | B2K0572-01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|-------------------------------------------------|-------------------|------------|----|----|----|----|----|----|----|----|----|

Comments: Samples were not @2-6C Upon Receipt



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244

425.420.9200 fax 425.420.9210

**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776

509.924.9200 fax 509.924.9290

**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

04 December 2002

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 11/20/02 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite

Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| HA-5       | B2K0471-01    | Water  | 11/19/02 14:50 | 11/20/02 17:15 |
| HA-7       | B2K0471-02    | Water  | 11/19/02 15:05 | 11/20/02 17:15 |
| HA-8       | B2K0471-03    | Water  | 11/19/02 15:00 | 11/20/02 17:15 |
| TRIP BLANK | B2K0471-04    | Water  | 11/19/02 12:00 | 11/20/02 17:15 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                         | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>HA-5 (B2K0471-01) Water Sampled: 11/19/02 14:50 Received: 11/20/02 17:15</b> |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 223    | 50.0               | ug/l  | 1        | 2L02001 | 12/02/02 | 12/02/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 3.39   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | 5.63   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | 0.581  | 0.500              | "     | "        | "       | "        | "        | "              | I-06  |
| Xylenes (total)                                                                 | 5.87   | 1.00               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 92.3 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 81.2 % | 62-120             |       |          | "       | "        | "        | "              |       |
| <b>HA-7 (B2K0471-02) Water Sampled: 11/19/02 15:05 Received: 11/20/02 17:15</b> |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 5510   | 1000               | ug/l  | 20       | 2L02001 | 12/02/02 | 12/02/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 587    | 10.0               | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | 31.3   | 10.0               | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | 259    | 10.0               | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | 324    | 20.0               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 86.2 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 82.5 % | 62-120             |       |          | "       | "        | "        | "              |       |
| <b>HA-8 (B2K0471-03) Water Sampled: 11/19/02 15:00 Received: 11/20/02 17:15</b> |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 135    | 50.0               | ug/l  | 1        | 2L02001 | 12/02/02 | 12/02/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 2.07   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | 4.11   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | 1.76   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | 7.42   | 1.00               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 84.2 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 80.0 % | 62-120             |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**

**North Creek Analytical - Bothell**

| Analyte                                                                              | Reporting |        | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|--------------------------------------------------------------------------------------|-----------|--------|-------|----------|---------|----------|----------|----------------|-------|
|                                                                                      | Result    | Limit  |       |          |         |          |          |                |       |
| TRIP BLANK (B2K0471-04) Water    Sampled: 11/19/02 12:00    Received: 11/20/02 17:15 |           |        |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                          | ND        | 50.0   | ug/l  | 1        | 2L03001 | 12/03/02 | 12/03/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                              | ND        | 0.500  | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                              | ND        | 0.500  | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                         | ND        | 0.500  | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                      | ND        | 1.00   | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                               | 78.3 %    | 57-125 |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                               | 80.4 %    | 62-120 |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 3 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 2L02001: Prepared 12/02/02 Using EPA 5030B (P/T)**

**Blank (2L02001-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 40.6 |       | "    | 48.0 |  | 84.6 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 39.5 |       | "    | 48.0 |  | 82.3 | 62-120 |  |  |

**LCS (2L02001-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 473  | 50.0  | ug/l | 502  |  | 94.2 | 80-120 |  |  |
| Benzene                     | 6.33 | 0.500 | "    | 6.20 |  | 102  | 80-120 |  |  |
| Toluene                     | 32.6 | 0.500 | "    | 38.1 |  | 85.6 | 80-120 |  |  |
| Ethylbenzene                | 8.28 | 0.500 | "    | 8.94 |  | 92.6 | 80-120 |  |  |
| Xylenes (total)             | 40.6 | 1.00  | "    | 44.0 |  | 92.3 | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 44.1 |       | "    | 48.0 |  | 91.9 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 38.1 |       | "    | 48.0 |  | 79.4 | 62-120 |  |  |

**LCS Dup (2L02001-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 467  | 50.0  | ug/l | 502  |  | 93.0 | 80-120 | 1.28  | 25 |
| Benzene                     | 6.36 | 0.500 | "    | 6.20 |  | 103  | 80-120 | 0.473 | 40 |
| Toluene                     | 32.6 | 0.500 | "    | 38.1 |  | 85.6 | 80-120 | 0.00  | 40 |
| Ethylbenzene                | 8.28 | 0.500 | "    | 8.94 |  | 92.6 | 80-120 | 0.00  | 40 |
| Xylenes (total)             | 40.4 | 1.00  | "    | 44.0 |  | 91.8 | 80-120 | 0.494 | 40 |
| Surrogate: 4-BFB (FID)      | 44.0 |       | "    | 48.0 |  | 91.7 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 38.0 |       | "    | 48.0 |  | 79.2 | 62-120 |       |    |

**Matrix Spike (2L02001-MS1)**

Source: B2K0465-31

|                             |      |       |      |      |       |      |        |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|
| Gasoline Range Hydrocarbons | 505  | 50.0  | ug/l | 502  | ND    | 101  | 70-130 |  |  |
| Benzene                     | 6.49 | 0.500 | "    | 6.20 | ND    | 105  | 80-134 |  |  |
| Toluene                     | 33.0 | 0.500 | "    | 38.1 | 0.153 | 86.2 | 68-114 |  |  |
| Ethylbenzene                | 8.49 | 0.500 | "    | 8.94 | ND    | 95.0 | 72-128 |  |  |
| Xylenes (total)             | 41.4 | 1.00  | "    | 44.0 | ND    | 94.1 | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 44.8 |       | "    | 48.0 |       | 93.3 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 37.9 |       | "    | 48.0 |       | 79.0 | 62-120 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 2L02001: Prepared 12/02/02 Using EPA 5030B (P/T)**

**Matrix Spike Dup (2L02001-MSD1)**

**Source: B2K0465-31**

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 485  | 50.0  | ug/l | 502  | ND    | 96.6 | 70-130 | 4.04  | 25 |  |
| Benzene                     | 6.48 | 0.500 | "    | 6.20 | ND    | 105  | 80-134 | 0.154 | 40 |  |
| Toluene                     | 33.0 | 0.500 | "    | 38.1 | 0.153 | 86.2 | 68-114 | 0.00  | 40 |  |
| Ethylbenzene                | 8.51 | 0.500 | "    | 8.94 | ND    | 95.2 | 72-128 | 0.235 | 40 |  |
| Xylenes (total)             | 41.5 | 1.00  | "    | 44.0 | ND    | 94.3 | 67-125 | 0.241 | 40 |  |
| Surrogate: 4-BFB (FID)      | 44.0 |       | "    | 48.0 |       | 91.7 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 38.2 |       | "    | 48.0 |       | 79.6 | 62-120 |       |    |  |

**Batch 2L03001: Prepared 12/03/02 Using EPA 5030B (P/T)**

**Blank (2L03001-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 39.6 |       | "    | 48.0 |  | 82.5 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 38.9 |       | "    | 48.0 |  | 81.0 | 62-120 |  |  |  |

**LCS (2L03001-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 482  | 50.0  | ug/l | 502  |  | 96.0 | 80-120 |  |  |  |
| Benzene                     | 6.16 | 0.500 | "    | 6.20 |  | 99.4 | 80-120 |  |  |  |
| Toluene                     | 32.7 | 0.500 | "    | 38.1 |  | 85.8 | 80-120 |  |  |  |
| Ethylbenzene                | 8.30 | 0.500 | "    | 8.94 |  | 92.8 | 80-120 |  |  |  |
| Xylenes (total)             | 39.6 | 1.00  | "    | 44.0 |  | 90.0 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 42.9 |       | "    | 48.0 |  | 89.4 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 36.5 |       | "    | 48.0 |  | 76.0 | 62-120 |  |  |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 5 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 2L03001: Prepared 12/03/02 Using EPA 5030B (P/T)**

**LCS Dup (2L03001-BSD1)**

|                             |      |       |      |      |  |      |        |      |    |
|-----------------------------|------|-------|------|------|--|------|--------|------|----|
| Gasoline Range Hydrocarbons | 476  | 50.0  | ug/l | 502  |  | 94.8 | 80-120 | 1.25 | 25 |
| Benzene                     | 6.06 | 0.500 | "    | 6.20 |  | 97.7 | 80-120 | 1.64 | 40 |
| Toluene                     | 32.3 | 0.500 | "    | 38.1 |  | 84.8 | 80-120 | 1.23 | 40 |
| Ethylbenzene                | 8.18 | 0.500 | "    | 8.94 |  | 91.5 | 80-120 | 1.46 | 40 |
| Xylenes (total)             | 38.8 | 1.00  | "    | 44.0 |  | 88.2 | 80-120 | 2.04 | 40 |
| Surrogate: 4-BFB (FID)      | 43.3 |       | "    | 48.0 |  | 90.2 | 57-125 |      |    |
| Surrogate: 4-BFB (PID)      | 36.5 |       | "    | 48.0 |  | 76.0 | 62-120 |      |    |

**Matrix Spike (2L03001-MS1)**

**Source: B2K0491-03**

|                             |      |       |      |      |    |      |        |  |  |
|-----------------------------|------|-------|------|------|----|------|--------|--|--|
| Gasoline Range Hydrocarbons | 499  | 50.0  | ug/l | 502  | ND | 99.4 | 70-130 |  |  |
| Benzene                     | 6.37 | 0.500 | "    | 6.20 | ND | 103  | 80-134 |  |  |
| Toluene                     | 33.8 | 0.500 | "    | 38.1 | ND | 88.7 | 68-114 |  |  |
| Ethylbenzene                | 8.60 | 0.500 | "    | 8.94 | ND | 96.2 | 72-128 |  |  |
| Xylenes (total)             | 40.9 | 1.00  | "    | 44.0 | ND | 93.0 | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 43.1 |       | "    | 48.0 |    | 89.8 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 36.5 |       | "    | 48.0 |    | 76.0 | 62-120 |  |  |

**Matrix Spike Dup (2L03001-MSD1)**

**Source: B2K0491-03**

|                             |      |       |      |      |    |      |        |       |    |
|-----------------------------|------|-------|------|------|----|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 480  | 50.0  | ug/l | 502  | ND | 95.6 | 70-130 | 3.88  | 25 |
| Benzene                     | 6.39 | 0.500 | "    | 6.20 | ND | 103  | 80-134 | 0.313 | 40 |
| Toluene                     | 33.9 | 0.500 | "    | 38.1 | ND | 89.0 | 68-114 | 0.295 | 40 |
| Ethylbenzene                | 8.53 | 0.500 | "    | 8.94 | ND | 95.4 | 72-128 | 0.817 | 40 |
| Xylenes (total)             | 40.6 | 1.00  | "    | 44.0 | ND | 92.3 | 67-125 | 0.736 | 40 |
| Surrogate: 4-BFB (FID)      | 42.4 |       | "    | 48.0 |    | 88.3 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 36.5 |       | "    | 48.0 |    | 76.0 | 62-120 |       |    |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 6 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

### Notes and Definitions

I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 7



04December2002

MartinPowers  
LandauAssociates-Edmonds  
SoundViewPlaza,1302ndAveS  
Edmonds,WA/USA98020-9129  
RE:TOSCORentonTerminal

Enclosedarethetheresultsofanalysesforsamplesreceivedbythelaboratoryon  
questionsconcerningthisreport,pleasefeelfreetocontactme.

11/20/0217:15.Ifyouhaveany

Sincerely,

A handwritten signature in cursive script, appearing to read "Jeanne Garthwaite".

JeanneGarthwaite  
ProjectManager

Landau Associates - Edmonds  
SoundViewPlaza,1302ndAveS  
EdmondsWA/USA,98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: MartinPowers

Reported:  
12/04/0211:23

ANALYTICALREPORTFORSAMPLES

| SampleID  | LaboratoryID | Matrix | DateSampled   | DateReceived  |
|-----------|--------------|--------|---------------|---------------|
| HA-5      | B2K0471-01   | Water  | 11/19/0214:50 | 11/20/0217:15 |
| HA-7      | B2K0471-02   | Water  | 11/19/0215:05 | 11/20/0217:15 |
| HA-8      | B2K0471-03   | Water  | 11/19/0215:00 | 11/20/0217:15 |
| TRIPBLANK | B2K0471-04   | Water  | 11/19/0212:00 | 11/20/0217:15 |

NorthCreekAnalytical-Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

JeanneGarthwaite,ProjectManager

Landau Associates - Edmonds  
SoundView Plaza, 1302nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021 B**  
**North Creek Analytical-Bothell**

| Analyte                                                                        | Result               | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method          | Notes |
|--------------------------------------------------------------------------------|----------------------|-----------------|-------|----------|---------|----------|----------|-----------------|-------|
| <b>HA-5(B2K0471-01) Water Sampled: 11/19/02 14:50 Received: 11/20/02 17:15</b> |                      |                 |       |          |         |          |          |                 |       |
| Gasoline Range Hydrocarbons                                                    | 223 <del>880</del>   | 50.0            | ug/l  | 1        | 2L02001 | 12/02/02 | 12/02/02 | NWTPH-Gx/8021 B |       |
| Benzene                                                                        | 3.39 <del>36</del>   | 0.500           | "     | "        | "       | "        | "        | "               |       |
| Toluene                                                                        | 5.63 <del>5.3</del>  | 0.500           | "     | "        | "       | "        | "        | "               |       |
| Ethylbenzene                                                                   | 0.581 <del>110</del> | 0.500           | "     | "        | "       | "        | "        | "               | I-06  |
| Xylenes (total)                                                                | 5.87 <del>16</del>   | 1.00            | "     | "        | "       | "        | "        | "               |       |
| Surrogate: 4-BFB (FID)                                                         | 92.3%                | 57-125          |       |          | "       | "        | "        | "               |       |
| Surrogate: 4-BFB (PID)                                                         | 81.2%                | 62-120          |       |          | "       | "        | "        | "               |       |
| <b>HA-7(B2K0471-02) Water Sampled: 11/19/02 15:05 Received: 11/20/02 17:15</b> |                      |                 |       |          |         |          |          |                 |       |
| Gasoline Range Hydrocarbons                                                    | 5510 <del>1000</del> | 1000            | ug/l  | 20       | 2L02001 | 12/02/02 | 12/02/02 | NWTPH-Gx/8021 B |       |
| Benzene                                                                        | 587 <del>1500</del>  | 10.0            | "     | "        | "       | "        | "        | "               |       |
| Toluene                                                                        | 31.3 <del>73</del>   | 10.0            | "     | "        | "       | "        | "        | "               |       |
| Ethylbenzene                                                                   | 259 <del>760</del>   | 10.0            | "     | "        | "       | "        | "        | "               |       |
| Xylenes (total)                                                                | 324 <del>1000</del>  | 20.0            | "     | "        | "       | "        | "        | "               |       |
| Surrogate: 4-BFB (FID)                                                         | 86.2%                | 57-125          |       |          | "       | "        | "        | "               |       |
| Surrogate: 4-BFB (PID)                                                         | 82.5%                | 62-120          |       |          | "       | "        | "        | "               |       |
| <b>HA-8(B2K0471-03) Water Sampled: 11/19/02 15:00 Received: 11/20/02 17:15</b> |                      |                 |       |          |         |          |          |                 |       |
| Gasoline Range Hydrocarbons                                                    | 135 <del>1000</del>  | 50.0            | ug/l  | 1        | 2L02001 | 12/02/02 | 12/02/02 | NWTPH-Gx/8021 B |       |
| Benzene                                                                        | 2.07 <del>6.3</del>  | 0.500           | "     | "        | "       | "        | "        | "               |       |
| Toluene                                                                        | 4.11 <del>6.4</del>  | 0.500           | "     | "        | "       | "        | "        | "               |       |
| Ethylbenzene                                                                   | 1.76 <del>31</del>   | 0.500           | "     | "        | "       | "        | "        | "               |       |
| Xylenes (total)                                                                | 7.42 <del>160</del>  | 1.00            | "     | "        | "       | "        | "        | "               |       |
| Surrogate: 4-BFB (FID)                                                         | 84.2%                | 57-125          |       |          | "       | "        | "        | "               |       |
| Surrogate: 4-BFB (PID)                                                         | 80.0%                | 62-120          |       |          | "       | "        | "        | "               |       |

North Creek Analytical-Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
SoundView Plaza, 1302nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical-Bothell**

| Analyte                                                                              | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method             | Notes |
|--------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|--------------------|-------|
| <b>TRIPBLANK (B2K0471-04) Water Sampled: 11/19/02 12:00 Received: 11/20/02 17:15</b> |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                          | ND     | 50.0               | ug/l  | 1        | 2L03001 | 12/03/02 | 12/03/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                              | ND     | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                              | ND     | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                         | ND     | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                      | ND     | 1.00               | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                               | 78.3%  | 57-125             |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                               | 80.4%  | 62-120             |       |          | "       | "        | "        | "                  |       |

North Creek Analytical-Bothell

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Landau Associates - Edmonds  
Sound View Plaza, 1302nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B-Quality Control**  
**North Creek Analytical-Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 2L02001: Prepared 12/02/02 Using EPA 5030B(P/T)**

**Blank (2L02001-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 40.6 |       | "    | 48.0 |  | 84.6 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 39.5 |       | "    | 48.0 |  | 82.3 | 62-120 |  |  |  |

**LCS (2L02001-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 473  | 50.0  | ug/l | 502  |  | 94.2 | 80-120 |  |  |  |
| Benzene                     | 6.33 | 0.500 | "    | 6.20 |  | 102  | 80-120 |  |  |  |
| Toluene                     | 32.6 | 0.500 | "    | 38.1 |  | 85.6 | 80-120 |  |  |  |
| Ethylbenzene                | 8.28 | 0.500 | "    | 8.94 |  | 92.6 | 80-120 |  |  |  |
| Xylenes (total)             | 40.6 | 1.00  | "    | 44.0 |  | 92.3 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 44.1 |       | "    | 48.0 |  | 91.9 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 38.1 |       | "    | 48.0 |  | 79.4 | 62-120 |  |  |  |

**LCSDup (2L02001-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 467  | 50.0  | ug/l | 502  |  | 93.0 | 80-120 | 1.28  | 25 |  |
| Benzene                     | 6.36 | 0.500 | "    | 6.20 |  | 103  | 80-120 | 0.473 | 40 |  |
| Toluene                     | 32.6 | 0.500 | "    | 38.1 |  | 85.6 | 80-120 | 0.00  | 40 |  |
| Ethylbenzene                | 8.28 | 0.500 | "    | 8.94 |  | 92.6 | 80-120 | 0.00  | 40 |  |
| Xylenes (total)             | 40.4 | 1.00  | "    | 44.0 |  | 91.8 | 80-120 | 0.494 | 40 |  |
| Surrogate: 4-BFB (FID)      | 44.0 |       | "    | 48.0 |  | 91.7 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 38.0 |       | "    | 48.0 |  | 79.2 | 62-120 |       |    |  |

**Matrix Spike (2L02001-MS1)**

Source: B2K0465-31

|                             |      |       |      |      |       |      |        |  |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 505  | 50.0  | ug/l | 502  | ND    | 101  | 70-130 |  |  |  |
| Benzene                     | 6.49 | 0.500 | "    | 6.20 | ND    | 105  | 80-134 |  |  |  |
| Toluene                     | 33.0 | 0.500 | "    | 38.1 | 0.153 | 86.2 | 68-114 |  |  |  |
| Ethylbenzene                | 8.49 | 0.500 | "    | 8.94 | ND    | 95.0 | 72-128 |  |  |  |
| Xylenes (total)             | 41.4 | 1.00  | "    | 44.0 | ND    | 94.1 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 44.8 |       | "    | 48.0 |       | 93.3 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 37.9 |       | "    | 48.0 |       | 79.0 | 62-120 |  |  |  |

North Creek Analytical-Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
SoundView Plaza, 1302nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
12/04/02 11:23

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B-Quality Control**  
**North Creek Analytical-Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 2L02001: Prepared 12/02/02 Using EPA 5030B (P/T)**

**Matrix Spike Dup (2L02001-MSD1)**

Source: B2K0465-31

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 485  | 50.0  | ug/l | 502  | ND    | 96.6 | 70-130 | 4.04  | 25 |  |
| Benzene                     | 6.48 | 0.500 | "    | 6.20 | ND    | 105  | 80-134 | 0.154 | 40 |  |
| Toluene                     | 33.0 | 0.500 | "    | 38.1 | 0.153 | 86.2 | 68-114 | 0.00  | 40 |  |
| Ethylbenzene                | 8.51 | 0.500 | "    | 8.94 | ND    | 95.2 | 72-128 | 0.235 | 40 |  |
| Xylenes (total)             | 41.5 | 1.00  | "    | 44.0 | ND    | 94.3 | 67-125 | 0.241 | 40 |  |
| Surrogate: 4-BFB (FID)      | 44.0 |       | "    | 48.0 |       | 91.7 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 38.2 |       | "    | 48.0 |       | 79.6 | 62-120 |       |    |  |

**Batch 2L03001: Prepared 12/03/02 Using EPA 5030B (P/T)**

**Blank (2L03001-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 39.6 |       | "    | 48.0 |  | 82.5 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 38.9 |       | "    | 48.0 |  | 81.0 | 62-120 |  |  |  |

**LCS (2L03001-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 482  | 50.0  | ug/l | 502  |  | 96.0 | 80-120 |  |  |  |
| Benzene                     | 6.16 | 0.500 | "    | 6.20 |  | 99.4 | 80-120 |  |  |  |
| Toluene                     | 32.7 | 0.500 | "    | 38.1 |  | 85.8 | 80-120 |  |  |  |
| Ethylbenzene                | 8.30 | 0.500 | "    | 8.94 |  | 92.8 | 80-120 |  |  |  |
| Xylenes (total)             | 39.6 | 1.00  | "    | 44.0 |  | 90.0 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 42.9 |       | "    | 48.0 |  | 89.4 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 36.5 |       | "    | 48.0 |  | 76.0 | 62-120 |  |  |  |

North Creek Analytical-Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Jeanne Garthwaite, Project Manager

Page 5 of 7

Landau Associates - Edmonds  
SoundViewPlaza,1302ndAveS  
EdmondsWA/USA,98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: MartinPowers

Reported:  
12/04/0211:23

**VolatilePetroleumProductsandBTEXbyNWTPH-GxandEPA8021B-QualityControl**  
**NorthCreekAnalytical-Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch2L03001:Prepared12/03/02UsingEPA5030B(P/T)**

**LCSDup(2L03001-BSD1)**

|                           |      |       |      |      |  |      |        |      |    |  |
|---------------------------|------|-------|------|------|--|------|--------|------|----|--|
| GasolineRangeHydrocarbons | 476  | 50.0  | ug/l | 502  |  | 94.8 | 80-120 | 1.25 | 25 |  |
| Benzene                   | 6.06 | 0.500 | "    | 6.20 |  | 97.7 | 80-120 | 1.64 | 40 |  |
| Toluene                   | 32.3 | 0.500 | "    | 38.1 |  | 84.8 | 80-120 | 1.23 | 40 |  |
| Ethylbenzene              | 8.18 | 0.500 | "    | 8.94 |  | 91.5 | 80-120 | 1.46 | 40 |  |
| Xylenes(total)            | 38.8 | 1.00  | "    | 44.0 |  | 88.2 | 80-120 | 2.04 | 40 |  |
| Surrogate: 4-BFB(FID)     | 43.3 |       | "    | 48.0 |  | 90.2 | 57-125 |      |    |  |
| Surrogate: 4-BFB(PID)     | 36.5 |       | "    | 48.0 |  | 76.0 | 62-120 |      |    |  |

**MatrixSpike(2L03001-MS1)**

Source:B2K0491-03

|                           |      |       |      |      |    |      |        |  |  |  |
|---------------------------|------|-------|------|------|----|------|--------|--|--|--|
| GasolineRangeHydrocarbons | 499  | 50.0  | ug/l | 502  | ND | 99.4 | 70-130 |  |  |  |
| Benzene                   | 6.37 | 0.500 | "    | 6.20 | ND | 103  | 80-134 |  |  |  |
| Toluene                   | 33.8 | 0.500 | "    | 38.1 | ND | 88.7 | 68-114 |  |  |  |
| Ethylbenzene              | 8.60 | 0.500 | "    | 8.94 | ND | 96.2 | 72-128 |  |  |  |
| Xylenes(total)            | 40.9 | 1.00  | "    | 44.0 | ND | 93.0 | 67-125 |  |  |  |
| Surrogate: 4-BFB(FID)     | 43.1 |       | "    | 48.0 |    | 89.8 | 57-125 |  |  |  |
| Surrogate: 4-BFB(PID)     | 36.5 |       | "    | 48.0 |    | 76.0 | 62-120 |  |  |  |

**MatrixSpikeDup(2L03001-MSD1)**

Source:B2K0491-03

|                           |      |       |      |      |    |      |        |       |    |  |
|---------------------------|------|-------|------|------|----|------|--------|-------|----|--|
| GasolineRangeHydrocarbons | 480  | 50.0  | ug/l | 502  | ND | 95.6 | 70-130 | 3.88  | 25 |  |
| Benzene                   | 6.39 | 0.500 | "    | 6.20 | ND | 103  | 80-134 | 0.313 | 40 |  |
| Toluene                   | 33.9 | 0.500 | "    | 38.1 | ND | 89.0 | 68-114 | 0.295 | 40 |  |
| Ethylbenzene              | 8.53 | 0.500 | "    | 8.94 | ND | 95.4 | 72-128 | 0.817 | 40 |  |
| Xylenes(total)            | 40.6 | 1.00  | "    | 44.0 | ND | 92.3 | 67-125 | 0.736 | 40 |  |
| Surrogate: 4-BFB(FID)     | 42.4 |       | "    | 48.0 |    | 88.3 | 57-125 |       |    |  |
| Surrogate: 4-BFB(PID)     | 36.5 |       | "    | 48.0 |    | 76.0 | 62-120 |       |    |  |

NorthCreekAnalytical-Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
SoundViewPlaza, 1302ndAveS  
EdmondsWA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002  
Project Manager: MartinPowers

Reported:  
12/04/02 11:23

### Notes and Definitions

I-06      The analyte concentration may be artificially elevated due to coeluting compounds or components.  
DET      Analyte DETECTED  
ND      Analyte NOT DETECTED or above the reporting limit  
NR      Not Reported  
dry      Sampler results reported on a dry weight basis  
RPD      Relative Percent Difference

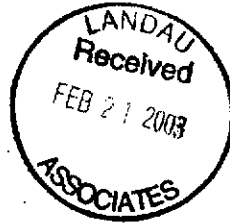
NorthCreek Analytical-Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Jeanne Garthwaite, Project Manager





R6m

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

14 February 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: Conoco Phillips

Enclosed are the results of analyses for samples received by the laboratory on 01/31/03 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

*Jeanne Garthwaite*

Jeanne Garthwaite

Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix    | Date Sampled   | Date Received  |
|-----------|---------------|-----------|----------------|----------------|
| BT-013103 | B3A0665-01    | Water     | 01/31/03 12:00 | 01/31/03 16:15 |
| LAI-7     | B3A0665-02    | Other wet | 01/31/03 16:15 | 01/31/03 16:15 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 8



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.534.9200 fax 907.534.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID**  
**North Creek Analytical - Bothell**

| Analyte                                                                       | Result | Reporting<br>Limit | Units     | Dilution | Batch   | Prepared | Analyzed | Method     | Notes |
|-------------------------------------------------------------------------------|--------|--------------------|-----------|----------|---------|----------|----------|------------|-------|
| LAI-7 (B3A0665-02) Other wet Sampled: 01/31/03 16:15 Received: 01/31/03 16:15 |        |                    |           |          |         |          |          |            |       |
| Gx Range Hydrocarbons                                                         | DET    | 8000               | mg/kg wet | 40       | 3B12003 | 02/12/03 | 02/12/03 | NWTPH-HCID |       |
| Kerosene Range Hydrocarbons                                                   | ND     | 20000              | "         | "        | "       | "        | "        | "          |       |
| Diesel Range Hydrocarbons                                                     | ND     | 20000              | "         | "        | "       | "        | "        | "          |       |
| Insulating Oil Range Hydrocarbons                                             | ND     | 40000              | "         | "        | "       | "        | "        | "          |       |
| Heavy Fuel Oil Range Hydrocarbons                                             | ND     | 40000              | "         | "        | "       | "        | "        | "          |       |
| Lube Oil Range Hydrocarbons                                                   | ND     | 40000              | "         | "        | "       | "        | "        | "          |       |
| Surrogate: 2-FBP                                                              | %      | 50-150             |           |          | "       | "        | "        | "          | S-01  |
| Surrogate: Octacosane                                                         | %      | 50-150             |           |          | "       | "        | "        | "          | S-01  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 8



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-6244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                                 | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|-----------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>BT-013103 (B3A0665-01) Water</b> Sampled: 01/31/03 12:00 Received: 01/31/03 16:15    |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                             | 380000 | 5000               | ug/l  | 100      | 3B10025 | 02/10/03 | 02/11/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                                 | 29400  | 500                | "     | 1000     | "       | "        | 02/11/03 | "              |       |
| Ethylbenzene                                                                            | 9150   | 500                | "     | "        | "       | "        | 02/11/03 | "              |       |
| Xylenes (total)                                                                         | 48800  | 1000               | "     | "        | "       | "        | 02/11/03 | "              |       |
| Surrogate: 4-BFB (FID)                                                                  | 108 %  | 57-125             |       |          | "       | "        | 02/11/03 | "              |       |
| Surrogate: 4-BFB (PID)                                                                  | 91.5 % | 62-120             |       |          | "       | "        | "        | "              |       |
| <b>BT-013103 (B3A0665-01RE1) Water</b> Sampled: 01/31/03 12:00 Received: 01/31/03 16:15 |        |                    |       |          |         |          |          |                |       |
| Toluene                                                                                 | 97500  | 1250               | ug/l  | 2500     | 3B12001 | 02/10/03 | 02/12/03 | NWTPH-Gx/8021B |       |
| Surrogate: 4-BFB (PID)                                                                  | 102 %  | 62-120             |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 8



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

**Hydrocarbon Identification by Washington DOE Method NWTPH-HCID - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

Batch 3B12003: Prepared 02/12/03 Using HCID (WA)

**Blank (3B12003-BLK1)**

|                                   |    |      |       |
|-----------------------------------|----|------|-------|
| Gx Range Hydrocarbons             | ND | 20.0 | mg/kg |
| Kerosene Range Hydrocarbons       | ND | 50.0 | "     |
| Diesel Range Hydrocarbons         | ND | 50.0 | "     |
| Insulating Oil Range Hydrocarbons | ND | 100  | "     |
| Heavy Fuel Oil Range Hydrocarbons | ND | 100  | "     |
| Lube Oil Range Hydrocarbons       | ND | 100  | "     |

|                       |     |   |     |      |        |
|-----------------------|-----|---|-----|------|--------|
| Surrogate: 2-FBP      | DET | " | 160 | 81.2 | 50-150 |
| Surrogate: Octacosane | DET | " | 160 | 91.2 | 50-150 |

**Duplicate (3B12003-DUP1)**

Source: B3B0133-01

|                                   |    |      |           |      |      |    |
|-----------------------------------|----|------|-----------|------|------|----|
| Gx Range Hydrocarbons             | ND | 20.0 | mg/kg dry | 2.06 | 36.1 | 50 |
| Kerosene Range Hydrocarbons       | ND | 50.0 | "         | 17.7 | 3.33 | 50 |
| Diesel Range Hydrocarbons         | ND | 50.0 | "         | 29.5 | 3.01 | 50 |
| Insulating Oil Range Hydrocarbons | ND | 100  | "         | 9.51 | 15.4 | 50 |
| Heavy Fuel Oil Range Hydrocarbons | ND | 100  | "         | 47.0 | 4.98 | 50 |
| Lube Oil Range Hydrocarbons       | ND | 100  | "         | 15.2 | 13.5 | 50 |

|                       |     |   |     |      |        |
|-----------------------|-----|---|-----|------|--------|
| Surrogate: 2-FBP      | DET | " | 175 | 79.4 | 50-150 |
| Surrogate: Octacosane | DET | " | 175 | 90.3 | 50-150 |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3B10025: Prepared 02/10/03 Using EPA 5030B (P/T)**

**Blank (3B10025-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 44.7 |       | "    | 48.0 |  | 93.1 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 47.8 |       | "    | 48.0 |  | 99.6 | 62-120 |  |  |  |

**LCS (3B10025-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 486  | 50.0  | ug/l | 502  |  | 96.8 | 80-120 |  |  |  |
| Benzene                     | 6.59 | 0.500 | "    | 6.21 |  | 106  | 80-120 |  |  |  |
| Toluene                     | 35.6 | 0.500 | "    | 38.1 |  | 93.4 | 80-120 |  |  |  |
| Ethylbenzene                | 8.91 | 0.500 | "    | 8.94 |  | 99.7 | 80-120 |  |  |  |
| Xylenes (total)             | 42.5 | 1.00  | "    | 44.0 |  | 96.6 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 48.1 |       | "    | 48.0 |  | 100  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 45.9 |       | "    | 48.0 |  | 95.6 | 62-120 |  |  |  |

**LCS Dup (3B10025-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 492  | 50.0  | ug/l | 502  |  | 98.0 | 80-120 | 1.23  | 25 |  |
| Benzene                     | 6.08 | 0.500 | "    | 6.21 |  | 97.9 | 80-120 | 8.05  | 40 |  |
| Toluene                     | 34.3 | 0.500 | "    | 38.1 |  | 90.0 | 80-120 | 3.72  | 40 |  |
| Ethylbenzene                | 8.92 | 0.500 | "    | 8.94 |  | 99.8 | 80-120 | 0.112 | 40 |  |
| Xylenes (total)             | 42.6 | 1.00  | "    | 44.0 |  | 96.8 | 80-120 | 0.235 | 40 |  |
| Surrogate: 4-BFB (FID)      | 48.0 |       | "    | 48.0 |  | 100  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 46.2 |       | "    | 48.0 |  | 96.2 | 62-120 |       |    |  |

**Matrix Spike (3B10025-MS1)**

Source: B3A0667-01

|                             |      |       |      |      |       |      |        |  |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 409  | 50.0  | ug/l | 502  | 13.8  | 78.7 | 70-130 |  |  |  |
| Benzene                     | 5.91 | 0.500 | "    | 6.21 | ND    | 95.2 | 80-134 |  |  |  |
| Toluene                     | 31.8 | 0.500 | "    | 38.1 | 0.149 | 83.1 | 68-114 |  |  |  |
| Ethylbenzene                | 7.66 | 0.500 | "    | 8.94 | ND    | 85.7 | 72-128 |  |  |  |
| Xylenes (total)             | 34.5 | 1.00  | "    | 44.0 | ND    | 78.4 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 48.5 |       | "    | 48.0 |       | 101  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 41.8 |       | "    | 48.0 |       | 87.1 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite 8, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denah Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3B10025: Prepared 02/10/03 Using EPA 5030B (P/T)**

**Matrix Spike Dup (3B10025-MSD1)**

Source: B3A0667-01

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 407  | 50.0  | ug/l | 502  | 13.8  | 78.3 | 70-130 | 0.490 | 25 |  |
| Benzene                     | 5.38 | 0.500 | "    | 6.21 | ND    | 86.6 | 80-134 | 9.39  | 40 |  |
| Toluene                     | 31.4 | 0.500 | "    | 38.1 | 0.149 | 82.0 | 68-114 | 1.27  | 40 |  |
| Ethylbenzene                | 7.49 | 0.500 | "    | 8.94 | ND    | 83.8 | 72-128 | 2.24  | 40 |  |
| Xylenes (total)             | 33.8 | 1.00  | "    | 44.0 | ND    | 76.8 | 67-125 | 2.05  | 40 |  |
| Surrogate: 4-BFB (FID)      | 48.1 |       | "    | 48.0 |       | 100  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 41.4 |       | "    | 48.0 |       | 86.2 | 62-120 |       |    |  |

**Batch 3B12001: Prepared 02/12/03 Using EPA 5030B (P/T)**

**Blank (3B12001-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 45.6 |       | "    | 48.0 |  | 95.0 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 49.6 |       | "    | 48.0 |  | 103  | 62-120 |  |  |  |

**CS (3B12001-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 491  | 50.0  | ug/l | 502  |  | 97.8 | 80-120 |  |  |  |
| Benzene                     | 5.42 | 0.500 | "    | 6.21 |  | 87.3 | 80-120 |  |  |  |
| Toluene                     | 31.8 | 0.500 | "    | 38.1 |  | 83.5 | 80-120 |  |  |  |
| Ethylbenzene                | 8.03 | 0.500 | "    | 8.94 |  | 89.8 | 80-120 |  |  |  |
| Xylenes (total)             | 38.2 | 1.00  | "    | 44.0 |  | 86.8 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 49.2 |       | "    | 48.0 |  | 102  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 42.1 |       | "    | 48.0 |  | 87.7 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N., Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite S, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.505.9200 fax 503.505.9210  
Bend 26332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3203 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3B12001: Prepared 02/12/03 Using EPA 5030B (P/T)**

**LCS Dup (3B12001-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 486  | 50.0  | ug/l | 502  |  | 96.8 | 80-120 | 1.02  | 25 |  |
| Benzene                     | 5.43 | 0.500 | "    | 6.21 |  | 87.4 | 80-120 | 0.184 | 40 |  |
| Toluene                     | 31.8 | 0.500 | "    | 38.1 |  | 83.5 | 80-120 | 0.00  | 40 |  |
| Ethylbenzene                | 7.96 | 0.500 | "    | 8.94 |  | 89.0 | 80-120 | 0.876 | 40 |  |
| Xylenes (total)             | 37.9 | 1.00  | "    | 44.0 |  | 86.1 | 80-120 | 0.788 | 40 |  |
| Surrogate: 4-BFB (FID)      | 49.4 |       | "    | 48.0 |  | 103  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 42.3 |       | "    | 48.0 |  | 88.1 | 62-120 |       |    |  |

**Matrix Spike (3B12001-MS1)**

Source: B3B0127-19

|                             |      |       |      |      |        |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 498  | 50.0  | ug/l | 502  | ND     | 99.2 | 70-130 |  |  |  |
| Benzene                     | 5.70 | 0.500 | "    | 6.21 | 0.0960 | 90.2 | 80-134 |  |  |  |
| Toluene                     | 33.0 | 0.500 | "    | 38.1 | 0.279  | 85.9 | 68-114 |  |  |  |
| Ethylbenzene                | 8.19 | 0.500 | "    | 8.94 | 0.0620 | 90.9 | 72-128 |  |  |  |
| Xylenes (total)             | 39.3 | 1.00  | "    | 44.0 | 0.245  | 88.8 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 48.6 |       | "    | 48.0 |        | 101  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 41.9 |       | "    | 48.0 |        | 87.3 | 62-120 |  |  |  |

**Matrix Spike Dup (3B12001-MSD1)**

Source: B3B0127-19

|                             |      |       |      |      |        |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 471  | 50.0  | ug/l | 502  | ND     | 93.8 | 70-130 | 5.57  | 25 |  |
| Benzene                     | 5.61 | 0.500 | "    | 6.21 | 0.0960 | 88.8 | 80-134 | 1.59  | 40 |  |
| Toluene                     | 32.9 | 0.500 | "    | 38.1 | 0.279  | 85.6 | 68-114 | 0.303 | 40 |  |
| Ethylbenzene                | 8.04 | 0.500 | "    | 8.94 | 0.0620 | 89.2 | 72-128 | 1.85  | 40 |  |
| Xylenes (total)             | 38.7 | 1.00  | "    | 44.0 | 0.245  | 87.4 | 67-125 | 1.54  | 40 |  |
| Surrogate: 4-BFB (FID)      | 49.0 |       | "    | 48.0 |        | 102  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 42.7 |       | "    | 48.0 |        | 89.0 | 62-120 |       |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
02/14/03 13:36

### Notes and Definitions

- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



LANDAU ASSOCIATES  
☐ Seattle (Edmonds) (425) 778-0907  
☐ Tacoma (253) 926-2493  
☐ Spokane (509) 327-9737  
☐ Portland (Tigard) (503) 443-6010

# Chain-of-Custody Record

Date 1/31/03  
Page 1 of 1

|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| Project Name <u>Conce Phillips</u>                                                                                                                                     |         | Project No. <u>766002.012</u>                                                                                                              |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
| Project Location/Event <u>Renton WA</u>                                                                                                                                |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
| Sampler's Name <u>Chris Kimmel</u>                                                                                                                                     |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
| Project Contact <u>Chris Kimmel</u>                                                                                                                                    |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
| Send Results To <u>↓</u>                                                                                                                                               |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
| Sample I.D.                                                                                                                                                            | Date    | Time                                                                                                                                       | Matrix    | No. of Containers                                                                                  | Testing Parameters                     | Observations/Comments                                                                          |  |  |  |  |  |  |  |
| B7-013103                                                                                                                                                              | 1/31/03 | 1200                                                                                                                                       | 1420      | 3                                                                                                  | ✓                                      | 01 HOLD LAT-7 UNTIL                                                                            |  |  |  |  |  |  |  |
| LA1-7                                                                                                                                                                  | 1/31/03 | 1615                                                                                                                                       | Product 1 |                                                                                                    |                                        | 02 FURTHER DIRECTED                                                                            |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
|                                                                                                                                                                        |         |                                                                                                                                            |           |                                                                                                    |                                        |                                                                                                |  |  |  |  |  |  |  |
| Special Shipment/Handling or Storage Requirements <u>Store on ice</u>                                                                                                  |         |                                                                                                                                            |           |                                                                                                    | Method of Shipment <u>Hand deliver</u> |                                                                                                |  |  |  |  |  |  |  |
| Relinquished by<br>Signature <u>Christie Kimmel</u><br>Printed Name <u>Christie Kimmel</u><br>Company <u>Landau Associates</u><br>Date <u>1/31/03</u> Time <u>1615</u> |         | Received by<br>Signature <u>SPRAY TONY</u><br>Printed Name <u>SPRAY TONY</u><br>Company <u>NCA</u><br>Date <u>1/31/03</u> Time <u>1615</u> |           | Relinquished by<br>Signature _____<br>Printed Name _____<br>Company _____<br>Date _____ Time _____ |                                        | Received by<br>Signature _____<br>Printed Name _____<br>Company _____<br>Date _____ Time _____ |  |  |  |  |  |  |  |

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



05 March 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 02/26/03 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID      | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|----------------|---------------|--------|----------------|----------------|
| HA-5           | B3B0527-01    | Water  | 02/24/03 11:35 | 02/26/03 14:30 |
| HA-8           | B3B0527-02    | Water  | 02/24/03 11:55 | 02/26/03 14:30 |
| HA-13          | B3B0527-03    | Water  | 02/24/03 12:30 | 02/26/03 14:30 |
| HA-15          | B3B0527-04    | Water  | 02/24/03 13:30 | 02/26/03 14:30 |
| LAI-1          | B3B0527-05    | Water  | 02/26/03 11:10 | 02/26/03 14:30 |
| LAI-3          | B3B0527-06    | Water  | 02/26/03 10:36 | 02/26/03 14:30 |
| LAI-10         | B3B0527-07    | Water  | 02/26/03 09:53 | 02/26/03 14:30 |
| LAI-11         | B3B0527-08    | Water  | 02/26/03 09:22 | 02/26/03 14:30 |
| LAI-14         | B3B0527-09    | Water  | 02/25/03 09:45 | 02/26/03 14:30 |
| LAI-16         | B3B0527-10    | Water  | 02/25/03 11:00 | 02/26/03 14:30 |
| TOSCO EFFLUENT | B3B0527-11    | Water  | 02/25/03 13:55 | 02/26/03 14:30 |
| LAI-17         | B3B0527-12    | Water  | 02/26/03 09:58 | 02/26/03 14:30 |
| BAKER TANK     | B3B0527-13    | Water  | 02/26/03 11:56 | 02/26/03 14:30 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                   | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| HA-5 (B3B0527-01) Water Sampled: 02/24/03 11:35 Received: 02/26/03 14:30  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                               | 65000  | 10000           | ug/l  | 200      | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                   | 8620   | 100             | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                   | 17200  | 100             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                              | 685    | 100             | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                           | 3260   | 200             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                    | 92.1 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                    | 99.4 % | 62-120          |       |          | "       | "        | "        | "              |       |
| HA-8 (B3B0527-02) Water Sampled: 02/24/03 11:55 Received: 02/26/03 14:30  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                               | 5720   | 500             | ug/l  | 10       | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                   | 14.6   | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                   | 74.5   | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                              | 232    | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                           | 1570   | 10.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                    | 97.5 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                    | 100 %  | 62-120          |       |          | "       | "        | "        | "              |       |
| HA-13 (B3B0527-03) Water Sampled: 02/24/03 12:30 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                               | ND     | 50.0            | ug/l  | 1        | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                   | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                   | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                              | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                           | 1.08   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                    | 90.8 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                    | 100 %  | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9406 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

#### North Creek Analytical - Bothell

| Analyte                                                                   | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| HA-15 (B3B0527-04) Water Sampled: 02/24/03 13:30 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                               | 1250   | 250             | ug/l  | 5        | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                   | 12.9   | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                   | 5.57   | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                              | 9.80   | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                           | 69.6   | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                    | 92.3 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                    | 95.6 % | 62-120          |       |          | "       | "        | "        | "              |       |
| LAI-1 (B3B0527-05) Water Sampled: 02/26/03 11:10 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                               | 15100  | 1000            | ug/l  | 20       | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                   | 2150   | 50.0            | "     | 100      | "       | "        | 03/03/03 | "              |       |
| Toluene                                                                   | 3680   | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                              | 116    | 10.0            | "     | 20       | "       | "        | 03/03/03 | "              |       |
| Xylenes (total)                                                           | 979    | 20.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                    | 92.7 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                    | 97.9 % | 62-120          |       |          | "       | "        | "        | "              |       |
| LAI-3 (B3B0527-06) Water Sampled: 02/26/03 10:36 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                               | 558    | 50.0            | ug/l  | 1        | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                   | 70.1   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                   | 159    | 2.50            | "     | 5        | "       | "        | 03/04/03 | "              |       |
| Ethylbenzene                                                              | 6.42   | 0.500           | "     | 1        | "       | "        | 03/03/03 | "              |       |
| Xylenes (total)                                                           | 32.6   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                    | 92.7 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                    | 97.9 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

#### North Creek Analytical - Bothell

| Analyte                                                                           | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|-----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>LAI-10 (B3B0527-07) Water</b> Sampled: 02/26/03 09:53 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | ND     | 50.0            | ug/l  | 1        | 3B27015 | 03/03/03 | 03/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | 0.991  | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | 1.37   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 91.2 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 101 %  | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>LAI-11 (B3B0527-08) Water</b> Sampled: 02/26/03 09:22 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | ND     | 50.0            | ug/l  | 1        | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 89.4 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 100 %  | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>LAI-14 (B3B0527-09) Water</b> Sampled: 02/25/03 09:45 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | 50.0   | 50.0            | ug/l  | 1        | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 91.2 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 101 %  | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**LAI-16 (B3B0527-10) Water** Sampled: 02/25/03 11:00 Received: 02/26/03 14:30

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 0.679  | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 1.09   | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 90.8 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 101 %  | 62-120 |      |   | "       | "        | "        | "              |  |

**TOSCO EFFLUENT (B3B0527-11) Water** Sampled: 02/25/03 13:55 Received: 02/26/03 14:30

|                             |        |        |      |    |         |          |          |                |  |
|-----------------------------|--------|--------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 16100  | 2500   | ug/l | 50 | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 1350   | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Toluene                     | 2350   | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Ethylbenzene                | 125    | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 1030   | 50.0   | "    | "  | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 93.5 % | 57-125 |      |    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 95.6 % | 62-120 |      |    | "       | "        | "        | "              |  |

**LAI-17 (B3B0527-12) Water** Sampled: 02/26/03 09:58 Received: 02/26/03 14:30

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3B27015 | 03/03/03 | 03/03/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 0.757  | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 1.18   | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 90.2 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 100 %  | 62-120 |      |   | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 13



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
03/05/03 14:00

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Result | Reporting | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|--------------------------------------------------------------------------------------|--------|-----------|-------|----------|---------|----------|----------|----------------|-------|
|                                                                                      |        | Limit     |       |          |         |          |          |                |       |
| BAKER TANK (B3B0527-13) Water    Sampled: 02/26/03 11:56    Received: 02/26/03 14:30 |        |           |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                          | 320000 | 50000     | ug/l  | 1000     | 3B27015 | 03/03/03 | 03/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                              | 10400  | 500       | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                              | 64800  | 500       | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                         | 7300   | 500       | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                      | 41900  | 1000      | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                               | 93.8 % | 57-125    |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                               | 99.8 % | 62-120    |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomerly, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

### Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

#### North Creek Analytical - Bothell

| Analyte                                                                          | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>HA-5 (B3B0527-01) Water</b> Sampled: 02/24/03 11:35 Received: 02/26/03 14:30  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                        | 0.476  | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/01/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                 | 91.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                            | 94.0 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-8 (B3B0527-02) Water</b> Sampled: 02/24/03 11:55 Received: 02/26/03 14:30  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                        | 0.767  | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/01/03 | NWTPH-Dx | D-06  |
| Lube Oil Range Hydrocarbons                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                 | 88.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                            | 88.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-13 (B3B0527-03) Water</b> Sampled: 02/24/03 12:30 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                        | ND     | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/01/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                 | 84.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                            | 87.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-15 (B3B0527-04) Water</b> Sampled: 02/24/03 13:30 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                        | 0.481  | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/01/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                 | 86.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                            | 88.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-1 (B3B0527-05) Water</b> Sampled: 02/26/03 11:10 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                        | 1.02   | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx | D-06  |
| Lube Oil Range Hydrocarbons                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                 | 83.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                            | 95.0 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

### Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

#### North Creek Analytical - Bothell

| Analyte                                                                           | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|-----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-3 (B3B0527-06) Water</b> Sampled: 02/26/03 10:36 Received: 02/26/03 14:30  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 83.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 91.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-10 (B3B0527-07) Water</b> Sampled: 02/26/03 09:53 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 80.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 87.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-11 (B3B0527-08) Water</b> Sampled: 02/26/03 09:22 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.401  | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx | D-06  |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 76.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 80.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-14 (B3B0527-09) Water</b> Sampled: 02/25/03 09:45 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.269  | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 58.6 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 73.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-16 (B3B0527-10) Water</b> Sampled: 02/25/03 11:00 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 71.9 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 83.1 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

| Analyte                                                                                   | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|-------------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>TOSCO EFFLUENT (B3B0527-11) Water</b> Sampled: 02/25/03 13:55 Received: 02/26/03 14:30 |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                                 | 5.73   | 2.50            | mg/l  | 10       | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                               | 1.62   | 0.500           | "     | 1        | "       | "        | 03/03/03 | "        | D-10  |
| Surrogate: 2-FBP                                                                          | 109 %  | 50-150          |       |          | "       | "        | 03/02/03 | "        |       |
| Surrogate: Octacosane                                                                     | 115 %  | 50-150          |       |          | "       | "        | 03/03/03 | "        |       |
| <b>LAI-17 (B3B0527-12) Water</b> Sampled: 02/26/03 09:58 Received: 02/26/03 14:30         |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                                 | ND     | 0.250           | mg/l  | 1        | 3B28004 | 02/28/03 | 03/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                          | 80.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                     | 88.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>BAKER TANK (B3B0527-13) Water</b> Sampled: 02/26/03 11:56 Received: 02/26/03 14:30     |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                                 | 58.4   | 5.00            | mg/l  | 20       | 3B28004 | 02/28/03 | 03/03/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                               | ND     | 5.00            | "     | 10       | "       | "        | 03/02/03 | "        |       |
| Surrogate: 2-FBP                                                                          | %      | 50-150          |       |          | "       | "        | 03/03/03 | "        | S-01  |
| Surrogate: Octacosane                                                                     | 86.8 % | 50-150          |       |          | "       | "        | 03/02/03 | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3B27015: Prepared 03/03/03 Using EPA 5030B (MeOH)**

**Blank (3B27015-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 43.2 |       | "    | 48.0 |  | 90.0 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 47.9 |       | "    | 48.0 |  | 99.8 | 62-120 |  |  |  |

**LCS (3B27015-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 501  | 50.0  | ug/l | 502  |  | 99.8 | 80-120 |  |  |  |
| Benzene                     | 5.79 | 0.500 | "    | 6.21 |  | 93.2 | 80-120 |  |  |  |
| Toluene                     | 31.6 | 0.500 | "    | 38.1 |  | 82.9 | 80-120 |  |  |  |
| Ethylbenzene                | 7.86 | 0.500 | "    | 8.94 |  | 87.9 | 80-120 |  |  |  |
| Xylenes (total)             | 38.3 | 1.00  | "    | 44.0 |  | 87.0 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 47.5 |       | "    | 48.0 |  | 99.0 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 41.5 |       | "    | 48.0 |  | 86.5 | 62-120 |  |  |  |

**LCS Dup (3B27015-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 487  | 50.0  | ug/l | 502  |  | 97.0 | 80-120 | 2.83  | 25 |  |
| Benzene                     | 5.72 | 0.500 | "    | 6.21 |  | 92.1 | 80-120 | 1.22  | 40 |  |
| Toluene                     | 31.1 | 0.500 | "    | 38.1 |  | 81.6 | 80-120 | 1.59  | 40 |  |
| Ethylbenzene                | 7.84 | 0.500 | "    | 8.94 |  | 87.7 | 80-120 | 0.255 | 40 |  |
| Xylenes (total)             | 37.8 | 1.00  | "    | 44.0 |  | 85.9 | 80-120 | 1.31  | 40 |  |
| Surrogate: 4-BFB (FID)      | 47.6 |       | "    | 48.0 |  | 99.2 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 42.1 |       | "    | 48.0 |  | 87.7 | 62-120 |       |    |  |

**Matrix Spike (3B27015-MS1)**

Source: B3B0527-08

|                             |      |       |      |      |        |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 514  | 50.0  | ug/l | 502  | 19.5   | 98.5 | 70-130 |  |  |  |
| Benzene                     | 6.03 | 0.500 | "    | 6.21 | 0.102  | 95.5 | 80-134 |  |  |  |
| Toluene                     | 32.9 | 0.500 | "    | 38.1 | 0.422  | 85.2 | 68-114 |  |  |  |
| Ethylbenzene                | 7.84 | 0.500 | "    | 8.94 | 0.0982 | 86.6 | 72-128 |  |  |  |
| Xylenes (total)             | 40.0 | 1.00  | "    | 44.0 | 0.836  | 89.0 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 47.1 |       | "    | 48.0 |        | 98.1 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 41.1 |       | "    | 48.0 |        | 85.6 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N. Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3B27015: Prepared 03/03/03 Using EPA 5030B (MeOH)**

**Matrix Spike Dup (3B27015-MSD1)**

**Source: B3B0527-08**

|                             |      |       |      |      |        |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 500  | 50.0  | ug/l | 502  | 19.5   | 95.7 | 70-130 | 2.76  | 25 |  |
| Benzene                     | 6.04 | 0.500 | "    | 6.21 | 0.102  | 95.6 | 80-134 | 0.166 | 40 |  |
| Toluene                     | 33.3 | 0.500 | "    | 38.1 | 0.422  | 86.3 | 68-114 | 1.21  | 40 |  |
| Ethylbenzene                | 7.93 | 0.500 | "    | 8.94 | 0.0982 | 87.6 | 72-128 | 1.14  | 40 |  |
| Xylenes (total)             | 40.7 | 1.00  | "    | 44.0 | 0.836  | 90.6 | 67-125 | 1.73  | 40 |  |
| Surrogate: 4-BFB (FID)      | 47.1 |       | "    | 48.0 |        | 98.1 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 41.4 |       | "    | 48.0 |        | 86.2 | 62-120 |       |    |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 11 of 13



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.8200 fax 907.334.8210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|--------------|-------|

Batch 3B28004: Prepared 02/28/03 Using EPA 3520C

**Blank (3B28004-BLK1)**

|                             |       |       |      |       |  |      |        |  |
|-----------------------------|-------|-------|------|-------|--|------|--------|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |      |        |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |      |        |  |
| Surrogate: 2-FBP            | 0.253 |       | "    | 0.320 |  | 79.1 | 50-150 |  |
| Surrogate: Octacosane       | 0.270 |       | "    | 0.320 |  | 84.4 | 50-150 |  |

**LCS (3B28004-BS1)**

|                           |       |       |      |       |  |      |        |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|
| Diesel Range Hydrocarbons | 1.64  | 0.250 | mg/l | 2.00  |  | 82.0 | 63-107 |  |
| Surrogate: 2-FBP          | 0.284 |       | "    | 0.320 |  | 88.8 | 50-150 |  |

**LCS Dup (3B28004-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|
| Diesel Range Hydrocarbons | 1.62  | 0.250 | mg/l | 2.00  |  | 81.0 | 63-107 | 1.23 | 40 |
| Surrogate: 2-FBP          | 0.255 |       | "    | 0.320 |  | 79.7 | 50-150 |      |    |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244

425.420.9200 fax 425.420.9210

Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 3209 Denali Street, Anchorage, AK 99503

907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/05/03 14:00

### Notes and Definitions

- D-06 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.
- D-10 The heavy oil range organics present are due to hydrocarbons eluting primarily in the diesel range.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 13 of 13



2010 Week 1  
Suite 1000  
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132  
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

AX 48  
FAX 924-9290  
FAX 924-9290  
FAX 906-9210  
FAX 382-7588

# CHAIN OF CUSTODY REPORT

Work Order #: B3B0527

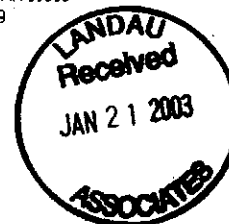
|                                       |                    |                                            |  |
|---------------------------------------|--------------------|--------------------------------------------|--|
| CLIENT: Landan Associates             |                    | INVOICE TO: Landan Assoc.<br>Martin Powers |  |
| REPORT TO: Martin Powers              |                    |                                            |  |
| ADDRESS: 130 2nd Ave. S., Edmonds, WA |                    |                                            |  |
| PHONE: 425-778-0907                   | FAX: 425-778-6409  | P.O. NUMBER:                               |  |
| PROJECT NAME: Tosco-Renton            |                    | REQUESTED ANALYSES                         |  |
| PROJECT NUMBER: 706002.012            |                    |                                            |  |
| SAMPLED BY: C. Kilday                 |                    |                                            |  |
| CLIENT SAMPLE IDENTIFICATION          | SAMPLING DATE/TIME |                                            |  |
| 1. HA-5                               | 2/24/03 11:35      | X                                          |  |
| 2. HA-8                               | 11:55              | X                                          |  |
| 3. HA-13                              | 12:30              | X                                          |  |
| 4. HA-15                              | 13:30              | X                                          |  |
| 5. LAI-1                              | 2/26/03 11:10      | X                                          |  |
| 6. LAI-3                              | 10:36              | X                                          |  |
| 7. LAI-10                             | 09:53              | X                                          |  |
| 8. LAI-11                             | 09:22              | X                                          |  |
| 9. LAI-14                             | 2/25/03 09:45      | X                                          |  |
| 10. LAI-16                            | 2/25/03 11:00      | X                                          |  |
| 11. TOSCO EFFLUENT                    | 2/25/03 13:55      | X                                          |  |
| 12. LAI-17                            | 2/26/03 09:58      | X                                          |  |
| 13. BAKER TANK                        | 2/26/03 11:56      | X                                          |  |
| 14.                                   |                    |                                            |  |
| 15.                                   |                    |                                            |  |
| RELINQUISHED BY: Catherine Kilday     |                    | DATE: 2/26/03                              |  |
| PRINT NAME: Catherine Kilday          |                    | TIME: 13:00                                |  |
| FIRM: NCA                             |                    | FIRM: NCA                                  |  |
| RELINQUISHED BY: Aaron Dockter        |                    | DATE: 2/26/03                              |  |
| PRINT NAME: Aaron Dockter             |                    | TIME: 14:30                                |  |
| FIRM: NCA                             |                    | FIRM: NCA                                  |  |
| ADDITIONAL REMARKS:                   |                    |                                            |  |
| COC REV 399                           |                    |                                            |  |

|                                                                |            |          |           |    |   |   |    |
|----------------------------------------------------------------|------------|----------|-----------|----|---|---|----|
| TURNAROUND REQUEST in Business Days*                           |            |          |           |    |   |   |    |
| Organic & Inorganic Analyses                                   |            |          |           |    |   |   |    |
| 10                                                             | 7          | 5        | 4         | 3  | 2 | 1 | <1 |
| STD.                                                           |            |          |           |    |   |   |    |
| Petroleum Hydrocarbon Analyses                                 |            |          |           |    |   |   |    |
| 4                                                              | 3          | 2        | 1         | <1 |   |   |    |
| STD.                                                           |            |          |           |    |   |   |    |
| OTHER: Please Specify                                          |            |          |           |    |   |   |    |
| *Turnaround Request less than standard may incur Rush Charges. |            |          |           |    |   |   |    |
| MATRIX (W, S, O)                                               | # OF CONT. | COMMENTS | NCA WO ID |    |   |   |    |
| W                                                              | 4          | B3B0527  | 01        |    |   |   |    |
|                                                                | 4          |          | 02        |    |   |   |    |
|                                                                | 4          |          | 03        |    |   |   |    |
|                                                                | 4          |          | 04        |    |   |   |    |
|                                                                | 5          |          | 05        |    |   |   |    |
|                                                                | 5          |          | 06        |    |   |   |    |
|                                                                | 5          |          | 07        |    |   |   |    |
|                                                                | 5          |          | 08        |    |   |   |    |
|                                                                | 5          |          | 09        |    |   |   |    |
|                                                                | 5          |          | 10        |    |   |   |    |
|                                                                | 5          |          | 11        |    |   |   |    |
|                                                                | 5          |          | 12        |    |   |   |    |
|                                                                | 5          |          | 13        |    |   |   |    |



706002

**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339



15 January 2003

Martin Powers

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129  
RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 12/31/02 12:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9336 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

**Reported:**  
01/15/03 15:06

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| BK-1      | B2L0677-01    | Water  | 12/30/02 11:45 | 12/31/02 12:10 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 1 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

Reported:  
01/15/03 15:06

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                        | Result | Reporting | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|--------------------------------------------------------------------------------|--------|-----------|-------|----------|---------|----------|----------|----------------|-------|
|                                                                                |        | Limit     |       |          |         |          |          |                |       |
| BK-1 (B2L0677-01) Water    Sampled: 12/30/02 11:45    Received: 12/31/02 12:10 |        |           |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                    | 342000 | 50000     | ug/l  | 1000     | 3A09001 | 01/09/03 | 01/09/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                        | 26900  | 500       | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                        | 94300  | 500       | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                   | 6680   | 500       | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                | 36000  | 1000      | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                         | 91.9 % | 57-125    |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                         | 97.3 % | 62-120    |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9339 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

Reported:  
01/15/03 15:06

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

| Analyte                                                                  | Result | Reporting | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|--------------------------------------------------------------------------|--------|-----------|-------|----------|---------|----------|----------|----------|-------|
|                                                                          |        | Limit     |       |          |         |          |          |          |       |
| BK-1 (B2L0677-01) Water Sampled: 12/30/02 11:45 Received: 12/31/02 12:10 |        |           |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                | 27.5   | 5.00      | mg/l  | 20       | 3A04002 | 01/04/03 | 01/06/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                              | ND     | 10.0      | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                         | 124 %  | 50-150    |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                    | 120 %  | 50-150    |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

Reported:  
01/15/03 15:06

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3A09001: Prepared 01/09/03 Using EPA 5030B (P/T)**

**Blank (3A09001-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 43.5 |       | "    | 48.0 |  | 90.6 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 46.9 |       | "    | 48.0 |  | 97.7 | 62-120 |  |  |

**LCS (3A09001-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 491  | 50.0  | ug/l | 502  |  | 97.8 | 80-120 |  |  |
| Benzene                     | 7.38 | 0.500 | "    | 6.21 |  | 119  | 80-120 |  |  |
| Toluene                     | 36.0 | 0.500 | "    | 38.1 |  | 94.5 | 80-120 |  |  |
| Ethylbenzene                | 9.26 | 0.500 | "    | 8.94 |  | 104  | 80-120 |  |  |
| Xylenes (total)             | 45.1 | 1.00  | "    | 44.0 |  | 102  | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 47.0 |       | "    | 48.0 |  | 97.9 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 45.1 |       | "    | 48.0 |  | 94.0 | 62-120 |  |  |

**LCS Dup (3A09001-BS1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 482  | 50.0  | ug/l | 502  |  | 96.0 | 80-120 | 1.85  | 25 |
| Benzene                     | 7.05 | 0.500 | "    | 6.21 |  | 114  | 80-120 | 4.57  | 40 |
| Toluene                     | 36.3 | 0.500 | "    | 38.1 |  | 95.3 | 80-120 | 0.830 | 40 |
| Ethylbenzene                | 9.24 | 0.500 | "    | 8.94 |  | 103  | 80-120 | 0.216 | 40 |
| Xylenes (total)             | 45.4 | 1.00  | "    | 44.0 |  | 103  | 80-120 | 0.663 | 40 |
| Surrogate: 4-BFB (FID)      | 47.1 |       | "    | 48.0 |  | 98.1 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 45.6 |       | "    | 48.0 |  | 95.0 | 62-120 |       |    |

**Matrix Spike (3A09001-MS1)**

Source: B2L0682-03

|                             |      |       |      |      |       |      |        |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|
| Gasoline Range Hydrocarbons | 521  | 50.0  | ug/l | 502  | ND    | 104  | 70-130 |  |  |
| Benzene                     | 7.37 | 0.500 | "    | 6.21 | ND    | 119  | 80-134 |  |  |
| Toluene                     | 37.4 | 0.500 | "    | 38.1 | 0.140 | 97.8 | 68-114 |  |  |
| Ethylbenzene                | 9.69 | 0.500 | "    | 8.94 | ND    | 108  | 72-128 |  |  |
| Xylenes (total)             | 46.9 | 1.00  | "    | 44.0 | ND    | 107  | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 47.1 |       | "    | 48.0 |       | 98.1 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 45.1 |       | "    | 48.0 |       | 94.0 | 62-120 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99205-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

Reported:  
01/15/03 15:06

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3A09001: Prepared 01/09/03 Using EPA 5030B (P/T)**

**Matrix Spike Dup (3A09001-MSD1)**

**Source: B2L0682-03**

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 518  | 50.0  | ug/l | 502  | ND    | 103  | 70-130 | 0.577 | 25 |  |
| Benzene                     | 7.38 | 0.500 | "    | 6.21 | ND    | 119  | 80-134 | 0.136 | 40 |  |
| Toluene                     | 37.8 | 0.500 | "    | 38.1 | 0.140 | 98.8 | 68-114 | 1.06  | 40 |  |
| Ethylbenzene                | 9.70 | 0.500 | "    | 8.94 | ND    | 109  | 72-128 | 0.103 | 40 |  |
| Xylenes (total)             | 47.3 | 1.00  | "    | 44.0 | ND    | 108  | 67-125 | 0.849 | 40 |  |
| Surrogate: 4-BFB (FID)      | 47.5 |       | "    | 48.0 |       | 99.0 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 45.5 |       | "    | 48.0 |       | 94.8 | 62-120 |       |    |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9330 fax 907.334.9333

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

Reported:  
01/15/03 15:06

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3A04002: Prepared 01/04/03 Using EPA 3520C**

**Blank (3A04002-BLK1)**

|                             |       |       |      |       |  |      |        |  |  |  |
|-----------------------------|-------|-------|------|-------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |      |        |  |  |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |      |        |  |  |  |
| Surrogate: 2-FBP            | 0.265 |       | "    | 0.320 |  | 82.8 | 50-150 |  |  |  |
| Surrogate: Octacosane       | 0.309 |       | "    | 0.320 |  | 96.6 | 50-150 |  |  |  |

**LCS (3A04002-BS1)**

|                           |       |       |      |       |  |      |        |  |  |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 1.61  | 0.250 | mg/l | 2.00  |  | 80.5 | 63-107 |  |  |  |
| Surrogate: 2-FBP          | 0.310 |       | "    | 0.320 |  | 96.9 | 50-150 |  |  |  |

**LCS Dup (3A04002-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |  |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 1.58  | 0.250 | mg/l | 2.00  |  | 79.0 | 63-107 | 1.88 | 40 |  |
| Surrogate: 2-FBP          | 0.314 |       | "    | 0.320 |  | 98.1 | 50-150 |      |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244

425.420.9200 fax 425.420.9210

Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 3209 Denali Street, Anchorage, AK 99503

907.334.9330 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 3485-LAI-001  
Project Manager: Martin Powers

Reported:  
01/15/03 15:06

### Notes and Definitions

D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 7

# TOSCO CHAIN OF CUSTODY REPORT

**TOSCO INFORMATION**

Facility Number: WNO. 3485

Site Address: 2423 Lind Ave SW

City, State, ZIP: Renton, WA

Project/AWO Code 3485-LAI-001

Tosco Manager: Tim Johnson

FACILITY TYPE: (check one)

☐ Brown Bear ☐ Former 76 Site ☐ Other

☒ Terminal/Bulk Plant

Other \_\_\_\_\_

## **CONSULTANT INFORMATION**

Firm: Landau Assoc. Project# 706002,012

Address: 130 2nd Ave S.

Edmonds, WA 98020

Phone: (425) 778-0907 Fax: 778-6409

Project Manager: M. Revens  
E-mail: mpowers@landawinc.

Sample Collection by: Nazhan Joyce

Quality Assurance Data Level:

**B**

**A**

### A: Standard Summary

**B: Standard + Chromatograms**

Laboratory Turnaround Days:

10 5 3 2 1

### 10 Day - Standard

NCA SAMPLE NUMBER

B260677-01

Relinquished by:

Firm:

Date &amp; Time

**Received by:**

**Firm:**

Date &amp; Time

**Comments:**

5.20%

Comments:

Page 1 of 1

Rev. Tos 3.3.2/99

**Distribution:** White - Laboratory      Yellow - Consultant      Photocopy - Tosco



706002  
T-2  
LAB  
DATA

**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

14 January 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: Conoco Phillips

Enclosed are the results of analyses for samples received by the laboratory on 01/07/03 14:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite

Project Manager



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9330 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
01/14/03 11:19

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID    | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|--------------|---------------|--------|----------------|----------------|
| LAI (010303) | B3A0091-01    | Soil   | 01/03/03 12:00 | 01/07/03 14:10 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 1 of 8



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9330 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/14/03 11:19

**Volatile Petroleum Products by NWTPH-Gx**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting |           | Units | Dilution | Batch    | Prepared | Analyzed | Method | Notes |
|---------------------------------------------------------------------------------------|--------|-----------|-----------|-------|----------|----------|----------|----------|--------|-------|
|                                                                                       |        | Limit     |           |       |          |          |          |          |        |       |
| LAI (010303) (B3A0091-01) Soil    Sampled: 01/03/03 12:00    Received: 01/07/03 14:10 |        |           |           |       |          |          |          |          |        |       |
| Gasoline Range Hydrocarbons                                                           | ND     | 5.00      | mg/kg dry | 1     | 3A10038  | 01/10/03 | 01/10/03 | NWTPH-Gx |        |       |
| Surrogate: 4-BFB (FID)                                                                | 96.2 % | 59-125    |           |       |          | "        | "        | "        | "      |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/14/03 11:19

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

| Analyte                                                                         | Result | Reporting<br>Limit | Units     | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|---------------------------------------------------------------------------------|--------|--------------------|-----------|----------|---------|----------|----------|----------|-------|
| LAI (010303) (B3A0091-01) Soil Sampled: 01/03/03 12:00 Received: 01/07/03 14:10 |        |                    |           |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                       | 12.8   | 10.0               | mg/kg dry | 1        | 3A0803S | 01/08/03 | 01/09/03 | NWTPH-Dx | D-09  |
| Lube Oil Range Hydrocarbons                                                     | 55.8   | 25.0               | "         | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                | 75.2 % | 50-150             |           |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                           | 89.4 % | 50-150             |           |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
01/14/03 11:19

**Physical Parameters by APHA/ASTM/EPA Methods**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting | Units | Dilution | Batch   | Prepared | Analyzed | Method        | Notes |
|---------------------------------------------------------------------------------------|--------|-----------|-------|----------|---------|----------|----------|---------------|-------|
|                                                                                       |        | Limit     |       |          |         |          |          |               |       |
| LAI (010303) (B3A0091-01) Soil    Sampled: 01/03/03 12:00    Received: 01/07/03 14:10 |        |           |       |          |         |          |          |               |       |
| Dry Weight                                                                            | 80.3   | 1.00      | %     | 1        | 3A08024 | 01/08/03 | 01/09/03 | BSOPSPL003R07 |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/14/03 11:19

**Volatile Petroleum Products by NWTPH-Gx - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 3A10038: Prepared 01/10/03 Using EPA 5030B (P/T)

**Blank (3A10038-BLK1)**

|                             |      |      |       |      |  |     |        |  |  |  |
|-----------------------------|------|------|-------|------|--|-----|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 5.00 | mg/kg |      |  |     |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 4.32 |      | "     | 4.00 |  | 108 | 59-125 |  |  |  |

**LCS (3A10038-BS1)**

|                             |      |      |       |      |  |     |        |  |  |  |
|-----------------------------|------|------|-------|------|--|-----|--------|--|--|--|
| Gasoline Range Hydrocarbons | 29.1 | 5.00 | mg/kg | 27.5 |  | 106 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 4.42 |      | "     | 4.00 |  | 110 | 59-125 |  |  |  |

**LCS Dup (3A10038-BSD1)**

|                             |      |      |       |      |  |     |        |      |    |  |
|-----------------------------|------|------|-------|------|--|-----|--------|------|----|--|
| Gasoline Range Hydrocarbons | 28.3 | 5.00 | mg/kg | 27.5 |  | 103 | 80-120 | 2.79 | 40 |  |
| Surrogate: 4-BFB (FID)      | 4.44 |      | "     | 4.00 |  | 111 | 59-125 |      |    |  |

**Matrix Spike (3A10038-MS1)**

Source: B3A0183-01

|                             |      |      |           |      |       |      |        |  |  |  |
|-----------------------------|------|------|-----------|------|-------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 23.9 | 5.00 | mg/kg dry | 35.3 | 0.895 | 65.2 | 53-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 4.23 |      | "         | 5.13 |       | 82.5 | 59-125 |  |  |  |

**Matrix Spike Dup (3A10038-MSD1)**

Source: B3A0183-01

|                             |      |      |           |      |       |      |        |      |    |  |
|-----------------------------|------|------|-----------|------|-------|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 26.1 | 5.00 | mg/kg dry | 35.3 | 0.895 | 71.4 | 53-120 | 8.80 | 40 |  |
| Surrogate: 4-BFB (FID)      | 4.56 |      | "         | 5.13 |       | 88.9 | 59-125 |      |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9330 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/14/03 11:19

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3A08035: Prepared 01/08/03 Using EPA 3550B**

**Blank (3A08035-BLK1)**

|                             |      |      |       |      |  |      |        |  |  |  |
|-----------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons   | ND   | 10.0 | mg/kg |      |  |      |        |  |  |  |
| Lube Oil Range Hydrocarbons | ND   | 25.0 | "     |      |  |      |        |  |  |  |
| Surrogate: 2-FBP            | 7.93 |      | "     | 10.7 |  | 74.1 | 50-150 |  |  |  |
| Surrogate: Octacosane       | 9.46 |      | "     | 10.7 |  | 88.4 | 50-150 |  |  |  |

**LCS (3A08035-BS1)**

|                           |      |      |       |      |  |      |        |  |  |  |
|---------------------------|------|------|-------|------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 53.7 | 10.0 | mg/kg | 66.7 |  | 80.5 | 72-113 |  |  |  |
| Surrogate: 2-FBP          | 8.48 |      | "     | 10.7 |  | 79.3 | 50-150 |  |  |  |

**LCS Dup (3A08035-BSD1)**

|                           |      |      |       |      |  |      |        |      |    |  |
|---------------------------|------|------|-------|------|--|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 51.0 | 10.0 | mg/kg | 66.7 |  | 76.5 | 72-113 | 5.16 | 40 |  |
| Surrogate: 2-FBP          | 7.77 |      | "     | 10.7 |  | 72.6 | 50-150 |      |    |  |

**Duplicate (3A08035-DUP1)**

Source: B3A0123-01

|                             |      |      |           |      |    |      |        |    |    |  |
|-----------------------------|------|------|-----------|------|----|------|--------|----|----|--|
| Diesel Range Hydrocarbons   | ND   | 10.0 | mg/kg dry |      | ND |      |        | NA | 40 |  |
| Lube Oil Range Hydrocarbons | ND   | 25.0 | "         |      | ND |      |        | NA | 40 |  |
| Surrogate: 2-FBP            | 7.44 |      | "         | 10.9 |    | 68.3 | 50-150 |    |    |  |
| Surrogate: Octacosane       | 9.60 |      | "         | 10.9 |    | 88.1 | 50-150 |    |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.0338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/14/03 11:19

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3A08024: Prepared 01/08/03 Using Dry Weight**

**Blank (3A08024-BLK1)**

|            |     |      |   |
|------------|-----|------|---|
| Dry Weight | 100 | 1.00 | % |
|------------|-----|------|---|

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 7 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9330 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
01/14/03 11:19

### Notes and Definitions

D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

B3H0091

☒ Seattle (Edmonds) (425) 778-0907  
☐ Tacoma (253) 926-2493  
☐ Spokane (509) 327-9737  
☐ Portland (Lake Oswego) (503) 443-6010  
☐ \_\_\_\_\_  
**Landau Associates**

# Chain-of-Custody Record

|                                                                                                                                                                                                                                                                  |               |                               |             |                   |                       |                                              |                                      |                       |           |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------|-------------|-------------------|-----------------------|----------------------------------------------|--------------------------------------|-----------------------|-----------|--|
| Project Name <u>Concepcion Phillips</u>                                                                                                                                                                                                                          |               | Project No. <u>706002.012</u> |             |                   |                       |                                              |                                      |                       |           |  |
| Project Location/Event <u>Renton, WA</u>                                                                                                                                                                                                                         |               |                               |             |                   |                       |                                              |                                      |                       |           |  |
| Sampler's Name <u>Chris Kimmel</u>                                                                                                                                                                                                                               |               |                               |             |                   |                       |                                              |                                      |                       |           |  |
| Project Contact <u>Martin Powers</u>                                                                                                                                                                                                                             |               |                               |             |                   |                       |                                              |                                      |                       |           |  |
| Send Results To <u>Martin Powers</u>                                                                                                                                                                                                                             |               |                               |             |                   |                       |                                              |                                      |                       |           |  |
| Sample I.D.                                                                                                                                                                                                                                                      | Date          | Time                          | Matrix      | No. of Containers |                       |                                              |                                      |                       |           |  |
| <u>LAT (010303)</u>                                                                                                                                                                                                                                              | <u>1/3/03</u> | <u>1200</u>                   | <u>SOIL</u> | <u>2</u>          |                       |                                              |                                      |                       |           |  |
| <div>Testing Parameters</div> <table border="1"><tr><td>Turnaround Time</td><td><input checked="" type="checkbox"/> Standard</td><td><input type="checkbox"/> Accelerated</td></tr><tr><td>Observations/Comments</td><td colspan="2"><u>01</u></td></tr></table> |               |                               |             |                   | Turnaround Time       | <input checked="" type="checkbox"/> Standard | <input type="checkbox"/> Accelerated | Observations/Comments | <u>01</u> |  |
|                                                                                                                                                                                                                                                                  |               |                               |             |                   | Turnaround Time       | <input checked="" type="checkbox"/> Standard | <input type="checkbox"/> Accelerated |                       |           |  |
|                                                                                                                                                                                                                                                                  |               |                               |             |                   | Observations/Comments | <u>01</u>                                    |                                      |                       |           |  |



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



28 April 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: Conoco Phillips - Renton

Enclosed are the results of analyses for samples received by the laboratory on 04/18/03 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| Trip Blank | B3D0437-01    | Water  | 04/17/03 08:00 | 04/18/03 15:00 |
| LAI-10     | B3D0437-02    | Water  | 04/17/03 13:30 | 04/18/03 15:00 |
| LAI-11     | B3D0437-03    | Water  | 04/17/03 16:00 | 04/18/03 15:00 |
| LAI-16     | B3D0437-04    | Water  | 04/17/03 16:05 | 04/18/03 15:00 |
| LAI-3      | B3D0437-05    | Water  | 04/17/03 16:30 | 04/18/03 15:00 |
| LAI-19     | B3D0437-06    | Water  | 04/18/03 08:00 | 04/18/03 15:00 |
| HA-13      | B3D0437-07    | Water  | 04/18/03 08:45 | 04/18/03 15:00 |
| HA-5       | B3D0437-08    | Water  | 04/18/03 09:00 | 04/18/03 15:00 |
| HA-15      | B3D0437-09    | Water  | 04/18/03 09:15 | 04/18/03 15:00 |
| HA-8       | B3D0437-10    | Water  | 04/18/03 09:30 | 04/18/03 15:00 |
| LAI-14     | B3D0437-11    | Water  | 04/18/03 10:50 | 04/18/03 15:00 |
| Baker Tank | B3D0437-12    | Water  | 04/18/03 11:10 | 04/18/03 15:00 |
| HA-14      | B3D0437-13    | Water  | 04/18/03 11:30 | 04/18/03 15:00 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Reporting |       | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|-----------|-------|-------|----------|-------|----------|----------|--------|-------|
|         | Result    | Limit |       |          |       |          |          |        |       |

**Trip Blank (B3D0437-01) Water** Sampled: 04/17/03 08:00 Received: 04/18/03 15:00

|                             |    |       |      |   |         |          |          |                |  |
|-----------------------------|----|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 50.0  | ug/l | 1 | 3D23014 | 04/23/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND | 1.00  | "    | " | "       | "        | "        | "              |  |

Surrogate: 4-BFB (FID) 91.7 % 57-125  
Surrogate: 4-BFB (PID) 103 % 62-120

**LAI-10 (B3D0437-02) Water** Sampled: 04/17/03 13:30 Received: 04/18/03 15:00

|                             |    |       |      |   |         |          |          |                |  |
|-----------------------------|----|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 50.0  | ug/l | 1 | 3D23014 | 04/23/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND | 1.00  | "    | " | "       | "        | "        | "              |  |

Surrogate: 4-BFB (FID) 98.5 % 57-125  
Surrogate: 4-BFB (PID) 101 % 62-120

**LAI-11 (B3D0437-03) Water** Sampled: 04/17/03 16:00 Received: 04/18/03 15:00

|                             |    |       |      |   |         |          |          |                |  |
|-----------------------------|----|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 50.0  | ug/l | 1 | 3D23014 | 04/23/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND | 1.00  | "    | " | "       | "        | "        | "              |  |

Surrogate: 4-BFB (FID) 99.0 % 57-125  
Surrogate: 4-BFB (PID) 102 % 62-120

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**LAI-16 (B3D0437-04) Water** Sampled: 04/17/03 16:05 Received: 04/18/03 15:00

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3D23014 | 04/23/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 3.51   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 87.3 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 102 %  | 62-120 |      |   | "       | "        | "        | "              |  |

**LAI-3 (B3D0437-05) Water** Sampled: 04/17/03 16:30 Received: 04/18/03 15:00

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 154    | 50.0   | ug/l | 1 | 3D23014 | 04/23/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 7.56   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 24.5   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | 4.00   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 29.4   | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 97.3 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 102 %  | 62-120 |      |   | "       | "        | "        | "              |  |

**LAI-19 (B3D0437-06) Water** Sampled: 04/18/03 08:00 Received: 04/18/03 15:00

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 3650   | 250    | ug/l | 5 | 3D18013 | 04/18/03 | 04/22/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 11.9   | 2.50   | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 41.1   | 2.50   | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | 164    | 2.50   | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 762    | 5.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 96.0 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 94.0 % | 62-120 |      |   | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**HA-13 (B3D0437-07) Water Sampled: 04/18/03 08:45 Received: 04/18/03 15:00**

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3D23014 | 04/23/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 95.8 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 102 %  | 62-120 |      |   | "       | "        | "        | "              |  |

**HA-5 (B3D0437-08) Water Sampled: 04/18/03 09:00 Received: 04/18/03 15:00**

|                             |        |        |      |     |         |          |          |                |  |
|-----------------------------|--------|--------|------|-----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 66600  | 10000  | ug/l | 200 | 3D18013 | 04/18/03 | 04/22/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 7550   | 100    | "    | "   | "       | "        | "        | "              |  |
| Toluene                     | 16800  | 100    | "    | "   | "       | "        | "        | "              |  |
| Ethylbenzene                | 857    | 100    | "    | "   | "       | "        | "        | "              |  |
| Xylenes (total)             | 3960   | 200    | "    | "   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 90.8 % | 57-125 |      |     | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 94.0 % | 62-120 |      |     | "       | "        | "        | "              |  |

**HA-15 (B3D0437-09) Water Sampled: 04/18/03 09:15 Received: 04/18/03 15:00**

|                             |        |        |      |   |         |          |          |                |      |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|------|
| Gasoline Range Hydrocarbons | 658    | 50.0   | ug/l | 1 | 3D22014 | 04/22/03 | 04/23/03 | NWTPH-Gx/8021B |      |
| Benzene                     | 7.21   | 0.500  | "    | " | "       | "        | "        | "              |      |
| Toluene                     | 1.88   | 0.500  | "    | " | "       | "        | "        | "              |      |
| Ethylbenzene                | 0.716  | 0.500  | "    | " | "       | "        | "        | "              | I-06 |
| Xylenes (total)             | 6.47   | 1.00   | "    | " | "       | "        | "        | "              |      |
| Surrogate: 4-BFB (FID)      | 79.0 % | 57-125 |      |   | "       | "        | "        | "              |      |
| Surrogate: 4-BFB (PID)      | 76.2 % | 62-120 |      |   | "       | "        | "        | "              |      |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**HA-8 (B3D0437-10) Water Sampled: 04/18/03 09:30 Received: 04/18/03 15:00**

|                             |      |       |      |   |         |          |          |                |  |
|-----------------------------|------|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 3040 | 50.0  | ug/l | 1 | 3D22014 | 04/22/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 12.1 | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 35.9 | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | 160  | 2.50  | "    | 5 | "       | "        | 04/23/03 | "              |  |
| Xylenes (total)             | 708  | 5.00  | "    | " | "       | "        | "        | "              |  |

|                        |        |        |  |  |   |   |          |   |  |
|------------------------|--------|--------|--|--|---|---|----------|---|--|
| Surrogate: 4-BFB (FID) | 114 %  | 57-125 |  |  | " | " | 04/23/03 | " |  |
| Surrogate: 4-BFB (PID) | 94.0 % | 62-120 |  |  | " | " | "        | " |  |

**LAI-14 (B3D0437-11) Water Sampled: 04/18/03 10:50 Received: 04/18/03 15:00**

|                             |    |       |      |   |         |          |          |                |  |
|-----------------------------|----|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 50.0  | ug/l | 1 | 3D22014 | 04/22/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND | 1.00  | "    | " | "       | "        | "        | "              |  |

|                        |        |        |  |  |   |   |   |   |  |
|------------------------|--------|--------|--|--|---|---|---|---|--|
| Surrogate: 4-BFB (FID) | 83.3 % | 57-125 |  |  | " | " | " | " |  |
| Surrogate: 4-BFB (PID) | 84.2 % | 62-120 |  |  | " | " | " | " |  |

**Baker Tank (B3D0437-12) Water Sampled: 04/18/03 11:10 Received: 04/18/03 15:00**

|                             |        |       |      |      |         |          |          |                |  |
|-----------------------------|--------|-------|------|------|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 287000 | 25000 | ug/l | 500  | 3D22014 | 04/22/03 | 04/23/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 39100  | 250   | "    | "    | "       | "        | "        | "              |  |
| Toluene                     | 80000  | 500   | "    | 1000 | "       | "        | 04/23/03 | "              |  |
| Ethylbenzene                | 4050   | 250   | "    | 500  | "       | "        | 04/23/03 | "              |  |
| Xylenes (total)             | 24300  | 500   | "    | "    | "       | "        | "        | "              |  |

|                        |        |        |  |  |   |   |   |   |  |
|------------------------|--------|--------|--|--|---|---|---|---|--|
| Surrogate: 4-BFB (FID) | 78.8 % | 57-125 |  |  | " | " | " | " |  |
| Surrogate: 4-BFB (PID) | 83.1 % | 62-120 |  |  | " | " | " | " |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                         | Result | Reporting | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------|--------|-----------|-------|----------|---------|----------|----------|----------------|-------|
|                                                                                 |        | Limit     |       |          |         |          |          |                |       |
| HA-14 (B3D0437-13) Water    Sampled: 04/18/03 11:30    Received: 04/18/03 15:00 |        |           |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                     | 1190   | 250       | ug/l  | 5        | 3D22014 | 04/22/03 | 04/23/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                         | 133    | 2.50      | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                         | 8.87   | 2.50      | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                    | 228    | 2.50      | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                 | 23.7   | 5.00      | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                          | 89.4 % | 57-125    |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                          | 86.0 % | 62-120    |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                           | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|-----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-10 (B3D0437-02) Water Sampled: 04/17/03 13:30 Received: 04/18/03 15:00</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 80.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 63.0 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-11 (B3D0437-03) Water Sampled: 04/17/03 16:00 Received: 04/18/03 15:00</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 78.6 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 68.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-16 (B3D0437-04) Water Sampled: 04/17/03 16:05 Received: 04/18/03 15:00</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 85.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 74.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-3 (B3D0437-05) Water Sampled: 04/17/03 16:30 Received: 04/18/03 15:00</b>  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 81.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 53.0 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-19 (B3D0437-06) Water Sampled: 04/18/03 08:00 Received: 04/18/03 15:00</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.257  | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 92.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 78.7 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9230  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|--------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>HA-13 (B3D0437-07) Water Sampled: 04/18/03 08:45 Received: 04/18/03 15:00</b>     |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 97.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 77.3 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-5 (B3D0437-08) Water Sampled: 04/18/03 09:00 Received: 04/18/03 15:00</b>      |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 102 %  | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 71.6 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-15 (B3D0437-09) Water Sampled: 04/18/03 09:15 Received: 04/18/03 15:00</b>     |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 80.9 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 54.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-8 (B3D0437-10) Water Sampled: 04/18/03 09:30 Received: 04/18/03 15:00</b>      |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3D21004 | 04/21/03 | 04/22/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 78.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 52.9 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-14 (B3D0437-11RE1) Water Sampled: 04/18/03 10:50 Received: 04/18/03 15:00</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3D24008 | 04/24/03 | 04/26/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 109 %  | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 89.9 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 8 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**Baker Tank (B3D0437-12RE1) Water** Sampled: 04/18/03 11:10 Received: 04/18/03 15:00

|                             |        |        |      |   |         |          |          |          |      |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------|------|
| Diesel Range Hydrocarbons   | 1.59   | 0.281  | mg/l | 1 | 3D24008 | 04/24/03 | 04/26/03 | NWTPH-Dx | D-08 |
| Lube Oil Range Hydrocarbons | ND     | 0.562  | "    | " | "       | "        | "        | "        |      |
| Surrogate: 2-FBP            | 111 %  | 50-150 |      |   | "       | "        | "        | "        |      |
| Surrogate: Octacosane       | 92.2 % | 50-150 |      |   | "       | "        | "        | "        |      |

**HA-14 (B3D0437-13RE1) Water** Sampled: 04/18/03 11:30 Received: 04/18/03 15:00

|                             |        |        |      |   |         |          |          |          |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------|--|
| Diesel Range Hydrocarbons   | ND     | 0.250  | mg/l | 1 | 3D24008 | 04/24/03 | 04/26/03 | NWTPH-Dx |  |
| Lube Oil Range Hydrocarbons | ND     | 0.500  | "    | " | "       | "        | "        | "        |  |
| Surrogate: 2-FBP            | 103 %  | 50-150 |      |   | "       | "        | "        | "        |  |
| Surrogate: Octacosane       | 85.4 % | 50-150 |      |   | "       | "        | "        | "        |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 9 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3D18013: Prepared 04/18/03 Using EPA 5030B (P/T)**

**Blank (3D18013-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 42.8 |       | "    | 48.0 |  | 89.2 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 45.3 |       | "    | 48.0 |  | 94.4 | 62-120 |  |  |

**LCS (3D18013-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 472  | 50.0  | ug/l | 502  |  | 94.0 | 80-120 |  |  |
| Benzene                     | 5.79 | 0.500 | "    | 6.21 |  | 93.2 | 80-120 |  |  |
| Toluene                     | 33.0 | 0.500 | "    | 38.1 |  | 86.6 | 80-120 |  |  |
| Ethylbenzene                | 8.43 | 0.500 | "    | 8.94 |  | 94.3 | 80-120 |  |  |
| Xylenes (total)             | 41.1 | 1.00  | "    | 44.0 |  | 93.4 | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 46.7 |       | "    | 48.0 |  | 97.3 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 45.4 |       | "    | 48.0 |  | 94.6 | 62-120 |  |  |

**LCS Dup (3D18013-BS1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 467  | 50.0  | ug/l | 502  |  | 93.0 | 80-120 | 1.06  | 25 |
| Benzene                     | 5.72 | 0.500 | "    | 6.21 |  | 92.1 | 80-120 | 1.22  | 40 |
| Toluene                     | 32.7 | 0.500 | "    | 38.1 |  | 85.8 | 80-120 | 0.913 | 40 |
| Ethylbenzene                | 8.40 | 0.500 | "    | 8.94 |  | 94.0 | 80-120 | 0.357 | 40 |
| Xylenes (total)             | 40.7 | 1.00  | "    | 44.0 |  | 92.5 | 80-120 | 0.978 | 40 |
| Surrogate: 4-BFB (FID)      | 46.7 |       | "    | 48.0 |  | 97.3 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 45.3 |       | "    | 48.0 |  | 94.4 | 62-120 |       |    |

**Matrix Spike (3D18013-MS1)**

Source: B3D0287-04

|                             |      |       |      |      |        |      |        |  |  |
|-----------------------------|------|-------|------|------|--------|------|--------|--|--|
| Gasoline Range Hydrocarbons | 501  | 50.0  | ug/l | 502  | 12.1   | 97.4 | 70-130 |  |  |
| Benzene                     | 6.56 | 0.500 | "    | 6.21 | ND     | 106  | 80-134 |  |  |
| Toluene                     | 35.8 | 0.500 | "    | 38.1 | 0.266  | 93.3 | 68-114 |  |  |
| Ethylbenzene                | 9.11 | 0.500 | "    | 8.94 | 0.0918 | 101  | 72-128 |  |  |
| Xylenes (total)             | 43.5 | 1.00  | "    | 44.0 | 0.268  | 98.3 | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 46.2 |       | "    | 48.0 |        | 96.2 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 44.3 |       | "    | 48.0 |        | 92.3 | 62-120 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 10 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>%REC | Limit<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|--------------|-----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|--------------|-----------------|-----|--------------|-------|

**Batch 3D18013: Prepared 04/18/03 Using EPA 5030B (P/T)**

**Matrix Spike Dup (3D18013-MSD1)**

Source: B3D0287-04

|                             |      |       |      |      |        |      |        |      |    |  |
|-----------------------------|------|-------|------|------|--------|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 486  | 50.0  | ug/l | 502  | 12.1   | 94.4 | 70-130 | 3.04 | 25 |  |
| Benzene                     | 6.28 | 0.500 | "    | 6.21 | ND     | 101  | 80-134 | 4.36 | 40 |  |
| Toluene                     | 35.4 | 0.500 | "    | 38.1 | 0.266  | 92.2 | 68-114 | 1.12 | 40 |  |
| Ethylbenzene                | 8.81 | 0.500 | "    | 8.94 | 0.0918 | 97.5 | 72-128 | 3.35 | 40 |  |
| Xylenes (total)             | 42.3 | 1.00  | "    | 44.0 | 0.268  | 95.5 | 67-125 | 2.80 | 40 |  |
| Surrogate: 4-BFB (FID)      | 46.7 |       | "    | 48.0 |        | 97.3 | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 46.3 |       | "    | 48.0 |        | 96.5 | 62-120 |      |    |  |

**Batch 3D22014: Prepared 04/22/03 Using EPA 5030B (P/T)**

**Blank (3D22014-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 37.4 |       | "    | 48.0 |  | 77.9 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 40.6 |       | "    | 48.0 |  | 84.6 | 62-120 |  |  |  |

**LCS (3D22014-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 463  | 50.0  | ug/l | 502  |  | 92.2 | 80-120 |  |  |  |
| Benzene                     | 5.80 | 0.500 | "    | 6.21 |  | 93.4 | 80-120 |  |  |  |
| Toluene                     | 32.0 | 0.500 | "    | 38.1 |  | 84.0 | 80-120 |  |  |  |
| Ethylbenzene                | 8.29 | 0.500 | "    | 8.94 |  | 92.7 | 80-120 |  |  |  |
| Xylenes (total)             | 39.6 | 1.00  | "    | 44.0 |  | 90.0 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 43.6 |       | "    | 48.0 |  | 90.8 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 38.6 |       | "    | 48.0 |  | 80.4 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 11 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3D22014: Prepared 04/22/03 Using EPA 5030B (P/T)**

**LCS Dup (3D22014-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 466  | 50.0  | ug/l | 502  |  | 92.8 | 80-120 | 0.646 | 25 |
| Benzene                     | 5.97 | 0.500 | "    | 6.21 |  | 96.1 | 80-120 | 2.89  | 40 |
| Toluene                     | 32.9 | 0.500 | "    | 38.1 |  | 86.4 | 80-120 | 2.77  | 40 |
| Ethylbenzene                | 8.50 | 0.500 | "    | 8.94 |  | 95.1 | 80-120 | 2.50  | 40 |
| Xylenes (total)             | 40.7 | 1.00  | "    | 44.0 |  | 92.5 | 80-120 | 2.74  | 40 |
| Surrogate: 4-BFB (FID)      | 43.3 |       | "    | 48.0 |  | 90.2 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 39.2 |       | "    | 48.0 |  | 81.7 | 62-120 |       |    |

**Matrix Spike (3D22014-MS1)**

Source: B3D0455-01

|                             |      |       |      |      |        |      |        |  |  |
|-----------------------------|------|-------|------|------|--------|------|--------|--|--|
| Gasoline Range Hydrocarbons | 483  | 50.0  | ug/l | 502  | ND     | 96.2 | 70-130 |  |  |
| Benzene                     | 6.88 | 0.500 | "    | 6.21 | 0.168  | 108  | 80-134 |  |  |
| Toluene                     | 38.0 | 0.500 | "    | 38.1 | 0.223  | 99.2 | 68-114 |  |  |
| Ethylbenzene                | 9.54 | 0.500 | "    | 8.94 | 0.0996 | 106  | 72-128 |  |  |
| Xylenes (total)             | 45.6 | 1.00  | "    | 44.0 | 0.358  | 103  | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 40.3 |       | "    | 48.0 |        | 84.0 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 38.6 |       | "    | 48.0 |        | 80.4 | 62-120 |  |  |

**Matrix Spike Dup (3D22014-MSD1)**

Source: B3D0455-01

|                             |      |       |      |      |        |      |        |       |    |
|-----------------------------|------|-------|------|------|--------|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 467  | 50.0  | ug/l | 502  | ND     | 93.0 | 70-130 | 3.37  | 25 |
| Benzene                     | 6.80 | 0.500 | "    | 6.21 | 0.168  | 107  | 80-134 | 1.17  | 40 |
| Toluene                     | 38.2 | 0.500 | "    | 38.1 | 0.223  | 99.7 | 68-114 | 0.525 | 40 |
| Ethylbenzene                | 9.44 | 0.500 | "    | 8.94 | 0.0996 | 104  | 72-128 | 1.05  | 40 |
| Xylenes (total)             | 45.6 | 1.00  | "    | 44.0 | 0.358  | 103  | 67-125 | 0.00  | 40 |
| Surrogate: 4-BFB (FID)      | 40.2 |       | "    | 48.0 |        | 83.8 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 39.0 |       | "    | 48.0 |        | 81.2 | 62-120 |       |    |

**Batch 3D23014: Prepared 04/23/03 Using EPA 5030B (P/T)**

**Blank (3D23014-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 44.0 |       | "    | 48.0 |  | 91.7 | 57-125 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control

### North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3D23014: Prepared 04/23/03 Using EPA 5030B (P/T)**

#### Blank (3D23014-BLK1)

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Surrogate: 4-BFB (PID)      | 48.4 |       | ug/l | 48.0 |  | 101  | 62-120 |  |  |  |
| <b>LCS (3D23014-BS1)</b>    |      |       |      |      |  |      |        |  |  |  |
| Gasoline Range Hydrocarbons | 461  | 50.0  | ug/l | 500  |  | 92.2 | 80-120 |  |  |  |
| Benzene                     | 6.55 | 0.500 | "    | 6.65 |  | 98.5 | 80-120 |  |  |  |
| Toluene                     | 35.9 | 0.500 | "    | 37.0 |  | 97.0 | 80-120 |  |  |  |
| Ethylbenzene                | 9.53 | 0.500 | "    | 8.55 |  | 111  | 80-120 |  |  |  |
| Xylenes (total)             | 44.9 | 1.00  | "    | 43.0 |  | 104  | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 46.9 |       | "    | 48.0 |  | 97.7 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 47.3 |       | "    | 48.0 |  | 98.5 | 62-120 |  |  |  |

#### LCS Dup (3D23014-BS1)

|                             |      |       |      |      |  |      |        |      |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 481  | 50.0  | ug/l | 500  |  | 96.2 | 80-120 | 4.25 | 25 |  |
| Benzene                     | 6.38 | 0.500 | "    | 6.65 |  | 95.9 | 80-120 | 2.63 | 40 |  |
| Toluene                     | 34.9 | 0.500 | "    | 37.0 |  | 94.3 | 80-120 | 2.82 | 40 |  |
| Ethylbenzene                | 9.20 | 0.500 | "    | 8.55 |  | 108  | 80-120 | 3.52 | 40 |  |
| Xylenes (total)             | 43.7 | 1.00  | "    | 43.0 |  | 102  | 80-120 | 2.71 | 40 |  |
| Surrogate: 4-BFB (FID)      | 50.2 |       | "    | 48.0 |  | 105  | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 47.0 |       | "    | 48.0 |  | 97.9 | 62-120 |      |    |  |

#### Matrix Spike (3D23014-MS1)

Source: B3D0437-04

|                             |      |       |      |      |      |      |        |  |  |      |
|-----------------------------|------|-------|------|------|------|------|--------|--|--|------|
| Gasoline Range Hydrocarbons | 440  | 50.0  | ug/l | 500  | 17.3 | 84.5 | 70-130 |  |  |      |
| Benzene                     | 8.79 | 0.500 | "    | 6.65 | 3.51 | 99.4 | 80-134 |  |  | Q-02 |
| Toluene                     | 34.6 | 0.500 | "    | 37.0 | ND   | 93.5 | 68-114 |  |  |      |
| Ethylbenzene                | 8.98 | 0.500 | "    | 8.55 | ND   | 105  | 72-128 |  |  |      |
| Xylenes (total)             | 43.6 | 1.00  | "    | 43.0 | ND   | 101  | 67-125 |  |  |      |
| Surrogate: 4-BFB (FID)      | 46.9 |       | "    | 48.0 |      | 97.7 | 57-125 |  |  |      |
| Surrogate: 4-BFB (PID)      | 47.2 |       | "    | 48.0 |      | 98.3 | 62-120 |  |  |      |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 13 of 17



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave. S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
04/28/03 16:02

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte                                                       | Result | Reporting Limit | Units | Spike Level | Source Result             | %REC | %REC Limits | RPD   | RPD Limit | Notes |
|---------------------------------------------------------------|--------|-----------------|-------|-------------|---------------------------|------|-------------|-------|-----------|-------|
| <b>Batch 3D23014: Prepared 04/23/03 Using EPA 5030B (P/T)</b> |        |                 |       |             |                           |      |             |       |           |       |
| <b>Matrix Spike Dup (3D23014-MSD1)</b>                        |        |                 |       |             | <b>Source: B3D0437-04</b> |      |             |       |           |       |
| Gasoline Range Hydrocarbons                                   | 463    | 50.0            | ug/l  | 500         | 17.3                      | 89.1 | 70-130      | 5.09  | 25        |       |
| Benzene                                                       | 8.81   | 0.500           | "     | 6.65        | 3.51                      | 79.7 | 80-134      | 0.227 | 40        | Q-02  |
| Toluene                                                       | 34.4   | 0.500           | "     | 37.0        | ND                        | 93.0 | 68-114      | 0.580 | 40        |       |
| Ethylbenzene                                                  | 8.80   | 0.500           | "     | 8.55        | ND                        | 103  | 72-128      | 2.02  | 40        |       |
| Xylenes (total)                                               | 43.1   | 1.00            | "     | 43.0        | ND                        | 100  | 67-125      | 1.15  | 40        |       |
| Surrogate: 4-BFB (FID)                                        | 51.6   |                 | "     | 48.0        |                           | 108  | 57-125      |       |           |       |
| Surrogate: 4-BFB (PID)                                        | 47.7   |                 | "     | 48.0        |                           | 99.4 | 62-120      |       |           |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 14 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.3200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3D21004: Prepared 04/21/03 Using EPA 3520C**

**Blank (3D21004-BLK1)**

|                             |       |       |      |       |  |      |        |  |  |  |
|-----------------------------|-------|-------|------|-------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |      |        |  |  |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |      |        |  |  |  |
| Surrogate: 2-FBP            | 0.242 |       | "    | 0.320 |  | 75.6 | 50-150 |  |  |  |
| Surrogate: Octacosane       | 0.106 |       | "    | 0.160 |  | 66.2 | 50-150 |  |  |  |

**LCS (3D21004-BS1)**

|                           |       |       |      |       |  |      |        |  |  |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 1.37  | 0.250 | mg/l | 2.00  |  | 68.5 | 45-105 |  |  |  |
| Surrogate: 2-FBP          | 0.277 |       | "    | 0.320 |  | 86.6 | 50-150 |  |  |  |

**LCS Dup (3D21004-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |  |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 1.55  | 0.250 | mg/l | 2.00  |  | 77.5 | 45-105 | 12.3 | 50 |  |
| Surrogate: 2-FBP          | 0.305 |       | "    | 0.320 |  | 95.3 | 50-150 |      |    |  |

**Matrix Spike (3D21004-MS1)**

Source: B3D0401-02

|                           |       |       |      |       |    |      |        |  |  |  |
|---------------------------|-------|-------|------|-------|----|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 1.56  | 0.250 | mg/l | 1.96  | ND | 79.6 | 50-150 |  |  |  |
| Surrogate: 2-FBP          | 0.304 |       | "    | 0.314 |    | 96.8 | 50-150 |  |  |  |

**Matrix Spike Dup (3D21004-MSD1)**

Source: B3D0401-02

|                           |       |       |      |       |    |      |        |      |    |  |
|---------------------------|-------|-------|------|-------|----|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 1.49  | 0.250 | mg/l | 1.96  | ND | 76.0 | 50-150 | 4.59 | 50 |  |
| Surrogate: 2-FBP          | 0.290 |       | "    | 0.314 |    | 92.4 | 50-150 |      |    |  |

**Batch 3D24008: Prepared 04/24/03 Using EPA 3520C**

**Blank (3D24008-BLK1)**

|                             |       |       |      |       |  |     |        |  |  |  |
|-----------------------------|-------|-------|------|-------|--|-----|--------|--|--|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |     |        |  |  |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |     |        |  |  |  |
| Surrogate: 2-FBP            | 0.348 |       | "    | 0.320 |  | 109 | 50-150 |  |  |  |
| Surrogate: Octacosane       | 0.169 |       | "    | 0.160 |  | 106 | 50-150 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 15 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3D24008: Prepared 04/24/03 Using EPA 3520C**

**LCS (3D24008-BS1)**

|                           |       |       |      |       |  |      |        |  |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|--|
| Diesel Range Hydrocarbons | 1.75  | 0.250 | mg/l | 2.00  |  | 87.5 | 45-105 |  |  |
| Surrogate: 2-FBP          | 0.347 |       | "    | 0.320 |  | 108  | 50-150 |  |  |

**LCS Dup (3D24008-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|
| Diesel Range Hydrocarbons | 1.77  | 0.250 | mg/l | 2.00  |  | 88.5 | 45-105 | 1.14 | 50 |
| Surrogate: 2-FBP          | 0.358 |       | "    | 0.320 |  | 112  | 50-150 |      |    |

**Matrix Spike (3D24008-MS1)**

**Source: B3D0462-04**

|                           |       |       |      |       |        |      |        |  |  |
|---------------------------|-------|-------|------|-------|--------|------|--------|--|--|
| Diesel Range Hydrocarbons | 1.88  | 0.250 | mg/l | 2.00  | 0.0992 | 89.0 | 50-150 |  |  |
| Surrogate: 2-FBP          | 0.360 |       | "    | 0.320 |        | 112  | 50-150 |  |  |

**Matrix Spike Dup (3D24008-MSD1)**

**Source: B3D0462-04**

|                           |       |       |      |       |        |      |        |      |    |
|---------------------------|-------|-------|------|-------|--------|------|--------|------|----|
| Diesel Range Hydrocarbons | 1.91  | 0.250 | mg/l | 2.00  | 0.0992 | 90.5 | 50-150 | 1.58 | 50 |
| Surrogate: 2-FBP          | 0.361 |       | "    | 0.320 |        | 113  | 50-150 |      |    |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 16 of 17



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/28/03 16:02

### Notes and Definitions

D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.

I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.

Q-02 The spike recovery for this QC sample is outside of NCA established control limits due to sample matrix interference.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

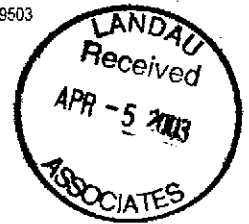
North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 17 of 17





**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



01 April 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 03/25/03 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite

Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| LAI-3      | B3C0615-01    | Water  | 03/25/03 10:00 | 03/25/03 17:10 |
| LAI-14     | B3C0615-02    | Water  | 03/25/03 10:15 | 03/25/03 17:10 |
| LAI-16     | B3C0615-03    | Water  | 03/25/03 09:30 | 03/25/03 17:10 |
| LAI-26     | B3C0615-04    | Water  | 03/25/03 09:40 | 03/25/03 17:10 |
| HA-5       | B3C0615-05    | Water  | 03/25/03 11:50 | 03/25/03 17:10 |
| HA-8       | B3C0615-06    | Water  | 03/25/03 11:21 | 03/25/03 17:10 |
| HA-13      | B3C0615-07    | Water  | 03/25/03 12:30 | 03/25/03 17:10 |
| HA-15      | B3C0615-08    | Water  | 03/25/03 12:15 | 03/25/03 17:10 |
| Baker Tank | B3C0615-09    | Water  | 03/25/03 14:35 | 03/25/03 17:10 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 10



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                                                                   | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>LAI-3 (B3C0615-01) Water</b> Sampled: 03/25/03 10:00 Received: 03/25/03 17:10                                          |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                                                               | 573    | 50.0            | ug/l  | 1        | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                                                                   | 61.6   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                                                   | 176    | 2.50            | "     | 5        | "       | "        | 03/28/03 | "              |       |
| Ethylbenzene                                                                                                              | 8.43   | 0.500           | "     | 1        | "       | "        | 03/28/03 | "              |       |
| Xylenes (total)                                                                                                           | 39.5   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                                                    | 89.8 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                                                    | 91.2 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>LAI-14 (B3C0615-02) Water</b> Sampled: 03/25/03 10:15 Received: 03/25/03 17:10 <span style="float: right;">Q-23</span> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                                                               | 66.3   | 50.0            | ug/l  | 1        | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                                                                   | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                                                   | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                                                              | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                                                           | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                                                    | 88.3 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                                                    | 93.1 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>LAI-16 (B3C0615-03) Water</b> Sampled: 03/25/03 09:30 Received: 03/25/03 17:10                                         |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                                                               | ND     | 50.0            | ug/l  | 1        | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                                                                   | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                                                                   | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                                                              | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                                                           | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                                                    | 87.7 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                                                    | 94.0 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 10



Seattle - 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**LAI-26 (B3C0615-04) Water Sampled: 03/25/03 09:40 Received: 03/25/03 17:10**

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 87.7 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 93.8 % | 62-120 |      |   | "       | "        | "        | "              |  |

**HA-5 (B3C0615-05) Water Sampled: 03/25/03 11:50 Received: 03/25/03 17:10**

|                             |        |        |      |     |         |          |          |                |  |
|-----------------------------|--------|--------|------|-----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 54700  | 5000   | ug/l | 100 | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 6550   | 50.0   | "    | "   | "       | "        | "        | "              |  |
| Toluene                     | 14700  | 100    | "    | 200 | "       | "        | 03/28/03 | "              |  |
| Ethylbenzene                | 657    | 50.0   | "    | 100 | "       | "        | 03/28/03 | "              |  |
| Xylenes (total)             | 2900   | 100    | "    | "   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 89.2 % | 57-125 |      |     | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 91.9 % | 62-120 |      |     | "       | "        | "        | "              |  |

**HA-8 (B3C0615-06) Water Sampled: 03/25/03 11:21 Received: 03/25/03 17:10**

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 1950   | 250    | ug/l | 5 | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 6.17   | 2.50   | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 22.0   | 2.50   | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | 73.0   | 2.50   | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 445    | 5.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 90.6 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 94.8 % | 62-120 |      |   | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 10



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

#### North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

#### HA-13 (B3C0615-07) Water Sampled: 03/25/03 12:30 Received: 03/25/03 17:10

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 98.4   | 50.0   | ug/l | 1 | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 0.580  | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 88.8 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 92.3 % | 62-120 |      |   | "       | "        | "        | "              |  |

#### HA-15 (B3C0615-08) Water Sampled: 03/25/03 12:15 Received: 03/25/03 17:10

Q-23

|                             |        |        |      |   |         |          |          |                |      |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|------|
| Gasoline Range Hydrocarbons | 910    | 50.0   | ug/l | 1 | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |      |
| Benzene                     | 7.47   | 0.500  | "    | " | "       | "        | "        | "              |      |
| Toluene                     | 1.55   | 0.500  | "    | " | "       | "        | "        | "              |      |
| Ethylbenzene                | 1.12   | 0.500  | "    | " | "       | "        | "        | "              | 1-06 |
| Xylenes (total)             | 3.99   | 1.00   | "    | " | "       | "        | "        | "              |      |
| Surrogate: 4-BFB (FID)      | 90.4 % | 57-125 |      |   | "       | "        | "        | "              |      |
| Surrogate: 4-BFB (PID)      | 81.7 % | 62-120 |      |   | "       | "        | "        | "              |      |

#### Baker Tank (B3C0615-09) Water Sampled: 03/25/03 14:35 Received: 03/25/03 17:10

|                             |        |        |      |      |         |          |          |                |  |
|-----------------------------|--------|--------|------|------|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 354000 | 10000  | ug/l | 200  | 3C27015 | 03/27/03 | 03/28/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 39800  | 500    | "    | 1000 | "       | "        | 03/28/03 | "              |  |
| Toluene                     | 79600  | 500    | "    | "    | "       | "        | "        | "              |  |
| Ethylbenzene                | 4690   | 100    | "    | 200  | "       | "        | 03/28/03 | "              |  |
| Xylenes (total)             | 24900  | 200    | "    | "    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 90.6 % | 57-125 |      |      | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 86.9 % | 62-120 |      |      | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 10



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

| Analyte                                                                           | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|-----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-3 (B3C0615-01) Water Sampled: 03/25/03 10:00 Received: 03/25/03 17:10</b>  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 85.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 68.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-14 (B3C0615-02) Water Sampled: 03/25/03 10:15 Received: 03/25/03 17:10</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 91.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 63.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-16 (B3C0615-03) Water Sampled: 03/25/03 09:30 Received: 03/25/03 17:10</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.288  | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 89.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 68.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-26 (B3C0615-04) Water Sampled: 03/25/03 09:40 Received: 03/25/03 17:10</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.330  | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 90.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 64.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-5 (B3C0615-05) Water Sampled: 03/25/03 11:50 Received: 03/25/03 17:10</b>   |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.388  | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 76.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 58.5 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 10



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|---------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>HA-8 (B3C0615-06) Water Sampled: 03/25/03 11:21 Received: 03/25/03 17:10</b>       |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 0.544  | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 93.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 81.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-13 (B3C0615-07) Water Sampled: 03/25/03 12:30 Received: 03/25/03 17:10</b>      |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | ND     | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 83.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 81.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-15 (B3C0615-08) Water Sampled: 03/25/03 12:15 Received: 03/25/03 17:10</b>      |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 0.486  | 0.250           | mg/l  | 1        | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 83.1 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 64.9 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>Baker Tank (B3C0615-09) Water Sampled: 03/25/03 14:35 Received: 03/25/03 17:10</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 20.0   | 2.50            | mg/l  | 10       | 3C28009 | 03/28/03 | 03/30/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                           | ND     | 5.00            | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 76.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 63.2 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 10



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control

### North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

#### Batch 3C27015: Prepared 03/27/03 Using EPA 5030B (MeOH)

##### Blank (3C27015-BLK1)

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 42.6 |       | "    | 48.0 |  | 88.8 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 45.0 |       | "    | 48.0 |  | 93.8 | 62-120 |  |  |  |

##### LCS (3C27015-BS1)

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 508  | 50.0  | ug/l | 502  |  | 101  | 80-120 |  |  |  |
| Benzene                     | 6.17 | 0.500 | "    | 6.21 |  | 99.4 | 80-120 |  |  |  |
| Toluene                     | 34.5 | 0.500 | "    | 38.1 |  | 90.6 | 80-120 |  |  |  |
| Ethylbenzene                | 8.82 | 0.500 | "    | 8.94 |  | 98.7 | 80-120 |  |  |  |
| Xylenes (total)             | 42.7 | 1.00  | "    | 44.0 |  | 97.0 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 46.5 |       | "    | 48.0 |  | 96.9 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 45.1 |       | "    | 48.0 |  | 94.0 | 62-120 |  |  |  |

##### LCS Dup (3C27015-BS1)

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 518  | 50.0  | ug/l | 502  |  | 103  | 80-120 | 1.95  | 25 |  |
| Benzene                     | 6.22 | 0.500 | "    | 6.21 |  | 100  | 80-120 | 0.807 | 40 |  |
| Toluene                     | 34.5 | 0.500 | "    | 38.1 |  | 90.6 | 80-120 | 0.00  | 40 |  |
| Ethylbenzene                | 8.75 | 0.500 | "    | 8.94 |  | 97.9 | 80-120 | 0.797 | 40 |  |
| Xylenes (total)             | 42.5 | 1.00  | "    | 44.0 |  | 96.6 | 80-120 | 0.469 | 40 |  |
| Surrogate: 4-BFB (FID)      | 47.0 |       | "    | 48.0 |  | 97.9 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 44.8 |       | "    | 48.0 |  | 93.3 | 62-120 |       |    |  |

##### Matrix Spike (3C27015-MS1)

Source: B3C0615-03

|                             |      |       |      |      |        |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 508  | 50.0  | ug/l | 502  | 11.1   | 99.0 | 70-130 |  |  |  |
| Benzene                     | 6.29 | 0.500 | "    | 6.21 | 0.120  | 99.4 | 80-134 |  |  |  |
| Toluene                     | 34.7 | 0.500 | "    | 38.1 | 0.368  | 90.1 | 68-114 |  |  |  |
| Ethylbenzene                | 8.75 | 0.500 | "    | 8.94 | 0.0846 | 96.9 | 72-128 |  |  |  |
| Xylenes (total)             | 42.6 | 1.00  | "    | 44.0 | 0.501  | 95.7 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 45.9 |       | "    | 48.0 |        | 95.6 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 43.6 |       | "    | 48.0 |        | 90.8 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 10



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3C27015: Prepared 03/27/03 Using EPA 5030B (MeOH)**

**Matrix Spike Dup (3C27015-MSD1)**

**Source: B3C0615-03**

|                             |      |       |      |      |        |      |        |       |    |
|-----------------------------|------|-------|------|------|--------|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 494  | 50.0  | ug/l | 502  | 11.1   | 96.2 | 70-130 | 2.79  | 25 |
| Benzene                     | 6.24 | 0.500 | "    | 6.21 | 0.120  | 98.6 | 80-134 | 0.798 | 40 |
| Toluene                     | 34.6 | 0.500 | "    | 38.1 | 0.368  | 89.8 | 68-114 | 0.289 | 40 |
| Ethylbenzene                | 8.66 | 0.500 | "    | 8.94 | 0.0846 | 95.9 | 72-128 | 1.03  | 40 |
| Xylenes (total)             | 42.3 | 1.00  | "    | 44.0 | 0.501  | 95.0 | 67-125 | 0.707 | 40 |
| Surrogate: 4-BFB (FID)      | 45.7 |       | "    | 48.0 |        | 95.2 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 43.7 |       | "    | 48.0 |        | 91.0 | 62-120 |       |    |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 8 of 10



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/01/03 17:04

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>%REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|--------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|--------------|----------------|-----|--------------|-------|

**Batch 3C28009: Prepared 03/28/03 Using EPA 3520C**

**Blank (3C28009-BLK1)**

|                             |    |       |      |
|-----------------------------|----|-------|------|
| Diesel Range Hydrocarbons   | ND | 0.250 | mg/l |
| Lube Oil Range Hydrocarbons | ND | 0.500 | "    |

|                       |       |  |   |       |      |        |
|-----------------------|-------|--|---|-------|------|--------|
| Surrogate: 2-FBP      | 0.289 |  | " | 0.320 | 90.3 | 50-150 |
| Surrogate: Octacosane | 0.139 |  | " | 0.160 | 86.9 | 50-150 |

**LCS (3C28009-BS1)**

|                           |       |       |      |       |      |        |
|---------------------------|-------|-------|------|-------|------|--------|
| Diesel Range Hydrocarbons | 1.56  | 0.250 | mg/l | 2.00  | 78.0 | 63-107 |
| Surrogate: 2-FBP          | 0.277 |       | "    | 0.320 | 86.6 | 50-150 |

**LCS Dup (3C28009-BSD1)**

|                           |       |       |      |       |      |        |      |    |
|---------------------------|-------|-------|------|-------|------|--------|------|----|
| Diesel Range Hydrocarbons | 1.48  | 0.250 | mg/l | 2.00  | 74.0 | 63-107 | 5.26 | 40 |
| Surrogate: 2-FBP          | 0.244 |       | "    | 0.320 | 76.2 | 50-150 |      |    |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 9 of 10



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
04/01/03 17:04

### Notes and Definitions

D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.  
I-06 The analyte concentration may be artificially elevated due to coeluting compounds or components.  
Q-23 This sample was received and analyzed unpreserved. Preservation with acid is required by the method.  
DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 10 of 10



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 FAX 420-9210  
(425) 420-9210  
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 FAX 924-9290  
(509) 924-9200  
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 FAX 906-9210  
(503) 906-9200  
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 FAX 382-7588  
(541) 383-9310

# CHAIN OF CUSTODY REPORT

CLIENT: Landau INVOICE TO: same WORK ORDER #: B3C0615

REPORT TO: Martin Powers

ADDRESS: 130 N. Hwy 101, S. 980 20

PHONE: (425) 778-0907 FAX: (425) 778-6401

PROJECT NAME: Tosco Renton

PROJECT NUMBER: 700001-012

SAMPLED BY: Cathy Kilday

CLIENT SAMPLE IDENTIFICATION

| CLIENT SAMPLE IDENTIFICATION | SAMPLING DATE/TIME |
|------------------------------|--------------------|
| 1. LAT-3                     | 3/25/03 10:00      |
| 2. LAT-14                    | 10:15              |
| 3. LAT-16                    | 09:30              |
| 4. LAT-26                    | 09:40              |
| 5. HA-5                      | 11:50              |
| 6. HA-8                      | 11:21              |
| 7. HA-13                     | 12:30              |
| 8. HA-15                     | 12:15              |
| 9. Baker Tank                |                    |
| 10. Air Stripper             |                    |
| 11. Baker Tank               | 3/25/03 14:35      |
| 12.                          |                    |
| 13.                          |                    |
| 14.                          |                    |
| 15.                          |                    |

| REQUESTED ANALYSES |            | TURNAROUND REQUEST in Business Days*                            |                                |
|--------------------|------------|-----------------------------------------------------------------|--------------------------------|
|                    |            | Organic & Inorganic Analyses                                    | Petroleum Hydrocarbon Analyses |
|                    |            | 10 7 5 4 3 2 1 <1                                               | STD. 4 3 2 1 <1                |
|                    |            |                                                                 | OTHER                          |
|                    |            | *Turnaround Requests less than standard may incur Rush Charges. |                                |
| MATRIX (W, S, O)   | # OF CONT. | COMMENTS                                                        | NCA WO ID                      |
| W                  | 4          | B3C0615                                                         | 01                             |
|                    |            |                                                                 | 02                             |
|                    |            |                                                                 | 03                             |
|                    |            |                                                                 | 04                             |
|                    |            |                                                                 | 05                             |
|                    |            |                                                                 | 06                             |
|                    |            |                                                                 | 07                             |
|                    |            |                                                                 | 08                             |
|                    |            |                                                                 | 09                             |

RELINQUISHED BY: Cathy Kilday DATE: 3/25/03 TIME: 15:00 FIRM: NCA

PRINT NAME: Cathy Kilday

RELINQUISHED BY: Donna Dicker DATE: 3/25/03 TIME: 17:10 FIRM: NCA

PRINT NAME: Donna Dicker

ADDITIONAL REMARKS:

RECEIVED BY: Donna Dicker DATE: 3/25/03 TIME: 15:00 FIRM: NCA

PRINT NAME: Donna Dicker

RECEIVED BY: Donna Dicker DATE: 3/25/03 TIME: 17:10 FIRM: NCA

PRINT NAME: Donna Dicker

TEMP: 17.0 PAGE: 01



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



06 June 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: Conoco Phillips - Renton

Enclosed are the results of analyses for samples received by the laboratory on 05/29/03 18:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

*Jeanne Garthwaite*

Jeanne Garthwaite

Project Manager



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

## CASE NARRATIVE for B3E0729

Client: Landau Associates, Inc.  
Project Manager: Martin Powers  
Project Name: Conoco Phillips Renton  
Project Number: 706002

### 1.0 DESCRIPTION OF CASE

Thirteen water samples were received in a single shipment as documented on the associated chain-of-custody. The scheduled analyses for these samples included: Gasoline Hydrocarbons and BTEX by NWTPH-Gx/EPA 8021B and Diesel Range Hydrocarbons by NWTPH-Dx.

### 2.0 COMMENTS ON SAMPLE RECEIPT

The samples were received in the Bothell laboratory on May 29, 2003. The cooler temperature was documented at 3.2 degrees C. upon receipt in the laboratory. All sample containers were received in good condition.

### 3.0 COMMENTS ON PREPARATION AND ANALYSIS

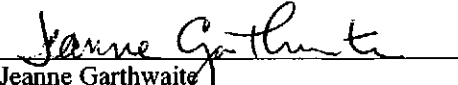
#### *Gasoline Hydrocarbons and BTEX by NWTPH-Gx/EPA 8021*

No anomalies or discrepancies were associated with this analysis other than those already qualified in the data. All quality control measures were within acceptable ranges.

#### *Diesel Range Hydrocarbons by NWTPH-Dx*

There were low surrogate recoveries for samples LAI-11, LAI-20, HA-17, LAI-2, and LAI-3. All of the samples except for HA-17 had extra volume for re-extraction. All of the samples mentioned except HA-17 were re-extracted and re-analyzed with surrogate recovery within the acceptable range. Since there was not extra volume for HA-17 we reported the analysis with the low surrogate recoveries. The results could be biased low.

"I certify that this data package is in compliance with the Contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."

  
\_\_\_\_\_  
Jeanne Garthwaite  
Project Manager  
North Creek Analytical



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

**Reported:**  
06/06/03 17:33

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| Trip Blank | B3E0729-01    | Water  | 05/28/03 08:00 | 05/29/03 18:10 |
| LAI-11     | B3E0729-02    | Water  | 05/28/03 12:00 | 05/29/03 18:10 |
| LAI-12     | B3E0729-03    | Water  | 05/28/03 12:35 | 05/29/03 18:10 |
| LAI-15     | B3E0729-04    | Water  | 05/28/03 13:35 | 05/29/03 18:10 |
| LAI-14     | B3E0729-05    | Water  | 05/28/03 14:10 | 05/29/03 18:10 |
| LAI-13     | B3E0729-06    | Water  | 05/28/03 14:30 | 05/29/03 18:10 |
| LAI-16     | B3E0729-07    | Water  | 05/28/03 15:10 | 05/29/03 18:10 |
| LAI-10     | B3E0729-08    | Water  | 05/28/03 16:00 | 05/29/03 18:10 |
| LAI-20     | B3E0729-09    | Water  | 05/29/03 08:00 | 05/29/03 18:10 |
| HA-17      | B3E0729-10    | Water  | 05/29/03 08:05 | 05/29/03 18:10 |
| HA-18      | B3E0729-11    | Water  | 05/29/03 08:35 | 05/29/03 18:10 |
| LAI-2      | B3E0729-12    | Water  | 05/29/03 08:50 | 05/29/03 18:10 |
| LAI-3      | B3E0729-13    | Water  | 05/29/03 09:15 | 05/29/03 18:10 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>Trip Blank (B3E0729-01) Water Sampled: 05/28/03 08:00 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| <b>A-01</b>                                                                           |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | ND     | 50.0            | ug/l  | 1        | 3F05004 | 06/05/03 | 06/05/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 86.5 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 97.3 % | 72-127          |       |          | "       | "        | "        | "              |       |
| <b>LAI-11 (B3E0729-02) Water Sampled: 05/28/03 12:00 Received: 05/29/03 18:10</b>     |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | ND     | 50.0            | ug/l  | 1        | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 92.9 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 97.3 % | 72-127          |       |          | "       | "        | "        | "              |       |
| <b>LAI-12 (B3E0729-03) Water Sampled: 05/28/03 12:35 Received: 05/29/03 18:10</b>     |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | ND     | 50.0            | ug/l  | 1        | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | 1.81   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 91.0 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 98.8 % | 72-127          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**LAI-15 (B3E0729-04) Water Sampled: 05/28/03 13:35 Received: 05/29/03 18:10**

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 104    | 50.0   | ug/l | 1 | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 92.7 % | 62-127 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 99.8 % | 72-127 |      |   | "       | "        | "        | "              |  |

**LAI-14 (B3E0729-05) Water Sampled: 05/28/03 14:10 Received: 05/29/03 18:10**

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 92.3 % | 62-127 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 96.7 % | 72-127 |      |   | "       | "        | "        | "              |  |

**LAI-13 (B3E0729-06) Water Sampled: 05/28/03 14:30 Received: 05/29/03 18:10**

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND     | 50.0   | ug/l | 1 | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND     | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 90.4 % | 62-127 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 96.9 % | 72-127 |      |   | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                           | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|-----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>LAI-16 (B3E0729-07) Water Sampled: 05/28/03 15:10 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | 705    | 100             | ug/l  | 2        | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B | G-03  |
| Benzene                                                                           | 523    | 5.00            | "     | 10       | "       | "        | 06/04/03 | "              |       |
| Toluene                                                                           | 14.9   | 1.00            | "     | 2        | "       | "        | 06/04/03 | "              |       |
| Ethylbenzene                                                                      | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | 2.25   | 2.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 85.4 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 104 %  | 72-127          |       |          | "       | "        | "        | "              |       |
| <b>LAI-10 (B3E0729-08) Water Sampled: 05/28/03 16:00 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | ND     | 50.0            | ug/l  | 1        | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 85.6 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 95.8 % | 72-127          |       |          | "       | "        | "        | "              |       |
| <b>LAI-20 (B3E0729-09) Water Sampled: 05/29/03 08:00 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | 18800  | 2500            | ug/l  | 50       | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | 2840   | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | 6320   | 100             | "     | 200      | "       | "        | 06/04/03 | "              |       |
| Ethylbenzene                                                                      | 235    | 25.0            | "     | 50       | "       | "        | 06/04/03 | "              |       |
| Xylenes (total)                                                                   | 1680   | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 90.8 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 99.2 % | 72-127          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                          | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>HA-17 (B3E0729-10) Water Sampled: 05/29/03 08:05 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 2090   | 125             | ug/l  | 2.5      | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 50.0   | 1.25            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                          | 129    | 1.25            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | 80.1   | 1.25            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                  | 322    | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 92.5 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 105 %  | 72-127          |       |          | "       | "        | "        | "              |       |
| <b>HA-18 (B3E0729-11) Water Sampled: 05/29/03 08:35 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 31000  | 2500            | ug/l  | 50       | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 95.0   | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                          | 157    | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | 2440   | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                  | 7840   | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 98.1 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 99.0 % | 72-127          |       |          | "       | "        | "        | "              |       |
| <b>LAI-2 (B3E0729-12) Water Sampled: 05/29/03 08:50 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 18100  | 2500            | ug/l  | 50       | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 2940   | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | 235    | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                  | 1680   | 50.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 88.1 % | 62-127          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 100 %  | 72-127          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                             | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|-------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>LAI-2 (B3E0729-12RE1) Water Sampled: 05/29/03 08:50 Received: 05/29/03 18:10</b> |        |                    |       |          |         |          |          |                |       |
| Toluene                                                                             | 6100   | 100                | ug/l  | 200      | 3F05004 | 06/05/03 | 06/05/03 | NWTPH-Gx/8021B |       |
| Surrogate: 4-BFB (PID)                                                              | 93.1 % | 72-127             |       |          | "       | "        | "        | "              |       |
| <b>LAI-3 (B3E0729-13) Water Sampled: 05/29/03 09:15 Received: 05/29/03 18:10</b>    |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                         | 301    | 50.0               | ug/l  | 1        | 3F03015 | 06/04/03 | 06/04/03 | NWTPH-Gx/8021B |       |
| Toluene                                                                             | 40.7   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                        | 0.951  | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                     | 4.63   | 1.00               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                              | 87.7 % | 62-127             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                              | 96.7 % | 72-127             |       |          | "       | "        | "        | "              |       |
| <b>LAI-3 (B3E0729-13RE1) Water Sampled: 05/29/03 09:15 Received: 05/29/03 18:10</b> |        |                    |       |          |         |          |          |                |       |
| Benzene                                                                             | 151    | 2.50               | ug/l  | 5        | 3F05004 | 06/05/03 | 06/05/03 | NWTPH-Gx/8021B |       |
| Surrogate: 4-BFB (PID)                                                              | 97.1 % | 72-127             |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|--------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-11 (B3E0729-02RE1) Water Sampled: 05/28/03 12:00 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3F04004 | 06/04/03 | 06/06/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 79.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 88.6 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-12 (B3E0729-03) Water Sampled: 05/28/03 12:35 Received: 05/29/03 18:10</b>    |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 80.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 53.2 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-15 (B3E0729-04) Water Sampled: 05/28/03 13:35 Received: 05/29/03 18:10</b>    |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 84.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 57.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-14 (B3E0729-05) Water Sampled: 05/28/03 14:10 Received: 05/29/03 18:10</b>    |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 74.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 50.5 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-13 (B3E0729-06) Water Sampled: 05/28/03 14:30 Received: 05/29/03 18:10</b>    |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/02/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 86.4 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 60.1 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|--------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-16 (B3E0729-07) Water Sampled: 05/28/03 15:10 Received: 05/29/03 18:10</b>    |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.298           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/03/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.595           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 84.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 75.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-10 (B3E0729-08) Water Sampled: 05/28/03 16:00 Received: 05/29/03 18:10</b>    |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/03/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 81.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 67.9 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>LAI-20 (B3E0729-09RE1) Water Sampled: 05/29/03 08:00 Received: 05/29/03 18:10</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 0.299  | 0.250           | mg/l  | 1        | 3F04004 | 06/04/03 | 06/06/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 90.8 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 91.7 % | 50-150          |       |          | "       | "        | "        | "        |       |
| <b>HA-17 (B3E0729-10) Water Sampled: 05/29/03 08:05 Received: 05/29/03 18:10</b>     |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | ND     | 0.250           | mg/l  | 1        | 3E31001 | 05/31/03 | 06/03/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                     | 38.4 % | 50-150          |       |          | "       | "        | "        | "        | X     |
| Surrogate: Octacosane                                                                | 28.9 % | 50-150          |       |          | "       | "        | "        | "        | X     |
| <b>HA-18 (B3E0729-11) Water Sampled: 05/29/03 08:35 Received: 05/29/03 18:10</b>     |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                            | 7.51   | 1.25            | mg/l  | 5        | 3E31001 | 05/31/03 | 06/03/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                          | ND     | 0.500           | "     | 1        | "       | "        | 06/03/03 | "        |       |
| Surrogate: 2-FBP                                                                     | 80.3 % | 50-150          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                | 54.0 % | 50-150          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 8 of 14



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

**Reported:**  
06/06/03 17:33

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                             | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|-------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-2 (B3E0729-12RE1) Water</b> Sampled: 05/29/03 08:50 Received: 05/29/03 18:10 |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                           | ND     | 0.250              | mg/l  | 1        | 3F04004 | 06/04/03 | 06/06/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                         | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                    | 78.9 % | 50-150             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                               | 60.5 % | 50-150             |       |          | "       | "        | "        | "        |       |
| <b>LAI-3 (B3E0729-13RE1) Water</b> Sampled: 05/29/03 09:15 Received: 05/29/03 18:10 |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                           | ND     | 0.250              | mg/l  | 1        | 3F04004 | 06/04/03 | 06/06/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                         | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                    | 73.3 % | 50-150             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                               | 56.5 % | 50-150             |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 9 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3F03015: Prepared 06/04/03 Using EPA 5030B (P/T)**

**Blank (3F03015-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 42.0 |       | "    | 48.0 |  | 87.5 | 62-127 |  |  |  |
| Surrogate: 4-BFB (PID)      | 46.6 |       | "    | 48.0 |  | 97.1 | 72-127 |  |  |  |

**LCS (3F03015-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 504  | 50.0  | ug/l | 500  |  | 101  | 86-120 |  |  |  |
| Benzene                     | 6.73 | 0.500 | "    | 6.65 |  | 101  | 80-120 |  |  |  |
| Toluene                     | 35.5 | 0.500 | "    | 37.0 |  | 95.9 | 80-120 |  |  |  |
| Ethylbenzene                | 9.15 | 0.500 | "    | 8.55 |  | 107  | 80-120 |  |  |  |
| Xylenes (total)             | 43.4 | 1.00  | "    | 43.0 |  | 101  | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 48.9 |       | "    | 48.0 |  | 102  | 62-127 |  |  |  |
| Surrogate: 4-BFB (PID)      | 44.8 |       | "    | 48.0 |  | 93.3 | 72-127 |  |  |  |

**LCS Dup (3F03015-BS1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 485  | 50.0  | ug/l | 500  |  | 97.0 | 80-120 | 3.84  | 25 |  |
| Benzene                     | 6.33 | 0.500 | "    | 6.65 |  | 95.2 | 80-120 | 6.13  | 40 |  |
| Toluene                     | 35.2 | 0.500 | "    | 37.0 |  | 95.1 | 80-120 | 0.849 | 40 |  |
| Ethylbenzene                | 9.07 | 0.500 | "    | 8.55 |  | 106  | 80-120 | 0.878 | 40 |  |
| Xylenes (total)             | 42.9 | 1.00  | "    | 43.0 |  | 99.8 | 80-120 | 1.16  | 40 |  |
| Surrogate: 4-BFB (FID)      | 49.4 |       | "    | 48.0 |  | 103  | 62-127 |       |    |  |
| Surrogate: 4-BFB (PID)      | 45.7 |       | "    | 48.0 |  | 95.2 | 72-127 |       |    |  |

**Matrix Spike (3F03015-MS1)**

Source: B3E0729-02

|                             |      |       |      |      |       |      |        |  |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 480  | 50.0  | ug/l | 500  | 12.2  | 93.6 | 72-119 |  |  |  |
| Benzene                     | 6.58 | 0.500 | "    | 6.65 | ND    | 98.9 | 70-129 |  |  |  |
| Toluene                     | 36.1 | 0.500 | "    | 37.0 | 0.187 | 97.1 | 73-114 |  |  |  |
| Ethylbenzene                | 8.97 | 0.500 | "    | 8.55 | ND    | 105  | 82-120 |  |  |  |
| Xylenes (total)             | 43.6 | 1.00  | "    | 43.0 | 0.430 | 100  | 74-118 |  |  |  |
| Surrogate: 4-BFB (FID)      | 47.4 |       | "    | 48.0 |       | 98.8 | 62-127 |  |  |  |
| Surrogate: 4-BFB (PID)      | 45.0 |       | "    | 48.0 |       | 93.8 | 72-127 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 10 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3F03015: Prepared 06/04/03 Using EPA 5030B (P/T)**

**Matrix Spike Dup (3F03015-MSD1)**

Source: B3E0729-02

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 466  | 50.0  | ug/l | 500  | 12.2  | 90.8 | 72-119 | 2.96  | 25 |  |
| Benzene                     | 6.49 | 0.500 | "    | 6.65 | ND    | 97.6 | 70-129 | 1.38  | 40 |  |
| Toluene                     | 36.0 | 0.500 | "    | 37.0 | 0.187 | 96.8 | 73-114 | 0.277 | 40 |  |
| Ethylbenzene                | 8.97 | 0.500 | "    | 8.55 | ND    | 105  | 82-120 | 0.00  | 40 |  |
| Xylenes (total)             | 43.5 | 1.00  | "    | 43.0 | 0.430 | 100  | 74-118 | 0.230 | 40 |  |
| Surrogate: 4-BFB (FID)      | 47.1 |       | "    | 48.0 |       | 98.1 | 62-127 |       |    |  |
| Surrogate: 4-BFB (PID)      | 45.8 |       | "    | 48.0 |       | 95.4 | 72-127 |       |    |  |

**Batch 3F05004: Prepared 06/05/03 Using EPA 5030B (MeOH)**

**Blank (3F05004-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 40.9 |       | "    | 48.0 |  | 85.2 | 62-127 |  |  |  |
| Surrogate: 4-BFB (PID)      | 45.2 |       | "    | 48.0 |  | 94.2 | 72-127 |  |  |  |

**LCS (3F05004-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 455  | 50.0  | ug/l | 502  |  | 90.6 | 80-120 |  |  |  |
| Benzene                     | 6.58 | 0.500 | "    | 7.31 |  | 90.0 | 80-120 |  |  |  |
| Toluene                     | 35.3 | 0.500 | "    | 33.9 |  | 104  | 80-120 |  |  |  |
| Ethylbenzene                | 9.15 | 0.500 | "    | 7.94 |  | 115  | 80-120 |  |  |  |
| Xylenes (total)             | 43.3 | 1.00  | "    | 38.4 |  | 113  | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 43.1 |       | "    | 48.0 |  | 89.8 | 62-127 |  |  |  |
| Surrogate: 4-BFB (PID)      | 43.9 |       | "    | 48.0 |  | 91.5 | 72-127 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 11 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 3F05004: Prepared 06/05/03 Using EPA 5030B (MeOH)**

**LCS Dup (3F05004-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 467  | 50.0  | ug/l | 502  |  | 93.0 | 80-120 | 2.60  | 25 |  |
| Benzene                     | 6.45 | 0.500 | "    | 7.31 |  | 88.2 | 80-120 | 2.00  | 40 |  |
| Toluene                     | 35.3 | 0.500 | "    | 33.9 |  | 104  | 80-120 | 0.00  | 40 |  |
| Ethylbenzene                | 9.21 | 0.500 | "    | 7.94 |  | 116  | 80-120 | 0.654 | 40 |  |
| Xylenes (total)             | 44.1 | 1.00  | "    | 38.4 |  | 115  | 80-120 | 1.83  | 40 |  |
| Surrogate: 4-BFB (FID)      | 45.2 |       | "    | 48.0 |  | 94.2 | 62-127 |       |    |  |
| Surrogate: 4-BFB (PID)      | 45.1 |       | "    | 48.0 |  | 94.0 | 72-127 |       |    |  |

**Matrix Spike (3F05004-MS1)**

Source: B3F0081-02

|                             |      |       |      |      |       |      |        |  |  |      |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|------|
| Gasoline Range Hydrocarbons | 496  | 50.0  | ug/l | 502  | 8.59  | 97.1 | 72-119 |  |  |      |
| Benzene                     | 7.04 | 0.500 | "    | 7.31 | ND    | 96.3 | 70-129 |  |  |      |
| Toluene                     | 38.1 | 0.500 | "    | 33.9 | 0.165 | 112  | 73-114 |  |  |      |
| Ethylbenzene                | 9.96 | 0.500 | "    | 7.94 | ND    | 125  | 82-120 |  |  | Q-01 |
| Xylenes (total)             | 46.8 | 1.00  | "    | 38.4 | ND    | 122  | 74-118 |  |  | Q-01 |
| Surrogate: 4-BFB (FID)      | 42.8 |       | "    | 48.0 |       | 89.2 | 62-127 |  |  |      |
| Surrogate: 4-BFB (PID)      | 44.2 |       | "    | 48.0 |       | 92.1 | 72-127 |  |  |      |

**Matrix Spike Dup (3F05004-MSD1)**

Source: B3F0081-02

|                             |      |       |      |      |       |      |        |       |    |      |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|------|
| Gasoline Range Hydrocarbons | 464  | 50.0  | ug/l | 502  | 8.59  | 90.7 | 72-119 | 6.67  | 25 |      |
| Benzene                     | 7.00 | 0.500 | "    | 7.31 | ND    | 95.8 | 70-129 | 0.570 | 40 |      |
| Toluene                     | 37.4 | 0.500 | "    | 33.9 | 0.165 | 110  | 73-114 | 1.85  | 40 |      |
| Ethylbenzene                | 9.60 | 0.500 | "    | 7.94 | ND    | 121  | 82-120 | 3.68  | 40 | Q-01 |
| Xylenes (total)             | 46.6 | 1.00  | "    | 38.4 | ND    | 121  | 74-118 | 0.428 | 40 | Q-01 |
| Surrogate: 4-BFB (FID)      | 42.9 |       | "    | 48.0 |       | 89.4 | 62-127 |       |    |      |
| Surrogate: 4-BFB (PID)      | 44.3 |       | "    | 48.0 |       | 92.3 | 72-127 |       |    |      |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 12 of 14



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3E31001: Prepared 05/31/03 Using EPA 3520C**

**Blank (3E31001-BLK1)**

|                             |       |       |      |       |  |      |        |  |  |
|-----------------------------|-------|-------|------|-------|--|------|--------|--|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |      |        |  |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |      |        |  |  |
| Surrogate: 2-FBP            | 0.244 |       | "    | 0.320 |  | 76.2 | 50-150 |  |  |
| Surrogate: Octacosane       | 0.131 |       | "    | 0.160 |  | 81.9 | 50-150 |  |  |

**LCS (3E31001-BS1)**

|                           |       |       |      |       |  |      |        |  |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|--|
| Diesel Range Hydrocarbons | 1.45  | 0.250 | mg/l | 2.00  |  | 72.5 | 45-105 |  |  |
| Surrogate: 2-FBP          | 0.246 |       | "    | 0.320 |  | 76.9 | 50-150 |  |  |

**LCS Dup (3E31001-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|
| Diesel Range Hydrocarbons | 1.48  | 0.250 | mg/l | 2.00  |  | 74.0 | 45-105 | 2.05 | 50 |
| Surrogate: 2-FBP          | 0.247 |       | "    | 0.320 |  | 77.2 | 50-150 |      |    |

**Batch 3F04004: Prepared 06/04/03 Using EPA 3520C**

**Blank (3F04004-BLK1)**

|                             |       |       |      |       |  |      |        |  |  |
|-----------------------------|-------|-------|------|-------|--|------|--------|--|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |      |        |  |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |      |        |  |  |
| Surrogate: 2-FBP            | 0.292 |       | "    | 0.320 |  | 91.2 | 50-150 |  |  |
| Surrogate: Octacosane       | 0.158 |       | "    | 0.160 |  | 98.8 | 50-150 |  |  |

**LCS (3F04004-BS1)**

|                           |       |       |      |       |  |      |        |  |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|--|
| Diesel Range Hydrocarbons | 1.79  | 0.250 | mg/l | 2.00  |  | 89.5 | 45-105 |  |  |
| Surrogate: 2-FBP          | 0.278 |       | "    | 0.320 |  | 86.9 | 50-150 |  |  |

**LCS Dup (3F04004-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|
| Diesel Range Hydrocarbons | 1.88  | 0.250 | mg/l | 2.00  |  | 94.0 | 45-105 | 4.90 | 50 |
| Surrogate: 2-FBP          | 0.305 |       | "    | 0.320 |  | 95.3 | 50-150 |      |    |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 13 of 14



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002  
Project Manager: Martin Powers

Reported:  
06/06/03 17:33

### Notes and Definitions

A-01 VOA had headspace due to lab use.

D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.

G-03 The total hydrocarbon result in this sample is primarily due to an individual compound eluting in the volatile hydrocarbon range. Identification and quantitation by EPA method 8021B or 8260B is recommended.

Q-01 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.

X See case narrative.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

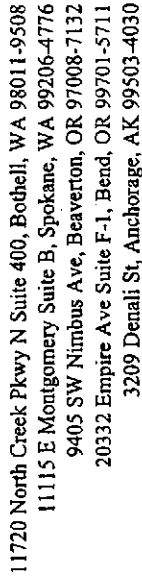
North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

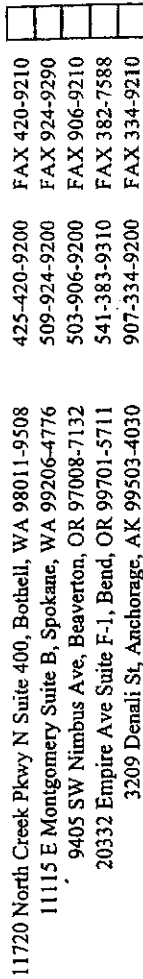
Page 14 of 14



|              |              |  |
|--------------|--------------|--|
|              | FAX 420-9210 |  |
| 425-420-9200 | FAX 924-9290 |  |
| 509-924-9200 | FAX 906-9210 |  |
| 503-906-9200 | FAX 382-7588 |  |
| 541-383-9310 | FAX 334-9210 |  |
| 907-334-9200 |              |  |

Work Order #: 2356-20

|                                                                                                                                                                                                                                                                                          |  |                                                     |  |                                                                                                     |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------|--|-----------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| CLIENT: <b>Landau Associates</b><br>REPORT TO: <b>Martin Powers (Chris Kimmie)</b><br>ADDRESS: <b>130 2nd Ave. South</b><br><b>Edmonds, WA 98020</b><br>PHONE: <b>(425) 778-0900 FAX: (425) 778-6409</b><br>PROJECT NAME: <b>ConocoPhillips, Renton</b><br>PROJECT NUMBER: <b>706002</b> |  | INVOICE TO:<br><b>Tim Johnson of ConocoPhillips</b> |  | <b>TURNAROUND REQUEST</b><br>in Business Days *                                                     |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | Organic & Inorganic Analyses<br>Petroleum Hydrocarbon Analyses<br>STD.                              |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 10 7 5 4 3 2 1 <1<br>5 4 3 2 1 <1                                                                   |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | OTHER Specify:                                                                                      |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | * Turnaround Requests less than standard may incur Rush Charges.                                    |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | MATRIX (W, S, O) LOCATION / COMMENTS # OF CONT. NCA W/O ID                                          |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | W 3 5 5 5 4 4 5 5 5 4                                                                               |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | Allow turbid samples to settle and collect aliquot from clear portion                               |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 01 02 03 04 05 06 07 08 09 10                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | REQUESTED ANALYSES                                                                                  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | PRESERVATIVE                                                                                        |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | HCl HCl HCl HCl HCl HCl HCl HCl HCl HCl HCl HCl                                                     |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | BTEX TPH-GX TPH-DX NW NW                                                                            |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | SAMPLED BY: <b>Erik Gerking</b>                                                                     |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | CLIENT SAMPLE IDENTIFICATION SAMPLING DATE/TIME                                                     |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 1 Trip Blank 5-28-03 0800                                                                           |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 2 LA1-11 1200                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 3 LA1-12 1235                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 4 LA1-15 1335                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 5 LA1-14 1410                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 6 LA1-13 1430                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 7 LA1-10 1516                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 8 LA1-10 1600                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 9 LA1-20 5-29-03 0800                                                                               |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | 10 HA-17 0805                                                                                       |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | RELEASED BY:                                                                                        |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | PRINT NAME: <b>Erik Gerking</b> FIRM: <b>Landau Assoc.</b> DATE: <b>5-28-03</b> TIME: <b>1510</b>   |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | RELEASED BY: <b>Chris Kimmie</b> FIRM: <b>Landau Assoc.</b> DATE: <b>5/29/03</b> TIME: <b>17:00</b> |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | PRINT NAME: <b>Chris Kimmie</b> FIRM: <b>Landau Assoc.</b> DATE: <b>5/29/03</b> TIME: <b>17:00</b>  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | ADDITIONAL REMARKS:                                                                                 |  |  |  |  |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                          |  |                                                     |  | TEMP: 3.2 PAGE OF                                                                                   |  |  |  |  |  |  |  |  |  |



Work Order #: 550179

| CLIENT: Landau Associates                |                    | INVOICE TO:             |  |
|------------------------------------------|--------------------|-------------------------|--|
| REPORT TO: Chris Kimmel                  |                    | ConocoPhillips          |  |
| ADDRESS: 13022 Ave South                 |                    | Tim Johnson             |  |
| Edmonds, WA 98020                        |                    |                         |  |
| PHONE (425) 778-0877 FAX: (425) 778-6409 |                    |                         |  |
| PROJECT NAME: ConocoPhillips, Renton     |                    |                         |  |
| PROJECT NUMBER: 706002                   |                    |                         |  |
| SAMPLED BY: Erik Gerking                 |                    | PRESERVATIVE            |  |
| CLIENT SAMPLE IDENTIFICATION             | SAMPLING DATE/TIME | REQUESTED ANALYSES      |  |
| 1 LA1-18                                 | 5-29-03 0835       | HCl HCl HCl             |  |
| 2 LA1-2                                  | 1 0850             | TPH-DX NCA (80218) BTEX |  |
| 3 LA1-3                                  | 1 0915             | TPH-DX NCA (80218) BTEX |  |
| 4                                        |                    |                         |  |
| 5                                        |                    |                         |  |
| 6                                        |                    |                         |  |
| 7                                        |                    |                         |  |
| 8                                        |                    |                         |  |
| 9                                        |                    |                         |  |
| 10                                       |                    |                         |  |

| RELEASED BY:    | PRINT NAME:     | FIRM: | DATE:   | TIME: |
|-----------------|-----------------|-------|---------|-------|
| Erik Gerking    | Landau Assoc    | NCA   | 5-29-03 | 1510  |
| RECEIVED BY:    | PRINT NAME:     | FIRM: | DATE:   | TIME: |
| Michael J. Hays | Michael J. Hays | NCA   | 5-29-03 | 1700  |

| TURNAROUND REQUEST | DATE:   | TIME: |
|--------------------|---------|-------|
| 10                 | 5/29/03 | 15:10 |
| 7                  | 5/29/03 | 17:00 |
| 5                  | 5/29/03 | 17:00 |
| 4                  | 5/29/03 | 17:00 |
| 3                  | 5/29/03 | 17:00 |
| 2                  | 5/29/03 | 17:00 |
| 1                  | 5/29/03 | 17:00 |



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



03 April 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: Conoco Phillips - Renton

Enclosed are the results of analyses for samples received by the laboratory on 04/02/03 09:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

*Jeanne Garthwaite*

Jeanne Garthwaite

Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/03/03 14:54

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID  | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|------------|---------------|--------|----------------|----------------|
| Influent   | B3D0042-01    | Water  | 04/01/03 10:15 | 04/02/03 09:55 |
| Effluent 1 | B3D0042-02    | Water  | 04/01/03 10:20 | 04/02/03 09:55 |
| Effluent 2 | B3D0042-03    | Water  | 04/01/03 19:00 | 04/02/03 09:55 |
| Effluent 3 | B3D0042-04    | Water  | 04/02/03 02:30 | 04/02/03 09:55 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/03/03 14:54

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|---------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>Influent (B3D0042-01) Water</b> Sampled: 04/01/03 10:15 Received: 04/02/03 09:55   |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | 222000 | 50000           | ug/l  | 1000     | 3D03003 | 04/03/03 | 04/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | 21000  | 500             | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | 43100  | 500             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | 2830   | 500             | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | 17900  | 1000            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 88.1 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 92.1 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>Effluent 1 (B3D0042-02) Water</b> Sampled: 04/01/03 10:20 Received: 04/02/03 09:55 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | 12800  | 500             | ug/l  | 10       | 3D03003 | 04/03/03 | 04/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | 268    | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | 701    | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | 86.0   | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | 602    | 10.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 110 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 90.2 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>Effluent 2 (B3D0042-03) Water</b> Sampled: 04/01/03 19:00 Received: 04/02/03 09:55 |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                           | 4920   | 250             | ug/l  | 5        | 3D03003 | 04/03/03 | 04/03/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                               | 73.1   | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                               | 186    | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                          | 18.6   | 2.50            | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                       | 157    | 5.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                                | 110 %  | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                                | 92.9 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/03/03 14:54

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                        | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|--------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------------|-------|
| Effluent 3 (B3D0042-04) Water Sampled: 04/02/03 02:30 Received: 04/02/03 09:55 |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                    | 3020   | 50.0               | ug/l  | 1        | 3D03003 | 04/03/03 | 04/03/03 | NWTPH-Gx/8021B | G-01  |
| Benzene                                                                        | 10.1   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                        | 30.6   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                   | 5.30   | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                | 44.5   | 1.00               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                         | 160 %  | 57-125             |       |          | "       | "        | "        | "              | S-04  |
| Surrogate: 4-BFB (PID)                                                         | 103 %  | 62-120             |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/03/03 14:54

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3D03003: Prepared 04/03/03 Using EPA 5030B (MeOH)**

**Blank (3D03003-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 42.3 |       | "    | 48.0 |  | 88.1 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 45.2 |       | "    | 48.0 |  | 94.2 | 62-120 |  |  |

**LCS (3D03003-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 511  | 50.0  | ug/l | 502  |  | 102  | 80-120 |  |  |
| Benzene                     | 5.89 | 0.500 | "    | 6.21 |  | 94.8 | 80-120 |  |  |
| Toluene                     | 34.0 | 0.500 | "    | 38.1 |  | 89.2 | 80-120 |  |  |
| Ethylbenzene                | 8.75 | 0.500 | "    | 8.94 |  | 97.9 | 80-120 |  |  |
| Xylenes (total)             | 42.4 | 1.00  | "    | 44.0 |  | 96.4 | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 47.2 |       | "    | 48.0 |  | 98.3 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 44.3 |       | "    | 48.0 |  | 92.3 | 62-120 |  |  |

**LCS Dup (3D03003-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 514  | 50.0  | ug/l | 502  |  | 102  | 80-120 | 0.585 | 25 |
| Benzene                     | 6.57 | 0.500 | "    | 6.21 |  | 106  | 80-120 | 10.9  | 40 |
| Toluene                     | 34.8 | 0.500 | "    | 38.1 |  | 91.3 | 80-120 | 2.33  | 40 |
| Ethylbenzene                | 8.86 | 0.500 | "    | 8.94 |  | 99.1 | 80-120 | 1.25  | 40 |
| Xylenes (total)             | 43.0 | 1.00  | "    | 44.0 |  | 97.7 | 80-120 | 1.41  | 40 |
| Surrogate: 4-BFB (FID)      | 46.8 |       | "    | 48.0 |  | 97.5 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 44.3 |       | "    | 48.0 |  | 92.3 | 62-120 |       |    |

**Matrix Spike (3D03003-MS1)**

Source: B3D0042-02

|                             |       |      |      |      |       |      |        |  |      |
|-----------------------------|-------|------|------|------|-------|------|--------|--|------|
| Gasoline Range Hydrocarbons | 17800 | 500  | ug/l | 5020 | 12800 | 99.6 | 70-130 |  |      |
| Benzene                     | 291   | 5.00 | "    | 62.1 | 268   | 57.0 | 80-134 |  | Q-03 |
| Toluene                     | 922   | 5.00 | "    | 381  | 701   | 58.0 | 68-114 |  | Q-03 |
| Ethylbenzene                | 149   | 5.00 | "    | 89.4 | 86.0  | 60.5 | 72-128 |  | Q-03 |
| Xylenes (total)             | 900   | 10.0 | "    | 440  | 602   | 67.7 | 67-125 |  |      |
| Surrogate: 4-BFB (FID)      | 58.5  |      | "    | 48.0 |       | 122  | 57-125 |  |      |
| Surrogate: 4-BFB (PID)      | 42.5  |      | "    | 48.0 |       | 88.5 | 62-120 |  |      |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 6



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
04/03/03 14:54

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3D03003: Prepared 04/03/03 Using EPA 5030B (MeOH)**

**Matrix Spike Dup (3D03003-MSD1)**

**Source: B3D0042-02**

|                             |       |      |      |      |       |      |        |       |    |      |
|-----------------------------|-------|------|------|------|-------|------|--------|-------|----|------|
| Gasoline Range Hydrocarbons | 17800 | 500  | ug/l | 5020 | 12800 | 99.6 | 70-130 | 0.00  | 25 |      |
| Benzene                     | 292   | 5.00 | "    | 62.1 | 268   | 88.6 | 80-134 | 0.343 | 40 | Q-03 |
| Toluene                     | 934   | 5.00 | "    | 381  | 701   | 61.2 | 68-114 | 1.29  | 40 | Q-03 |
| Ethylbenzene                | 152   | 5.00 | "    | 89.4 | 86.0  | 73.8 | 72-128 | 1.99  | 40 |      |
| Xylenes (total)             | 913   | 10.0 | "    | 440  | 602   | 70.7 | 67-125 | 1.43  | 40 |      |
| Surrogate: 4-BFB (FID)      | 58.2  |      | "    | 48.0 |       | 121  | 57-125 |       |    |      |
| Surrogate: 4-BFB (PID)      | 42.9  |      | "    | 48.0 |       | 89.4 | 62-120 |       |    |      |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 6



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7568  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Conoco Phillips - Renton  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
04/03/03 14:54

### Notes and Definitions

G-01 Results reported for the gas range are primarily due to overlap from diesel range hydrocarbons.

Q-03 The percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 6

- ☒ Seattle (Edmonds) (425) 778-0907  
☐ Tacoma (253) 926-2493  
☐ Spokane (509) 327-9737  
☐ Portland (Lake Oswego) (503) 443-6010



Landau  
Associates

## Chain-of-Custody Record

Project Name ConocoPhillips Project No. 706002.012  
Project Location/Event Renton  
Sampler's Name Chris Kimmel  
Project Contact Chris Kimmel  
Send Results To Chris Kimmel

Sample I.D. Date Time Matrix Containers No. of

| Sample I.D. | Date   | Time | Matrix | Containers | No. of |
|-------------|--------|------|--------|------------|--------|
| Influent    | 4/1/03 | 1015 | Water  | 3          | ✓      |
| Effluent 1  | ↓      | 1020 | ↓      | ↓          | ✓      |
| Effluent 2  | ↓      | 1900 | ↓      | ↓          | ✓      |
| Effluent 3  | 4/2/03 | 0236 | ↓      | ↓          | ✓      |

### Testing Parameters

Turnaround Time

☐ Standard

☒ Accelerated

☐ 24 Hours

TAT

Observations/Comments

01

02

03

04

Special Shipment/Handling  
or Storage Requirements

Method of  
Shipment

Hand Delivery

Relinquished by

Chris Kimmel  
Signature

Chris Kimmel  
Printed Name

Landau Associates  
Company

Date 4/2/03 Time 0955

Received by

Chris Kimmel  
Signature

Chris Kimmel  
Printed Name

Landau Associates  
Company

Date 4/2/03 Time 9:55

Relinquished by

Signature

Printed Name

Company

Date Time

Received by

Signature

Printed Name

Company

Date Time

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative

Rev 4/01



700002  
**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



28 January 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 01/15/03 14:56. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID     | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|---------------|---------------|--------|----------------|----------------|
| HA-18         | B3A0300-01    | Water  | 01/14/03 10:30 | 01/15/03 14:56 |
| HA-17         | B3A0300-02    | Water  | 01/14/03 10:40 | 01/15/03 14:56 |
| HA-7          | B3A0300-03    | Water  | 01/14/03 11:20 | 01/15/03 14:56 |
| HA-8          | B3A0300-04    | Water  | 01/14/03 11:10 | 01/15/03 14:56 |
| HA-15         | B3A0300-05    | Water  | 01/14/03 10:50 | 01/15/03 14:56 |
| HA-5          | B3A0300-06    | Water  | 01/14/03 11:00 | 01/15/03 14:56 |
| LAI-1(MS/MSD) | B3A0300-07    | Water  | 01/15/03 12:20 | 01/15/03 14:56 |
| LAI-2         | B3A0300-08    | Water  | 01/15/03 12:45 | 01/15/03 14:56 |
| LAI-3         | B3A0300-09    | Water  | 01/15/03 13:10 | 01/15/03 14:56 |
| LAI-12        | B3A0300-10    | Water  | 01/15/03 12:55 | 01/15/03 14:56 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**HA-18 (B3A0300-01) Water Sampled: 01/14/03 10:30 Received: 01/15/03 14:56**

|                             |       |        |      |    |         |          |          |                |  |
|-----------------------------|-------|--------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 11400 | 1250   | ug/l | 25 | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 40.3  | 12.5   | "    | "  | "       | "        | "        | "              |  |
| Toluene                     | 75.9  | 12.5   | "    | "  | "       | "        | "        | "              |  |
| Ethylbenzene                | 810   | 12.5   | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 2220  | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 101 % | 57-125 |      |    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 104 % | 62-120 |      |    | "       | "        | "        | "              |  |

**HA-17 (B3A0300-02) Water Sampled: 01/14/03 10:40 Received: 01/15/03 14:56**

|                             |        |        |      |     |         |          |          |                |  |
|-----------------------------|--------|--------|------|-----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 548    | 125    | ug/l | 2.5 | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 10.2   | 1.25   | "    | "   | "       | "        | "        | "              |  |
| Toluene                     | ND     | 1.25   | "    | "   | "       | "        | "        | "              |  |
| Ethylbenzene                | 1.55   | 1.25   | "    | "   | "       | "        | "        | "              |  |
| Xylenes (total)             | 2.61   | 2.50   | "    | "   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 94.8 % | 57-125 |      |     | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 98.1 % | 62-120 |      |     | "       | "        | "        | "              |  |

**HA-7 (B3A0300-03) Water Sampled: 01/14/03 11:20 Received: 01/15/03 14:56**

|                             |        |        |      |    |         |          |          |                |  |
|-----------------------------|--------|--------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 13700  | 2500   | ug/l | 50 | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 421    | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Toluene                     | 56.2   | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Ethylbenzene                | 261    | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 2350   | 50.0   | "    | "  | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 96.9 % | 57-125 |      |    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 101 %  | 62-120 |      |    | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                          | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>HA-8 (B3A0300-04) Water Sampled: 01/14/03 11:10 Received: 01/15/03 14:56</b>  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 633    | 50.0            | ug/l  | 1        | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 4.02   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                          | 16.5   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | 16.3   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                  | 207    | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 96.5 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 104 %  | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>HA-15 (B3A0300-05) Water Sampled: 01/14/03 10:50 Received: 01/15/03 14:56</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 344    | 50.0            | ug/l  | 1        | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 3.34   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                          | 0.672  | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                  | 2.51   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 92.9 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 89.8 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>HA-5 (B3A0300-06) Water Sampled: 01/14/03 11:00 Received: 01/15/03 14:56</b>  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 14300  | 1250            | ug/l  | 25       | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 3380   | 25.0            | "     | 50       | "       | "        | 01/24/03 | "              |       |
| Toluene                                                                          | 2870   | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | 43.6   | 12.5            | "     | 25       | "       | "        | 01/24/03 | "              |       |
| Xylenes (total)                                                                  | 151    | 25.0            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 95.0 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 100 %  | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|--------------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|--------------------|-------|----------|-------|----------|----------|--------|-------|

**LAI-1(MS/MSD) (B3A0300-07) Water** Sampled: 01/15/03 12:20 Received: 01/15/03 14:56

|                             |        |        |      |    |         |          |          |                |  |
|-----------------------------|--------|--------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 4120   | 500    | ug/l | 10 | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 728    | 5.00   | "    | "  | "       | "        | "        | "              |  |
| Toluene                     | 935    | 5.00   | "    | "  | "       | "        | "        | "              |  |
| Ethylbenzene                | 22.8   | 5.00   | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 120    | 10.0   | "    | "  | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 94.8 % | 57-125 |      |    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 99.0 % | 62-120 |      |    | "       | "        | "        | "              |  |

**LAI-2 (B3A0300-08) Water** Sampled: 01/15/03 12:45 Received: 01/15/03 14:56

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 72.6   | 50.0   | ug/l | 1 | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |  |
| Benzene                     | 2.78   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 2.20   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | 1.10   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 9.33   | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 95.4 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 103 %  | 62-120 |      |   | "       | "        | "        | "              |  |

**LAI-3 (B3A0300-09) Water** Sampled: 01/15/03 13:10 Received: 01/15/03 14:56

|                             |        |        |      |   |         |          |          |                |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 66.6   | 50.0   | ug/l | 1 | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |  |
| Benzene                     | ND     | 0.500  | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 3.19   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | 1.36   | 0.500  | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 8.45   | 1.00   | "    | " | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 95.2 % | 57-125 |      |   | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 104 %  | 62-120 |      |   | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                          | Result | Reporting | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|----------------------------------------------------------------------------------|--------|-----------|-------|----------|---------|----------|----------|----------------|-------|
|                                                                                  |        | Limit     |       |          |         |          |          |                |       |
| LAI-12 (B3A0300-10) Water    Sampled: 01/15/03 12:55    Received: 01/15/03 14:56 |        |           |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                      | 103    | 50.0      | ug/l  | 1        | 3A24001 | 01/24/03 | 01/24/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                          | 3.39   | 0.500     | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                          | 3.36   | 0.500     | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                     | 1.68   | 0.500     | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                  | 15.1   | 1.00      | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                           | 96.0 % | 57-125    |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                           | 104 %  | 62-120    |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

## Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control

### North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

#### Batch 3A24001: Prepared 01/24/03 Using EPA 5030B (P/T)

##### Blank (3A24001-BLK1)

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 45.5 |       | "    | 48.0 |  | 94.8 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 50.1 |       | "    | 48.0 |  | 104  | 62-120 |  |  |  |

##### LCS (3A24001-BS1)

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 499  | 50.0  | ug/l | 502  |  | 99.4 | 80-120 |  |  |  |
| Benzene                     | 6.23 | 0.500 | "    | 6.21 |  | 100  | 80-120 |  |  |  |
| Toluene                     | 35.2 | 0.500 | "    | 38.1 |  | 92.4 | 80-120 |  |  |  |
| Ethylbenzene                | 9.15 | 0.500 | "    | 8.94 |  | 102  | 80-120 |  |  |  |
| Xylenes (total)             | 43.6 | 1.00  | "    | 44.0 |  | 99.1 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 49.3 |       | "    | 48.0 |  | 103  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 47.9 |       | "    | 48.0 |  | 99.8 | 62-120 |  |  |  |

##### LCS Dup (3A24001-BSD1)

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 492  | 50.0  | ug/l | 502  |  | 98.0 | 80-120 | 1.41  | 25 |  |
| Benzene                     | 6.26 | 0.500 | "    | 6.21 |  | 101  | 80-120 | 0.480 | 40 |  |
| Toluene                     | 36.5 | 0.500 | "    | 38.1 |  | 95.8 | 80-120 | 3.63  | 40 |  |
| Ethylbenzene                | 9.10 | 0.500 | "    | 8.94 |  | 102  | 80-120 | 0.548 | 40 |  |
| Xylenes (total)             | 43.7 | 1.00  | "    | 44.0 |  | 99.3 | 80-120 | 0.229 | 40 |  |
| Surrogate: 4-BFB (FID)      | 49.1 |       | "    | 48.0 |  | 102  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 47.8 |       | "    | 48.0 |  | 99.6 | 62-120 |       |    |  |

##### Matrix Spike (3A24001-MS1)

Source: B3A0300-07

|                             |       |      |      |       |      |      |        |  |  |  |
|-----------------------------|-------|------|------|-------|------|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 16800 | 1250 | ug/l | 12500 | 4120 | 101  | 70-130 |  |  |  |
| Benzene                     | 914   | 12.5 | "    | 155   | 728  | 120  | 80-134 |  |  |  |
| Toluene                     | 1820  | 12.5 | "    | 952   | 935  | 93.0 | 68-114 |  |  |  |
| Ethylbenzene                | 245   | 12.5 | "    | 223   | 22.8 | 99.6 | 72-128 |  |  |  |
| Xylenes (total)             | 1180  | 25.0 | "    | 1100  | 120  | 96.4 | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 49.3  |      | "    | 48.0  |      | 103  | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 47.2  |      | "    | 48.0  |      | 98.3 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
01/28/03 15:36

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3A24001: Prepared 01/24/03 Using EPA 5030B (P/T)**

**Matrix Spike Dup (3A24001-MSD1)**

**Source: B3A0300-07**

|                             |       |      |      |       |      |      |        |      |    |  |
|-----------------------------|-------|------|------|-------|------|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 16500 | 1250 | ug/l | 12500 | 4120 | 99.0 | 70-130 | 1.80 | 25 |  |
| Benzene                     | 888   | 12.5 | "    | 155   | 728  | 103  | 80-134 | 2.89 | 40 |  |
| Toluene                     | 1770  | 12.5 | "    | 952   | 935  | 87.7 | 68-114 | 2.79 | 40 |  |
| Ethylbenzene                | 241   | 12.5 | "    | 223   | 22.8 | 97.8 | 72-128 | 1.65 | 40 |  |
| Xylenes (total)             | 1160  | 25.0 | "    | 1100  | 120  | 94.5 | 67-125 | 1.71 | 40 |  |
| Surrogate: 4-BFB (FID)      | 49.4  |      | "    | 48.0  |      | 103  | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 47.3  |      | "    | 48.0  |      | 98.5 | 62-120 |      |    |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 8



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
01/28/03 15:36

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 8 of 8

- ☐ Seattle (Edmonds) (425) 778-0907  
☐ Tacoma (253) 926-2493  
☐ Spokane (509) 327-9737  
☐ Portland (Tigard) (503) 443-6010  
☐ LANDAU ASSOCIATES



# Chain-of-Custody Record B3A0300

Date 1/15/03

Page 1 of 1

| Project Name <u>Tosco, Renton</u> Project No. <u>706002.012</u> |         |      |                  | Testing Parameters                   |                            |  |  |                 |  |  |  |              |  |  |  |  |
|-----------------------------------------------------------------|---------|------|------------------|--------------------------------------|----------------------------|--|--|-----------------|--|--|--|--------------|--|--|--|--|
| Project Location/Event <u>Tosco Terminal, Renton</u>            |         |      |                  |                                      |                            |  |  |                 |  |  |  |              |  |  |  |  |
| Sampler's Name <u>NATE JOYCE</u>                                |         |      |                  |                                      |                            |  |  |                 |  |  |  |              |  |  |  |  |
| Project Contact <u>MARTIN POWERS</u>                            |         |      |                  |                                      |                            |  |  |                 |  |  |  |              |  |  |  |  |
| Send Results To <u>MARTIN POWERS</u>                            |         |      |                  |                                      |                            |  |  |                 |  |  |  |              |  |  |  |  |
| Sample I.D.                                                     | Date    | Time | Matrix           | No. of Containers                    | Observations/Comments      |  |  |                 |  |  |  |              |  |  |  |  |
| HA-10                                                           | 1/14/03 | 1030 | H <sub>2</sub> O | 3                                    | Let Settle before Analysis |  |  |                 |  |  |  |              |  |  |  |  |
| HA-17                                                           | 1/14/03 | 1040 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| HA-7                                                            | 1/14/03 | 1120 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| HA-8                                                            | 1/14/03 | 1110 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| HA-15                                                           | 1/14/03 | 1050 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| HA-5                                                            | 1/14/03 | 1100 |                  | 3                                    | Let Settle before Analysis |  |  |                 |  |  |  |              |  |  |  |  |
| LAI-1 (ms/msd)                                                  | 1/15/03 | 1220 |                  | 9                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| LAI-2                                                           | 1/15/03 | 1245 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| LAI-3                                                           | 1/15/03 | 1310 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| LAI-12                                                          | 1/15/03 | 1255 |                  | 3                                    |                            |  |  |                 |  |  |  |              |  |  |  |  |
| Special Shipment/Handling or Storage Requirements               |         |      |                  | Method of Shipment                   |                            |  |  |                 |  |  |  |              |  |  |  |  |
| Relinquished by <u>Nate Joyce</u>                               |         |      |                  | Received by <u>Collette Weaver</u>   |                            |  |  | Relinquished by |  |  |  | Received by  |  |  |  |  |
| Signature <u>NATE JOYCE</u>                                     |         |      |                  | Signature <u>Collette Weaver</u>     |                            |  |  | Signature       |  |  |  | Signature    |  |  |  |  |
| Printed Name <u>LANDAU ASSOCIATES</u>                           |         |      |                  | Printed Name <u>Collette Weaver</u>  |                            |  |  | Printed Name    |  |  |  | Printed Name |  |  |  |  |
| Company                                                         |         |      |                  | Company <u>NA</u>                    |                            |  |  | Company         |  |  |  | Company      |  |  |  |  |
| Date <u>1/15/03</u> Time                                        |         |      |                  | Date <u>1-15-03</u> Time <u>1450</u> |                            |  |  | Date            |  |  |  | Date         |  |  |  |  |

3.0 c w/o



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

18 December 2002

Jerry Ninteman

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: Tosco Terminal

Enclosed are the results of analyses for samples received by the laboratory on 11/27/02 14:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite

Project Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID   | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-------------|---------------|--------|----------------|----------------|
| W4-021125   | B2K0619-01    | Water  | 11/25/02 17:20 | 11/27/02 14:40 |
| HA13-021125 | B2K0619-02    | Water  | 11/26/02 08:25 | 11/27/02 14:40 |
| HA14-021125 | B2K0619-03    | Water  | 11/26/02 08:20 | 11/27/02 14:40 |
| D1-021126   | B2K0619-04    | Water  | 11/26/02 10:15 | 11/27/02 14:40 |
| B6-021126   | B2K0619-05    | Water  | 11/26/02 09:00 | 11/27/02 14:40 |
| B17-021126  | B2K0619-06    | Water  | 11/26/02 07:00 | 11/27/02 14:40 |
| D7-021126   | B2K0619-07    | Water  | 11/26/02 14:10 | 11/27/02 14:40 |
| HA1-021126  | B2K0619-08    | Water  | 11/26/02 12:25 | 11/27/02 14:40 |
| W3-021126   | B2K0619-09    | Water  | 11/26/02 11:30 | 11/27/02 14:40 |
| HA9-021126  | B2K0619-10    | Water  | 11/26/02 11:00 | 11/27/02 14:40 |
| D6-021126   | B2K0619-11    | Water  | 11/26/02 09:45 | 11/27/02 14:40 |
| Trip Blank  | B2K0619-12    | Water  | 11/26/02 12:00 | 11/27/02 14:40 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

#### North Creek Analytical - Bothell

| Analyte | Result | Reporting | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------|-------|----------|-------|----------|----------|--------|-------|
|         |        | Limit     |       |          |       |          |          |        |       |

W4-021125 (B2K0619-01) Water Sampled: 11/25/02 17:20 Received: 11/27/02 14:40

|                             |       |      |      |    |         |          |          |                |  |
|-----------------------------|-------|------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 39900 | 2500 | ug/l | 50 | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | 1830  | 25.0 | "    | "  | "       | "        | "        | "              |  |
| Toluene                     | 38.2  | 25.0 | "    | "  | "       | "        | "        | "              |  |
| Ethylbenzene                | 2550  | 25.0 | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 4220  | 50.0 | "    | "  | "       | "        | "        | "              |  |

|                        |        |        |  |  |   |   |   |   |  |
|------------------------|--------|--------|--|--|---|---|---|---|--|
| Surrogate: 4-BFB (FID) | 100 %  | 57-125 |  |  | " | " | " | " |  |
| Surrogate: 4-BFB (PID) | 84.6 % | 62-120 |  |  | " | " | " | " |  |

D1-021126 (B2K0619-04) Water Sampled: 11/26/02 10:15 Received: 11/27/02 14:40

|                             |      |       |      |   |         |          |          |                |  |
|-----------------------------|------|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 185  | 50.0  | ug/l | 1 | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | ND   | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 1.12 | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND   | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 2.16 | 1.00  | "    | " | "       | "        | "        | "              |  |

|                        |        |        |  |  |   |   |   |   |  |
|------------------------|--------|--------|--|--|---|---|---|---|--|
| Surrogate: 4-BFB (FID) | 101 %  | 57-125 |  |  | " | " | " | " |  |
| Surrogate: 4-BFB (PID) | 86.5 % | 62-120 |  |  | " | " | " | " |  |

B6-021126 (B2K0619-05) Water Sampled: 11/26/02 09:00 Received: 11/27/02 14:40

|                             |       |      |      |     |         |          |          |                |  |
|-----------------------------|-------|------|------|-----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 43000 | 1000 | ug/l | 20  | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | 5230  | 100  | "    | 200 | "       | "        | 12/05/02 | "              |  |
| Toluene                     | 5410  | 100  | "    | "   | "       | "        | "        | "              |  |
| Ethylbenzene                | 525   | 10.0 | "    | 20  | "       | "        | 12/05/02 | "              |  |
| Xylenes (total)             | 5460  | 20.0 | "    | "   | "       | "        | "        | "              |  |

|                        |        |        |  |  |   |   |   |   |  |
|------------------------|--------|--------|--|--|---|---|---|---|--|
| Surrogate: 4-BFB (FID) | 95.6 % | 57-125 |  |  | " | " | " | " |  |
| Surrogate: 4-BFB (PID) | 84.6 % | 62-120 |  |  | " | " | " | " |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**B17-021126 (B2K0619-06) Water** Sampled: 11/26/02 07:00 Received: 11/27/02 14:40

|                             |       |      |      |     |         |          |          |                |  |
|-----------------------------|-------|------|------|-----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 43500 | 5000 | ug/l | 100 | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | 4850  | 50.0 | "    | "   | "       | "        | "        | "              |  |
| Toluene                     | 5010  | 50.0 | "    | "   | "       | "        | "        | "              |  |
| Ethylbenzene                | 464   | 50.0 | "    | "   | "       | "        | "        | "              |  |
| Xylenes (total)             | 5430  | 100  | "    | "   | "       | "        | "        | "              |  |

Surrogate: 4-BFB (FID) 88.3 % 57-125

Surrogate: 4-BFB (PID) 81.2 % 62-120

**D7-021126 (B2K0619-07) Water** Sampled: 11/26/02 14:10 Received: 11/27/02 14:40

|                             |       |       |      |   |         |          |          |                |  |
|-----------------------------|-------|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND    | 50.0  | ug/l | 1 | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | 2.82  | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | 0.614 | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND    | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | 1.12  | 1.00  | "    | " | "       | "        | "        | "              |  |

Surrogate: 4-BFB (FID) 86.0 % 57-125

Surrogate: 4-BFB (PID) 82.1 % 62-120

**HA1-021126 (B2K0619-08) Water** Sampled: 11/26/02 12:25 Received: 11/27/02 14:40

|                             |    |       |      |   |         |          |          |                |  |
|-----------------------------|----|-------|------|---|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | ND | 50.0  | ug/l | 1 | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Toluene                     | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Ethylbenzene                | ND | 0.500 | "    | " | "       | "        | "        | "              |  |
| Xylenes (total)             | ND | 1.00  | "    | " | "       | "        | "        | "              |  |

Surrogate: 4-BFB (FID) 86.9 % 57-125

Surrogate: 4-BFB (PID) 82.9 % 62-120

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244

425.420.9200 fax 425.420.9210

Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776

509.924.9200 fax 509.924.9290

Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132

503.906.9200 fax 503.906.9210

Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

541.383.9310 fax 541.382.7588

Anchorage 3209 Denali Street, Anchorage, AK 99503

907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

### Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

#### North Creek Analytical - Bothell

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

W3-021126 (B2K0619-09) Water Sampled: 11/26/02 11:30 Received: 11/27/02 14:40

|                             |        |        |      |    |         |          |          |                |  |
|-----------------------------|--------|--------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 14100  | 2500   | ug/l | 50 | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | 455    | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Toluene                     | 156    | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Ethylbenzene                | 463    | 25.0   | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 1570   | 50.0   | "    | "  | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 89.4 % | 57-125 |      |    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 83.8 % | 62-120 |      |    | "       | "        | "        | "              |  |

HA9-021126 (B2K0619-10) Water Sampled: 11/26/02 11:00 Received: 11/27/02 14:40

|                             |       |        |      |    |         |          |          |                |      |
|-----------------------------|-------|--------|------|----|---------|----------|----------|----------------|------|
| Gasoline Range Hydrocarbons | 6110  | 50.0   | ug/l | 1  | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |      |
| Benzene                     | 249   | 5.00   | "    | 10 | "       | "        | 12/05/02 | "              |      |
| Toluene                     | 3.55  | 0.500  | "    | 1  | "       | "        | 12/05/02 | "              |      |
| Ethylbenzene                | 349   | 5.00   | "    | 10 | "       | "        | 12/05/02 | "              |      |
| Xylenes (total)             | 187   | 1.00   | "    | 1  | "       | "        | 12/05/02 | "              |      |
| Surrogate: 4-BFB (FID)      | %     | 57-125 |      |    | "       | "        | "        | "              | S-02 |
| Surrogate: 4-BFB (PID)      | 106 % | 62-120 |      |    | "       | "        | "        | "              |      |

D6-021126 (B2K0619-11) Water Sampled: 11/26/02 09:45 Received: 11/27/02 14:40

|                             |        |        |      |    |         |          |          |                |  |
|-----------------------------|--------|--------|------|----|---------|----------|----------|----------------|--|
| Gasoline Range Hydrocarbons | 385    | 50.0   | ug/l | 1  | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |  |
| Benzene                     | 121    | 5.00   | "    | 10 | "       | "        | 12/05/02 | "              |  |
| Toluene                     | 10.7   | 0.500  | "    | 1  | "       | "        | 12/05/02 | "              |  |
| Ethylbenzene                | 1.20   | 0.500  | "    | "  | "       | "        | "        | "              |  |
| Xylenes (total)             | 5.59   | 1.00   | "    | "  | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (FID)      | 77.7 % | 57-125 |      |    | "       | "        | "        | "              |  |
| Surrogate: 4-BFB (PID)      | 81.5 % | 62-120 |      |    | "       | "        | "        | "              |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                        | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|--------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------------|-------|
| Trip Blank (B2K0619-12) Water Sampled: 11/26/02 12:00 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                    | ND     | 50.0               | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021B |       |
| Benzene                                                                        | ND     | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                        | ND     | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                   | ND     | 0.500              | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                | ND     | 1.00               | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                         | 87.1 % | 57-125             |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                         | 81.2 % | 62-120             |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.0338 fax 907.334.0330

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

**W4-021125 (B2K0619-01) Water** Sampled: 11/25/02 17:20 Received: 11/27/02 14:40

|                             |        |        |      |    |         |          |          |          |  |
|-----------------------------|--------|--------|------|----|---------|----------|----------|----------|--|
| Diesel Range Hydrocarbons   | 19.2   | 2.50   | mg/l | 10 | 2L02008 | 12/02/02 | 12/04/02 | NWTPH-Dx |  |
| Lube Oil Range Hydrocarbons | 0.648  | 0.500  | "    | 1  | "       | "        | 12/03/02 | "        |  |
| Surrogate: 2-FBP            | 62.9 % | 36-119 |      |    | "       | "        | 12/04/02 | "        |  |
| Surrogate: Octacosane       | 82.1 % | 43-126 |      |    | "       | "        | 12/03/02 | "        |  |

**HA13-021125 (B2K0619-02) Water** Sampled: 11/26/02 08:25 Received: 11/27/02 14:40

|                             |        |        |      |   |         |          |          |          |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------|--|
| Diesel Range Hydrocarbons   | ND     | 0.250  | mg/l | 1 | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |  |
| Lube Oil Range Hydrocarbons | ND     | 0.500  | "    | " | "       | "        | "        | "        |  |
| Surrogate: 2-FBP            | 70.9 % | 36-119 |      |   | "       | "        | "        | "        |  |
| Surrogate: Octacosane       | 85.4 % | 43-126 |      |   | "       | "        | "        | "        |  |

**HA14-021125 (B2K0619-03) Water** Sampled: 11/26/02 08:20 Received: 11/27/02 14:40

|                             |        |        |      |   |         |          |          |          |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------|--|
| Diesel Range Hydrocarbons   | ND     | 0.250  | mg/l | 1 | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |  |
| Lube Oil Range Hydrocarbons | ND     | 0.500  | "    | " | "       | "        | "        | "        |  |
| Surrogate: 2-FBP            | 74.2 % | 36-119 |      |   | "       | "        | "        | "        |  |
| Surrogate: Octacosane       | 97.7 % | 43-126 |      |   | "       | "        | "        | "        |  |

**D1-021126 (B2K0619-04) Water** Sampled: 11/26/02 10:15 Received: 11/27/02 14:40

|                             |        |        |      |   |         |          |          |          |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------|--|
| Diesel Range Hydrocarbons   | 0.434  | 0.250  | mg/l | 1 | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |  |
| Lube Oil Range Hydrocarbons | 1.01   | 0.500  | "    | " | "       | "        | "        | "        |  |
| Surrogate: 2-FBP            | 64.6 % | 36-119 |      |   | "       | "        | "        | "        |  |
| Surrogate: Octacosane       | 93.7 % | 43-126 |      |   | "       | "        | "        | "        |  |

**B6-021126 (B2K0619-05) Water** Sampled: 11/26/02 09:00 Received: 11/27/02 14:40

|                             |        |        |      |   |         |          |          |          |  |
|-----------------------------|--------|--------|------|---|---------|----------|----------|----------|--|
| Diesel Range Hydrocarbons   | 5.31   | 1.25   | mg/l | 5 | 2L02008 | 12/02/02 | 12/04/02 | NWTPH-Dx |  |
| Lube Oil Range Hydrocarbons | 2.51   | 0.500  | "    | 1 | "       | "        | 12/03/02 | "        |  |
| Surrogate: 2-FBP            | 66.6 % | 36-119 |      |   | "       | "        | 12/04/02 | "        |  |
| Surrogate: Octacosane       | 109 %  | 43-126 |      |   | "       | "        | 12/03/02 | "        |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.0338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|---------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------|-------|
| <b>B17-021126 (B2K0619-06) Water Sampled: 11/26/02 07:00 Received: 11/27/02 14:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 7.04   | 1.25            | mg/l  | 5        | 2L02008 | 12/02/02 | 12/04/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | 3.63   | 0.500           | "     | 1        | "       | "        | 12/03/02 | "        |       |
| Surrogate: 2-FBP                                                                      | 58.3 % | 36-119          |       |          | "       | "        | 12/04/02 | "        |       |
| Surrogate: Octacosane                                                                 | 90.7 % | 43-126          |       |          | "       | "        | 12/03/02 | "        |       |
| <b>D7-021126 (B2K0619-07) Water Sampled: 11/26/02 14:10 Received: 11/27/02 14:40</b>  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 0.435  | 0.250           | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx | D-09  |
| Lube Oil Range Hydrocarbons                                                           | 1.26   | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 47.7 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 85.1 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>HA1-021126 (B2K0619-08) Water Sampled: 11/26/02 12:25 Received: 11/27/02 14:40</b> |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | ND     | 0.250           | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 74.5 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 99.0 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>W3-021126 (B2K0619-09) Water Sampled: 11/26/02 11:30 Received: 11/27/02 14:40</b>  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 4.89   | 0.250           | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 95.7 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 85.4 % | 43-126          |       |          | "       | "        | "        | "        |       |
| <b>D6-021126 (B2K0619-11) Water Sampled: 11/26/02 09:45 Received: 11/27/02 14:40</b>  |        |                 |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | ND     | 0.250           | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 62.9 % | 36-119          |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 84.8 % | 43-126          |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

Batch 2L05002: Prepared 12/05/02 Using EPA 5030B (P/T)

**Blank (2L05002-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |  |
| Surrogate: 4-BFB (FID)      | 41.1 |       | "    | 48.0 |  | 85.6 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 40.3 |       | "    | 48.0 |  | 84.0 | 62-120 |  |  |  |

**LCS (2L05002-BS1)**

|                             |      |       |      |      |  |      |        |  |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 487  | 50.0  | ug/l | 502  |  | 97.0 | 80-120 |  |  |  |
| Benzene                     | 6.51 | 0.500 | "    | 6.20 |  | 105  | 80-120 |  |  |  |
| Toluene                     | 33.2 | 0.500 | "    | 38.1 |  | 87.1 | 80-120 |  |  |  |
| Ethylbenzene                | 8.54 | 0.500 | "    | 8.94 |  | 95.5 | 80-120 |  |  |  |
| Xylenes (total)             | 41.6 | 1.00  | "    | 44.0 |  | 94.5 | 80-120 |  |  |  |
| Surrogate: 4-BFB (FID)      | 44.5 |       | "    | 48.0 |  | 92.7 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 38.5 |       | "    | 48.0 |  | 80.2 | 62-120 |  |  |  |

**LCS Dup (2L05002-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |  |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 483  | 50.0  | ug/l | 502  |  | 96.2 | 80-120 | 0.825 | 25 |  |
| Benzene                     | 6.43 | 0.500 | "    | 6.20 |  | 104  | 80-120 | 1.24  | 40 |  |
| Toluene                     | 33.4 | 0.500 | "    | 38.1 |  | 87.7 | 80-120 | 0.601 | 40 |  |
| Ethylbenzene                | 8.53 | 0.500 | "    | 8.94 |  | 95.4 | 80-120 | 0.117 | 40 |  |
| Xylenes (total)             | 41.6 | 1.00  | "    | 44.0 |  | 94.5 | 80-120 | 0.00  | 40 |  |
| Surrogate: 4-BFB (FID)      | 44.7 |       | "    | 48.0 |  | 93.1 | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 38.9 |       | "    | 48.0 |  | 81.0 | 62-120 |       |    |  |

**Matrix Spike (2L05002-MS1)**

Source: B2K0619-08

|                             |      |       |      |      |    |      |        |  |  |  |
|-----------------------------|------|-------|------|------|----|------|--------|--|--|--|
| Gasoline Range Hydrocarbons | 461  | 50.0  | ug/l | 502  | ND | 91.8 | 70-130 |  |  |  |
| Benzene                     | 7.24 | 0.500 | "    | 6.20 | ND | 117  | 80-134 |  |  |  |
| Toluene                     | 37.0 | 0.500 | "    | 38.1 | ND | 97.1 | 68-114 |  |  |  |
| Ethylbenzene                | 9.36 | 0.500 | "    | 8.94 | ND | 105  | 72-128 |  |  |  |
| Xylenes (total)             | 45.0 | 1.00  | "    | 44.0 | ND | 102  | 67-125 |  |  |  |
| Surrogate: 4-BFB (FID)      | 40.7 |       | "    | 48.0 |    | 84.8 | 57-125 |  |  |  |
| Surrogate: 4-BFB (PID)      | 38.4 |       | "    | 48.0 |    | 80.0 | 62-120 |  |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.0338 fax 907.334.0330

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

Batch 2L05002: Prepared 12/05/02 Using EPA 5030B (P/T)

Matrix Spike Dup (2L05002-MSD1)

Source: B2K0619-08

|                             |      |       |      |      |    |      |        |      |    |  |
|-----------------------------|------|-------|------|------|----|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 452  | 50.0  | ug/l | 502  | ND | 90.0 | 70-130 | 1.97 | 25 |  |
| Benzene                     | 5.91 | 0.500 | "    | 6.20 | ND | 95.3 | 80-134 | 20.2 | 40 |  |
| Toluene                     | 32.8 | 0.500 | "    | 38.1 | ND | 86.1 | 68-114 | 12.0 | 40 |  |
| Ethylbenzene                | 8.22 | 0.500 | "    | 8.94 | ND | 91.9 | 72-128 | 13.0 | 40 |  |
| Xylenes (total)             | 39.6 | 1.00  | "    | 44.0 | ND | 90.0 | 67-125 | 12.8 | 40 |  |
| Surrogate: 4-BFB (FID)      | 45.6 |       | "    | 48.0 |    | 95.0 | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 38.6 |       | "    | 48.0 |    | 80.4 | 62-120 |      |    |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 9 of 11



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
 425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
 503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
 541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
 907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
 Sound View Plaza, 130 2nd Ave S  
 Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
 Project Number: Renton Terminal  
 Project Manager: Jerry Ninteman

**Reported:**  
 12/18/02 17:25

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch 2L02008: Prepared 12/02/02 Using EPA 3520C**

**Blank (2L02008-BLK1)**

|                             |       |       |      |       |  |      |        |  |  |  |
|-----------------------------|-------|-------|------|-------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons   | ND    | 0.250 | mg/l |       |  |      |        |  |  |  |
| Lube Oil Range Hydrocarbons | ND    | 0.500 | "    |       |  |      |        |  |  |  |
| Surrogate: 2-FBP            | 0.241 |       | "    | 0.320 |  | 75.3 | 36-119 |  |  |  |
| Surrogate: Octacosane       | 0.275 |       | "    | 0.320 |  | 85.9 | 43-126 |  |  |  |

**LCS (2L02008-BS1)**

|                           |       |       |      |       |  |      |        |  |  |  |
|---------------------------|-------|-------|------|-------|--|------|--------|--|--|--|
| Diesel Range Hydrocarbons | 1.52  | 0.250 | mg/l | 2.00  |  | 76.0 | 45-105 |  |  |  |
| Surrogate: 2-FBP          | 0.247 |       | "    | 0.320 |  | 77.2 | 36-119 |  |  |  |

**LCS Dup (2L02008-BSD1)**

|                           |       |       |      |       |  |      |        |      |    |  |
|---------------------------|-------|-------|------|-------|--|------|--------|------|----|--|
| Diesel Range Hydrocarbons | 1.38  | 0.250 | mg/l | 2.00  |  | 69.0 | 45-105 | 9.66 | 50 |  |
| Surrogate: 2-FBP          | 0.228 |       | "    | 0.320 |  | 71.2 | 36-119 |      |    |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 10 of 11



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9338 fax 907.334.9339

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/18/02 17:25

### Notes and Definitions

D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

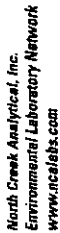
*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 11 of 11



(425) 924-9200 X 420  
(509) 924-9200 FAX 924-9290  
(503) 906-9200 FAX 906-9210  
(541) 383-9310 FAX 382-7588

B2K0619

| CONSULTANT INFORMATION                        |                     |
|-----------------------------------------------|---------------------|
| Firm: LAI                                     | Project#            |
| Address: 130 2nd Ave So.<br>Edwards, WA 98022 |                     |
| Phone: (425) 778-0907                         | Fax: (425) 778-0107 |
| Project Manager: Jerry Minter                 | E-mail:             |
| Sample Collection by: JES/PLG                 |                     |

Quality Assurance Data Level:

A: Standard Summary

B: Standard + Chromatograms

Laboratory Turnaround Days:

10 5 3 2 1

10 Day - Standard

[illegible]

|                                                                      |                   |
|----------------------------------------------------------------------|-------------------|
| Please let settle<br>300 ml plus<br>+ 200 ml + from<br>upper portion | NCA SAMPLE NUMBER |
| B2K0619 - 01                                                         | 02                |
| - 03                                                                 | 04                |
| - 05                                                                 | 06                |
| - 07                                                                 | 08                |
| - 09                                                                 | 10                |

Comments: 5,43 w/p



11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8223  
East 11115 Montgomery, Suite B, Spokane, WA 98206-4776  
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132  
20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711

(425) 420-9200 FAX 420-9210  
(509) 924-9200 FAX 924-9290  
(503) 906-9200 FAX 906-9210  
(541) 383-9310 FAX 382-7588

# TOSCO CHAIN OF CUSTODY REPORT B2 K0619

|                                                                                                            |                                                                                       |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| TOSCO INFORMATION                                                                                          |                                                                                       |
| Facility Number:                                                                                           |                                                                                       |
| Site Address:                                                                                              | 2423 Lind                                                                             |
| City, State, ZIP:                                                                                          | Benton, WA                                                                            |
| Project/AWO Code                                                                                           |                                                                                       |
| Tosco Manager:                                                                                             |                                                                                       |
| FACILITY TYPE: (check one)                                                                                 | <input type="checkbox"/> BP/® <input checked="" type="checkbox"/> Terminal/Bulk Plant |
| <input type="checkbox"/> Brown Bear <input type="checkbox"/> Former 76 Site <input type="checkbox"/> Other |                                                                                       |

|                        |                                       |
|------------------------|---------------------------------------|
| CONSULTANT INFORMATION |                                       |
| Firm:                  | LAT                                   |
| Address:               | 130 2nd Ave. So.<br>Edmonds, WA 98020 |
| Phone:                 | (425) 778-0907 Fax: (425) 778-6010    |
| Project Manager:       | Jerry Ninte email: mail:              |
| Sample Collection by:  | JPS/PLC                               |

Quality Assurance Data Level:  
☐ A ☒ B  
A: Standard Summary  
B: Standard + Chromatograms

Laboratory Turnaround Days:  
☒ 10 ☐ 5 ☐ 3 ☐ 2 ☐ 1  
10 Day - Standard

| SAMPLE IDENTIFICATION | SAMPLING DATE / TIME | MATRIX (W.S.O) | # OF CON-TAINERS |
|-----------------------|----------------------|----------------|------------------|
| 1. Dg-021126          | 11/27/02 09:45       | W              | 4                |
| 2. Trip Blank         |                      | W              | 5                |
| 3.                    |                      |                |                  |
| 4.                    |                      |                |                  |
| 5.                    |                      |                |                  |
| 6.                    |                      |                |                  |
| 7.                    |                      |                |                  |
| 8.                    |                      |                |                  |
| 9.                    |                      |                |                  |
| 10.                   |                      |                |                  |

| OR                 | WA | AK | NW Series | ID |
|--------------------|----|----|-----------|----|
| TPH-HCID           |    |    |           |    |
| TPH-Gas            |    |    |           |    |
| BTEX               |    |    |           |    |
| EPA 8021 Mod       |    |    |           |    |
| TPH-Gas + BTEX     |    |    |           |    |
| TPH-Diesel         |    |    |           |    |
| Extended           |    |    |           |    |
| TPH-Diesel-Ext     |    |    |           |    |
| w/SG Cleanup       |    |    |           |    |
| Halogen Volatiles  |    |    |           |    |
| EPA 8021           |    |    |           |    |
| Pesticides/PCBs    |    |    |           |    |
| or PCBs Only       |    |    |           |    |
| GCMS Volatiles     |    |    |           |    |
| GCMS Semi-Vols     |    |    |           |    |
| EPA 8270           |    |    |           |    |
| PAH's              |    |    |           |    |
| 8270 SIM or 8310   |    |    |           |    |
| Lead:              |    |    |           |    |
| Total or Dissolved |    |    |           |    |
| TCDF or RCRA       |    |    |           |    |
| Metals (8)         |    |    |           |    |

Please let settle + decant sample from top

NCA SAMPLE NUMBER  
- 11  
- 12

|                  |       |                |              |       |                |
|------------------|-------|----------------|--------------|-------|----------------|
| Relinquished by: | Firm: | Date & Time    | Received by: | Firm: | Date & Time    |
| 1. [Signature]   | LAT   | 11/27/02 11:13 | [Signature]  | NCA   | 11/27/02 11:13 |
| 2. [Signature]   | NCA   | 11/27/02 14:46 | [Signature]  | NCA   | 11/27/02 14:46 |
| 3.               |       |                |              |       |                |

Comments:

5.40 w/a

13 December 2002

Jerry Ninteman  
Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds, WA/USA 98020-9129  
RE: Tosco Terminal

Enclosed are the results of analyses for samples received by the laboratory on 11/27/02 14:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeanne Garthwaite  
Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID     | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|---------------|---------------|--------|----------------|----------------|
| W4-021125     | B2K0619-01    | Water  | 11/25/02 17:20 | 11/27/02 14:40 |
| ✓ HA13-021125 | B2K0619-02    | Water  | 11/26/02 08:25 | 11/27/02 14:40 |
| ✓ HA14-021125 | B2K0619-03    | Water  | 11/26/02 08:20 | 11/27/02 14:40 |
| D1-021126     | B2K0619-04    | Water  | 11/26/02 10:15 | 11/27/02 14:40 |
| B6-021126     | B2K0619-05    | Water  | 11/26/02 09:00 | 11/27/02 14:40 |
| B17-021126    | B2K0619-06    | Water  | 11/26/02 07:00 | 11/27/02 14:40 |
| D7-021126     | B2K0619-07    | Water  | 11/26/02 14:10 | 11/27/02 14:40 |
| HA1-021126    | B2K0619-08    | Water  | 11/26/02 12:25 | 11/27/02 14:40 |
| W3-021126     | B2K0619-09    | Water  | 11/26/02 11:30 | 11/27/02 14:40 |
| HA9-021126    | B2K0619-10    | Water  | 11/26/02 11:00 | 11/27/02 14:40 |
| D6-021126     | B2K0619-11    | Water  | 11/26/02 09:45 | 11/27/02 14:40 |
| Trip Blank    | B2K0619-12    | Water  | 11/26/02 12:00 | 11/27/02 14:40 |

X - Also in B2K0572 data package

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                              | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method             | Notes |
|--------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|--------------------|-------|
| <b>W4-021125 (B2K0619-01) Water</b> Sampled: 11/25/02 17:20 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                          | 39900  | 2500               | ug/l  | 50       | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                              | 1830   | 25.0               | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                              | 38.2   | 25.0               | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                         | 2550   | 25.0               | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                      | 4220   | 50.0               | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                               | 100 %  | 57-125             |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                               | 84.6 % | 62-120             |       |          | "       | "        | "        | "                  |       |
| <b>D1-021126 (B2K0619-04) Water</b> Sampled: 11/26/02 10:15 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                          | 185    | 50.0               | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                              | ND     | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                              | 1.12   | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                         | ND     | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                      | 2.16   | 1.00               | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                               | 101 %  | 57-125             |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                               | 86.5 % | 62-120             |       |          | "       | "        | "        | "                  |       |
| <b>B6-021126 (B2K0619-05) Water</b> Sampled: 11/26/02 09:00 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                          | 43000  | 1000               | ug/l  | 20       | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                              | 5230   | 100                | "     | 200      | "       | "        | 12/05/02 | "                  |       |
| Toluene                                                                              | 5410   | 100                | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                         | 525    | 10.0               | "     | 20       | "       | "        | 12/05/02 | "                  |       |
| Xylenes (total)                                                                      | 5460   | 20.0               | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                               | 95.6 % | 57-125             |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                               | 84.6 % | 62-120             |       |          | "       | "        | "        | "                  |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method             | Notes |
|---------------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|--------------------|-------|
| <b>B17-021126 (B2K0619-06) Water</b> Sampled: 11/26/02 07:00 Received: 11/27/02 14:40 |        |                 |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                           | 43500  | 5000            | ug/l  | 100      | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                               | 4850   | 50.0            | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                               | 5010   | 50.0            | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                          | 464    | 50.0            | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                       | 5430   | 100             | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                                | 88.3 % | 57-125          |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                                | 81.2 % | 62-120          |       |          | "       | "        | "        | "                  |       |
| <b>D7-021126 (B2K0619-07) Water</b> Sampled: 11/26/02 14:10 Received: 11/27/02 14:40  |        |                 |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                           | ND     | 50.0            | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                               | 2.82   | 0.500           | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                               | 0.614  | 0.500           | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                       | 1.12   | 1.00            | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                                | 86.0 % | 57-125          |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                                | 82.1 % | 62-120          |       |          | "       | "        | "        | "                  |       |
| <b>HA1-021126 (B2K0619-08) Water</b> Sampled: 11/26/02 12:25 Received: 11/27/02 14:40 |        |                 |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                           | ND     | 50.0            | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                               | ND     | 0.500           | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                          | ND     | 0.500           | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                       | ND     | 1.00            | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                                | 86.9 % | 57-125          |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                                | 82.9 % | 62-120          |       |          | "       | "        | "        | "                  |       |

North Creek Analytical - Bothell



Jeanne Garthwaite, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method             | Notes |
|---------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|--------------------|-------|
| <b>W3-021126 (B2K0619-09) Water Sampled: 11/26/02 11:30 Received: 11/27/02 14:40</b>  |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                           | 14100  | 2500               | ug/l  | 50       | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                               | 455    | 25.0               | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                               | 156    | 25.0               | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                          | 463    | 25.0               | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                       | 1570   | 50.0               | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                                | 89.4 % | 57-125             |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                                | 83.8 % | 62-120             |       |          | "       | "        | "        | "                  |       |
| <b>HA9-021126 (B2K0619-10) Water Sampled: 11/26/02 11:00 Received: 11/27/02 14:40</b> |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                           | 6110   | 50.0               | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                               | 249    | 5.00               | "     | 10       | "       | "        | 12/05/02 | "                  |       |
| Toluene                                                                               | 3.55   | 0.500              | "     | 1        | "       | "        | 12/05/02 | "                  |       |
| Ethylbenzene                                                                          | 349    | 5.00               | "     | 10       | "       | "        | 12/05/02 | "                  |       |
| Xylenes (total)                                                                       | 187    | 1.00               | "     | 1        | "       | "        | 12/05/02 | "                  |       |
| Surrogate: 4-BFB (FID)                                                                | %      | 57-125             |       |          | "       | "        | "        | "                  | S-02  |
| Surrogate: 4-BFB (PID)                                                                | 106 %  | 62-120             |       |          | "       | "        | "        | "                  |       |
| <b>D6-021126 (B2K0619-11) Water Sampled: 11/26/02 09:45 Received: 11/27/02 14:40</b>  |        |                    |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                           | 385    | 50.0               | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                               | 121    | 5.00               | "     | 10       | "       | "        | 12/05/02 | "                  |       |
| Toluene                                                                               | 10.7   | 0.500              | "     | 1        | "       | "        | 12/05/02 | "                  |       |
| Ethylbenzene                                                                          | 1.20   | 0.500              | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                       | 5.59   | 1.00               | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                                | 77.7 % | 57-125             |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                                | 81.5 % | 62-120             |       |          | "       | "        | "        | "                  |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                                     | Reporting |        | Units | Dilution | Batch   | Prepared | Analyzed | Method             | Notes |
|---------------------------------------------------------------------------------------------|-----------|--------|-------|----------|---------|----------|----------|--------------------|-------|
|                                                                                             | Result    | Limit  |       |          |         |          |          |                    |       |
| <b>Trip Blank (B2K0619-12) Water    Sampled: 11/26/02 12:00    Received: 11/27/02 14:40</b> |           |        |       |          |         |          |          |                    |       |
| Gasoline Range Hydrocarbons                                                                 | ND        | 50.0   | ug/l  | 1        | 2L05002 | 12/05/02 | 12/05/02 | NWTPH-Gx/8021<br>B |       |
| Benzene                                                                                     | ND        | 0.500  | "     | "        | "       | "        | "        | "                  |       |
| Toluene                                                                                     | ND        | 0.500  | "     | "        | "       | "        | "        | "                  |       |
| Ethylbenzene                                                                                | ND        | 0.500  | "     | "        | "       | "        | "        | "                  |       |
| Xylenes (total)                                                                             | ND        | 1.00   | "     | "        | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (FID)                                                                      | 87.1 %    | 57-125 |       |          | "       | "        | "        | "                  |       |
| Surrogate: 4-BFB (PID)                                                                      | 81.2 %    | 62-120 |       |          | "       | "        | "        | "                  |       |

North Creek Analytical - Bothell



Jeanne Garthwaite, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                                | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|----------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------|-------|
| <b>W4-021125 (B2K0619-01) Water</b> Sampled: 11/25/02 17:20 Received: 11/27/02 14:40   |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | 19.2   | 2.50               | mg/l  | 10       | 2L02008 | 12/02/02 | 12/04/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | 0.648  | 0.500              | "     | 1        | "       | "        | 12/03/02 | "        |       |
| Surrogate: 2-FBP                                                                       | 62.9 % | 36-119             |       |          | "       | "        | 12/04/02 | "        |       |
| Surrogate: Octacosane                                                                  | 82.1 % | 43-126             |       |          | "       | "        | 12/03/02 | "        |       |
| <b>HA13-021125 (B2K0619-02) Water</b> Sampled: 11/26/02 08:25 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | ND     | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 70.9 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 85.4 % | 43-126             |       |          | "       | "        | "        | "        |       |
| <b>HA14-021125 (B2K0619-03) Water</b> Sampled: 11/26/02 08:20 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | ND     | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 74.2 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 97.7 % | 43-126             |       |          | "       | "        | "        | "        |       |
| <b>D1-021126 (B2K0619-04) Water</b> Sampled: 11/26/02 10:15 Received: 11/27/02 14:40   |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | 0.434  | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | 1.01   | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                       | 64.6 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                  | 93.7 % | 43-126             |       |          | "       | "        | "        | "        |       |
| <b>B6-021126 (B2K0619-05) Water</b> Sampled: 11/26/02 09:00 Received: 11/27/02 14:40   |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                              | 5.31   | 1.25               | mg/l  | 5        | 2L02008 | 12/02/02 | 12/04/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                            | 2.51   | 0.500              | "     | 1        | "       | "        | 12/03/02 | "        |       |
| Surrogate: 2-FBP                                                                       | 66.6 % | 36-119             |       |          | "       | "        | 12/04/02 | "        |       |
| Surrogate: Octacosane                                                                  | 109 %  | 43-126             |       |          | "       | "        | 12/03/02 | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up**  
**North Creek Analytical - Bothell**

| Analyte                                                                               | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|---------------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------|-------|
| <b>B17-021126 (B2K0619-06) Water</b> Sampled: 11/26/02 07:00 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 7.04   | 1.25               | mg/l  | 5        | 2L02008 | 12/02/02 | 12/04/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | 3.63   | 0.500              | "     | 1        | "       | "        | 12/03/02 | "        |       |
| Surrogate: 2-FBP                                                                      | 58.3 % | 36-119             |       |          | "       | "        | 12/04/02 | "        |       |
| Surrogate: Octacosane                                                                 | 90.7 % | 43-126             |       |          | "       | "        | 12/03/02 | "        |       |
| <b>D7-021126 (B2K0619-07) Water</b> Sampled: 11/26/02 14:10 Received: 11/27/02 14:40  |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 0.435  | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx | D-09  |
| Lube Oil Range Hydrocarbons                                                           | 1.26   | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 47.7 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 85.1 % | 43-126             |       |          | "       | "        | "        | "        |       |
| <b>HA1-021126 (B2K0619-08) Water</b> Sampled: 11/26/02 12:25 Received: 11/27/02 14:40 |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | ND     | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 74.5 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 99.0 % | 43-126             |       |          | "       | "        | "        | "        |       |
| <b>W3-021126 (B2K0619-09) Water</b> Sampled: 11/26/02 11:30 Received: 11/27/02 14:40  |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | 4.89   | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 95.7 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 85.4 % | 43-126             |       |          | "       | "        | "        | "        |       |
| <b>D6-021126 (B2K0619-11) Water</b> Sampled: 11/26/02 09:45 Received: 11/27/02 14:40  |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                             | ND     | 0.250              | mg/l  | 1        | 2L02008 | 12/02/02 | 12/03/02 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                           | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                      | 62.9 % | 36-119             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                                 | 84.8 % | 43-126             |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 2L05002: Prepared 12/05/02 Using EPA 5030B (P/T)**

**Blank (2L05002-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 41.1 |       | "    | 48.0 |  | 85.6 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 40.3 |       | "    | 48.0 |  | 84.0 | 62-120 |  |  |

**LCS (2L05002-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 487  | 50.0  | ug/l | 502  |  | 97.0 | 80-120 |  |  |
| Benzene                     | 6.51 | 0.500 | "    | 6.20 |  | 105  | 80-120 |  |  |
| Toluene                     | 33.2 | 0.500 | "    | 38.1 |  | 87.1 | 80-120 |  |  |
| Ethylbenzene                | 8.54 | 0.500 | "    | 8.94 |  | 95.5 | 80-120 |  |  |
| Xylenes (total)             | 41.6 | 1.00  | "    | 44.0 |  | 94.5 | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 44.5 |       | "    | 48.0 |  | 92.7 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 38.5 |       | "    | 48.0 |  | 80.2 | 62-120 |  |  |

**LCS Dup (2L05002-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 483  | 50.0  | ug/l | 502  |  | 96.2 | 80-120 | 0.825 | 25 |
| Benzene                     | 6.43 | 0.500 | "    | 6.20 |  | 104  | 80-120 | 1.24  | 40 |
| Toluene                     | 33.4 | 0.500 | "    | 38.1 |  | 87.7 | 80-120 | 0.601 | 40 |
| Ethylbenzene                | 8.53 | 0.500 | "    | 8.94 |  | 95.4 | 80-120 | 0.117 | 40 |
| Xylenes (total)             | 41.6 | 1.00  | "    | 44.0 |  | 94.5 | 80-120 | 0.00  | 40 |
| Surrogate: 4-BFB (FID)      | 44.7 |       | "    | 48.0 |  | 93.1 | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 38.9 |       | "    | 48.0 |  | 81.0 | 62-120 |       |    |

**Matrix Spike (2L05002-MS1)**

**Source: B2K0619-08**

|                             |      |       |      |      |    |      |        |  |  |
|-----------------------------|------|-------|------|------|----|------|--------|--|--|
| Gasoline Range Hydrocarbons | 461  | 50.0  | ug/l | 502  | ND | 91.8 | 70-130 |  |  |
| Benzene                     | 7.24 | 0.500 | "    | 6.20 | ND | 117  | 80-134 |  |  |
| Toluene                     | 37.0 | 0.500 | "    | 38.1 | ND | 97.1 | 68-114 |  |  |
| Ethylbenzene                | 9.36 | 0.500 | "    | 8.94 | ND | 105  | 72-128 |  |  |
| Xylenes (total)             | 45.0 | 1.00  | "    | 44.0 | ND | 102  | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 40.7 |       | "    | 48.0 |    | 84.8 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 38.4 |       | "    | 48.0 |    | 80.0 | 62-120 |  |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 2L05002: Prepared 12/05/02 Using EPA 5030B (P/T)**

**Matrix Spike Dup (2L05002-MSD1)**

**Source: B2K0619-08**

|                             |      |       |      |      |    |      |        |      |    |  |
|-----------------------------|------|-------|------|------|----|------|--------|------|----|--|
| Gasoline Range Hydrocarbons | 452  | 50.0  | ug/l | 502  | ND | 90.0 | 70-130 | 1.97 | 25 |  |
| Benzene                     | 5.91 | 0.500 | "    | 6.20 | ND | 95.3 | 80-134 | 20.2 | 40 |  |
| Toluene                     | 32.8 | 0.500 | "    | 38.1 | ND | 86.1 | 68-114 | 12.0 | 40 |  |
| Ethylbenzene                | 8.22 | 0.500 | "    | 8.94 | ND | 91.9 | 72-128 | 13.0 | 40 |  |
| Xylenes (total)             | 39.6 | 1.00  | "    | 44.0 | ND | 90.0 | 67-125 | 12.8 | 40 |  |
| Surrogate: 4-BFB (FID)      | 45.6 |       | "    | 48.0 |    | 95.0 | 57-125 |      |    |  |
| Surrogate: 4-BFB (PID)      | 38.6 |       | "    | 48.0 |    | 80.4 | 62-120 |      |    |  |

North Creek Analytical - Bothell



Jeanne Garthwaite, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

Reported:  
12/13/02 13:37

**Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 2L02008: Prepared 12/02/02 Using EPA 3520C**

**Blank (2L02008-BLK1)**

|                             |    |       |      |
|-----------------------------|----|-------|------|
| Diesel Range Hydrocarbons   | ND | 0.250 | mg/l |
| Lube Oil Range Hydrocarbons | ND | 0.500 | "    |

|                       |       |   |       |      |        |
|-----------------------|-------|---|-------|------|--------|
| Surrogate: 2-FBP      | 0.241 | " | 0.320 | 75.3 | 36-119 |
| Surrogate: Octacosane | 0.275 | " | 0.320 | 85.9 | 43-126 |

**LCS (2L02008-BS1)**

|                           |       |       |       |      |        |        |
|---------------------------|-------|-------|-------|------|--------|--------|
| Diesel Range Hydrocarbons | 1.52  | 0.250 | mg/l  | 2.00 | 76.0   | 45-105 |
| Surrogate: 2-FBP          | 0.247 | "     | 0.320 | 77.2 | 36-119 |        |

**LCS Dup (2L02008-BSD1)**

|                           |       |       |       |      |        |        |      |    |
|---------------------------|-------|-------|-------|------|--------|--------|------|----|
| Diesel Range Hydrocarbons | 1.38  | 0.250 | mg/l  | 2.00 | 69.0   | 45-105 | 9.66 | 50 |
| Surrogate: 2-FBP          | 0.228 | "     | 0.320 | 71.2 | 36-119 |        |      |    |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: Tosco Terminal  
Project Number: Renton Terminal  
Project Manager: Jerry Ninteman

**Reported:**  
12/13/02 13:37

### Notes and Definitions

D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell



Jeanne Garthwaite, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210



31 March 2003

Martin Powers

Landau Associates - Edmonds

Sound View Plaza, 130 2nd Ave S

Edmonds, WA/USA 98020-9129

RE: TOSCO Renton Terminal

Enclosed are the results of analyses for samples received by the laboratory on 03/24/03 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite

Project Manager



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
03/31/03 14:35

### ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled   | Date Received  |
|-----------|---------------|--------|----------------|----------------|
| LAI-1     | B3C0577-01    | Water  | 03/24/03 15:20 | 03/24/03 17:00 |
| LAI-10    | B3C0577-02    | Water  | 03/24/03 14:25 | 03/24/03 17:00 |
| LAI-11    | B3C0577-03    | Water  | 03/24/03 13:45 | 03/24/03 17:00 |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 7



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
03/31/03 14:35

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B**  
**North Creek Analytical - Bothell**

| Analyte                                                                           | Result | Reporting Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method         | Notes |
|-----------------------------------------------------------------------------------|--------|-----------------|-------|----------|---------|----------|----------|----------------|-------|
| <b>LAI-1 (B3C0577-01) Water Sampled: 03/24/03 15:20 Received: 03/24/03 17:00</b>  |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | 47500  | 12500           | ug/l  | 250      | 3C25008 | 03/24/03 | 03/25/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | 7970   | 125             | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | 15000  | 125             | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | 739    | 125             | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | 4250   | 250             | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 84.6 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 95.8 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>LAI-10 (B3C0577-02) Water Sampled: 03/24/03 14:25 Received: 03/24/03 17:00</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | ND     | 50.0            | ug/l  | 1        | 3C25008 | 03/24/03 | 03/25/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | 1.35   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | 2.67   | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | 1.36   | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 95.6 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 98.3 % | 62-120          |       |          | "       | "        | "        | "              |       |
| <b>LAI-11 (B3C0577-03) Water Sampled: 03/24/03 13:45 Received: 03/24/03 17:00</b> |        |                 |       |          |         |          |          |                |       |
| Gasoline Range Hydrocarbons                                                       | ND     | 50.0            | ug/l  | 1        | 3C25008 | 03/24/03 | 03/25/03 | NWTPH-Gx/8021B |       |
| Benzene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Toluene                                                                           | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Ethylbenzene                                                                      | ND     | 0.500           | "     | "        | "       | "        | "        | "              |       |
| Xylenes (total)                                                                   | ND     | 1.00            | "     | "        | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (FID)                                                            | 94.4 % | 57-125          |       |          | "       | "        | "        | "              |       |
| Surrogate: 4-BFB (PID)                                                            | 98.5 % | 62-120          |       |          | "       | "        | "        | "              |       |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/31/03 14:35

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)**  
**North Creek Analytical - Bothell**

| Analyte                                                                           | Result | Reporting<br>Limit | Units | Dilution | Batch   | Prepared | Analyzed | Method   | Notes |
|-----------------------------------------------------------------------------------|--------|--------------------|-------|----------|---------|----------|----------|----------|-------|
| <b>LAI-1 (B3C0577-01) Water Sampled: 03/24/03 15:20 Received: 03/24/03 17:00</b>  |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 1.49   | 0.250              | mg/l  | 1        | 3C26014 | 03/26/03 | 03/29/03 | NWTPH-Dx | D-08  |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 107 %  | 50-150             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 91.2 % | 50-150             |       |          | "       | "        | "        | "        |       |
| <b>LAI-10 (B3C0577-02) Water Sampled: 03/24/03 14:25 Received: 03/24/03 17:00</b> |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | ND     | 0.250              | mg/l  | 1        | 3C26014 | 03/26/03 | 03/30/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 92.2 % | 50-150             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 78.1 % | 50-150             |       |          | "       | "        | "        | "        |       |
| <b>LAI-11 (B3C0577-03) Water Sampled: 03/24/03 13:45 Received: 03/24/03 17:00</b> |        |                    |       |          |         |          |          |          |       |
| Diesel Range Hydrocarbons                                                         | 0.429  | 0.250              | mg/l  | 1        | 3C26014 | 03/26/03 | 03/28/03 | NWTPH-Dx |       |
| Lube Oil Range Hydrocarbons                                                       | ND     | 0.500              | "     | "        | "       | "        | "        | "        |       |
| Surrogate: 2-FBP                                                                  | 92.2 % | 50-150             |       |          | "       | "        | "        | "        |       |
| Surrogate: Octacosane                                                             | 62.3 % | 50-150             |       |          | "       | "        | "        | "        |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 3 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/31/03 14:35

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|----------------|-----|--------------|-------|

**Batch 3C25008: Prepared 03/25/03 Using EPA 5030B (MeOH)**

**Blank (3C25008-BLK1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | ND   | 50.0  | ug/l |      |  |      |        |  |  |
| Benzene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Toluene                     | ND   | 0.500 | "    |      |  |      |        |  |  |
| Ethylbenzene                | ND   | 0.500 | "    |      |  |      |        |  |  |
| Xylenes (total)             | ND   | 1.00  | "    |      |  |      |        |  |  |
| Surrogate: 4-BFB (FID)      | 42.2 |       | "    | 48.0 |  | 87.9 | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 47.4 |       | "    | 48.0 |  | 98.8 | 62-120 |  |  |

**LCS (3C25008-BS1)**

|                             |      |       |      |      |  |      |        |  |  |
|-----------------------------|------|-------|------|------|--|------|--------|--|--|
| Gasoline Range Hydrocarbons | 461  | 50.0  | ug/l | 500  |  | 92.2 | 80-120 |  |  |
| Benzene                     | 6.39 | 0.500 | "    | 6.65 |  | 96.1 | 80-120 |  |  |
| Toluene                     | 34.2 | 0.500 | "    | 37.0 |  | 92.4 | 80-120 |  |  |
| Ethylbenzene                | 9.11 | 0.500 | "    | 8.55 |  | 107  | 80-120 |  |  |
| Xylenes (total)             | 42.7 | 1.00  | "    | 43.0 |  | 99.3 | 80-120 |  |  |
| Surrogate: 4-BFB (FID)      | 49.4 |       | "    | 48.0 |  | 103  | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 46.9 |       | "    | 48.0 |  | 97.7 | 62-120 |  |  |

**LCS Dup (3C25008-BSD1)**

|                             |      |       |      |      |  |      |        |       |    |
|-----------------------------|------|-------|------|------|--|------|--------|-------|----|
| Gasoline Range Hydrocarbons | 469  | 50.0  | ug/l | 500  |  | 93.8 | 80-120 | 1.72  | 25 |
| Benzene                     | 6.32 | 0.500 | "    | 6.65 |  | 95.0 | 80-120 | 1.10  | 40 |
| Toluene                     | 35.1 | 0.500 | "    | 37.0 |  | 94.9 | 80-120 | 2.60  | 40 |
| Ethylbenzene                | 9.06 | 0.500 | "    | 8.55 |  | 106  | 80-120 | 0.550 | 40 |
| Xylenes (total)             | 43.1 | 1.00  | "    | 43.0 |  | 100  | 80-120 | 0.932 | 40 |
| Surrogate: 4-BFB (FID)      | 49.1 |       | "    | 48.0 |  | 102  | 57-125 |       |    |
| Surrogate: 4-BFB (PID)      | 46.5 |       | "    | 48.0 |  | 96.9 | 62-120 |       |    |

**Matrix Spike (3C25008-MS1)**

Source: B3C0508-01

|                             |      |       |      |      |       |      |        |  |  |
|-----------------------------|------|-------|------|------|-------|------|--------|--|--|
| Gasoline Range Hydrocarbons | 436  | 50.0  | ug/l | 500  | 11.5  | 84.9 | 70-130 |  |  |
| Benzene                     | 6.20 | 0.500 | "    | 6.65 | 0.110 | 91.6 | 80-134 |  |  |
| Toluene                     | 34.7 | 0.500 | "    | 37.0 | 0.232 | 93.2 | 68-114 |  |  |
| Ethylbenzene                | 8.97 | 0.500 | "    | 8.55 | 0.191 | 103  | 72-128 |  |  |
| Xylenes (total)             | 42.2 | 1.00  | "    | 43.0 | 0.472 | 97.0 | 67-125 |  |  |
| Surrogate: 4-BFB (FID)      | 48.7 |       | "    | 48.0 |       | 101  | 57-125 |  |  |
| Surrogate: 4-BFB (PID)      | 47.4 |       | "    | 48.0 |       | 98.8 | 62-120 |  |  |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 4 of 7



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
03/31/03 14:35

**Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte | Result | Reporting<br>Limit | Units | Spike<br>Level | Source<br>Result | %REC | %REC<br>Limits | RPD | RPD<br>Limit | Notes |
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|
|---------|--------|--------------------|-------|----------------|------------------|------|----------------|-----|--------------|-------|

**Batch 3C25008: Prepared 03/25/03 Using EPA 5030B (MeOH)**

**Matrix Spike Dup (3C25008-MSD1)**

**Source: B3C0508-01**

|                             |      |       |      |      |       |      |        |       |    |  |
|-----------------------------|------|-------|------|------|-------|------|--------|-------|----|--|
| Gasoline Range Hydrocarbons | 457  | 50.0  | ug/l | 500  | 11.5  | 89.1 | 70-130 | 4.70  | 25 |  |
| Benzene                     | 6.30 | 0.500 | "    | 6.65 | 0.110 | 93.1 | 80-134 | 1.60  | 40 |  |
| Toluene                     | 35.2 | 0.500 | "    | 37.0 | 0.232 | 94.5 | 68-114 | 1.43  | 40 |  |
| Ethylbenzene                | 9.07 | 0.500 | "    | 8.55 | 0.191 | 104  | 72-128 | 1.11  | 40 |  |
| Xylenes (total)             | 42.5 | 1.00  | "    | 43.0 | 0.472 | 97.7 | 67-125 | 0.708 | 40 |  |
| Surrogate: 4-BFB (FID)      | 48.9 |       | "    | 48.0 |       | 102  | 57-125 |       |    |  |
| Surrogate: 4-BFB (PID)      | 46.6 |       | "    | 48.0 |       | 97.1 | 62-120 |       |    |  |

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 5 of 7



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
Anchorage 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

Reported:  
03/31/03 14:35

**Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control**  
**North Creek Analytical - Bothell**

| Analyte                                                 | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD   | RPD Limit | Notes |
|---------------------------------------------------------|--------|-----------------|-------|-------------|---------------|------|-------------|-------|-----------|-------|
| <b>Batch 3C26014: Prepared 03/26/03 Using EPA 3520C</b> |        |                 |       |             |               |      |             |       |           |       |
| <b>Blank (3C26014-BLK1)</b>                             |        |                 |       |             |               |      |             |       |           |       |
| Diesel Range Hydrocarbons                               | ND     | 0.250           | mg/l  |             |               |      |             |       |           |       |
| Lube Oil Range Hydrocarbons                             | ND     | 0.500           | "     |             |               |      |             |       |           |       |
| Surrogate: 2-FBP                                        | 0.297  |                 | "     | 0.320       |               | 92.8 | 50-150      |       |           |       |
| Surrogate: Octacosane                                   | 0.147  |                 | "     | 0.160       |               | 91.9 | 50-150      |       |           |       |
| <b>LCS (3C26014-BS1)</b>                                |        |                 |       |             |               |      |             |       |           |       |
| Diesel Range Hydrocarbons                               | 1.75   | 0.250           | mg/l  | 2.00        |               | 87.5 | 63-107      |       |           |       |
| Surrogate: 2-FBP                                        | 0.320  |                 | "     | 0.320       |               | 100  | 50-150      |       |           |       |
| <b>LCS Dup (3C26014-BSD1)</b>                           |        |                 |       |             |               |      |             |       |           |       |
| Diesel Range Hydrocarbons                               | 1.76   | 0.250           | mg/l  | 2.00        |               | 88.0 | 63-107      | 0.570 | 40        |       |
| Surrogate: 2-FBP                                        | 0.314  |                 | "     | 0.320       |               | 98.1 | 50-150      |       |           |       |
| <b>Duplicate (3C26014-DUP1) Source: B3C0577-01</b>      |        |                 |       |             |               |      |             |       |           |       |
| Diesel Range Hydrocarbons                               | 1.39   | 0.250           | mg/l  |             | 1.49          |      |             | 6.94  | 40        | D-08  |
| Lube Oil Range Hydrocarbons                             | ND     | 0.500           | "     |             | 0.225         |      |             | 22.2  | 40        |       |
| Surrogate: 2-FBP                                        | 0.341  |                 | "     | 0.320       |               | 107  | 50-150      |       |           |       |
| Surrogate: Octacosane                                   | 0.141  |                 | "     | 0.160       |               | 88.1 | 50-150      |       |           |       |
| <b>Duplicate (3C26014-DUP2) Source: B3C0577-02</b>      |        |                 |       |             |               |      |             |       |           |       |
| Diesel Range Hydrocarbons                               | 0.799  | 0.250           | mg/l  |             | 0.241         |      |             | 107   | 40        | D-08  |
| Lube Oil Range Hydrocarbons                             | ND     | 0.500           | "     |             | 0.138         |      |             | 71.3  | 40        | Q-05  |
| Surrogate: 2-FBP                                        | 0.324  |                 | "     | 0.320       |               | 101  | 50-150      |       |           |       |
| Surrogate: Octacosane                                   | 0.125  |                 | "     | 0.160       |               | 78.1 | 50-150      |       |           |       |

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 6 of 7



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588  
**Anchorage** 3209 Denali Street, Anchorage, AK 99503  
907.334.9200 fax 907.334.9210

Landau Associates - Edmonds  
Sound View Plaza, 130 2nd Ave S  
Edmonds WA/USA, 98020-9129

Project: TOSCO Renton Terminal  
Project Number: 706002.012  
Project Manager: Martin Powers

**Reported:**  
03/31/03 14:35

### Notes and Definitions

D-08 Results in the diesel organics range are primarily due to overlap from a gasoline range product.

Q-05 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 7 of 7



APPENDIX C

## Bills of Lading for Liquid Disposal

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

|                                                                                                                                                                                                                                                                                   |  |                                                     |                |                                               |                    |                                           |          |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------|----------------|-----------------------------------------------|--------------------|-------------------------------------------|----------|--|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                                                                                                                               |  | 1. Generator's US EPA ID No.<br><b>WA0000641530</b> |                | Manifest Document No.<br><b>0303R</b>         |                    | 2. Page 1 of 1                            |          |  |
| 3. Generator's Name and Mailing Address<br><b>CONOCO PHILLIPS<br/>2423 LIND AVE SW<br/>RENTON, WA 98051</b>                                                                                                                                                                       |  |                                                     |                |                                               |                    |                                           |          |  |
| 4. Generator's Phone<br><b>425 1223-6142</b>                                                                                                                                                                                                                                      |  |                                                     |                |                                               |                    |                                           |          |  |
| 5. Transporter 1 Company Name<br><b>EMERALD SERVICES</b>                                                                                                                                                                                                                          |  | 6. US EPA ID Number<br><b>WA058364647</b>           |                | A. State Transporter's ID                     |                    |                                           |          |  |
| 7. Transporter 2 Company Name                                                                                                                                                                                                                                                     |  | 8. US EPA ID Number                                 |                | B. Transporter 1 Phone<br><b>206-832-3000</b> |                    |                                           |          |  |
| 9. Designated Facility Name and Site Address<br><b>CONOCO PHILLIPS<br/>3901 UNICK ROAD<br/>FERNDALE WA</b>                                                                                                                                                                        |  |                                                     |                | C. State Transporter's ID                     |                    |                                           |          |  |
|                                                                                                                                                                                                                                                                                   |  |                                                     |                | D. Transporter 2 Phone                        |                    |                                           |          |  |
| 10. US EPA ID Number                                                                                                                                                                                                                                                              |  |                                                     |                | E. State Facility's ID                        |                    |                                           |          |  |
|                                                                                                                                                                                                                                                                                   |  |                                                     |                | F. Facility's Phone<br><b>360-832-5531</b>    |                    |                                           |          |  |
| 11. WASTE DESCRIPTION                                                                                                                                                                                                                                                             |  |                                                     | 12. Containers |                                               | 13. Total Quantity |                                           | 14. Unit |  |
|                                                                                                                                                                                                                                                                                   |  |                                                     | No. Type       |                                               |                    |                                           | Unit     |  |
| a. Mixture is water and gasoline from<br>RENTON LITCH SEEP                                                                                                                                                                                                                        |  |                                                     | 1 11           |                                               | 4500               |                                           | GAL      |  |
| b.                                                                                                                                                                                                                                                                                |  |                                                     |                |                                               |                    |                                           |          |  |
| c.                                                                                                                                                                                                                                                                                |  |                                                     |                |                                               |                    |                                           |          |  |
| d.                                                                                                                                                                                                                                                                                |  |                                                     |                |                                               |                    |                                           |          |  |
| G. Additional Descriptions for Materials Listed Above<br><b>(A) CONTAINS NO PCB'S, USED LUBE OILS, SOLVENTS,<br/>OR RCW DW HAZWASTE.</b>                                                                                                                                          |  |                                                     |                | H. Handling Codes for Wastes Listed Above     |                    |                                           |          |  |
| 15. Special Handling Instructions and Additional Information                                                                                                                                                                                                                      |  |                                                     |                |                                               |                    |                                           |          |  |
| 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. |  |                                                     |                |                                               |                    |                                           |          |  |
| Printed/Typed Name<br><b>JOSEPH PORZIAK</b>                                                                                                                                                                                                                                       |  |                                                     |                | Signature<br><i>Joseph Porzjak</i>            |                    | Date<br>Month Day Year<br><b>01 18 01</b> |          |  |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                                     |                | Signature<br><i>[Signature]</i>               |                    | Date<br>Month Day Year<br><b>1 18 01</b>  |          |  |
| Printed/Typed Name<br><b>[Name]</b>                                                                                                                                                                                                                                               |  |                                                     |                | Signature<br><i>[Signature]</i>               |                    | Date<br>Month Day Year                    |          |  |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                                     |                | Signature                                     |                    | Date                                      |          |  |
| Printed/Typed Name                                                                                                                                                                                                                                                                |  |                                                     |                | Signature                                     |                    | Date                                      |          |  |
| 19. Discrepancy Indication Space                                                                                                                                                                                                                                                  |  |                                                     |                |                                               |                    |                                           |          |  |
| 20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.                                                                                                                                             |  |                                                     |                |                                               |                    |                                           |          |  |
| Printed/Typed Name                                                                                                                                                                                                                                                                |  |                                                     |                | Signature                                     |                    | Date<br>Month Day Year                    |          |  |

# NON-HAZARDOUS WASTE MANIFEST

(Form designed for use on elite (12 pitch) typewriter)

|                                                                                                                                                                                                                        |  |                                              |  |                                        |  |                  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|----------------------------------------|--|------------------|--|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                                                                    |  | 1. Generator's US EPA ID No.<br>WAB002641530 |  | Manifest Document No.<br>0203R         |  | 2. Page 1 of 1   |  |
| Generator's Name and Mailing Address<br>CONOCO PHILLIPS<br>2423 LIND AVENUE<br>RENTON, WA 98055                                                                                                                        |  |                                              |  |                                        |  |                  |  |
| Generator's Phone<br>(206) 223-6142                                                                                                                                                                                    |  |                                              |  |                                        |  |                  |  |
| Transporter 1 Company Name<br>METAL SERVICES                                                                                                                                                                           |  | 6. US EPA ID Number<br>WAB053364647          |  | A. State Transporter's ID              |  |                  |  |
| Transporter 2 Company Name                                                                                                                                                                                             |  | 8. US EPA ID Number                          |  | B. Transporter 1 Phone<br>206.832.3000 |  |                  |  |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNION ROAD<br>FERRETDALE WA                                                                                                                    |  | 10. US EPA ID Number<br>WAB009250360         |  | C. State Transporter's ID              |  |                  |  |
| 11. WASTE DESCRIPTION<br>MIXTURE OF GASOLINE AND WATER FROM<br>RENTON DITCH SEEP                                                                                                                                       |  |                                              |  | D. Transporter 2 Phone                 |  |                  |  |
|                                                                                                                                                                                                                        |  |                                              |  | E. State Facility's ID                 |  |                  |  |
|                                                                                                                                                                                                                        |  |                                              |  | F. Facility's Phone<br>360-384-8331    |  |                  |  |
|                                                                                                                                                                                                                        |  | 12. Containers                               |  | 13. Total Quantity                     |  | 14. Unit WL/Vol. |  |
|                                                                                                                                                                                                                        |  | No. Type                                     |  |                                        |  |                  |  |
|                                                                                                                                                                                                                        |  | 1 11                                         |  | 3306                                   |  | GAL              |  |
| 15. Descriptions for Materials Listed Above<br>STAINS NO PCB'S, USED LUBE OILS, SOLVENTS<br>RCW, DW, HAZWASTE                                                                                                          |  | H. Handling Codes for Wastes Listed Above    |  |                                        |  |                  |  |
| 16. Instructions and Additional Information                                                                                                                                                                            |  |                                              |  |                                        |  |                  |  |
| <p>I hereby certify that the contents of this shipment are fully and accurately described and are in all respects the materials described on this manifest are not subject to federal hazardous waste regulations.</p> |  |                                              |  |                                        |  |                  |  |
| Signature                                                                                                                                                                                                              |  | Date                                         |  |                                        |  |                  |  |
| Signature                                                                                                                                                                                                              |  | Date                                         |  |                                        |  |                  |  |
| Signature                                                                                                                                                                                                              |  | Date                                         |  |                                        |  |                  |  |
| Signature                                                                                                                                                                                                              |  | Date                                         |  |                                        |  |                  |  |
| Waste materials covered by this manifest, except as noted in item 19.                                                                                                                                                  |  |                                              |  |                                        |  |                  |  |
| Signature                                                                                                                                                                                                              |  | Date                                         |  |                                        |  |                  |  |

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

## NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

WA000641530

Manifest Document No.

0103R

2. Page 1

of 1

3. Generator's Name and Mailing Address

CONDOR PHILLIPS  
2423 LIND AVENUE  
RENTON WA 98055

4. Generator's Phone

253 1228-6142

5. Transporter 1 Company Name

EMERALD SERVICES

6. US EPA ID Number

WA0058364647

7. Transporter 2 Company Name

8. US EPA ID Number

9. Designated Facility Name and Site Address

CONDOR PHILLIPS  
3901 UNICK ROAD  
FERNDALE WA 9

10. US EPA ID Number

WA009250360

A. State Transporter's ID

B. Transporter 1 Phone

C. State Transporter's ID

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone

360-384-8331

11. WASTE DESCRIPTION

a. MIXTURE IN GASOLINE AND WATER FROM  
RENTON DITCH SEEP

12. Containers

No.

Type

13. Total Quantity

14. Unit WL/Vol.

1

TT

4848

GAL

G. Additional Descriptions for Materials Listed Above

(A) CONTAINS NO PCB'S, USED LUBE OILS, SOLVENTS  
OR RCW, DW, HAZWASTE

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Date

Printed/Typed Name

JOSEPH PERDIAK

Signature

*Joseph Perdiak*

Month Day Year

01/18/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Michael Clark

Signature

*Michael Clark*

Month Day Year

01/19/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

-

Signature

-

Month Day Year

-

19. Discrepancy Indication Space

20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Date

Printed/Typed Name

-

Signature

-

Month Day Year

-

GENERATOR

TRANSPORTER

FACILITY





Invoice Number: 29702



9010 EAST MARGINAL WAY SOUTH  
SUITE 200  
SEATTLE, WA 98108  
Tel. (206) 832-3000 Fax No. (206) 832-3030  
Federal ID No. 91-1578671

Customer Service Contact: Connie Valadez  
Phone No. (206) 832-3027

Customer ID: LAN700

Invoice Date: 02/28/03

Page: 1

Bill-to Address:  
LANDAU ASSOCIATES.  
130 2ND AVE S  
EDMONDS, WA 98020

Site Address:  
TOSCO  
MARTIN  
RENTON  
WA

Job No. 30 - 52874.02

P.O. Number  
Payment Term: NET30

| Date | Description | Ref. No. | Quantity | Unit | Unit Price | Total Price |
|------|-------------|----------|----------|------|------------|-------------|
|------|-------------|----------|----------|------|------------|-------------|

PROVIDE PUMPS AND COMPRESSOR FOR PUMPING SYSTEM. PROVIDE LABOR AND EQUIPMENT TO PUMP AND CLEAN BAKER TANK AND  
TRANSPORT PRODUCT TO FERNDAL

|                                              |                        |  |     |      |       |          |
|----------------------------------------------|------------------------|--|-----|------|-------|----------|
| Subject<br>To<br>Tax<br>Exemption<br>of 8.8% | 02/28/03 M8 PUMPS (4)  |  | 21  | DAY  | 264   | 5,544.00 |
|                                              | COMPRESSOR             |  | 21  | DAY  | 90    | 1,890.00 |
|                                              | TRANSPORTATION/FERNDAL |  | 73  | HOUR | 79.75 | 5,821.75 |
|                                              | TRANSPORTATION/FERNDAL |  | 14  | HOUR | 93.25 | 1,305.50 |
|                                              | GENERAL LABOR/ST       |  | 25  | HOUR | 39.5  | 987.50   |
|                                              | GENERAL LABOR/OT       |  | 4.5 | HOUR | 52.25 | 235.13   |
|                                              | EQUIPMENT OPERATOR/ST  |  | 4.5 | HOUR | 41.5  | 186.75   |
|                                              | FIELD SUPERVISOR       |  | 4.5 | HOUR | 43.5  | 195.75   |
|                                              | SM VAC TRUCK           |  | 4.5 | HOUR | 32.95 | 148.28   |
|                                              | GEAR TRUCK             |  | 5   | HOUR | 20    | 100.00   |
|                                              | WASH PUMP              |  | 3.5 | HOUR | 27.5  | 96.25    |
|                                              |                        |  |     |      |       | (798.77) |

OK To Pay  
706002.012  
Task 012  
MTD  
3-12-03

Please make sure to  
send them a copy of  
our tax exemption letter.

Amount Subject to  
Sales Tax  
16,510.91

Amount Exempt  
from Sales Tax  
0.00

Subtotal: 16,510.91  
Sales Tax: 1,452.96  
(798.77)  
Total: 17,963.87

Pay This Amt → \$17,165.10

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.  
WA D 0 5 8 3 5 4 7

Manifest  
Document No.

2. Page 1  
of 1

0803R

**COPY**  
2/3

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA D 0 5 8 3 5 4 7

A. Transporter's Phone (206) 962-8000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
WA D 0 6 9 2 5 0 3 6 0

C. Facility's Phone (360) 386-8331

11. Waste Shipping Name and Description

a. GASOLINE MIXTURE, 5, UN1203, PG-II, ERG#128

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
JIM FREDRICKSON

Signature  
*Jim Fredrickson*

Month Day Year  
10/13/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
DONALD KNECHTEL

Signature  
*Donald Knechtel*

Month Day Year  
01/30/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name  
PAT Tibollo

Signature  
*Pat Tibollo*

Month Day Year

TRANSPORTER # 1

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of 1

1003R

**COPY**  
2/38

3. Generator's Name and Mailing Address  
LORD PHILIPS  
1423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 226-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA 1000000000000000

A. Transporter's Phone  
(206) 891-0000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
LORD PHILIPS  
3901 UNION ROAD  
EDMUNDS, WA 98048

10. US EPA ID Number  
WA 1000000000000000

C. Facility's Phone  
(206) 784-8291

11. Waste Shipping Name and Description

12. Containers

13. Total Quantity

14. Unit Wt/Vol

a. GASOLINE MIXTURE, A. UN1203, PG-II, EPC4128

No.

Type

4958

5

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DM OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

10/13/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

DONALD KUECHTEL

Signature

*Donald Kuechtel*

Month Day Year

01/31/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

David Brangh

Signature

*David Brangh*

Month Day Year

02/01/03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name

DAT 1003R

Signature

*DAT 1003R*

Month Day Year

02/01/03

GENERATOR  
TRANSPORTER  
FACILITY

TRANSPORTER #2

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest  
Document No.

2. Page 1  
of 1

0903R  
**COPY**  
2/3

3. Generator's Name and Mailing Address

4. Generator's Phone

5. Transporter 1 Company Name

6. US EPA ID Number

A. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

10. US EPA ID Number

C. Facility's Phone

11. Waste Shipping Name and Description

a. GASOLINE MIXTURE, A. FINE, 10-15, 100-150

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

AT A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR SOLIDS OR OF HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year

10/13/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

James Fredrickson

Signature

James Fredrickson

Month Day Year

10/13/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

10/13/03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

James Fredrickson

Signature

James Fredrickson

Month Day Year

10/13/03

T/S/D/F COPY

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No:  
W A D 0 0 0 6 4 1 5 3 0

Manifest  
Document No.

2. Page 1  
of 1

1103R

**COPY**  
2/68

3. Generator's Name and Mailing Address: CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (1253) 228-6142

5. Transporter 1 Company Name:  
EMERALD SERVICES, INC.

6. US EPA ID Number:  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone:  
(206) 832-300

7. Transporter 2 Company Name:

8. US EPA ID Number:

B. Transporter's Phone:

9. Designated Facility Name and Site Address:  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number:  
W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone:  
(360) 384-9331

11. Waste Shipping Name and Description:

a. GASOLINE MIXTURE, 3, UN1203, PG-II, ERG#128

12. Containers  
No. Type 13. Total  
Quantity 14. Unit  
Wt/Vol

TT 1 TT 23.42 G

|    |  |  |  |  |
|----|--|--|--|--|
| b. |  |  |  |  |
| c. |  |  |  |  |
| d. |  |  |  |  |

D. Additional Descriptions for Materials Listed Above:

a) A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information:

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE.

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name:  
JAMES FREDRICKSON

Signature: James Fredrickson

Month Day Year  
10 20 30 3

17. Transporter 1 Acknowledgement of Receipt of Materials:

Printed/Typed Name:  
Michael Clark

Signature: Michael Clark

Month Day Year  
10 20 30 3

18. Transporter 2 Acknowledgement of Receipt of Materials:

Printed/Typed Name:

Signature:

Month Day Year

19. Discrepancy Indication Space:

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name:  
PAT Tiballo

Signature: Pat Tiballo

Month Day Year

TRANSPORTER #2

GENERATOR

TRANSPORTER

FACILITY

|                                                                                                                                                                                  |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------|--|---------------------------------------|--|------------------------------------------------|--|-----------------------------------------|--|----------|--|--------|--|
| <b>NON-HAZARDOUS<br/>WASTE MANIFEST</b>                                                                                                                                          |  | 1. Generator's US EPA ID No.<br>WA D 0 0 5 4 1 5 3 0 |  | Manifest Document No.                 |  | 2. Page 1 of 1                                 |  | 1203R                                   |  |          |  |        |  |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILLIPS<br>2423 LIND AVE SW<br>RENTON, WA 98055                                                                               |  |                                                      |  |                                       |  | <b>COPY</b><br>268                             |  |                                         |  |          |  |        |  |
| 4. Generator's Phone (253) 228-6142                                                                                                                                              |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES, INC.                                                                                                                          |  |                                                      |  |                                       |  | 6. US EPA ID Number<br>WA D 0 5 8 3 6 4 6 4 7  |  | A. Transporter's Phone<br>(206) 832-300 |  |          |  |        |  |
| 7. Transporter 2 Company Name                                                                                                                                                    |  |                                                      |  |                                       |  | 8. US EPA ID Number                            |  | B. Transporter's Phone                  |  |          |  |        |  |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                         |  |                                                      |  |                                       |  | 10. US EPA ID Number<br>WA D 0 0 9 2 5 0 3 6 0 |  | C. Facility's Phone<br>(360) 384-8331   |  |          |  |        |  |
| 11. Waste Shipping Name and Description<br>a. GASOLINE MIXTURE, 3, UN1203, PG-II, ERG#125<br>b.<br>c.<br>d.                                                                      |  |                                                      |  |                                       |  | 12. Containers                                 |  | 13. Total Quantity                      |  | 14. Unit |  |        |  |
|                                                                                                                                                                                  |  |                                                      |  |                                       |  | No.                                            |  | Type                                    |  | Quantity |  | Wt/Vol |  |
|                                                                                                                                                                                  |  |                                                      |  |                                       |  | TT 1                                           |  | T.T                                     |  | 4.666    |  | G      |  |
|                                                                                                                                                                                  |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
|                                                                                                                                                                                  |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
| D. Additional Descriptions for Materials Listed Above<br>a) A GASOLINE AND WATER MIXTURE                                                                                         |  |                                                      |  |                                       |  | E. Handling Codes for Wastes Listed Above:     |  |                                         |  |          |  |        |  |
| 15. Special Handling Instructions and Additional Information<br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DM OR HAZARDOUS WASTE                                        |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                          |  |                                                      |  | Signature<br><i>James Fredrickson</i> |  | Month Day Year<br>10/26/03                     |  |                                         |  |          |  |        |  |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                        |  |                                                      |  | Printed/Typed Name<br>DAVE BOROUGH    |  | Signature<br><i>Dave Borough</i>               |  | Month Day Year<br>10/26/03              |  |          |  |        |  |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                        |  |                                                      |  | Printed/Typed Name<br>MALE NICKERMAN  |  | Signature<br><i>Male Nickerman</i>             |  | Month Day Year<br>02/04/03              |  |          |  |        |  |
| 19. Discrepancy Indication Space                                                                                                                                                 |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.                                                 |  |                                                      |  |                                       |  |                                                |  |                                         |  |          |  |        |  |
| Printed/Typed Name<br>PAT Tibolli                                                                                                                                                |  |                                                      |  | Signature<br><i>Pat Tibolli</i>       |  | Month Day Year                                 |  |                                         |  |          |  |        |  |

TRANSPORTER # 1

GENERATOR

TRANSPORTER

FACILITY

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W A D O 0 5 8 3 6 4 1 5 3 0

Manifest  
Document No.

2. Page 1  
of 1

1303R

1

**COPY**

2/6/8

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253), 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W A D O 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

W A D O 0 5 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. GASOLINE MIXTURE, 3, UN1203, PG-II, ERG#128

12. Containers

No.

Type

13. Total  
Quantity

14. Unit  
Wt/Vol

1

TT

47.82

G

D. Additional Descriptions for Materials Listed Above

a) A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year

02/03/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

DAVID BOROUGHS

Signature

David Boroughs

Month Day Year

02/03/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

PAT TIBALL

Signature

Pat Tiball

Month Day Year

TRANSPORTER # 1

GENERATOR

TRANSPORTER

FACILITY

|                                                                                                                                                                                  |  |                                                         |                       |                                            |                    |          |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------|-----------------------|--------------------------------------------|--------------------|----------|---|
| <b>NON-HAZARDOUS<br/>WASTE MANIFEST</b>                                                                                                                                          |  | 1. Generator's US EPA ID No.<br>W A D 0 0 0 5 4 1 5 3 0 | Manifest Document No. | 2. Page 1 of 1                             | 1403R              |          |   |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILLIPS<br>2423 LIND AVE SW<br>RENTON, WA 98055                                                                               |  |                                                         |                       | <h1 style="margin: 0;">COPY</h1><br>2/12/8 |                    |          |   |
| 4. Generator's Phone (253) 228-6142                                                                                                                                              |  |                                                         |                       |                                            |                    |          |   |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES, INC.                                                                                                                          |  | 6. US EPA ID Number<br>W A D 0 5 8 3 8 4 6 4 7          |                       | A. Transporter's Phone<br>(206) 832-3000   |                    |          |   |
| 7. Transporter 2 Company Name                                                                                                                                                    |  | 8. US EPA ID Number                                     |                       | B. Transporter's Phone                     |                    |          |   |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                         |  | 10. US EPA ID Number<br>W A D 0 0 9 2 5 0 3 0 0         |                       | C. Facility's Phone<br>(360) 384-8331      |                    |          |   |
| 11. Waste Shipping Name and Description<br><br>a. GASOLINE MIXTURE, 3, UN1203, PG-II, ERG#128<br><br>b.<br><br>c.<br><br>d.                                                      |  |                                                         |                       | 12. Containers                             | 13. Total Quantity | 14. Unit |   |
|                                                                                                                                                                                  |  |                                                         |                       | No.                                        | Type               | Wt/Vol   |   |
|                                                                                                                                                                                  |  |                                                         |                       | 1                                          | T.T                | 4.758    | G |
|                                                                                                                                                                                  |  |                                                         |                       |                                            |                    |          |   |
|                                                                                                                                                                                  |  |                                                         |                       |                                            |                    |          |   |
| D. Additional Descriptions for Materials Listed Above<br>a) A GASOLINE AND WATER MIXTURE                                                                                         |  |                                                         |                       | E. Handling Codes for Wastes Listed Above  |                    |          |   |
| 15. Special Handling Instructions and Additional Information<br><br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR PCRA, DW OR HAZARDOUS WASTE                                    |  |                                                         |                       |                                            |                    |          |   |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |  |                                                         |                       |                                            |                    |          |   |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                          |  | Signature<br><i>James Fredrickson</i>                   |                       | Month Day Year<br>02/10/03                 |                    |          |   |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                        |  | Printed/Typed Name<br>DAVID KNECHTEL                    |                       | Signature<br><i>David Knechtel</i>         |                    |          |   |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                        |  | Printed/Typed Name                                      |                       | Signature                                  |                    |          |   |
| 19. Discrepancy Indication Space                                                                                                                                                 |  |                                                         |                       |                                            |                    |          |   |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.                                                 |  |                                                         |                       |                                            |                    |          |   |
| Printed/Typed Name<br>PAT Tibello                                                                                                                                                |  | Signature<br><i>PAT Tibello</i>                         |                       | Month Day Year<br>2/10/03                  |                    |          |   |

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

|                                                                                                                                                                                                                                                                                   |  |                                              |  |                                           |  |                    |  |                   |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|-------------------------------------------|--|--------------------|--|-------------------|--|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                                                                                                                               |  | 1. Generator's US EPA ID No.<br>WAD000641530 |  | Manifest Document No. 1503R               |  | 2. Page 1 of 1     |  |                   |  |
| 3. Generator's Name and Mailing Address<br>CONOCOPHILLIPS<br>2423 LIAD AVE SW<br>RENTON, WA 98055                                                                                                                                                                                 |  |                                              |  |                                           |  |                    |  |                   |  |
| 4. Generator's Phone ( )                                                                                                                                                                                                                                                          |  |                                              |  |                                           |  |                    |  |                   |  |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES INC                                                                                                                                                                                                                             |  | 6. US EPA ID Number<br>WAD058364647          |  | A. State Transporter's ID                 |  |                    |  |                   |  |
| 7. Transporter 2 Company Name                                                                                                                                                                                                                                                     |  | 8. US EPA ID Number                          |  | B. Transporter 1 Phone 206 832-3000       |  |                    |  |                   |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  | C. State Transporter's ID                 |  |                    |  |                   |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  | D. Transporter 2 Phone                    |  |                    |  |                   |  |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS REFINERY<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                                                                                                                 |  | 10. US EPA ID Number<br>WAD009250360         |  | E. State Facility's ID                    |  |                    |  |                   |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  | F. Facility's Phone<br>360-384-8331       |  |                    |  |                   |  |
| 11. WASTE DESCRIPTION<br><br>a. GASOLINE MIXTURE, 3, UN1203, PG-II, ERG #128<br><br>b.<br><br>c.<br><br>d. A                                                                                                                                                                      |  |                                              |  | 12. Containers                            |  | 13. Total Quantity |  | 14. Unit Wt./Vol. |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  | No. Type                                  |  |                    |  |                   |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  | 1 111                                     |  | 4733               |  | G                 |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  |                                           |  |                    |  |                   |  |
|                                                                                                                                                                                                                                                                                   |  |                                              |  |                                           |  |                    |  |                   |  |
| G. Additional Descriptions for Materials Listed Above<br>(A) A GASOLINE AND WATER MIXTURE                                                                                                                                                                                         |  |                                              |  | H. Handling Codes for Wastes Listed Above |  |                    |  |                   |  |
| 15. Special Handling Instructions and Additional Information<br>CONTAINS NO PCB'S, USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZEROUS WASTE                                                                                                                                         |  |                                              |  |                                           |  |                    |  |                   |  |
| 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. |  |                                              |  |                                           |  |                    |  |                   |  |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                                                                                                                           |  |                                              |  | Signature<br><i>James Fredrickson</i>     |  | Date<br>2/17/03    |  |                   |  |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                              |  | Signature<br><i>Dave Brounsh</i>          |  | Date<br>02/17/03   |  |                   |  |
| Printed/Typed Name<br>DAVE BROUNSH                                                                                                                                                                                                                                                |  |                                              |  | Signature                                 |  | Date               |  |                   |  |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                              |  | Signature                                 |  | Date               |  |                   |  |
| Printed/Typed Name                                                                                                                                                                                                                                                                |  |                                              |  | Signature                                 |  | Date               |  |                   |  |
| 19. Discrepancy Indication Space                                                                                                                                                                                                                                                  |  |                                              |  |                                           |  |                    |  |                   |  |
| 20. Facility Owner or Operator, Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.                                                                                                                                             |  |                                              |  |                                           |  |                    |  |                   |  |
| Printed/Typed Name<br>DENNIS LITTE                                                                                                                                                                                                                                                |  |                                              |  | Signature<br><i>Dennis Little</i>         |  | Date<br>2/17/03    |  |                   |  |



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

|                                                                                                                                                                                                                                                                                   |  |                                                |  |                                                                  |  |                                     |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------|--|------------------------------------------------------------------|--|-------------------------------------|--|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                                                                                                                               |  | 1. Generator's US EPA ID No.<br>WAD 000 641530 |  | Manifest Document No. 1603R                                      |  | 2. Page 1 of 1                      |  |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILLIPS<br>2423 LINDA AVE S.W.<br>RENTON, WA, 98023                                                                                                                                                                            |  |                                                |  |                                                                  |  |                                     |  |
| 4. Generator's Phone (425) 228-6142                                                                                                                                                                                                                                               |  |                                                |  |                                                                  |  |                                     |  |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES INC                                                                                                                                                                                                                             |  | 6. US EPA ID Number<br>WAD 058364647           |  | A. State Transporter's ID                                        |  | B. Transporter 1 Phone 206 832 3000 |  |
| 7. Transporter 2 Company Name                                                                                                                                                                                                                                                     |  | 8. US EPA ID Number                            |  | C. State Transporter's ID                                        |  | D. Transporter 2 Phone              |  |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS REFINERY<br>3901 UNICK ROAD<br>FERNDALE, WA. 98248                                                                                                                                                                |  | 10. US EPA ID Number<br>WAD 009250360          |  | E. State Facility's ID                                           |  | F. Facility's Phone 360-384-8331    |  |
| 11. WASTE DESCRIPTION                                                                                                                                                                                                                                                             |  |                                                |  | 12. Containers                                                   |  | 13. Total Quantity                  |  |
|                                                                                                                                                                                                                                                                                   |  |                                                |  | No. Type                                                         |  | Unit Wt./Vol.                       |  |
| a. GASOLINE MIXTURE, 3, UN1203, PG II, ERG#128                                                                                                                                                                                                                                    |  |                                                |  | 1                                                                |  | TT 4664 G                           |  |
| b.                                                                                                                                                                                                                                                                                |  |                                                |  |                                                                  |  |                                     |  |
| c.                                                                                                                                                                                                                                                                                |  |                                                |  |                                                                  |  |                                     |  |
| d.                                                                                                                                                                                                                                                                                |  |                                                |  |                                                                  |  |                                     |  |
| G. Additional Descriptions for Materials Listed Above<br>(A) GASOLINE WATER MIXTURE                                                                                                                                                                                               |  |                                                |  | H. Handling Codes for Wastes Listed Above<br><b>COPY</b><br>2/19 |  |                                     |  |
| 15. Special Handling Instructions and Additional Information<br>CONTAINS NO PCB'S, USED LUBE OILS, SOLVENTS, OR RCRA, D.W OR HAZEROUS WASTE                                                                                                                                       |  |                                                |  |                                                                  |  |                                     |  |
| 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. |  |                                                |  |                                                                  |  |                                     |  |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                                                                                                                           |  |                                                |  | Signature<br><i>James Fredrickson</i>                            |  | Date<br>Month 2 Day 17 Year 03      |  |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                                |  | Signature<br><i>Sothern-Khim</i>                                 |  | Date<br>Month 02 Day 17 Year 03     |  |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                                |  | Signature                                                        |  | Date                                |  |
| Printed/Typed Name                                                                                                                                                                                                                                                                |  |                                                |  | Signature                                                        |  | Date                                |  |
| 19. Discrepancy Indication Space                                                                                                                                                                                                                                                  |  |                                                |  |                                                                  |  |                                     |  |
| 20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.                                                                                                                                             |  |                                                |  |                                                                  |  |                                     |  |
| Printed/Typed Name<br>DENNIS IFFER                                                                                                                                                                                                                                                |  |                                                |  | Signature<br><i>Dennis Iffer</i>                                 |  | Date<br>Month 2 Day 17 Year 03      |  |

NON-HAZARDOUS WASTE

TRANSPORTER

FACILITY



**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W.A.D.0.0.6.4.1.5.3.0

Manifest  
Document No.  
1903R

2. Page 1  
of 1

1

**COPY**

2/24

3. Generator's Name and Mailing Address  
CONOCO PHILIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W.A.D.0.5.8.3.6.4.6.4.7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
W.A.D.0.0.9.2.5.0.3.6.0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

a. GASOLINE MIXTURE, 3, UN1203, PG-II, ERG#128

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

1 T 1 486.8 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

a) A GASOLINE AND WATER MIXTURE

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
GARY ANDERSON

Signature

Month Day Year  
02/20/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
Terry Loder

Signature

Month Day Year  
02/20/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19:

Printed/Typed Name  
PAT Tibbitts

Signature

Month Day Year  
2/24/03

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.

W.A.D.0.0.6.4.1.5.3.0

Manifest  
Document No.

2003R

2. Page 1  
of 1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2428 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name

EMERALD SERVICES, INC.

6. US EPA ID Number

W.A.D.0.5.8.3.6.4.6.4.7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

W.A.D.0.0.9.2.5.0.3.6.0

C. Facility's Phone

(360) 884-8331

11. Waste Shipping Name and Description

a. GASOLINE MIXTURE, UN1203, PG-II, ERG128

12. Containers

No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

1 TT

4800

G

D. Additional Descriptions for Materials Listed Above

a) A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

GAZY ANDERSON

Signature

[Signature]

Month Day Year

02 21 03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

R A Bell

Signature

[Signature]

Month Day Year

02 21 03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

PAT Tibo/10

Signature

[Signature]

Month Day Year

2 21 03

TRANSPORTER #2

COPY

## NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter).

|                                                                                                                                                                                                                                                                                   |  |                                              |  |                                        |  |                                           |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|----------------------------------------|--|-------------------------------------------|------|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                                                                                                                               |  | 1. Generator's US EPA ID No.<br>WA0000061930 |  | Manifest Document No.<br>1703R         |  | 2. Page 1 of 1                            |      |
| 3. Generator's Name and Mailing Address<br>Crown Phillips<br>2423 East 1st St<br>Seattle, WA 98102                                                                                                                                                                                |  |                                              |  |                                        |  |                                           |      |
| 4. Generator's Phone: (206) 376-1234                                                                                                                                                                                                                                              |  |                                              |  | 6. US EPA ID Number<br>WA0000061930    |  |                                           |      |
| 5. Transporter 1 Company Name<br>General Services                                                                                                                                                                                                                                 |  |                                              |  | A. State Transporter's ID              |  |                                           |      |
| 7. Transporter 2 Company Name                                                                                                                                                                                                                                                     |  |                                              |  | B. Transporter 1 Phone<br>206-737-5000 |  |                                           |      |
| 8. US EPA ID Number                                                                                                                                                                                                                                                               |  |                                              |  | C. State Transporter's ID              |  |                                           |      |
| 9. Designated Facility Name and Site Address<br>Crown Phillips Refinery<br>3901 Duwamish St<br>Seattle, WA 98148                                                                                                                                                                  |  |                                              |  | D. Transporter 2 Phone                 |  |                                           |      |
| 10. US EPA ID Number<br>WA0000061930                                                                                                                                                                                                                                              |  |                                              |  | E. State Facility's ID                 |  |                                           |      |
|                                                                                                                                                                                                                                                                                   |  |                                              |  | F. Facility's Phone<br>360-984-8331    |  |                                           |      |
| 11. WASTE DESCRIPTION                                                                                                                                                                                                                                                             |  |                                              |  |                                        |  | 12. Containers                            |      |
|                                                                                                                                                                                                                                                                                   |  |                                              |  |                                        |  | No.                                       | Type |
| a. Gasoline residues, 544 RO3, PCB #12, EXST 128                                                                                                                                                                                                                                  |  |                                              |  |                                        |  | 1                                         | TT   |
| b.                                                                                                                                                                                                                                                                                |  |                                              |  |                                        |  |                                           |      |
| c.                                                                                                                                                                                                                                                                                |  |                                              |  |                                        |  |                                           |      |
| d.                                                                                                                                                                                                                                                                                |  |                                              |  |                                        |  |                                           |      |
| 13. Total Quantity<br>4762                                                                                                                                                                                                                                                        |  |                                              |  |                                        |  | 14. Unit<br>GAL                           |      |
| G. Additional Descriptions for Materials Listed Above<br>(A) Gasoline water residue                                                                                                                                                                                               |  |                                              |  |                                        |  | H. Handling Codes for Wastes Listed Above |      |
| 15. Special Handling Instructions and Additional Information<br>Contains PCB, used only solvents or RCRA, DW or Hazardous Waste.                                                                                                                                                  |  |                                              |  |                                        |  |                                           |      |
| 16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations. |  |                                              |  |                                        |  |                                           |      |
| Printed/Typed Name<br>Crown Phillips                                                                                                                                                                                                                                              |  |                                              |  | Signature<br>[Signature]               |  | Date<br>7/15/02                           |      |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                              |  | Signature<br>[Signature]               |  | Date<br>2/16/03                           |      |
| Printed/Typed Name<br>LOTHORN-KHIN                                                                                                                                                                                                                                                |  |                                              |  | Signature<br>[Signature]               |  | Date                                      |      |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                                                                                                                         |  |                                              |  | Signature                              |  | Date                                      |      |
| Printed/Typed Name                                                                                                                                                                                                                                                                |  |                                              |  | Signature                              |  | Date                                      |      |
| 19. Discrepancy Indication Space                                                                                                                                                                                                                                                  |  |                                              |  |                                        |  |                                           |      |
| 20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19:                                                                                                                                             |  |                                              |  |                                        |  |                                           |      |
| Printed/Typed Name<br>PAT Tibbitt                                                                                                                                                                                                                                                 |  |                                              |  | Signature<br>[Signature]               |  | Date                                      |      |



|                                                                                                                                                                                   |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------|-------------------------------------------------|------------------------------------|--|-------------------------------------------|--|-----------------------|----------------------------|--------------------|--|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                               |  | 1. Generator's US EPA ID No.<br>W A D 0 0 0 6 4 1 5 3 0 |                                                 | Manifest Document No.<br>1-8-0-3-R |  | 2. Page 1<br>1 of 1                       |  | 1                     |                            |                    |  |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILIPS<br>2423 LIND AVE SW<br>RENTON, WA 98055                                                                                 |  |                                                         |                                                 |                                    |  | <b>COPY</b><br>2/24/03                    |  |                       |                            |                    |  |
| 4. Generator's Phone ((253)) 228-6142                                                                                                                                             |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES, INC.                                                                                                                           |  |                                                         | 6. US EPA ID Number<br>W A D 0 5 8 3 6 4 6 4 7  |                                    |  | A. Transporter's Phone<br>(206) 832-300   |  |                       |                            |                    |  |
| 7. Transporter 2 Company Name                                                                                                                                                     |  |                                                         | 8. US EPA ID Number                             |                                    |  | B. Transporter's Phone                    |  |                       |                            |                    |  |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                          |  |                                                         | 10. US EPA ID Number<br>W A D 0 0 9 2 5 0 3 6 0 |                                    |  | C. Facility's Phone<br>(360) 384-8331     |  |                       |                            |                    |  |
| 11. Waste Shipping Name and Description<br>a. GASOLINE MIXTURE, 3, UN1203, PG-II, BRG#128                                                                                         |  |                                                         |                                                 |                                    |  | 12. Containers<br>No.                     |  | 13. Total<br>Quantity |                            | 14. Unit<br>Wt/Vol |  |
|                                                                                                                                                                                   |  |                                                         |                                                 |                                    |  | TT                                        |  | TT 4803               |                            | G                  |  |
| D. Additional Descriptions for Materials Listed Above<br>a) A GASOLINE AND WATER MIXTURE                                                                                          |  |                                                         |                                                 |                                    |  | E. Handling Codes for Wastes Listed Above |  |                       |                            |                    |  |
| 15. Special Handling Instructions and Additional Information<br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE                                         |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above, on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| Printed/Typed Name<br>GARY ANDERSON                                                                                                                                               |  |                                                         |                                                 |                                    |  | Signature<br><i>[Signature]</i>           |  |                       | Month Day Year<br>02/19/03 |                    |  |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                         |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| Printed/Typed Name<br>Terry Luder                                                                                                                                                 |  |                                                         |                                                 |                                    |  | Signature<br><i>[Signature]</i>           |  |                       | Month Day Year<br>02/19/03 |                    |  |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                         |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| Printed/Typed Name                                                                                                                                                                |  |                                                         |                                                 |                                    |  | Signature                                 |  |                       | Month Day Year             |                    |  |
| 19. Discrepancy Indication Space                                                                                                                                                  |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.                                                  |  |                                                         |                                                 |                                    |  |                                           |  |                       |                            |                    |  |
| Printed/Typed Name<br>PAT Tibollo                                                                                                                                                 |  |                                                         |                                                 |                                    |  | Signature<br><i>[Signature]</i>           |  |                       | Month Day Year<br>02/19/03 |                    |  |

TRANSPORTER # 1

EMPLOYEE NAME: John Westmore

SHIFT: Day APPROVAL: [Signature] DATE: 2/18/03

LUNCH IN: — TIME IN: 07:00

LUNCH OUT: — TIME OUT: 08:00

JOB #: 30-53139 52874-02

JOB DESCRIPTION: TOSCO - LANDAU

Devi Pumps

| TODD SHIPYARD           |                           | HOURS                  |    |     |
|-------------------------|---------------------------|------------------------|----|-----|
| DEPT                    |                           | REG                    | OT | D/T |
| 324                     | SITE SUPERVISOR 786       |                        |    |     |
|                         | LEADMAN 710               |                        |    |     |
|                         | DRIVER EQUIPMENT OPR. 720 |                        |    |     |
|                         | TANK CLEANER 731          |                        |    |     |
|                         | LABORER 749               |                        |    |     |
|                         | HYDROBLAST 755            |                        |    |     |
| EMERALD SERVICES        |                           | TANK CLEANING ON SHORE |    |     |
| DEPT                    |                           |                        |    |     |
| 330                     | LEADMAN 610               |                        |    |     |
|                         | TANK CLEANER 630          | 1.0                    |    |     |
|                         | DRIVER EQUIPMENT OPR. 640 |                        |    |     |
|                         | HYDROBLAST 650            |                        |    |     |
|                         |                           |                        |    |     |
|                         |                           |                        |    |     |
|                         |                           |                        |    |     |
| TANK CLEANING OFF SHORE |                           |                        |    |     |
| DEPT                    |                           |                        |    |     |
| 330                     | LEADMAN 615               |                        |    |     |
|                         | TANK CLEANER (ALL) 635    |                        |    |     |
|                         | DRIVER EQUIPMENT OPR. 645 |                        |    |     |
|                         | HYDROBLAST 655            |                        |    |     |
|                         |                           |                        |    |     |
|                         |                           |                        |    |     |



Invoice Number: 29874

9010 EAST MARGINAL WAY SOUTH  
SUITE 200  
SEATTLE, WA 98108  
Tel. (206) 832-3000 Fax No. (206) 832-3030  
Federal ID No. 91-1578671

Customer Service Contact: Connie Valadez  
Phone No. (206) 832-3027

Customer ID: LAN700

Invoice Date: 03/31/03

Page: 1

Bill-to Address:  
LANDAU ASSOCIATES.  
130 2ND AVE S  
EDMONDS, WA 98020

Site Address:  
TOSCO  
MARTIN  
RENTON PLANT  
RENTON  
WA

P.O. Number  
Payment Term: NET30

Job No. 30-52874.03

| Date | Description | Ref. No. | Quantity | Unit | Unit Price | Total Price |
|------|-------------|----------|----------|------|------------|-------------|
|------|-------------|----------|----------|------|------------|-------------|

PROVIDE LABOR AND EQUIPMENT TO TRANSPORT WATER TO FERNDAL AND TO PROVIDE PUMPS. ABSORBENT BAILS WERE USED DURING SPILL CLEAN-UP

|          |                            |  |      |      |       |          |
|----------|----------------------------|--|------|------|-------|----------|
| 01/20/03 | ABSORBENT BAILS            |  | 6    | EACH | 49    | 294.00   |
| 03/31/03 | M8 PUMPS (4)               |  | 24   | DAY  | 264   | 6,336.00 |
|          | COMPRESSOR                 |  | 24   | DAY  | 90    | 2,160.00 |
|          | <del>TRANSFERNDAL/ST</del> |  | 79   | HR   | 79.75 | 6,300.25 |
|          | <del>TRANSFERNDAL/OT</del> |  | 29.5 | HR   | 93.25 | 2,750.88 |
|          | <del>TRANSFERNDAL</del>    |  | 30.5 | HR   | 39.5  | 1,204.75 |
|          | <del>TRANSFERNDAL</del>    |  | 1    | HR   | 52.25 | 52.25    |
|          | GEAR TRUCK                 |  | 18   | HR   | 20    | 360.00   |

OK To Pay  
706002.012  
T-013  
MTD  
4-17-03

Amount Subject to Sales Tax 19,458.13  
Amount Exempt from Sales Tax 0.00

Subtotal: 19,458.13

Sales Tax: 1,712.31

Total: 21,170.44

Remove Sales Tax From Highlighted Items b/c of Exemption

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.

WA D 0 0 9 6 4 1 5 3 0

Manifest  
Document No.

2. Page 1  
of

1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number

WA D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 822-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS

3901 UNICK ROAD

FERNDALE, WA 98248

10. US EPA ID Number

WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

12. Containers

No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE);

ET

48.48

G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

TIM FREDRICKSON

Signature

*Tim Fredrickson*

Month Day Year

03/12/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

*LA Ben*

Signature

*LA Ben*

Month Day Year

03/12/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

PAT TIBOLLO

Signature

*PAT TIBOLLO*

Month Day Year

03/12/03

TRANSPORTER # 1

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W.A.D.0.0.0.0.4.1.5.3.0

Manifest Document No.  
2-10-58

2. Page 1 of 1

3. Generator's Name and Mailing Address: CONOCO PHILLIPS  
2433 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 286-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W.A.D.0.5.8.3.5.4.6.4.7

A. Transporter's Phone (206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNION ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
W.A.D.0.0.9.2.5.0.3.6.0

C. Facility's Phone (360) 384-8331

11. Waste Shipping Name and Description

12. Containers

13. Total Quantity

14. Unit Wt/Vol

a. ~~WATER GASOLINE MIXTURE~~ NON HAZARDOUS  
WATER GASOLINE MIXTURE NON DOT REGULATED

TTI TT 4.665 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A GASOLINE AND WATER MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

03/17/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

SOTHORN-KHIM

Signature

*Sothorn Khim*

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

PAT TIBOLLO

Signature

*Pat Tibollo*

Month Day Year

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0

Manifest  
Document No.

2. Page 1  
of

1

3. Generator's Name and Mailing Address  
CONOCO PHILIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

12. Containers

No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

TT

4580

G

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

03/14/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

JOHN RAMSEY

Signature

*John Ramsey*

Month Day Year

03/14/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

MARY PROVANCE

Signature

*Mary Provance*

Month Day Year

03/14/03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
WA D 0 0 0 6 4 1 5 3 0

Manifest  
Document No.  
24038

2. Page 1  
of

**COPY**

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-4000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

1 4.948 G

|    |  |  |  |  |
|----|--|--|--|--|
| b. |  |  |  |  |
| c. |  |  |  |  |
| d. |  |  |  |  |

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

a) A WATER AND GASOLINE MIXTURE

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR PCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
**JAMES FREDRICKSON**

Signature  
*James Fredrickson*

Month Day Year  
6/3/17 6/3

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
**DALE MUCK**

Signature  
*Dale Muck*

Month Day Year  
6/3/17 6/3

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name  
**JOHN HATFIELD**

Signature  
*John Hatfield*

Month Day Year  
6/3/17 6/3

TRANSPORTER #2

GENERATOR

TRANSPORTER

FACILITY

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W.A.D.0.0.6.4.1.5.3.0

Manifest  
Document No.  
25032

2. Page 1  
of

**COPY**

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 226-5142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W.A.D.0.5.8.3.6.4.6.4.7

A. Transporter's Phone (206) 832-3131

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
W.A.D.0.0.8.2.5.0.3.6.0

C. Facility's Phone (360) 381-0111

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE)

PT

4762

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
JAMES FREDRICKSON

Signature  
James Fredrickson

Month Day Year  
03/18/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
SOUTHERN KRM

Signature  
[Signature]

Month Day Year  
03/18/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name  
Sonia Halford

Signature  
[Signature]

Month Day Year  
11/16/03

|                                                                                                                                                                                  |                                                 |                                                         |                                  |                            |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|----------------------------------|----------------------------|-----------------|
| <b>NON-HAZARDOUS<br/>WASTE MANIFEST</b>                                                                                                                                          |                                                 | 1. Generator's US EPA ID No.<br>W A D 0 0 0 6 4 1 5 3 0 | Manifest Document No.<br>2703R11 | 2. Page 1 of 1             | 1               |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILIPS<br>2423 LIND AVE SW<br>RENTON, WA 98055                                                                                |                                                 |                                                         |                                  |                            |                 |
| 4. Generator's Phone (253) 228-6142                                                                                                                                              |                                                 |                                                         |                                  |                            |                 |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES, INC.                                                                                                                          | 6. US EPA ID Number<br>W A D 0 5 8 3 6 4 6 4 7  | A. Transporter's Phone<br>(206) 832-3000                |                                  |                            |                 |
| 7. Transporter 2 Company Name                                                                                                                                                    | 8. US EPA ID Number                             | B. Transporter's Phone                                  |                                  |                            |                 |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                         | 10. US EPA ID Number<br>W A D 0 0 9 2 5 0 3 6 0 | C. Facility's Phone<br>(360) 384-8331                   |                                  |                            |                 |
| 11. Waste Shipping Name and Description<br><br>a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS WATER/GAS MIXTURE),<br><br>b.<br><br>c.<br><br>d.                             |                                                 | 12. Containers                                          |                                  | 13. Total Quantity         | 14. Unit Wt/Vol |
|                                                                                                                                                                                  |                                                 | No.                                                     | Type                             |                            |                 |
|                                                                                                                                                                                  |                                                 |                                                         |                                  | 5042                       | G               |
|                                                                                                                                                                                  |                                                 |                                                         |                                  |                            |                 |
|                                                                                                                                                                                  |                                                 |                                                         |                                  |                            |                 |
| D. Additional Descriptions for Materials Listed Above<br>a) A WATER AND GASOLINE MIXTURE                                                                                         |                                                 | E. Handling Codes for Wastes Listed Above               |                                  |                            |                 |
| 15. Special Handling Instructions and Additional Information<br><br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE                                    |                                                 |                                                         |                                  |                            |                 |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |                                                 |                                                         |                                  |                            |                 |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                          |                                                 | Signature<br><i>James Fredrickson</i>                   |                                  | Month Day Year<br>10/31/03 |                 |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                        |                                                 |                                                         |                                  |                            |                 |
| Printed/Typed Name<br>HARRY UNKNOWN                                                                                                                                              |                                                 | Signature<br><i>Harry Unknown</i>                       |                                  | Month Day Year<br>10/31/03 |                 |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                        |                                                 |                                                         |                                  |                            |                 |
| Printed/Typed Name                                                                                                                                                               |                                                 | Signature                                               |                                  | Month Day Year             |                 |
| 19. Discrepancy Indication Space                                                                                                                                                 |                                                 |                                                         |                                  |                            |                 |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.                                                 |                                                 |                                                         |                                  |                            |                 |
| Printed/Typed Name<br>GIBSON C.                                                                                                                                                  |                                                 | Signature<br><i>Chris Gibson</i>                        |                                  | Month Day Year<br>10/31/03 |                 |

GENERATOR

TRANSPORTER

FACILITY

|                                                                                                                                                                                  |                                       |                                               |                       |                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------|-----------------------|----------------------------|
| <b>NON-HAZARDOUS<br/>WASTE MANIFEST</b>                                                                                                                                          |                                       | 1. Generator's US EPA ID No.<br>WA D000641530 | Manifest Document No. | 2. Page 1 of 1             |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILLIPS<br>2423 LIND AVE SW<br>RENTON, WA 98055                                                                               |                                       |                                               |                       |                            |
| 4. Generator's Phone (253) 226-6142                                                                                                                                              |                                       |                                               |                       |                            |
| 5. Transporter 1 Company Name<br>EMERALL SERVICES, INC.                                                                                                                          | 6. US EPA ID Number<br>WA D058364640  | A. Transporter's Phone<br>(206) 932-3000      |                       |                            |
| 7. Transporter 2 Company Name                                                                                                                                                    | 8. US EPA ID Number                   | B. Transporter's Phone                        |                       |                            |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                         | 10. US EPA ID Number<br>WA D009250360 | C. Facility's Phone<br>(360) 384-8331         |                       |                            |
| 11. Waste Shipping Name and Description                                                                                                                                          |                                       | 12. Containers<br>No. Type                    | 13. Total Quantity    | 14. Unit<br>Wt/Vol         |
| a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS WATER/GAS MIXTURE).                                                                                                          |                                       | TT                                            | 50.17                 | G                          |
| b.                                                                                                                                                                               |                                       |                                               |                       |                            |
| c.                                                                                                                                                                               |                                       |                                               |                       |                            |
| d.                                                                                                                                                                               |                                       |                                               |                       |                            |
| D. Additional Descriptions for Materials Listed Above<br>3. A WATER AND GASOLINE MIXTURE                                                                                         |                                       | E. Handling Codes for Wastes Listed Above     |                       |                            |
| 15. Special Handling Instructions and Additional Information<br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DN OR HAZARDOUS WASTE                                        |                                       |                                               |                       |                            |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |                                       |                                               |                       |                            |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                          |                                       | Signature<br><i>James Fredrickson</i>         |                       | Month Day Year<br>03/20/03 |
| 17. Transporter 1 Acknowledgement of Receipt of Materials<br>Printed/Typed Name<br>MICHAEL CLARK                                                                                 |                                       | Signature<br><i>Michael Clark</i>             |                       | Month Day Year<br>03/20/03 |
| 18. Transporter 2 Acknowledgement of Receipt of Materials<br>Printed/Typed Name                                                                                                  |                                       | Signature                                     |                       | Month Day Year             |
| 19. Discrepancy Indication Space                                                                                                                                                 |                                       |                                               |                       |                            |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.                                                 |                                       |                                               |                       |                            |
| Printed/Typed Name<br>MARY PROTHAKER                                                                                                                                             |                                       | Signature<br><i>Mary Prothaker</i>            |                       | Month Day Year<br>3/20/03  |

GENERATOR

TRANSPORTER

FACILITY

|                                                                                                                                                                                  |                                                        |                                                                |                                       |                                   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------|---------------------------------------|-----------------------------------|---|
| <b>NON-HAZARDOUS<br/>WASTE MANIFEST</b>                                                                                                                                          |                                                        | 1. Generator's US EPA ID No.<br><b>W A D 0 0 0 6 4 1 5 3 0</b> | Manifest Document No.<br><b>28038</b> | 2. Page 1 of<br>.....             | 1 |
| 3. Generator's Name and Mailing Address<br><b>CONOCO PHILIPS<br/>2423 LIND AVE SW<br/>RENTON, WA 98055</b>                                                                       |                                                        |                                                                |                                       |                                   |   |
| 4. Generator's Phone (253) 228-6142                                                                                                                                              |                                                        |                                                                |                                       |                                   |   |
| 5. Transporter 1 Company Name<br><b>EMERALD SERVICES, INC.</b>                                                                                                                   | 6. US EPA ID Number<br><b>W A D 0 5 8 3 6 4 6 4 7</b>  | A. Transporter's Phone<br>(206) 832-3000                       |                                       |                                   |   |
| 7. Transporter 2 Company Name                                                                                                                                                    | 8. US EPA ID Number                                    | B. Transporter's Phone                                         |                                       |                                   |   |
| 9. Designated Facility Name and Site Address<br><b>CONOCO PHILLIPS<br/>3901 UNICK ROAD<br/>FERNDAL, WA 98248</b>                                                                 | 10. US EPA ID Number<br><b>W A D 0 0 9 2 5 0 3 6 0</b> | C. Facility's Phone<br>(360) 384-8331                          |                                       |                                   |   |
| 11. Waste Shipping Name and Description                                                                                                                                          |                                                        | 12. Containers No.                                             | 13. Total Quantity                    | 14. Unit Wt/Vol                   |   |
| a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS WATER/GAS MIXTURE),                                                                                                          |                                                        | TT                                                             | 4736                                  | G                                 |   |
| b.                                                                                                                                                                               |                                                        |                                                                |                                       |                                   |   |
| c.                                                                                                                                                                               |                                                        |                                                                |                                       |                                   |   |
| d.                                                                                                                                                                               |                                                        |                                                                |                                       |                                   |   |
| D. Additional Descriptions for Materials Listed Above<br>a) A WATER AND GASOLINE MIXTURE, AND DIESEL FROM SPILL CONTAINMENT TANK                                                 |                                                        | E. Handling Codes for Wastes Listed Above                      |                                       |                                   |   |
| 15. Special Handling Instructions and Additional Information<br><br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE                                    |                                                        |                                                                |                                       |                                   |   |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |                                                        |                                                                |                                       |                                   |   |
| Printed/Typed Name<br><b>JAMES FREDRICKSON</b>                                                                                                                                   |                                                        | Signature<br><i>James Fredrickson</i>                          |                                       | Month Day Year<br><b>6/21/03</b>  |   |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                        |                                                        |                                                                |                                       |                                   |   |
| Printed/Typed Name<br><b>SOTHORN-KHIM</b>                                                                                                                                        |                                                        | Signature<br><i>Sothorn Khim</i>                               |                                       | Month Day Year<br><b>6/21/03</b>  |   |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                        |                                                        |                                                                |                                       |                                   |   |
| Printed/Typed Name                                                                                                                                                               |                                                        | Signature                                                      |                                       | Month Day Year                    |   |
| 19. Discrepancy Indication Space                                                                                                                                                 |                                                        |                                                                |                                       |                                   |   |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.                                                 |                                                        |                                                                |                                       |                                   |   |
| Printed/Typed Name                                                                                                                                                               |                                                        | Signature<br><i>J. Melkine</i>                                 |                                       | Month Day Year<br><b>13/21/03</b> |   |

ORIGINAL - RETURN TO GENERATOR

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
WA 0000541530

Manifest  
Document No.  
270321

2. Page 1  
of 1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
BENTON, WA 98055

4. Generator's Phone (253) 226-6142

5. Transporter 1 Company Name  
CHEPALD SERVICES, INC.

6. US EPA ID Number  
WA 0058364647

A. Transporter's Phone  
(206) 932-3011

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3501 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
WA 0002250360

C. Facility's Phone  
(360) 284-0311

11. Waste Shipping Name and Description

12. Containers

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE).

No.

Type

497.2

G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
JAMES FREDERICKSON

Signature  
James Frederickson

Month Day Year  
10 31 03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
Theresa Umomati

Signature  
Theresa Umomati

Month Day Year  
13 21 03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name  
Michael Clark

Signature  
Michael Clark

Month Day Year  
5 2 03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name  
ALLEN SYTMA

Signature  
Allen Sytma

Month Day Year

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0

Manifest Document No.  
3 0 0 3 R

2. Page 1  
of 1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-3061

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS

10. US EPA ID Number

C. Facility's Phone

3901 UNICK ROAD  
FERNDALE, WA 98248

W A D 0 0 9 2 5 0 3 6 0

(360) 384-8331

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE), .

TT 4590 G

GENERATOR

TRANSPORTER

FACILITY

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year

12/24/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Michael Clark

Signature

Michael Clark

Month Day Year

03/24/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Mary P. P. P.

Signature

Mary P. P. P.

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name

Signature

Month Day Year

TRANSPORTER # 1

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.  
WA D 0 0 0 6 4 1 5 3 0  
Manifest Document No.  
3103R

2. Page 1  
of 1

## COPY

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone: (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 532-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
WA D 0 0 9 2 5 0 3 5 0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

12. Containers  
No. Type  
13. Total Quantity  
14. Unit Wt/Vol

a. MATERIALS NOT REGULATED BY D.C.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

11. T.T. 4026 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above  
a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: JAMES FREDRICKSON Signature: James Fredrickson Month: 03 Day: 25 Year: 93

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DONALD KNECHTEL Signature: Donald Knechtel Month: 03 Day: 25 Year: 93

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: Signature: Month: Day: Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: HARRY PROVANCE Signature: Harry Provance Month: 03 Day: 25 Year: 93

TRANSPORTER #1

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.  
W.A.D.0.0.6.4.1.5.3.0  
Manifest Document No.  
3205R

2. Page 1 of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

## COPY

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W.A.D.0.5.8.3.5.4.6.4.7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNION ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
W.A.D.0.0.9.2.5.0.3.6.0

C. Facility's Phone  
(360) 384-8321

11. Waste Shipping Name and Description

| 12. Containers | 13. Total Quantity | 14. Unit |
|----------------|--------------------|----------|
| No.            | Type               | Wt/Vol   |
| 1              | IT                 | 4934 G   |
|                |                    |          |
|                |                    |          |
|                |                    |          |

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS WATER/GAS MIXTURE),

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

|                                         |                                       |                            |
|-----------------------------------------|---------------------------------------|----------------------------|
| Printed/Typed Name<br>JAMES FREDRICKSON | Signature<br><i>James Fredrickson</i> | Month Day Year<br>03/28/03 |
|-----------------------------------------|---------------------------------------|----------------------------|

17. Transporter 1 Acknowledgement of Receipt of Materials

|                                        |                                      |                            |
|----------------------------------------|--------------------------------------|----------------------------|
| Printed/Typed Name<br>Carl A. Kittrell | Signature<br><i>Carl A. Kittrell</i> | Month Day Year<br>03/28/03 |
|----------------------------------------|--------------------------------------|----------------------------|

18. Transporter 2 Acknowledgement of Receipt of Materials

|                    |           |                            |
|--------------------|-----------|----------------------------|
| Printed/Typed Name | Signature | Month Day Year<br>03/28/03 |
|--------------------|-----------|----------------------------|

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

|                                  |                                |                            |
|----------------------------------|--------------------------------|----------------------------|
| Printed/Typed Name<br>PAT Tibolt | Signature<br><i>PAT Tibolt</i> | Month Day Year<br>03/28/03 |
|----------------------------------|--------------------------------|----------------------------|

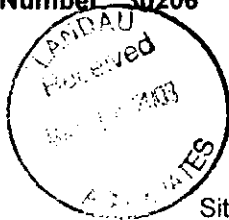
TRANSPORTER #1

|                                                                                                                                                                                  |  |                                                         |  |                                                 |  |                                           |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------|--|-------------------------------------------------|--|-------------------------------------------|------|
| <b>NON-HAZARDOUS WASTE MANIFEST</b>                                                                                                                                              |  | 1. Generator's US EPA ID No.<br>W A D 0 0 0 6 4 1 5 3 0 |  | Manifest Document No.<br>33032                  |  | 2. Page 1 of 1                            |      |
| 3. Generator's Name and Mailing Address<br>CONOCO PHILLIPS<br>2423 LIND AVE SW<br>RENTON, WA 98055                                                                               |  |                                                         |  |                                                 |  | <b>COPY</b>                               |      |
| 4. Generator's Phone (253) 228-6142                                                                                                                                              |  |                                                         |  |                                                 |  | A. Transporter's Phone (206) 832-300      |      |
| 5. Transporter 1 Company Name<br>EMERALD SERVICES, INC.                                                                                                                          |  |                                                         |  | 6. US EPA ID Number<br>W A D 0 5 8 3 6 4 6 4 7  |  | B. Transporter's Phone                    |      |
| 7. Transporter 2 Company Name                                                                                                                                                    |  |                                                         |  | 8. US EPA ID Number                             |  | C. Facility's Phone                       |      |
| 9. Designated Facility Name and Site Address<br>CONOCO PHILLIPS<br>3901 UNICK ROAD<br>FERNDALE, WA 98248                                                                         |  |                                                         |  | 10. US EPA ID Number<br>W A D 0 0 9 2 5 0 3 6 0 |  | (360) 384-8331                            |      |
| 11. Waste Shipping Name and Description<br>a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS WATER/GAS MIXTURE),                                                               |  |                                                         |  |                                                 |  | 12. Containers                            |      |
|                                                                                                                                                                                  |  |                                                         |  |                                                 |  | No.                                       | Type |
|                                                                                                                                                                                  |  |                                                         |  |                                                 |  | TT                                        | TT   |
|                                                                                                                                                                                  |  |                                                         |  |                                                 |  |                                           | 4758 |
|                                                                                                                                                                                  |  |                                                         |  |                                                 |  |                                           |      |
|                                                                                                                                                                                  |  |                                                         |  |                                                 |  |                                           |      |
|                                                                                                                                                                                  |  |                                                         |  |                                                 |  |                                           |      |
| D. Additional Descriptions for Materials Listed Above<br>a) A WATER AND GASOLINE MIXTURE                                                                                         |  |                                                         |  |                                                 |  | E. Handling Codes for Wastes Listed Above |      |
| 15. Special Handling Instructions and Additional Information<br>CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, LW OR HAZARDOUS WASTE                                        |  |                                                         |  |                                                 |  |                                           |      |
| 16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste. |  |                                                         |  |                                                 |  |                                           |      |
| Printed/Typed Name<br>JAMES FREDRICKSON                                                                                                                                          |  |                                                         |  | Signature<br><i>James Fredrickson</i>           |  | Month Day Year<br>03/31/03                |      |
| 17. Transporter 1 Acknowledgement of Receipt of Materials                                                                                                                        |  |                                                         |  | Signature<br><i>Sottorv-Kittin</i>              |  | Month Day Year<br>03/31/03                |      |
| 18. Transporter 2 Acknowledgement of Receipt of Materials                                                                                                                        |  |                                                         |  | Signature<br><i>Christine Gibson</i>            |  | Month Day Year<br>03/31/03                |      |
| 19. Discrepancy Indication Space                                                                                                                                                 |  |                                                         |  |                                                 |  |                                           |      |
| 20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.                                                 |  |                                                         |  |                                                 |  |                                           |      |
| Printed/Typed Name<br>S                                                                                                                                                          |  |                                                         |  | Signature                                       |  | Month Day Year                            |      |

TRANSPORTER #2



Invoice Number: 30206



9010 EAST MARGINAL WAY SOUTH  
SUITE 200  
SEATTLE, WA 98108  
Tel. (206) 832-3000 Fax No. (206) 832-3030  
Federal ID No. 91-1578671

Customer Service Contact: Connie Valadez  
Phone No. (206) 832-3027

Customer ID: LAN700

Invoice Date: 04/30/03

Page: 1

Bill-to Address:  
LANDAU ASSOCIATES.  
130 2ND AVE S  
EDMONDS, WA 98020

Site Address:  
TOSCO  
MARTIN  
RENTON PLANT  
RENTON  
WA

Job No. 30 - 52874.04

P.O. Number  
Payment Term: NET30

| Date                                                                                     | Description         | Ref. No. | Quantity | Unit | Unit Price | Total Price |
|------------------------------------------------------------------------------------------|---------------------|----------|----------|------|------------|-------------|
| PROVIDE LABOR, EQUIPMENT AND MATERIALS TO PUMP AND TRANSPORT WATER, AND CLEAN BAKER TANK |                     |          |          |      |            |             |
| 04/01/03                                                                                 | TRANSPORTATION (ST) |          | 101      | HRS  | 79.75      | 8,054.75    |
|                                                                                          | TRANSPORTATION (OT) |          | 25.5     | HRS  | 93.25      | 2,377.88    |
|                                                                                          | LABOR (ST)          |          | 2.5      | HRS  | 39.5       | 98.75       |
|                                                                                          | GEAR TRUCK          |          | 2.5      | HRS  | 20         | 50.00       |

0513184

MAY 17 2003

5202

OK To Pay

706002.012

T-014

9MTD

5-22-03

Amount Subject to  
Sales Tax  
0.00

Amount Exempt  
from Sales Tax  
10,581.38

Subtotal: 10,581.38  
Sales Tax: 0.00  
Total: 10,581.38



7343 EAST MARGINAL WAY SOUTH  
SEATTLE, WASHINGTON 98108  
(206) 832-3000  
FAX: (206) 832-3030  
24 HOUR EMERGENCY PHONE: 1-800-424-9300

20370  
**COPY**

### BILL OF LADING AND GALLONAGE TICKET

|                                           |  |         |                               |
|-------------------------------------------|--|---------|-------------------------------|
| SHIPPER/GENERATOR <u>Conoco Phillips</u>  |  | CONTACT | JOB # <u>30-52874.04</u>      |
| ADDRESS <u>2423 Lind Ave SW</u>           |  | PHONE#  | LOAD #                        |
| CITY, STATE, ZIP <u>RENTON, WA. 98055</u> |  |         | DATE <u>4-2-03</u>            |
| CARRIER <u>EMERALD SERVICES</u>           |  | PHONE#  | DOCUMENT # <u>20370</u>       |
| CONSIGNEE <u>Conoco Phillips</u>          |  | CONTACT | TRUCK # <u>1571350</u>        |
| ADDRESS <u>3901 UNICK RD</u>              |  | PHONE#  | PRODUCT TYPE <u>SAS/WATER</u> |
| CITY, STATE, ZIP <u>RENTON, WA. 98048</u> |  |         | EST. GALLONS <u>48 1/2</u>    |

| HM | ITEM # | U.S. DOT DESCRIPTION                      | #        | TYPE      | QTY.             |
|----|--------|-------------------------------------------|----------|-----------|------------------|
|    | A      | <u>GASOLINE MIXTURE, 3, UN1203, PG II</u> | <u>1</u> | <u>TT</u> | <u>492.5 GAL</u> |
|    | B      | <u>EEG #128</u>                           |          |           |                  |
|    | C      |                                           |          |           |                  |
|    | D      |                                           |          |           |                  |

A. WPQ # \_\_\_\_\_ DISP. CODE: \_\_\_\_\_ C. WPQ # \_\_\_\_\_ DISP. CODE: \_\_\_\_\_  
B. WPO # \_\_\_\_\_ DISP. CODE: \_\_\_\_\_ D. WPO # \_\_\_\_\_ DISP. CODE: \_\_\_\_\_

### DISPOSAL

DUMP DELAY TIME \_\_\_\_\_  
WASH OUT: YES ( ) NO ( )  
TIME IN \_\_\_\_\_ TIME OUT \_\_\_\_\_  
E. WATER \_\_\_\_\_ GALLONS LOCATION \_\_\_\_\_ TEST \_\_\_\_\_ DISP. CODE \_\_\_\_\_  
F. SOLIDS \_\_\_\_\_ GALLONS LOCATION \_\_\_\_\_ TEST \_\_\_\_\_ DISP. CODE \_\_\_\_\_  
\_\_\_\_\_ % SUSPENDED SOLIDS BY CENTRIFUGE + \_\_\_\_\_ GALS SEDIMENT  
G. OIL/DIESEL/GAS \_\_\_\_\_ GALLONS LOCATION \_\_\_\_\_ TEST \_\_\_\_\_ DISP. CODE \_\_\_\_\_  
HOC'S \_\_\_\_\_ PCB'S \_\_\_\_\_ B.S.&W. \_\_\_\_\_ API \_\_\_\_\_ LAB: Y / N

Shipper's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway, vessel and rail according to applicable international and national government regulations and this material is not regulated as a hazardous waste in accordance with WAC 173-303, 40 CFR, Part 261 or 40 CFR Part 761.

X JAMES FREDRICKSON  
SHIPPER (PRINT NAME)  
X Don Boush  
CARRIER - DRIVER 1 (PRINT NAME)  
X \_\_\_\_\_  
CARRIER - DRIVER 2 (PRINT NAME)  
X CS Gibson  
CONSIGNEE (PRINT NAME)

X James Fredrickson  
SIGNATURE  
X Don Boush  
SIGNATURE  
X \_\_\_\_\_  
SIGNATURE  
X CS Gibson  
SIGNATURE

DATE: 4-2-03  
DATE: 4-2-03  
DATE: \_\_\_\_\_  
DATE: 4-2-03

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

WA D 0 0 6 4 1 5 3 0

Manifest Document No.

3403R

2. Page 1

of 1

1

## COPY

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number

WA D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98246

10. US EPA ID Number

WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

12. Containers

No.

Type

13. Total Quantity

14. Unit Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS WATER/GAS MIXTURE),

ET 1 TT 492.6

G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Signature

Month Day Year

JAMES FREDRICKSON

James Fredrickson

6/4/02/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

DAVE BOROUGH

Dave Borough

6/4/02/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

CS GRIFFIN

CS Griffin

4/2/03

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**1. Generator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0Manifest  
Document No.  
3503R2. Page 1  
of 1

1

**COPY**3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDAL, WA 9824810. US EPA ID Number  
W A D 0 0 9 2 5 0 3 6 0C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

12. Containers

No.

Type

13.  
Total  
Quantity14.  
Unit  
Wt/Vola. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

ET 1 TT 4758 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
JAMES FREDRICKSONSignature  
James FredricksonMonth Day Year  
6/4/03/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
DONALD KNECHTELSignature  
Donald KnechtelMonth Day Year  
6/4/03/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name  
CS GibsonSignature  
CS GibsonMonth Day Year  
7/3/03

TRANSPORTER #1

CS Gibson

4 2 62

GENERATOR

TRANSPORTER

FACILITY

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
WA D 0 0 0 6 4 0 5 3 0

Manifest Document No.  
3603R

2. Page 1 of 1

**COPY**

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98243

10. US EPA ID Number

WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-0301

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

12. Containers

No. Type

13. Total Quantity

14. Unit Wt/Vol

1. TT 4758 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

10/4/04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

SOTIRON - KHIM

Signature

*Sotiron Khim*

Month Day Year

10/4/04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

(S) ENRIS T-H

Signature

*Enris T-H*

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

TRANSPORTER #2

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.

W A D 0 0 0 6 4 1 5 3 0

Manifest  
Document No.

3705R

2. Page 1

of 1

1

**COPY**3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number

W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS

3901 UNICK ROAD

FERNDALE, WA 98248

10. US EPA ID Number

W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

12. Containers

No.

Type

13.  
Total  
Quantity14.  
Unit  
Wt/Vol

PT 1 TT 4528 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Christopher W. Church

Signature

Christopher W. Church

Month Day Year

4 04 03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

John RAMSEY

Signature

John Ramsey

Month Day Year

4 4 03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

PAT Tibbello

Signature

PAT Tibbello

Month Day Year

4 7 03

TRANSPORTER #1

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

WA D 0 0 0 6 4 1 5 3 0

Manifest Document No.

3805R

2. Page 1 of 1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA D 0 5 8 3 6 4 6 3 7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 284-9231

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY E.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE)

1. TT 47.82

b.

c.

d.

157/100

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED ALBA OILS, SOLVENTS OR PCRA, LW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

04/07/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

SCOTT RUM

Signature

*Scott Rum*

Month Day Year

04/07/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

*John M*

Signature

*John M*

Month Day Year

04/08/03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

PAT TIBB

Signature

*Pat Tibb*

Month Day Year

04/08/03

TRANSPORTER #1

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.  
W A D 0 0 6 4 1 5 3

Manifest  
Document No.  
39032

2. Page 1  
of 1

1

COPY

3. Generator's Name and Mailing Address  
CONOCO PHILIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (1253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98246

10. US EPA ID Number  
W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

1. TT 47.82 G

b.

c.

d.

157 lbs

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to Federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

10/11/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

SOTIORN-KHIM

Signature

*Sotiorn Khim*

Month Day Year

10/11/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

MARY PRODUCE

Signature

*Mary Produce*

Month Day Year

10/11/03

TRANSPORTER #2

GENERATOR

TRANSPORTER

FACILITY

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
WA D 0 0 0 6 4 1 5 3

Manifest  
Document No.  
4-0032

2. Page 1  
of 1

**COPY**

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
WA D 0 5 3 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

PT 1 TT 4831 G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year  
10/11/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

SOTIORN-KITIM

Signature

Sotiorn Kitim

Month Day Year  
10/11/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

John H. Field

Signature

John H. Field

Month Day Year  
10/14/03

TRANSPORTER #2

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS  
WASTE MANIFEST1. Generator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0Manifest  
Document No.  
4103R2. Page 1  
of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO-PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE)12. Containers  
No. Type13. Total  
Quantity14. Unit  
Wt/Vol

FT 1 TT 4665 G

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Signature

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.

WA D 0 0 6 4 1 5 3 0

Manifest

Document No.

4203R

2. Page 1

1 of 1

1

**COPY**3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.6. US EPA ID Number  
WA D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS

3901 UNICK ROAD

FERNDALE, WA 98248

10. US EPA ID Number

WA D 0 6 3 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),12. Containers  
No. Type13. Total  
Quantity14. Unit  
Wt/Vol

TT

4782

G

b. ~~WATER/GAS MIXTURE~~c. ~~WATER/GAS MIXTURE~~d. ~~WATER/GAS MIXTURE~~

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year  
04/17/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

SOTHORN-KHIM

Signature

SOTHORN-KHIM

Month Day Year  
04/17/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

SOTHORN-KHIM

Signature

SOTHORN-KHIM

Month Day Year  
04/17/03

TRANSPORTER #2

NON-HAZARDOUS  
WASTE MANIFESTGenerator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0Manifest  
Document No.  
4-503RPage 1  
of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE), .

12. Containers

No. Type

13. Total  
Quantity14. Unit  
Wt/Vol

45.5"

4.891

G

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

GARY ANDERSON

Signature

Month Day Year

10/4/18/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Mark NUGURUKA

Signature

Month Day Year

10/4/18/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Christina Gibson

Signature

Month Day Year

10/4/18/03

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0

Manifest  
Document No.  
44032

2. Page 1  
of 1

1

**COPY**

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

| 12. Containers |      | 13. Total Quantity | 14. Unit Wt/Vol |
|----------------|------|--------------------|-----------------|
| No.            | Type |                    |                 |
| TT             |      | 51                 |                 |
|                |      | 5016               | G               |
|                |      |                    |                 |
|                |      |                    |                 |
|                |      |                    |                 |

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name  
GARY ANDERSON

Signature  
*[Signature]*

Month Day Year  
04/18/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name  
DALE MUCK

Signature  
*[Signature]*

Month Day Year  
07/18/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name  
Christine Gibson

Signature  
*[Signature]*

Month Day Year  
04/18/03

TRANSPORTER #1

**NON-HAZARDOUS  
WASTE MANIFEST**1. Generator's US EPA ID No.  
WA D 0 0 0 6 4 1 5 3 0Manifest  
Document No.  
450322. Page 1  
of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055**COPY**

4. Generator's Phone (253) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.6. US EPA ID Number  
WA D 0 5 8 9 6 4 6 4 7A. Transporter's Phone  
(206) 832-300

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDAL, WA 98248

10. US EPA ID Number

WA D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

12. Containers

No.

Type

13.  
Total  
Quantity14.  
Unit  
Wt/Vol

1T

4782

G

157/390

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year

12/4/2003

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

STEVE PRICE

Signature

Steve Price

Month Day Year

10/4/2003

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

JAMES FREDRICKSON

Signature

James Fredrickson

Month Day Year

12/4/2003

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name

MARY PROVANCE

Signature

Mary Provance

Month Day Year

10/4/2003

TRANSPORTER # 1

GENERATOR

TRANSPORTER

FACILITY

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.  
W A D 0 0 6 4 1 5 3 0

Manifest  
Document No.  
4803A

2. Page  
of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address  
CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number  
W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 384-8331

11. Waste Shipping Name and Description

12. Containers

No.

Type

13. Total  
Quantity

14. Unit  
Wt/Vol

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE), .

DT

50"

4.9.34

G

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Gary Clark

Signature

[Signature]

Month Day Year

10/4/25/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Carl A. Kittrell

Signature

[Signature]

Month Day Year

10/4/25/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

MARKER PROVINE

Signature

[Signature]

Month Day Year

TRANSPORTER #1

COPY

GENERATOR

TRANSPORTER

FACILITY

**NON-HAZARDOUS  
WASTE MANIFEST**1. Generator's US EPA ID No.  
W A D 0 0 0 6 4 1 5 3 0Manifest  
Document No.  
470382. Page 1  
of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone (253) 228-6142

**COPY**5. Transporter 1 Company Name  
EMERALD SERVICES, INC.6. US EPA ID Number  
W A D 0 5 8 3 6 4 6 4 7A. Transporter's Phone  
(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone  
(360) 384-0331

11. Waste Shipping Name and Description

12. Containers

No. Type

13. Total  
Quantity14. Unit  
Wt/Vola. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

1

4891

G

b.

c.

d.

194/25

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Gary Clark

Signature

Month Day Year  
04/28/03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

A. BELL

Signature

Month Day Year  
04/28/03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

CHRISTINE GIBSON

Signature

Month Day Year  
04/28/03

TRANSPORTER #

**NON-HAZARDOUS  
WASTE MANIFEST**

1. Generator's US EPA ID No.

W A D 0 0 6 4 1 5 3 0

Manifest  
Document No.

48032

2. Page 1

of 1

1

3. Generator's Name and Mailing Address  
CONOCO PHILLIPS  
2423 LIND AVE SW  
RENTON, WA 98055

4. Generator's Phone ((253)) 228-6142

5. Transporter 1 Company Name  
EMERALD SERVICES, INC.

6. US EPA ID Number

W A D 0 5 8 3 6 4 6 4 7

A. Transporter's Phone

(206) 832-3000

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

CONOCO PHILLIPS  
3901 UNICK ROAD  
FERNDALE, WA 98248

10. US EPA ID Number

W A D 0 0 9 2 5 0 3 6 0

C. Facility's Phone

(360) 384-8331

11. Waste Shipping Name and Description

a. MATERIALS NOT REGULATED BY D.O.T. (NON-HAZARDOUS  
WATER/GAS MIXTURE),

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

a) A WATER AND GASOLINE MIXTURE

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

CONTAINS NO PCB'S USED LUBE OILS, SOLVENTS OR RCRA, DW OR HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

JAMES FREDRICKSON

Signature

*James Fredrickson*

Month Day Year

10 4 13 01 03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

R. RASNER

Signature

*R. Rasner*

Month Day Year

10 4 13 01 03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

J. McAllister

Signature

*J. McAllister*

Month Day Year

14 30 03

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

J. McAllister

Signature

*J. McAllister*

Month Day Year

14 30 03

TRANSPORTER #1

GENERATOR

TRANSPORTER

FACILITY

Date: 3/28/03  
By: ERG

By: ERG

Project Name/Client: Conoco Phillips- Renton

Job No.: 706002

[illegible]

Top of casing survey conducted on March 6, 2003

swap diaphragm pump off - no product seeping in

Tues - pads & boom changed Friday 3/28



January 30, 2003

Mr. Kwame Agyei  
Puget Sound Clean Air Agency  
110 Union Street  
Suite 500  
Seattle, Washington 98101-2038

**RE: SUBMISSION OF NOTICE OF CONSTRUCTION APPLICATION  
ENVIRONMENTAL REMEDIATION SYSTEM  
CONOCOPhillips BULK PETROLEUM TERMINAL  
2423 LIND AVENUE SW  
RENTON, KING COUNTY, WASHINGTON**

Dear Mr. Agyei,

In accordance with our telephone conversation on January 23, 2003, Landau Associates is submitting the enclosed Notice of Construction (NoC) application to the Puget Sound Clean Air Agency (PSCAA) on behalf of ConocoPhillips Petroleum Company (ConocoPhillips). As we discussed, it is the intent of ConocoPhillips to install a remedial action system at the above referenced site to reduce subsurface contamination caused by the release of petroleum products to the subsurface. The remediation system will include a dual-phase vacuum extraction (DPVE) element that will collect free phase gasoline, vapors, and groundwater impacted by gasoline from the subsurface. Vapors collected by the DPVE system will be treated with a thermal oxidizer unit prior to discharge. Please find enclosed the referenced NoC application form as well as the following attachments:

- Attachment A – Operation and Maintenance Overview
- Attachment B – Worst Case Emissions Calculations
- Attachment C – System Drawings and Specifications
- Attachment D – SEPA Checklist

We are also enclosing a check in the amount of \$700 made out to PSCAA to be applied to the Application and Engineering Review Fees.

As we discussed in our conversation on January 23, the DPVE system is being implemented to address a recent gasoline release at the site and we are attempting to initiate its operation as soon as possible in accordance with a request made by Mr. Richard Walker of the Department of Ecology's Spill Response Division. If you require any additional information regarding the urgency of this request, please contact Mr. Walker by telephone at (425) 649-7116. Given our current schedule to install the DPVE system at the site as early as the week beginning February 2, 2003, we would like to request that

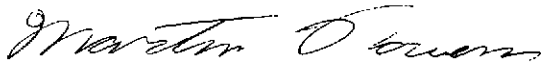
public notification requirements run concurrently with the review process for the enclosed NoC application, thereby allowing ConocoPhillips to operate the remediation system with PSCAA approval and prior to the completion of the public notification period. ConocoPhillips understands that granting permission to operate the remediation system prior to the completion of the public notification process may require alterations to the operating system as a result of the public comments received.

If you have any questions regarding the information provided herein, please contact me at (425) 329-0246. ConocoPhillips and Landau Associates appreciate your consideration of our application.

Sincerely,

LANDAU ASSOCIATES, INC.

By:



Martin Powers, P.E.

Project Manager

Attachments: Notice of Construction  
Operation and Maintenance Overview  
Worst Case Emissions Calculations  
System Drawings and Specifications  
SEPA Checklist

✓  
Cc: Tim Johnson - ConocoPhillips



# PUGET SOUND CLEAN AIR AGENCY

110 Union Street Suite 500 Seattle, WA 98101-2038  
 Telephone: (206) 689-4052 Fax: (206) 343-7522 <www.pscleanair.org>

## NOTICE OF CONSTRUCTION AND APPLICATION FOR APPROVAL

| SOIL & GROUNDWATER REMEDIATION                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                        | FORM SGR                                                     |                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|----------------------------------|
| AGENCY USE ONLY:                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                        | DATE RECEIVED                                                | REG NO. NOC NO.                  |
| TYPE OF BUSINESS (CHECK)<br><input type="checkbox"/> NEW<br><input checked="" type="checkbox"/> EXISTING                                                                                                                                                                                                                                                                                          | STATUS OF EQUIPMENT (CHECK)<br><input checked="" type="checkbox"/> NEW<br><input type="checkbox"/> EXISTING<br><input type="checkbox"/> ALTERED<br><input type="checkbox"/> RELOCATION | Applicant<br>ConocoPhillips Petroleum Co.<br>Mr. Tim Johnson |                                  |
| Company (or Owner Name)<br>ConocoPhillips Petroleum Co.                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                        | Applicant Address<br>2977 Leary Way NW<br>Seattle, WA 98107  |                                  |
| Company (or Owner) Mailing Address<br>2977 Leary Way NW<br>Seattle, WA 98107                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                        | Installation Address<br>2423 Hind Ave SW<br>Renton, WA 98055 |                                  |
| PROCESS EQUIPMENT                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                        |                                                              |                                  |
| DESCRIPTION: Industrial blower used to extract total fluids (vapor, water and gasoline product) from recovery wells                                                                                                                                                                                                                                                                               |                                                                                                                                                                                        |                                                              |                                  |
| NO. OF UNITS: 1 MAKE AND MODEL: Sutorbilt 4M Legend P                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                        |                                                              |                                  |
| CONNECTED TO: Influent - Recovery Wells, Effluent - Thermal Oxidizer                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                        |                                                              |                                  |
| CONTROL EQUIPMENT (Must Meet 90% Destruction Efficiency):                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                        |                                                              |                                  |
| <input type="checkbox"/> Vapor <input type="checkbox"/> Catalytic <input checked="" type="checkbox"/> Thermal <input type="checkbox"/> Internal<br><input type="checkbox"/> Carbon Vessels <input type="checkbox"/> Oxidizer <input type="checkbox"/> Oxidizer <input type="checkbox"/> Combustion<br>(Two in Series) <input type="checkbox"/> Engine<br><input type="checkbox"/> Other (Specify) |                                                                                                                                                                                        |                                                              |                                  |
| Enclose a narrative that addresses procedures for continued proper operation and maintenance of selected control equipment (i.e., monitoring carbon bed exhaust for breakthrough, monitoring temperature of thermal oxidizer, etc.).                                                                                                                                                              |                                                                                                                                                                                        |                                                              |                                  |
| Basic Equipment Cost (Estimate)                                                                                                                                                                                                                                                                                                                                                                   | Control Equipment Cost (Estimate)                                                                                                                                                      | Planned Start Date for Construction                          | Planned Start Date for Operation |
|                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                        | January 31, 2003                                             | February 5, 2003                 |
| GAS STREAM CHARACTERISTICS OF CONTROL EQUIPMENT                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                        |                                                              |                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                   | Temperature (°F)                                                                                                                                                                       | Static Pressure (psig)                                       | Flow Rate (acfm)                 |
| INLET                                                                                                                                                                                                                                                                                                                                                                                             | 500                                                                                                                                                                                    | 2.0                                                          | 350                              |
| OUTLET                                                                                                                                                                                                                                                                                                                                                                                            | 1700                                                                                                                                                                                   | 5.0                                                          | 250                              |

\* See Attachment A

Form No. 50-152 (9-97)

\* AIR CONTAMINANT EMISSION WORST CASE ESTIMATE (Attach separate sheet with calculations) \*

| POLLUTANT                          | UNCONTROLLED<br>LB/DAY | UNCONTROLLED<br>LB/YEAR | UNCONTROLLED<br>LB/LIFETIME | CONTROL<br>EFFICIENCY | CONTROLLED<br>LBS/LIFETIME |
|------------------------------------|------------------------|-------------------------|-----------------------------|-----------------------|----------------------------|
| Benzene                            | 74                     | 27,000                  | 13,500                      | 99                    | 1,350                      |
| Toluene                            | 87                     | 32,000                  | 16,000                      | 99                    | 1,600                      |
| Ethylbenzene                       | 101                    | 37,000                  | 19,500                      | 99                    | 1,950                      |
| Xylenes                            | 97                     | 36,000                  | 18,000                      | 99                    | 1,800                      |
| TOTAL<br>PETROLEUM<br>HYDROCARBONS | 910                    | 332,000                 | 116,000                     | 99                    | 11,600                     |

|                                                   |                                                  |
|---------------------------------------------------|--------------------------------------------------|
| AMOUNT OF SOIL TO BE REMEDIATED: <u>5,000 yds</u> | Days of Operation (Circle): <u>S M T W T F S</u> |
| FLOW RATE (gpm): <u>10</u>                        | Daily Hours of Operation: <u>Continuous</u>      |
| ESTIMATED DURATION OF PROJECT: <u>6 mths.</u>     | From _____ am to _____ pm                        |

EXHAUST STACK PARAMETERS

| Stack Height<br>Above Ground (ft) | Stack Internal Diameter<br>at Exit (ft) | CFM Exhausted | Velocity (ft/sec) |
|-----------------------------------|-----------------------------------------|---------------|-------------------|
| <u>10</u>                         | <u>1.2</u>                              | <u>350</u>    | <u>32</u>         |

FLOW DIAGRAM & PLOT PLAN

- FLOW DIAGRAM INSTRUCTIONS
- FLOW DIAGRAM MAY BE SCHEMATIC. ALL EQUIPMENT SHOULD BE SHOWN WITH EXISTING EQUIPMENT SO INDICATED.
  - SHOW FLOW DIAGRAM OF PROCESS
  - INDICATE ALL POINTS IN PROCESS WHERE GASEOUS OR PARTICULATE POLLUTANTS ARE EMITTED.
  - FLOW CHART CAN BE ATTACHED SEPARATELY IF NECESSARY. DRAWINGS MAY BE SUBMITTED INSTEAD, IF DESIRED.
  - ATTACH A PLOT PLAN SHOWING NEAREST PUBLIC ACCESS

\*\*\*

CERTIFICATION

I, THE UNDERSIGNED, DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED IN THIS APPLICATION AND THE ACCOMPANYING FORMS, PLANS, AND SUPPLEMENTAL DATA DESCRIBED HEREIN IS, TO THE BEST OF MY KNOWLEDGE, ACCURATE AND COMPLETE.

|                                          |                              |
|------------------------------------------|------------------------------|
| SIGNATURE<br><u>Tim Johnson</u>          | DATE<br><u>1/30/03</u>       |
| TYPE OR PRINT NAME<br><u>Tim Johnson</u> | TITLE<br><u>Site Manager</u> |
| PHONE<br><u>206.706.2341</u>             |                              |
| Prepared by (Signature and Title):       |                              |

\* See Attachment B

Form No. 50-152 (9-99)

\*\*\* See Attachment C

# **Operation & Maintenance Overview**

**ATTACHMENT A**  
**OPERATION AND MAINTENANCE OVERVIEW**  
**PROPOSED TOTAL FLUID EXTRACTION SYSTEM**  
**CONOCOPHILLIPS RENTON BULK STORAGE TERMINAL**  
**RENTON, WASHINGTON**

*Initial System Startup*

Initial system startup operations will be considered to be the 7-day period following activation of the system. During the initial system startup operation, it is anticipated that a significant amount of “dilution” air will be required to maintain a thermal oxidation temperature of less than 1400 ° Fahrenheit (the upper limit for thermal oxidizer operation). The temperature and LEL limits are preset in the programmable logic controller that operates the remedial system, however maintenance personnel will continually monitor the system operation to ensure that the failsafes are effectively monitored and dilution air is capable of maintaining safe equipment operation. Also during the initial system startup period, vapor samples will be collected from the influent (untreated) and effluent (treated) vapor sampling ports on the thermal oxidizer unit and the total vacuum and flow from the extraction wells will be monitored and recorded.

*Ongoing Operation and Maintenance of System*

Following the initial system startup period (7 days) ongoing operation and maintenance of the system will continue throughout the operating time for the system. Ongoing operation and maintenance will include the monitoring of the thermal oxidizer operating temperature and LEL levels, as well as daily recording of vapor flowrates and vacuum induced at the extraction wellheads. Weekly vapor samples will be collected from the influent vapor sampling port on the thermal oxidizer and bi-monthly (twice per month) vapor samples will be collected from the effluent vapor sampling port on the thermal oxidizer.

## **Worst Case Emissions Calculation**

**ATTACHMENT B**  
**WORST CASE EMISSION ESTIMATION CALCULATIONS**  
**PROPOSED TOTAL FLUIDS EXTRACTION SYSTEM**  
**CONOCOPHILLIPS RENTON BULK STORAGE TERMINAL**  
**RENTON, WA**

Basis Equation

$$ER = Q \times C \times MW \times 1.58 \times 10^{-7}$$

Where:

ER = Emission Rate in lbs/day

Q = Flowrate in cubic feet per minute

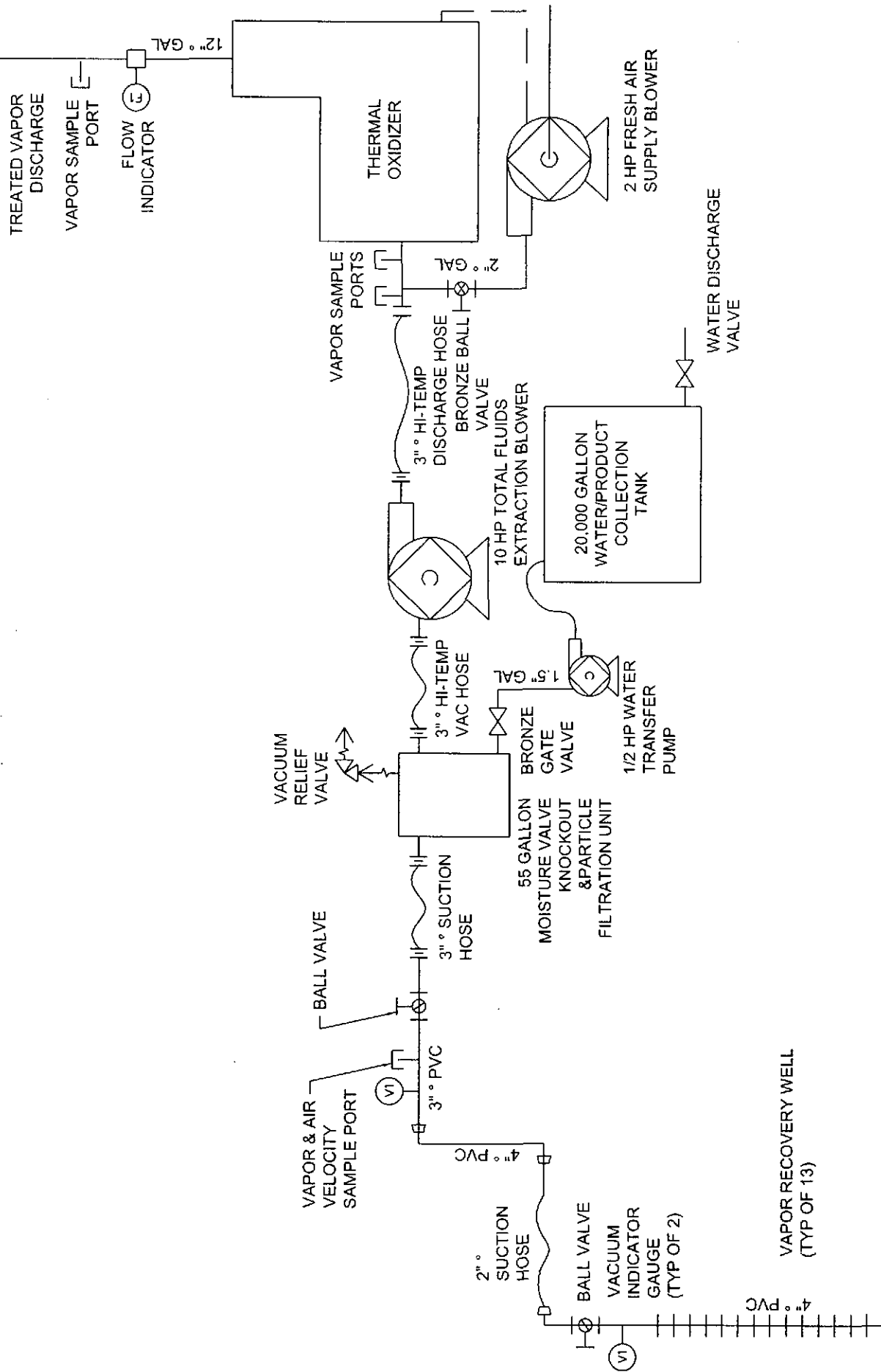
C = Concentration of Contaminant in ppmv

MW = Molecular Weight of Constituent

$1.58 \times 10^{-7}$  = Conversion Factor

| <b>Constituent</b> | <b>Molecular Weight<br/>Estimate</b> | <b>Maximum Concentration<br/>Expected, ppmv</b> | <b>Potential Untreated<br/>Emission Rate, lbs/hr</b> |
|--------------------|--------------------------------------|-------------------------------------------------|------------------------------------------------------|
| Benzene            | 78                                   | 1000                                            | 3.08                                                 |
| Toluene            | 92                                   | 1000                                            | 3.64                                                 |
| Ethylbenzene       | 106                                  | 1000                                            | 4.19                                                 |
| Xylenes            | 102                                  | 1000                                            | 4.03                                                 |
| TPH - Gas          | 96                                   | 10000                                           | 37.94                                                |

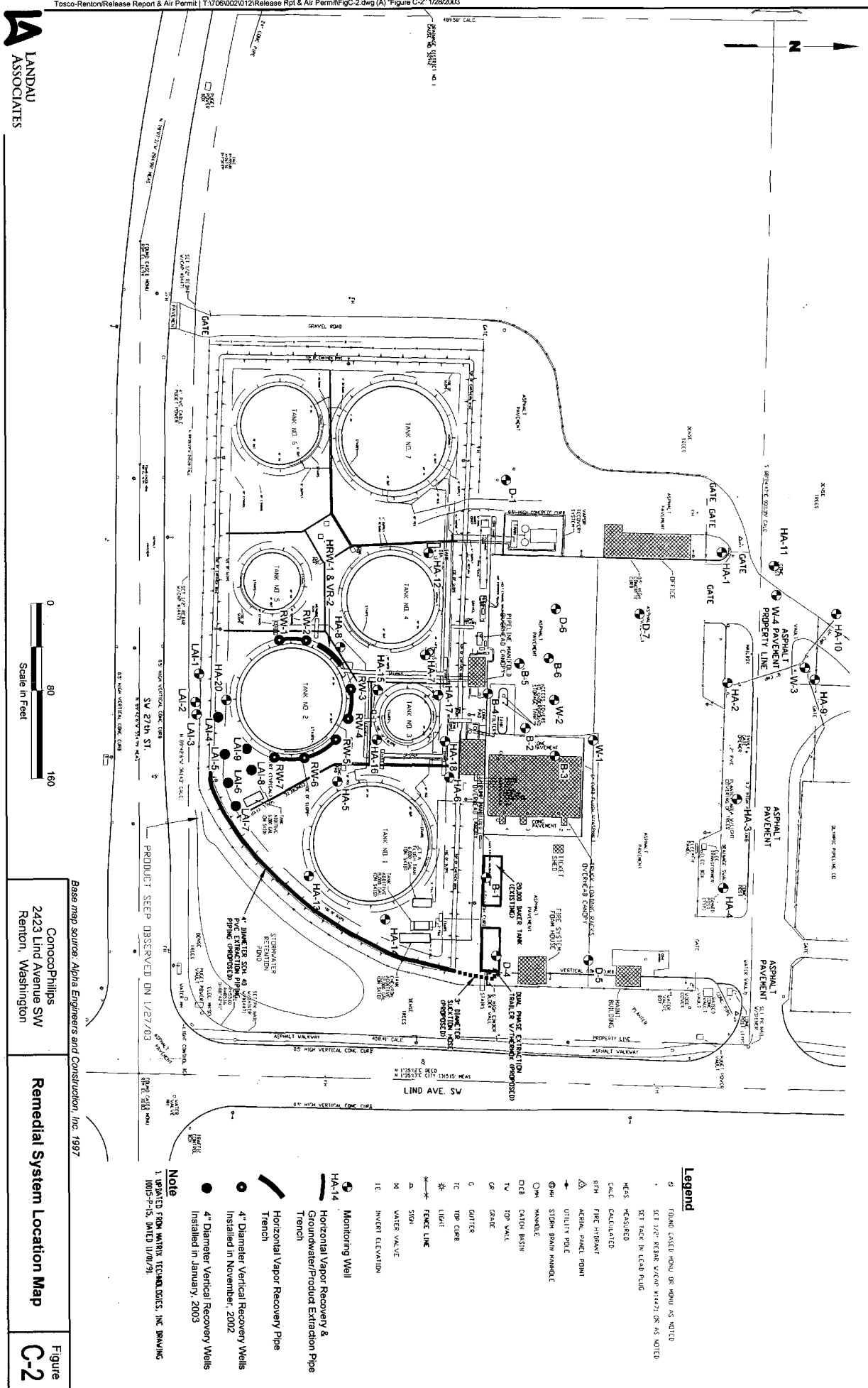
# **System Drawings & Specifications**



ConocoPhillips  
2423 Lind Avenue SW  
Renton, Washington

# Basic Process and Instrumentation Diagram Total Fluids Extraction System

Figure  
**C-1**



**H2** Oil Recovery Equipment, Inc.**COPY**

P.O. Box 9028 • Bend, OR 97708

(541) 382-7070 • Fax (541) 382-2242

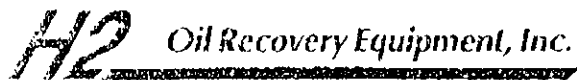
**Date:** Tuesday, January 28, 2003**To:** Landau Associates  
Martin Powers  
**Phone:** 425-778-0907  
**Fax:** 425-778-6409**From:** H2 Oil Recovery Equipment Inc  
Joe Rounds  
**Phone:** 541-382-7070  
**Fax:** 541-382-2242**Pages:** 17

---

**Subject:** Renton Oxidizer System**Martin,**

Following is the quote and information for the Conoco oxidizer system. I have included the air flow rates for different vacuum levels for the blower on the trailer. For total air flow you need to add the fresh air blower to the SVE blower. The operating temperature for the thermal oxidizer is 1450 degrees F. Let me know if you have any questions. Also, Tim Johnson asked me to send him the quote too.

**Regards,****Joe Rounds**  
H2 Oil Recovery Equipment, Inc.  
**h2oilrecovery.com**  
**Email: h2oil@coinet.com**



111, Box 9028 • Bend, OR 97708

(541) 382-7070 • Fax (541) 382-2242

Tuesday, January 28, 2003

Tim Johnson  
ConocoPhillips  
3977 Leary Way NW  
Seattle, WA 98107

Rework Oxidizer System  
H2 Ref # 230121BJR

Dear Tim:

H2 Oil Recovery Equipment, Inc. is pleased to offer pricing on the following remediation equipment and services based on information received.

**A(1) Rework Thermal Oxidizer System -**

To include:

- New 55 gallon cyclonic type moisture separator with 4" inlet and outlet fittings, constructed of carbon steel, removable lid, external and internal industrial grade chemically resistant powder coating, 4 base mounting tabs, internal 100 micron particle filter, manual brass dilution valve, manual brass drain valve, (2) electric explosion proof switches for pump on and pump off
- Vapor stream high temperature safety shut off valve
- Install moisture separator
- Install safety valve
- Change oil and grease vapor extraction blower
- Control panel wiring changes for proper operation
- Testing of system for proper operation

Price: **\$ 6,583.00**

**B(1) Delivery & Startup of System -**

To include:

- Mob and demob of personnel to jobsite in Renton, WA
- (24) hours of onsite labor for startup assistance

Price: **\$ 2,790.00**

Page #2  
230121BJR  
ConocoPhillips

C(1) Pickup of trailer mounted system in Spokane, WA

Price: \$ 868.00

Notes:

- 1) This quote is subject to H2 Oil's standard warranty-disclaimer.
- 2) Shipment of equipment 1 to 2 weeks after receipt of order.
- 3) Rework pricing is based on using the fittings from the old moisture separator.
- 4) Pricing for delivery and startup does not include any parts. Field supplies will be billed at cost plus 5%.

Prices do not include any applicable sales tax, electrical service equipment, or installation, unless specifically noted.

Terms: Shipping is FOB at Buyer's expense, H2 Oil Recovery Equipment, Inc., Bend, Oregon. Buyer bears risk of loss during shipping. Seller shall notify Buyer of shipment. Payment terms are Net 30 days from date of shipment. Payment by check in US funds payable to H2 Oil Recovery Equipment, Inc., unless otherwise agreed. Service charges will be computed at 1.5% per month (18% per year) on amounts past due. Products are deemed accepted on the third business day following date of delivery. Acceptance cannot be revoked.

Seller reserves all remedies available under the Uniform Commercial Code as codified under the revised statutes for the State of Oregon in effect at the time of this agreement or as subsequently amended. Buyer waives any right to the remedy of "cover" and all claims for injury to person or property arising out of the manufacture, production, sale or use of the product(s). Buyer authorizes, at Seller's option, as liquidated damages and not a penalty, a sum equal to a minimum of 50% of purchase contract price in the event of Buyer's breach or repudiation of the contract. Buyer's remedy for Seller's breach is limited to return of the product(s) for the price paid, at Seller's option, repair or replacement of any non conforming product(s).

Any action for breach of contract must be brought within one year after the claim accrues.

Venue for any dispute regarding this agreement in any way is exclusively in the courts for Deschutes County, Oregon and governed by Oregon law. The prevailing party in any such dispute shall recover from the other its reasonable attorney fees, whether incurred at arbitration, trial or on appeal.

Page #3  
230121BJR  
ConocoPhillips

Buyer confirms this is a firm offer to purchase the attached product(s) under the terms stated above.

Buyer's confirmation of purchase order, acceptance of terms and H2 Oil's standard warranty-disclaimer.

Total Purchase Price: \_\_\_\_\_

Purchase Order Number: \_\_\_\_\_

Shipping Date: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Company: \_\_\_\_\_

Regards,



Joe Rounds  
H2 Oil Recovery Equipment, Inc.  
h2oilrecovery.com  
email: h2oil@coinet.com

Date: 1/27/2003

PROJECT:



Application:  
 Customer Name:  
 Comments:

Application Engineer:  
 Sales Order Number:

GAS MIXTURE: Air(100%)  
 MACHINE SELECTION: 4M-LegendP  
 SERVICE: Dry Vacuum

# CORRECTED VALUES ORIGINAL UNITS

|                 |                   |
|-----------------|-------------------|
| Inlet Set #1    |                   |
| Barometer       | 14.696 PSIA       |
| Inlet Pres.     | -6.000 In.Hg(G) ← |
| Inlet Temp.     | 68.00 F           |
| Blower Speed    | 2,630 RPM         |
| % of Max. Speed | 73.1 %            |
| Dis. Pres.      | 0.300 PSIG        |
| Rel. Humid.     | 36.0 %            |
| Delta Pressure  | 6.611 In.Hg(G)    |

# MEASURED VALUES PLOT UNITS

|                 |               |
|-----------------|---------------|
| Inlet Set #1    |               |
| Inlet Flow      | 207.85 SCFM ← |
| Blower Power ** | 4.8 HP        |
| Efficiency      | 69.8 %        |
| Discharge Temp. | 114.4 F       |
| Estimated Noise | 83.4 dBA      |

Actual Disch. Flow 222.1 CFM

\*\* Drive losses not included

| GAS PARAMETERS         | ENGLISH UNITS             | METRIC UNITS            |
|------------------------|---------------------------|-------------------------|
| Inlet Set #1           |                           |                         |
| Molecular Weight       | 28.88 lbm/lbmol           | 28.88 kg/kgmol          |
| R Value                | 53.51 ft.lbf/lbm.R        | 0.29 kJ/kg.K            |
| Density                | 0.060 lbm/ft <sup>3</sup> | 0.959 kg/m <sup>3</sup> |
| Sp. Heat @ Const. P    | 0.241 BTU/lbm.R           | 1.008 kJ/kg.K           |
| Ratio of Sp. Heats     | 1.40                      | 1.40                    |
| Saturated Vapor Pres.  | 1.4466 PSIA               | 0.0997 Bars(A)          |
| Partial Pres. of Gas   | 11.6262 PSIA              | 0.8016 Bars(A)          |
| Partial Pres. of Vapor | 0.1220 PSIA               | 0.0084 Bars(A)          |

Date: 1/27/2003

PROJECT:



Application:  
Customer Name:  
Comments:

Application Engineer:  
Sales Order Number:

GAS MIXTURE: Air(100%)  
MACHINE SELECTION: 4M-LegendP  
SERVICE: Dry Vacuum

# CORRECTED VALUES ORIGINAL UNITS

|                 |                   |
|-----------------|-------------------|
| Inlet Set #1    |                   |
| Barometer       | 14.696 PSIA       |
| Inlet Pres.     | -8.000 In.Hg(G) ← |
| Inlet Temp.     | 68.00 F           |
| Blower Speed    | 2,630 RPM         |
| % of Max. Speed | 73.1 %            |
| Dis. Pres.      | 0.300 PSIG        |
| Rel. Humid.     | 36.0 %            |
| Delta Pressure  | 8.611 In.Hg(G)    |

# MEASURED VALUES PLOT UNITS

|                 |               |
|-----------------|---------------|
| Inlet Set #1    |               |
| Inlet Flow      | 183.66 SCFM ← |
| Blower Power ** | 6.2 HP        |
| Efficiency      | 66.5 %        |
| Discharge Temp. | 134.7 F       |
| Estimated Noise | 83.9 dBA      |

Actual Disch. Flow 203.4 CFM

\*\* Drive losses not included

| GAS PARAMETERS         | ENGLISH UNITS             | METRIC UNITS            |
|------------------------|---------------------------|-------------------------|
| Inlet Set #1           |                           |                         |
| Molecular Weight       | 28.88 lbm/lbmol           | 28.88 kg/kgmol          |
| R Value                | 53.51 ft.lbf/lbm.R        | 0.29 kJ/kg.K            |
| Density                | 0.055 lbm/ft <sup>3</sup> | 0.878 kg/m <sup>3</sup> |
| Sp. Heat @ Const. P    | 0.241 BTU/lbm.R           | 1.009 kJ/kg.K           |
| Ratio of Sp. Heats     | 1.40                      | 1.40                    |
| Saturated Vapor Pres.  | 2.5170 PSIA               | 0.1735 Bars(A)          |
| Partial Pres. of Gas   | 10.6435 PSIA              | 0.7338 Bars(A)          |
| Partial Pres. of Vapor | 0.1220 PSIA               | 0.0084 Bars(A)          |



Application:  
Customer Name:  
Comments:

Application Engineer:  
Sales Order Number:

GAS MIXTURE: Air(100%)  
MACHINE SELECTION: 4M-LegendP  
SERVICE: Dry Vacuum

#### CORRECTED VALUES ORIGINAL UNITS

|                 |                    |
|-----------------|--------------------|
| Inlet Set #1    |                    |
| Barometer       | 14.696 PSIA        |
| Inlet Pres.     | -10.000 In.Hg(G) ← |
| Inlet Temp.     | 68.00 F            |
| Blower Speed    | 2,630 RPM          |
| % of Max. Speed | 73.1 %             |
| Dis. Pres.      | 0.300 PSIG         |
| Rel. Humid.     | 36.0 %             |
| Delta Pressure  | 10.611 In.Hg(G)    |

#### MEASURED VALUES PLOT UNITS

|                 |               |
|-----------------|---------------|
| Inlet Set #1    |               |
| Inlet Flow      | 160.56 SCFM ← |
| Blower Power ** | 7.6 HP        |
| Efficiency      | 61.8 %        |
| Discharge Temp. | 160.0 F       |
| Estimated Noise | 84.4 dBA      |

Actual Disch. Flow 185.6 CFM

\*\* Drive losses not included

| GAS PARAMETERS         | ENGLISH UNITS      | METRIC UNITS   |
|------------------------|--------------------|----------------|
| Inlet Set #1           |                    |                |
| Molecular Weight       | 28.88 lbm/lbmol    | 28.88 kg/kgmol |
| R Value                | 53.51 ft.lbf/lbm.R | 0.29 kJ/kg.K   |
| Density                | 0.050 lbm/ft^3     | 0.798 kg/m^3   |
| Sp. Heat @ Const. P    | 0.241 BTU/lbm.R    | 1.010 kJ/kg.K  |
| Ratio of Sp. Heats     | 1.40               | 1.40           |
| Saturated Vapor Pres.  | 4.7338 PSIA        | 0.3264 Bars(A) |
| Partial Pres. of Gas   | 9.6609 PSIA        | 0.6661 Bars(A) |
| Partial Pres. of Vapor | 0.1220 PSIA        | 0.0084 Bars(A) |

Date: 1/27/2003

PROJECT:



Application:  
Customer Name:  
Comments:

Application Engineer:  
Sales Order Number:

GAS MIXTURE: Air(100%)  
MACHINE SELECTION: 4M-LegendP  
SERVICE: Dry Vacuum

# CORRECTED VALUES ORIGINAL UNITS

|                 |                    |
|-----------------|--------------------|
| Inlet Set #1    |                    |
| Barometer       | 14.696 PSIA        |
| Inlet Pres.     | -12.000 In.Hg(G) ← |
| Inlet Temp.     | 68.00 F            |
| Blower Speed    | 2,630 RPM          |
| % of Max. Speed | 73.1 %             |
| Dis. Pres.      | 0.300 PSIG         |
| Rel. Humid.     | 36.0 %             |
| Delta Pressure  | 12.611 In.Hg(G)    |

# MEASURED VALUES PLOT UNITS

|                    |               |
|--------------------|---------------|
| Inlet Set #1       |               |
| Inlet Flow         | 136.39 SCFM ← |
| Blower Power **    | 9.0 HP        |
| Efficiency         | 56.8 %        |
| Discharge Temp.    | 191.9 F       |
| Estimated Noise    | 84.9 dBA      |
| Actual Disch. Flow | 168.5 CFM     |

\*\* Drive losses not included

| GAS PARAMETERS         | ENGLISH UNITS      | METRIC UNITS   |
|------------------------|--------------------|----------------|
| Inlet Set #1           |                    |                |
| Molecular Weight       | 28.88 lbm/lbmol    | 28.88 kg/kgmol |
| R Value                | 53.51 ft.lbf/lbm.R | 0.29 kJ/kg.K   |
| Density                | 0.045 lbm/ft^3     | 0.717 kg/m^3   |
| Sp. Heat @ Const. P    | 0.242 BTU/lbm.R    | 1.010 kJ/kg.K  |
| Ratio of Sp. Heats     | 1.40               | 1.40           |
| Saturated Vapor Pres.  | 9.7324 PSIA        | 0.6710 Bars(A) |
| Partial Pres. of Gas   | 8.6783 PSIA        | 0.5983 Bars(A) |
| Partial Pres. of Vapor | 0.1220 PSIA        | 0.0084 Bars(A) |

Date: 1/27/2003

PROJECT:



Application:  
Customer Name:  
Comments:

Application Engineer:  
Sales Order Number:

GAS MIXTURE: Air(100%)  
MACHINE SELECTION: 4M-LegendP  
SERVICE: Dry Vacuum

**CORRECTED VALUES ORIGINAL UNITS**

|                 |                    |
|-----------------|--------------------|
| Inlet Set #1    |                    |
| Barometer       | 14.696 PSIA        |
| Inlet Pres.     | -13.000 In.Hg(G) ← |
| Inlet Temp.     | 68.00 F            |
| Blower Speed    | 2,630 RPM          |
| % of Max. Speed | 73.1 %             |
| Dis. Pres.      | 0.300 PSIG         |
| Rel. Humid.     | 36.0 %             |
| Delta Pressure  | 13.611 In.Hg(G)    |

**MEASURED VALUES PLOT UNITS**

|                 |               |
|-----------------|---------------|
| Inlet Set #1    |               |
| Inlet Flow      | 127.62 SCFM ← |
| Blower Power ** | 9.8 HP        |
| Efficiency      | 54.3 %        |
| Discharge Temp. | 211.4 F       |
| Estimated Noise | 85.1 dBA      |

Actual Disch. Flow 160.1 CFM

\*\* Drive losses not included

| GAS PARAMETERS         | ENGLISH UNITS      | METRIC UNITS   |
|------------------------|--------------------|----------------|
| Inlet Set #1           |                    |                |
| Molecular Weight       | 28.88 lbm/lbmol    | 28.88 kg/kgmol |
| R Value                | 53.51 ft.lbf/lbm.R | 0.29 kJ/kg.K   |
| Density                | 0.042 lbm/ft^3     | 0.677 kg/m^3   |
| Sp. Heat @ Const. P    | 0.242 BTU/lbm.R    | 1.011 kJ/kg.K  |
| Ratio of Sp. Heats     | 1.40               | 1.40           |
| Saturated Vapor Pres.  | 14.5253 PSIA       | 1.0015 Bars(A) |
| Partial Pres. of Gas   | 8.1870 PSIA        | 0.5645 Bars(A) |
| Partial Pres. of Vapor | 0.1220 PSIA        | 0.0084 Bars(A) |

# EN 505M & CP 505M

## Sealed Regenerative Blower w/Explosion-Proof Motor

### FEATURES

- Manufactured in the USA – ISO 9001 compliant
- Maximum flow: 160 SCFM
- Maximum pressure: 62 IWG
- Maximum vacuum: 60 IWG
- Standard motor: 2.0 HP, explosion-proof
- Cast aluminum blower housing, cover, impeller & manifold; cast iron flanges (threaded); teflon lip seal
- UL & CSA approved motor with permanently sealed ball bearings for explosive gas atmospheres Class I Group D minimum
- Sealed blower assembly
- Quiet operation within OSHA standards

### MOTOR OPTIONS

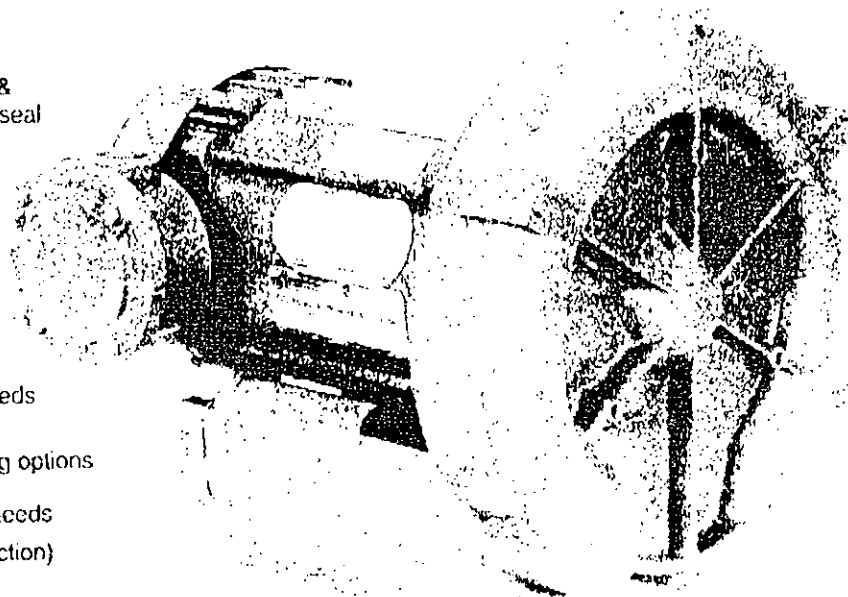
- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepower for application-specific needs

### BLOWER OPTIONS

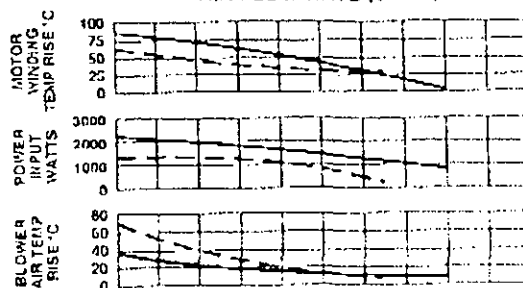
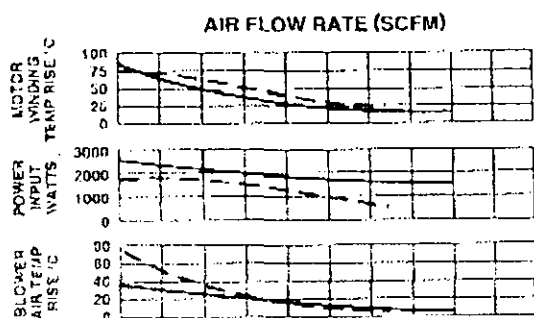
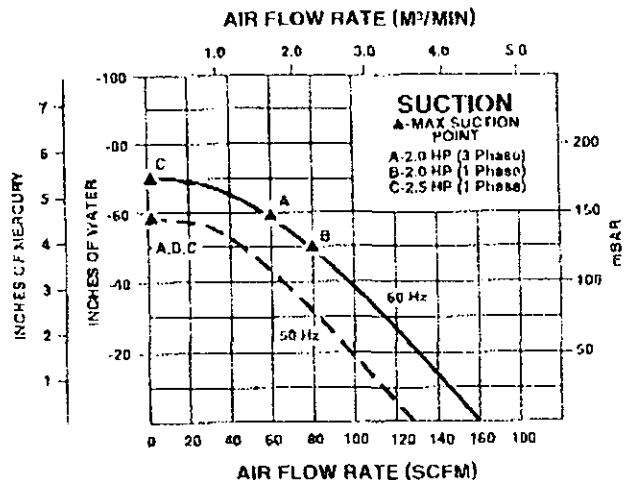
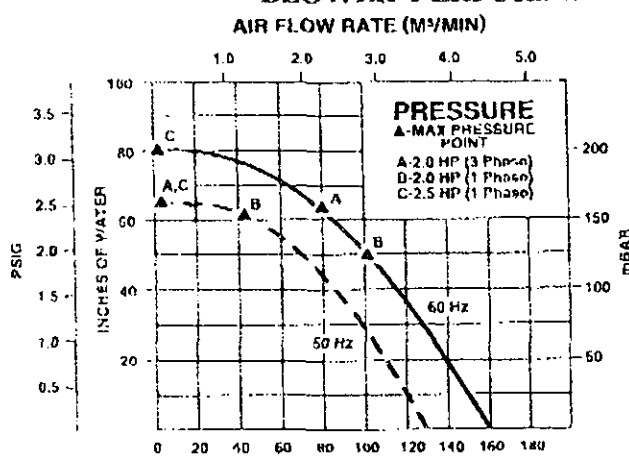
- Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- Slip-on or face flanges for application-specific needs

### ACCESSORIES (See Catalog Accessory Section)

- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges & relief valves
- Switches – air flow, pressure, vacuum or temperature
- External mufflers for additional silencing
- Air knives (used on blow-off applications)
- Variable frequency drive package



### BLOWER PERFORMANCE AT STANDARD CONDITIONS

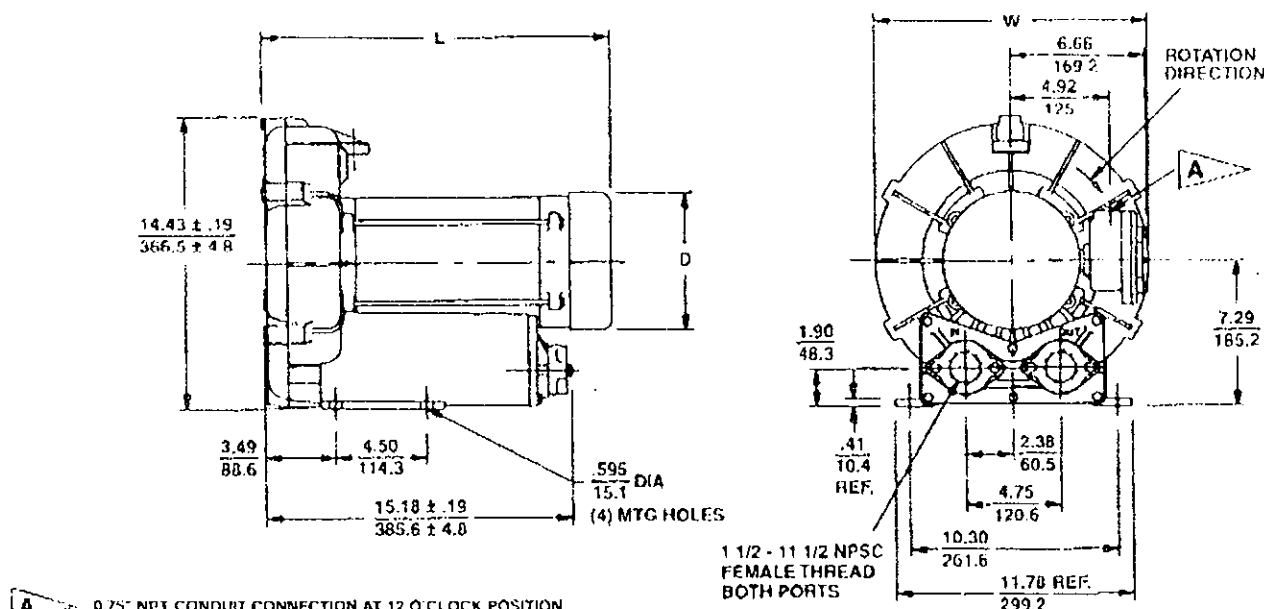


**AMETEK® Rotron® Industrial Products**

# EN 505M & CP 505M

## Sealed Regenerative Blower w/Explosion-Proof Motor

Scale CAD drawing available upon request.



A 0.75" NPT CONDUIT CONNECTION AT 12 O'CLOCK POSITION

DIMENSIONS: IN.  
MM  
TOLERANCES: XX ± .0R  
2.0  
XXX ± .030  
.000  
(UNLESS OTHERWISE NOTED)

| MODEL          | L (IN) ± .30 | L (MM) ± .8 | D (IN) | D (MM) | W (IN) | W (MM) ± .5 MM |
|----------------|--------------|-------------|--------|--------|--------|----------------|
| EN/CP505AX72ML | 16.0         | 405         | 6.84   | 173    | 13.53  | 344            |
| EN/CP505AX58ML | 17.21        | 437         | 6.84   | 173    | 13.53  | 344            |
| EN/CP505CJ5ML  | 18.57        | 472         | 7.32   | 186    | 13.53  | 344            |

**SPECIFICATIONS**

| MODEL                             | EN505AX58ML           | EN505AX72ML           | EN505CJ5ML            | CP505FS58MLR                                   | CP505FS72MLR                                   |
|-----------------------------------|-----------------------|-----------------------|-----------------------|------------------------------------------------|------------------------------------------------|
| Part No.                          | 038177                | 038178                | 038445                | 080655                                         | 038962                                         |
| Motor Enclosure -- Shaft Material | Explosion-proof -- CS | Explosion-proof -- CS | Explosion-proof -- CS | Chem XP -- SS                                  | Chem XP -- SS                                  |
| Horsepower                        | 2.0                   | 2.0                   | 2.5                   | Same as<br>EN505AX58ML --<br>038177            | Same as<br>EN505AX72ML --<br>038178            |
| Phase -- Frequency <sup>1</sup>   | Single - 60 Hz        | Three - 60 Hz         | Single - 60 Hz        | except add<br>Chemical<br>Processing<br>(CP)   | except add<br>Chemical<br>Processing<br>(CP)   |
| Voltage <sup>1</sup>              | 115 230               | 230 460               | 230                   | features<br>from catalog<br>inside front cover | features<br>from catalog<br>inside front cover |
| Motor Nameplate Amps              | 17.2 8.6              | 5.8 2.9               | 15.5                  |                                                |                                                |
| Max. Blower Amps <sup>3</sup>     | 22.0 11.0             | 6.2 3.1               | 14.0                  |                                                |                                                |
| Inrush Amps                       | 112 56                | 56 28                 | 86                    |                                                |                                                |
| Starter Size                      | 1 0                   | 0 0                   | 1                     |                                                |                                                |
| Service Factor                    | 1.0                   | 1.0                   | 1.0                   |                                                |                                                |
| Thermal Protection <sup>2</sup>   | Class B - Pilot Duty  | Class B - Pilot Duty  | Class B - Pilot Duty  |                                                |                                                |
| XP Motor Class -- Group           | I-D                   | I-D                   | I-D, II-F&G           |                                                |                                                |
| Shipping Weight                   | 95 lb (43 kg)         | 87 lb (40 kg)         | 103 lb (22B kg)       |                                                |                                                |

<sup>1</sup> Rotron motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 3 phase motors are factory tested and certified to operate on both: 208-230/415-460 VAC-3 ph-60 Hz and 190-208/380-415 VAC-3 ph-50 Hz. Our dual voltage 1 phase motors are factory tested and certified to operate on both: 104-115/208-230 VAC-1 ph-60 Hz and 100-110/200-220 VAC-1 ph-50 Hz. All voltages above can handle a ±10% voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

<sup>2</sup> Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

<sup>3</sup> Maximum blower amps corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.



P.O. Box 9028 • Bend, OR 97703

(541) 382-7070 • Fax (541) 382-2242

## Thermal Oxidizer Technical Specifications

### 1.0 EXPERIENCE AND DESIGN STANDARD:

H2 Oil Recovery Equipment, Inc. has been manufacturing thermal oxidizers for more than five years. The general construction of the thermal oxidizer is substantial and durable with the intent of producing a piece of equipment that will operate for many years under severe outdoor weather conditions with minimal maintenance.

### 2.0 PROCESS GENERAL:

The thermal oxidizer utilizes a gas burner system to heat the inlet vapor stream causing the inlet vapors to convert into CO<sub>2</sub> and H<sub>2</sub>O. The design temperature is 1400 deg. (f). The thermal oxidizer includes, but is not limited to -

- A - Inlet process stream train
- B - Burner system
- C - UL controls

### 3.0 CONSTRUCTION GENERAL:

|                                      |                        |
|--------------------------------------|------------------------|
| Stack height                         | 120"                   |
| Length of skid                       | 168"                   |
| Width of unit skid                   | 42.5"                  |
| Weight of unit                       | 2500 lbs               |
| Shell/stack material of construction | 3/16" carbon steel     |
| Paint                                | Silicone alkyd         |
| Insulation                           | Ceramic                |
| Steel skid with fork lift pockets    | 1/4" steel             |
| Burner BTUH rating                   | 1.5 million per hour   |
| Main fuel train                      | 1" Piping/1.5 MBTUH    |
| Type of fuel                         | Natural gas or propane |
| Maximum fuel pressure                | 5 psi                  |
| Minimum fuel pressure                | 2 psi                  |

## Thermal Oxidizer Technical Specifications

### 3.10 BURNER SYSTEM:

The burner system conforms to NFPA 86 regulations. The burner system utilizes either natural gas or propane as the primary fuel source. The burner system includes -

- A - Pilot ignited burner
- B - Gas piping train
  - 1) Automatic gas control valve
  - 2) Safety shut-off valves
  - 3) Gas high pressure switch
  - 4) Gas low pressure switch
  - 5) Pressure gauges
  - 6) Pressure regulators
  - 7) Pilot flame solenoid shut-off valve
  - 8) Manual gas supply shut-off valves
  - 9) Gas line filter

### 3.20 INLET VAPOR STREAM PIPING:

- A - Automatic vapor stream shut-off valve
- B - Automatic vapor stream by-pass valve
- C - Flame arrestor

### 4.0 ELECTRICAL:

The electrical control panel is UL listed and is a Nema 4 rated enclosure. The control circuit is 120 VAC single phase. The control panel will bear a *Underwriters Laboratories Inc.* marking label for a classified enclosed flame control panel. The control circuit includes, but is not limited to-

- A - Nema 4 construction
- B - Status indicating lights
  - 1) Power on
  - 2) Power failure
  - 3) Moisture separator high water shutdown
  - 4) Flame loss shutdown
  - 5) Purge
  - 6) Limits complete
  - 7) Systems operating
  - 8) Burner high temperature shutdown

Page 3

## Thermal Oxidizer Technical Specifications

### 9) Catalyst high temperature shutdown

- C - Fan draft switch
- D - Digital temperature indicators
- E - Flame failure safeguard
- F - Over temperature protection
- G - Thermocouples
- H - Safety interlock switches
- I - Ignition transformer
- J - UV flame detector
- K - Flame arrestor high temperature shutdown

### 5.0 TESTING:

The thermal oxidizer shall be functionally tested by the manufacturer prior to shipment and these tests shall include, but is not limited to -

- A - Start-up and operation at design temperature
- B - Burner high temperature shutdown
- C - Gas low pressure shutdown
- D - Gas high pressure shutdown
- E - Sensor for high water shutdown in moisture separator
- F - Flame loss shutdown
- G - UV flame detector voltage test
- H - UV flame detector operation test
- I - Draft air loss shutdown

10/17/97

engman/thernox tech spec



(541) 382-7070

Fax (541) 382-2242

P.O. Box 9028

Bend, OR 97708

### THERMAL OXIDIZER

BTUH REQUIRED TO HEAT AIR FROM 100(F) TO 1400(F)

UNASSISTED BY VAPOR STREAM BTU CONTENT

| FLOW | BTUH    | TNG/MO | GLPG/MO | **NG COST   | ***LPG COST  |
|------|---------|--------|---------|-------------|--------------|
| 100  | 175000  | 1260   | 1380    | \$ 630.00   | \$ 1,380.00  |
| 200  | 350000  | 2520   | 2762    | \$ 1,260.00 | \$ 2,762.00  |
| 300  | 526000  | 3744   | 4139    | \$ 1,872.00 | \$ 4,139.00  |
| 400  | 702000  | 5040   | 5524    | \$ 2,520.00 | \$ 5,524.00  |
| 500  | 877000  | 6264   | 6905    | \$ 3,132.00 | \$ 6,905.00  |
| 600  | 1050000 | 7560   | 8262    | \$ 3,780.00 | \$ 8,262.00  |
| 700  | 1228000 | 8856   | 9678    | \$ 4,428.00 | \$ 9,678.00  |
| 800  | 1404000 | 10080  | 11016   | \$ 5,040.00 | \$ 11,016.00 |
| 900  | 1579000 | 11376  | 12432   | \$ 5,688.00 | \$ 12,432.00 |
| 1000 | 1755000 | 12600  | 13770   | \$ 6,300.00 | \$ 13,770.00 |

ASSISTED BY VAPOR STREAM BTU CONTENT  
APPROXIMATELY 40% LEL

| FLOW | *BTUH  | TNG/MO | GLPG/MO | **NG COST   | ***LPG COST |
|------|--------|--------|---------|-------------|-------------|
| 100  | 33750  | 243    | 264     | \$ 121.00   | \$ 265.00   |
| 200  | 67500  | 486    | 531     | \$ 243.00   | \$ 531.00   |
| 300  | 101250 | 729    | 796     | \$ 364.00   | \$ 796.00   |
| 400  | 135000 | 972    | 1062    | \$ 486.00   | \$ 1,062.00 |
| 500  | 168750 | 1215   | 1327    | \$ 607.00   | \$ 1,327.00 |
| 600  | 202500 | 1458   | 1593    | \$ 729.00   | \$ 1,593.00 |
| 700  | 236250 | 1701   | 1859    | \$ 850.00   | \$ 1,859.00 |
| 800  | 270000 | 1944   | 2124    | \$ 972.00   | \$ 2,124.00 |
| 900  | 303750 | 2187   | 2390    | \$ 1,093.00 | \$ 2,390.00 |
| 1000 | 337500 | 2430   | 2657    | \$ 1,215.00 | \$ 2,657.00 |

\* Based upon a minimum burner turndown temperature of 350(f)

\*\* Based on \$.50/therm on natural gas

\*\*\* Based on \$1.00/gal. for LPG (propane)

TNG/MO - Therms of natural gas per month

GLPG/MO - Gallons of LPG (propane) per month

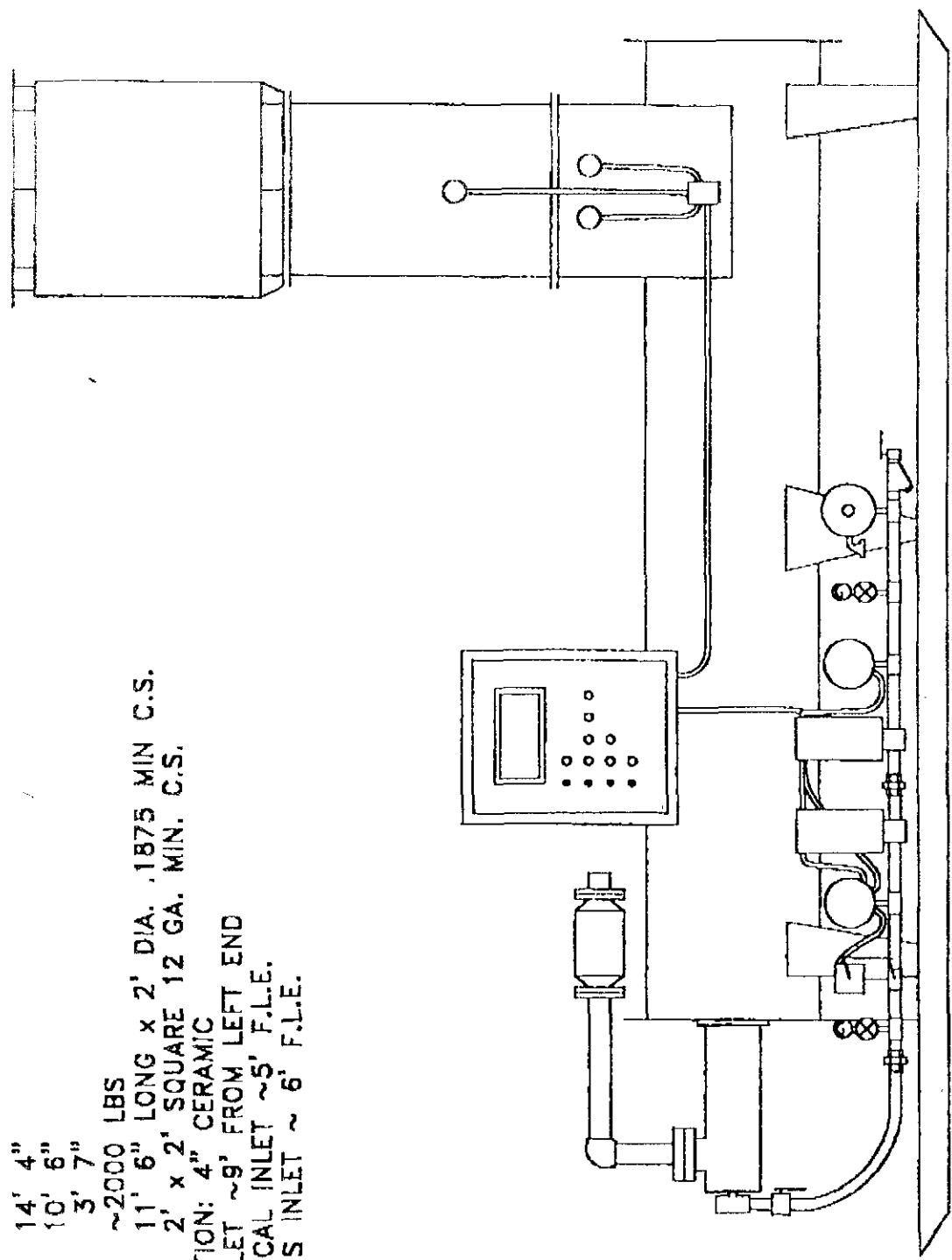
1/20/99

manecat/therm ox BTUH- 100-1400



SPECIFICATIONS

LENGTH 14' 4"  
HIEGHT 10' 6"  
WIDTH 3' 7"  
WEIGHT ~2000 LBS  
SHELL 11' 6" LONG x 2' DIA. .1875 MIN C.S.  
STACK 2' x 2' SQUARE 12 GA. MIN. C.S.  
INSULATION: 4" CERAMIC  
GAS INLET ~9' FROM LEFT END  
ELECTRICAL INLET ~5' F.L.E.  
PROCESS INLET ~ 6' F.L.E.



|                              |    |       |       |
|------------------------------|----|-------|-------|
| H2 OIL RECOVERY EQUIPMENT    |    |       |       |
| 100-400 CFM THERMAL OXIDIZER |    |       |       |
| DRAWN BY                     | GS | SCALE | NONE  |
| CHK'D                        | GS | DATE  | 3/94  |
| CAD                          | FW | APP'D | A1001 |