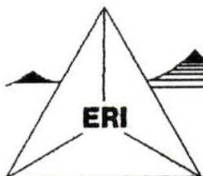


TEXACO STATION #63-232-0037

LUST# 2298

KING/Seattle



**ENVIRONMENTAL RESOLUTIONS, INC.**

RECEIVED

OCT 30 1997

DEPT. OF ECOLOGY

DEPARTMENT OF ECOLOGY NWRO/TCP TANK UNIT	
INTERIM CLEANUP REPORT	<input type="checkbox"/>
SITE CHARACTERIZATION	<input type="checkbox"/>
FINAL CLEANUP REPORT	<input type="checkbox"/>
OTHER <u>Post IRAP Monitoring</u>	<input checked="" type="checkbox"/>
AFFECTED MEDIA: SOIL	<input type="checkbox"/>
OTHER _____ GW	<input type="checkbox"/>
INSPECTOR (INIT.) <u>RN</u>	DATE <u>11/21/97</u>

September 15, 1997  
ERI 31001.R09

Ms. Theresa Geijer, R.G.  
Texaco Refining and Marketing Inc.  
Environment, Health & Safety  
3400 188th Street SW, Suite 630  
Lynnwood, Washington 98037

Subject: Monitoring Well Installation, Sampling, and Laboratory Analysis, Former Texaco Facility  
63-232-0037, 8701 Greenwood Avenue North, Seattle, Washington

Dear Theresa:

As requested by Texaco Refining and Marketing Inc.- Environment, Health & Safety (TRMI-EH&S) Environmental Resolutions, Inc. (ERI) has prepared this report describing the installation, sampling, and laboratory results of groundwater monitoring well MW8 installed at the site referenced above. The site location shown on Plate P-1.

**Background**

Prior to 1994, the site had historically operated as a retail gasoline service station. In 1994, the former station building was demolished and environmental assessment and remediation activities were conducted to remove hydrocarbon-impacted soil and groundwater. Previous investigations have identified a silt and peat confining layer present between approximately 8 and 15 feet below ground surface (bgs). The peat and silt layer appears to act as a confining layer separating underlying saturated soils from the overlying vadose zone soils.

In June 1995 the property was sold. In January 1996, an Independent Remedial Action Report summarizing results of the site activities was submitted to the Washington State Department of Ecology (Ecology) for review under the Independent Remedial Action Program (IRAP). On July 31, 1996, Ecology issued a no further action letter for the site notifying TRMI-EH&S and the site owner that no further cleanup action would be required. One condition of the no further action determination was that groundwater samples be collected from remaining downgradient monitoring well AGW-6 and submitted for hydrocarbon analyses on a twice-yearly basis to monitor groundwater conditions.

In September 1996, the surface completion of AGW-6 was temporarily capped and buried approximately 2 feet below ground surface (bgs) to accommodate new building construction activities. Well modification activities were to be conducted immediately prior to final paving to raise the wellhead to the final grade elevation for future sampling activities. However, the buried wellcap was subsequently obstructed by the building contractor by installation of a concrete catch basin immediately over the former wellhead. Installation of a replacement groundwater monitoring well (MW8) was, therefore, required to comply with Ecology requirements. Well locations are shown on Plate P-2.



Texaco Refining  
and Marketing Inc

3400 188th Street SW  
Suite 630  
Lynnwood WA 98037

October 24, 1997

RECEIVED  
OCT 30 1997  
DEPT. OF ECOLOGY

**ENV - SERVICE STATIONS**

Monitoring Well Installation, Sampling, and Laboratory Analysis Report  
8701 Greenwood Avenue North  
Seattle, Washington (Texaco Facility #63-232-0037)

Mr. Roger Nye  
Washington Department of Ecology- Northwest Region  
3190 - 160th Avenue Southeast  
Bellevue, Washington 98008-5452

Dear Mr. Nye:

Enclosed is the Monitoring Well Installation, Sampling, and Laboratory Analysis Report for the referenced site. The report was prepared by Environmental Resolutions, Inc. (ERI) for Texaco. The report details the installation of a groundwater monitoring well (MW-8), as a replacement well for AGW-6, which was damaged during the construction activities of the Walgreens building onsite. Replacement well MW-8 was installed by ERI immediately downgradient of the AGW-6.

One condition of the July 31, 1996 no further action letter issued by Department of Ecology was that groundwater samples be collected from remaining downgradient monitoring well AGW-6 and submitted for hydrocarbon analysis on a twice-yearly basis. Groundwater samples were collected from AGW-6 on September 12, 1996, and were analyzed for TPH-G, TPH-D, TPH-O, BTEX, Total lead and dissolved lead. None of the analytes were detected at concentrations at or above MTCA Method A Cleanup levels. Groundwater in the new well (MW-8) was sampled on August 7, 1997. Laboratory results indicated that the groundwater sample contained 15.8 ppb benzene and 20.4 ppb total xylenes, exceeding the MTCA Method A Cleanup levels of 5 and 20 ppb, respectively. TPH-G, toluene, and ethylbenzene were detected at concentrations below the A Cleanup levels. TPH-D, TPH-O and total and dissolved lead were not detected at or above respective laboratory method reporting limits.

The next groundwater monitoring and sampling event will be conducted in November 1997. If you have any questions please contact me at (206) 774-6090, extension 224.

Sincerely,

Theresa A. Geijer  
Project Coordinator

TAG:tag  
p:\tag\greenw\2qt97gw.cov

Enclosure

RLLane-File (w/enclosure)

cc: R. Isackson (w/enclosure)  
M. Nesteroff (w/enclosure)

PR: \_\_\_\_\_

### Drilling and Soil Sampling

On February 27, 1997, soil boring B8 was drilled to a depth of approximately 26.5 feet bgs near the southwestern property corner (Plate P-2). The soil boring was drilled using a CME-75 hollow-stem auger drilling rig operated by Cascade Drilling, Inc. (Cascade) of Woodinville, Washington. The continuous flight 10-inch diameter, hollow-stem augers used to drill the boring were steam-cleaned prior to drilling to reduce the probability of cross-contamination. Decontamination water and soil cuttings generated during drilling were placed in sealed 55-gallon drums and transported off site the same day for treatment and disposal.

### Soil Sampling

Soil samples were collected continuously at approximate 5-foot intervals using a California-modified, 2-inch diameter, split-spoon sampler driven into the soil ahead of the drill bit with a 140-pound hammer. The sampler was driven 18 inches or until it met with refusal. The number of blows to drive the sampler each 6-inch increment was recorded in order to evaluate the relative density of soil materials. This information is contained in the attached Boring Log.

For each sampling interval, soil from the lowest portion of the sampler was transferred to a laboratory-supplied glass jar sealed with a Teflon-lined cap. The jars were then labeled, placed in iced storage, and transported to the laboratory for analysis. A Chain of Custody was initiated by the field geologist and accompanied the samples to the analytical laboratory. Copies of the Chain-of-Custody forms are attached with the analytical results.

Soil from remaining portions of the sampler was disaggregated, placed in a separate glass jar with a perforated lid, and shaken for several seconds. The tip of a photo-ionization detector (PID) was then inserted in the jar to measure the organic vapor concentrations in the head space of the samples. Field instruments such as the PID indicate relative organic vapor concentrations in the soil, but they cannot be used to directly assess the absolute concentrations of hydrocarbons in the soil. A summary of the PID readings is provided on the Boring Log.

The remaining soil was used by ERI's geologist to field-classify the samples according to the Unified Soils Classification System. Sediment encountered consisted of fill material from the surface to approximately 4 feet bgs underlain by sandy silt and peat. Silt and clay were present immediately beneath the peat and were underlain at approximately 15 feet bgs by saturated, well graded sand. Clay and silt were encountered beneath the sand approximately 21 feet bgs and extended to the maximum depth explored of 26.5 feet bgs. The results of the soil classification are included on the Boring Logs.

### Monitoring Well Construction

Following drilling and sampling, the boring was constructed as a groundwater monitoring well by installing 4-inch diameter, schedule 40, polyvinyl chloride (PVC) casing in the boring. Factory-slotted casing with 0.010-inch slots was installed with the screened interval extending between approximately 15 and 20 feet bgs. The screened interval was placed to coincide with the saturated sandy zone encountered during drilling. Blank 4-inch diameter PVC casing was set from 15 feet bgs to just below grade. Factory-sealed PVC casing was used to construct the well to reduce the possibility of cross-contamination. All casing joints were flush-threaded, and no glues, chemical cements, or solvents were used in well construction.

The annular space of the groundwater monitoring well was backfilled with No. 2/12 Monterey sand from the total depth of the borehole to 14 feet bgs. The annular space of the well was sealed with bentonite from 14 feet bgs to within 3 feet bgs. The well was capped with a locking, watertight well cap to protect against surface water infiltration. The wellhead was finished with a traffic-rated well box set in concrete approximately ½ inch above the surrounding grade. Graphic representations of groundwater well construction are shown on the Boring Log.

#### Monitoring Well Development and Sampling

On August 6, 1997, ERI returned to the site to develop MW8 by surging and removing sediment from the casing. The well was developed for approximately 30 minutes by surging using a PVC bailer. The well was then bailed dry by removing approximately 10 gallons of water, and allowed to recharge for approximately 30 minutes. The well was then purged dry again by bailing an additional 5 gallons of water.

On August 7, 1997, ERI returned to the site to measure the depth to water, purge the well, and collect groundwater samples. Prior to purging, the depth to water was measured using a water level indicator, and the well was checked for the presence of free product. After measuring the water level, the well was purged of at least three casing volumes using a PVC bailer. After each casing volume, the pH, conductivity, and temperature were checked until measurements were within 10% variance. Purge water generated during sampling was placed into 55-gallon drums and transported off site for treatment and recycling. Groundwater samples were subsequently collected using a disposable bailer and transferred to laboratory-supplied containers containing appropriate preservatives. The samples were then placed in iced storage and transported to the laboratory for analysis. A Chain of Custody was initiated by the field geologist and accompanied the samples to the analytical laboratory. Copies of the Chain-of-Custody forms are attached with the analytical results.

#### Laboratory Analysis

The soil and groundwater samples were submitted to the North Creek Analytical, Inc. laboratory in Bothell, Washington, for analysis. Soil samples collected approximately 10 and 16 feet bgs were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) using Ecology Method WTPH-G/EPA Method 8020/602, total petroleum hydrocarbons as diesel (TPH-D) and as oil (TPH-O) using Ecology Method WTPH-D (extended), and for total lead using EPA 6010/7000 Series Methods.

Groundwater samples were analyzed for TPH-G and BTEX using Ecology Method WTPH-G/EPA Method 8020/602, TPH-D and TPH-O using Ecology Method WTPH-D (extended), and total and dissolved lead using EPA 6010/7000 Series Methods. Copies of the reports received from the analytical laboratory, including the Chain-of-Custody documentation, are attached.

#### Laboratory Results

Laboratory results indicate that soil samples collected approximately 10 and 16 feet bgs from B8 did not contain analyte concentrations exceeding MTCA Method A Cleanup Levels. Laboratory results are shown in Table 1.

Depth to water measurements collected on August 7, 1997 indicated groundwater was present approximately 4.37 feet below the top of the casing. No free product was observed. Laboratory results indicated that the groundwater sample collected from MW8 on August 7, 1997 contained 15.8 parts per

billion (ppb) benzene and 20.4 ppb total xylenes, exceeding the MTCA Method A Cleanup Levels of 5 and 20 ppb, respectively. TPH-G, toluene, and ethylbenzene were detected at concentrations below the MTCA Method A Cleanup Levels. TH-D, TPH-O, and total and dissolved lead were not detected at or above the laboratory method reporting limit (MRL). Depth to water measurements and laboratory results for MW8 are shown in Table 2 with historical data from abandoned monitoring well AGW-6.

#### Waste Disposal

Soil cuttings generated during drilling were transported to TPS Technologies' facility in Tacoma, Washington, for recycling. Purge water and decontamination rinsate were transported to the Spencer Environmental, Inc., facility in Sumner, Washington, for treatment and recycling. Copies of the soil manifest and weigh ticket are attached.

#### Limitations

The site assessment investigation was conducted in accordance with generally accepted standards of environmental geological practice at the time performed. This investigation was conducted solely for the purpose of evaluating environmental conditions of the soil and groundwater. No soil engineering or geotechnical implications are stated or should be inferred. The evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. Subsurface conditions may vary away from the data points available.

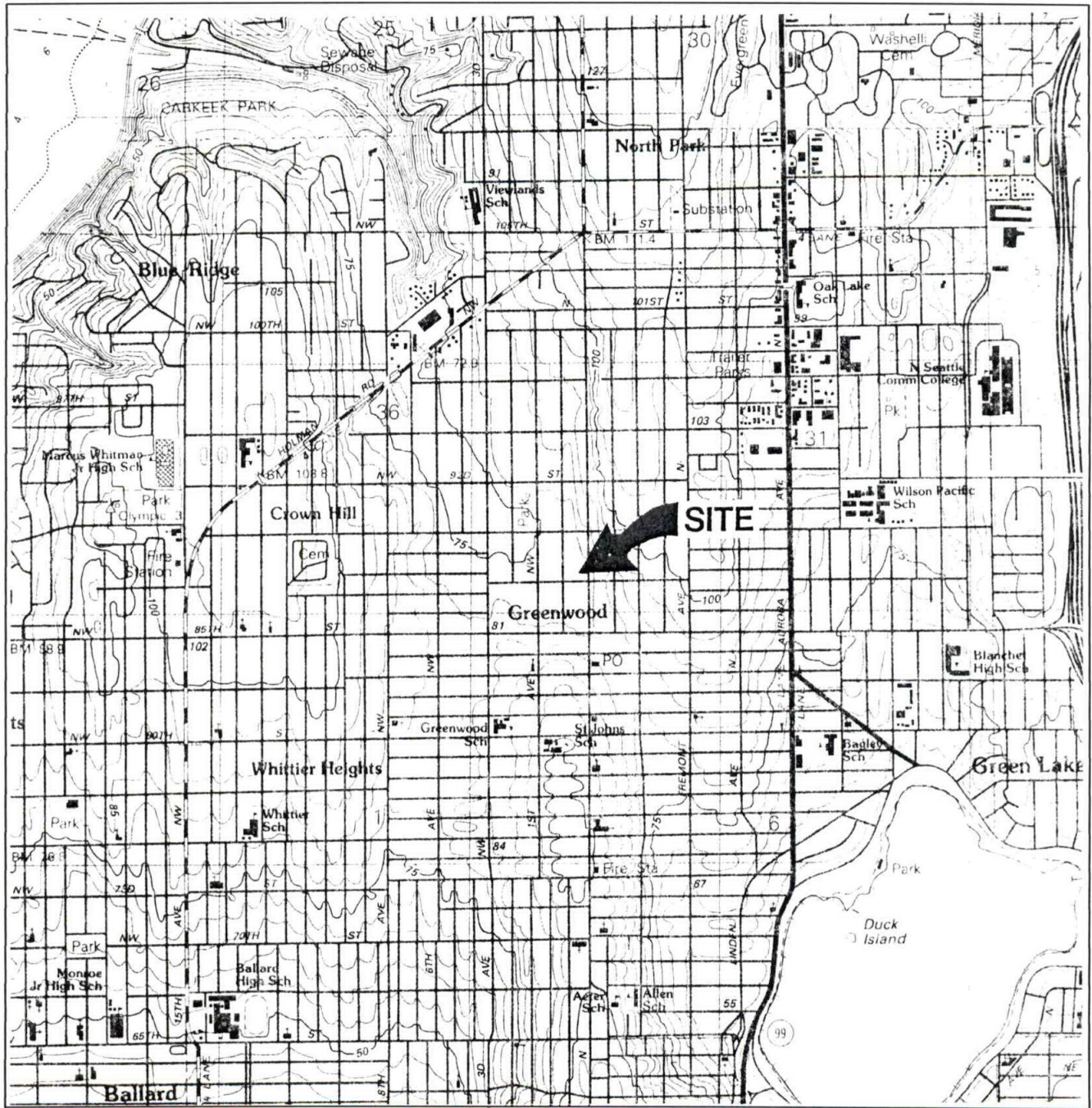
ERI appreciates this opportunity to provide assistance on this project. Please call if you have questions.

Sincerely,  
Environmental Resolutions, Inc.



John K. Meyer, R.G.  
Branch Manager

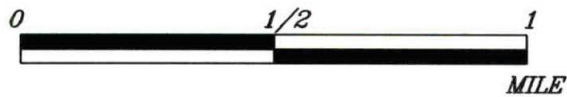
Attachments: Plates P-1 and P-2  
Tables 1 and 2  
Boring Log and Well Construction Diagram  
Laboratory Reports and Chain of Custody Records  
Soil Manifests and Weigh Tickets



31001SVM



APPROXIMATE SCALE

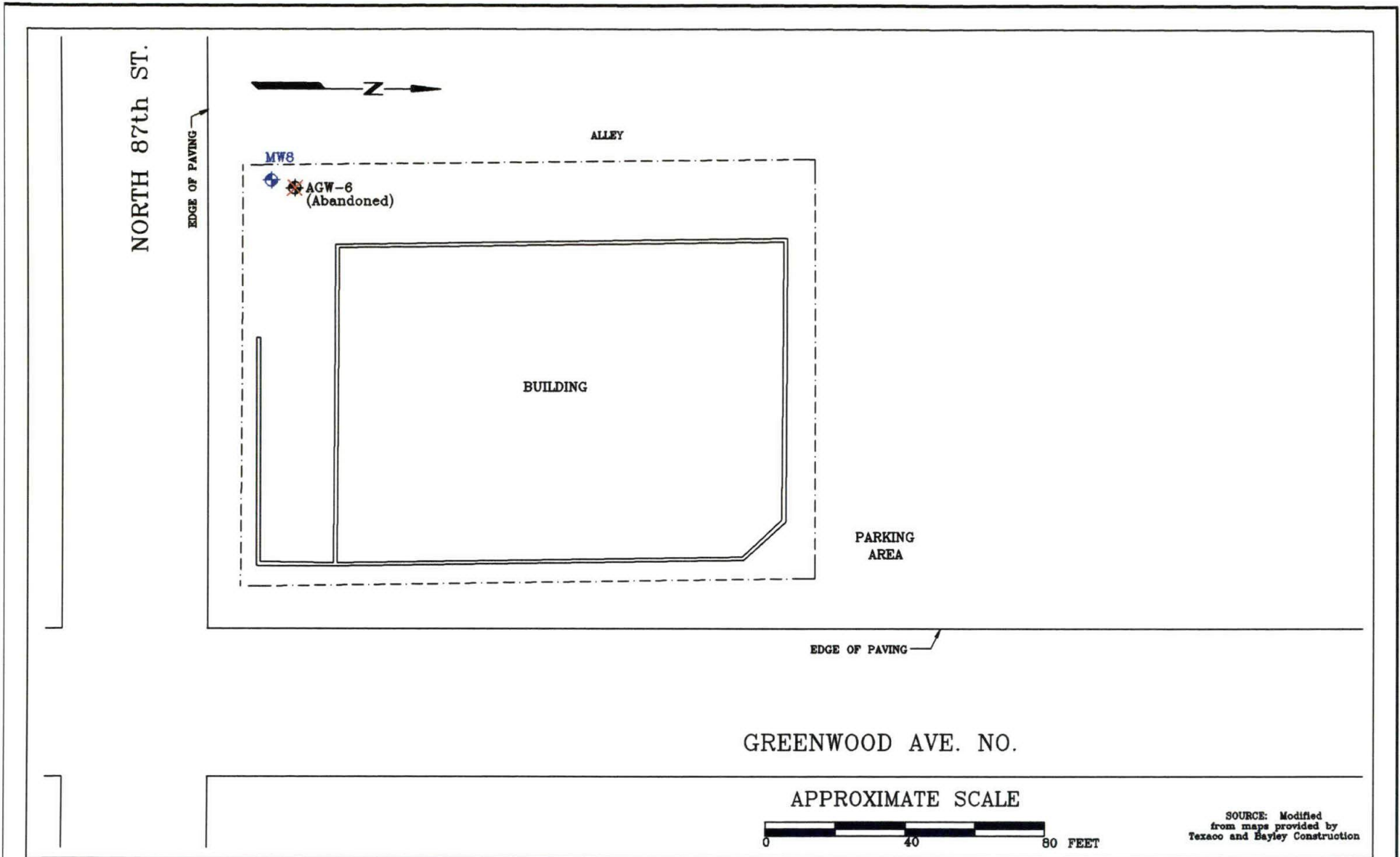


Source: U.S.G.S. 7.5 x 15 minute topographic quadrangle map Seattle, North 1983



**SITE VICINITY MAP**  
 FORMER TEXACO FACILITY 63-232-0037  
 8701 Greenwood Avenue North  
 Seattle, Washington

**PROJECT**  
 31001  
**PLATE**  
 P-1



FN 31001\31001R09



**GENERALIZED SITE PLAN**  
 FORMER TEXACO  
 FACILITY 63-232-0037  
 8701 Greenwood Avenue North  
 Seattle, Washington

**EXPLANATION**

◆ MW8 GROUNDWATER MONITORING WELL

**PROJECT NO.**

31001

**PLATE**

P-2

DATE: 07/22/97

**TABLE 1**  
**SOIL ANALYTICAL RESULTS**  
**Texaco Facility 63-232-0037**  
**8701 Greenwood Avenue North**  
**Seattle, Washington**  
**Samples Collected by ERI on June 30, 1997**  
**Page 1 of 1**

Sample Name	Depth	TPH-G	TPH-D	TPH-O	B	T	E	X	Total Lead
B8-S-10	10	<5	11.9	73.4	<0.05	<0.05	<0.05	<0.1	<10
B8-S-16	16	<5	<10	<25	0.108	<0.05	<0.05	<0.1	12.1
MTC Method A Cleanup Level		100	200	200	0.5	40	20	20	250

**EXPLANATION:**

All concentrations in mg/kg (ppm).

Depths are in feet below ground surface.

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Ecology Method WTPH-G.

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method WTPH-D (extended).

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

BTEX = Aromatic compounds by EPA Method 8020.

Total lead by EPA 6010/7000 Series Methods.

< = Less than the stated laboratory reporting limit.



TABLE 2  
GROUNDWATER ANALYTICAL RESULTS  
Texaco Facility 63-232-0037  
8701 Greenwood Avenue North  
Seattle, Washington  
Page 1 of 1

Well Name	Sample Date	DTW	TPH-G	TPH-D	TPH-O	B	T	E	X	Tot. Pb	Diss. Pb
AGW-6	3/17/94	0.51	300	ND	ND	10.6	1	14	56	4	-
	11/10/94	1.58	200	ND	ND	7.4	ND	6	29	ND	-
	2/24/95	2.62	460	ND	ND	8.3	2	8	20	ND	-
	6/28/95	3.97	80	ND	ND	4.7	ND	1	7	ND	-
	9/11/95	1.70	ND	ND	ND	3.2	ND	ND	3	ND	-
	12/11/95	1.81	ND	ND	ND	2.8	ND	ND	3.8	ND	-
	2/27/96	1.63	ND	ND	ND	ND	ND	ND	2.9	ND	-
	9/12/96	1.22	<50	<250	<750	1.64	<0.50	<0.50	<1.0	2.39	<2.0
Well abandoned during construction, spring 1997.											
MW8	8/7/97	4.37	123	<250	<750	15.8	0.777	1.45	20.4	<2.0	<2.0
MTCA Method A Cleanup Level			1,000 <sup>a</sup>			5	40	30	20	5	5

**EXPLANATION:**

All concentrations in ug/L (ppb).

DTW = Depth to water in feet below top of casing.

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Ecology Method WTPH-G.

TPH-D and TPH-O = Total Petroleum Hydrocarbons as Diesel and Oil, respectively, by Ecology Method WTPH-D (extended).

B = Benzene; T = Toluene; E = Ethylbenzene; X = Total Xylenes; Tot. Pb = Total Lead; Diss. Pb = Dissolved Lead.

BTEX = Aromatic compounds by EPA Method 8020.

Total and dissolved lead by EPA 6010/7000 Series Methods.

ND = Not detected at or above the laboratory reporting limit.

< = Less than the stated laboratory reporting limit.

Shaded values equal or exceed MTCA Method A Cleanup Levels.

<sup>a</sup> Total Petroleum Hydrocarbons

Data collected before 9/12/96 are taken from prior consultants.

# UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	DESCRIPTION	MAJOR DIVISIONS	LTR	DESCRIPTION	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel sand mixtures, little or no fines	FINE GRAINED SOILS	SILTS AND CLAYS LL<50	ML	Inorganic silts and very fine-grained sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		GP	Poorly-graded gravels or gravel sand mixture, little or no fines			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		GM	Silty gravels, gravel-sand-clay mixtures			OL	Organic silts and organic silt-clays of low plasticity
		GC	Clayey gravels, gravel-sand-clay mixtures			MH	Inorganic silts, micaceous or diatomaceous fine-grained sandy or silty soils, elastic silts
	SAND AND SANDY SOILS	SW	Well-graded sands or gravelly sands, little or no fines		SILTS AND CLAYS LL>50	CH	Inorganic clays of high plasticity, fat clays
		SP	Poorly-graded sands or gravelly sands, little or no fines			OH	Organic clays of medium to high plasticity
		SM	Silty sands, sand-silt mixtures			Pt	Peat and other highly organic soils
		SC	Clayey sands, sand-clay mixtures				
			HIGHLY ORGANIC SOILS				

## WELL DESIGN

<p> DEPTH THROUGH WHICH SAMPLER IS DRIVEN</p> <p> RELATIVELY UNDISTURBED SAMPLE</p> <p> MISSED SAMPLE</p> <p> GROUNDWATER LEVEL OBSERVED FROM FIRST WET SOIL SAMPLE IN BORING</p> <p> STATIC GROUNDWATER LEVEL</p> <p>OVM ORGANIC VAPOR METER READING IN PARTS PER MILLION</p> <p>PID PHOTO-IONIZATION DETECTOR READING IN PARTS PER MILLION</p>	<p> SAND PACK</p> <p> BENTONITE ANNULAR SEAL</p> <p> NEAT CEMENT ANNULAR SEAL</p> <p> BLANK PVC</p> <p> MACHINE-SLOTTED PVC</p> <p>S-10 SAMPLE NUMBER</p> <p> GROUT</p>
--	---

BLOW/FT. REPRESENTS THE NUMBER OF BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES TO DRIVE THE SAMPLER THROUGH 6 INCHES OF PENETRATION.

DASHED LINES SEPARATING UNITS ON THE LOG REPRESENT APPROXIMATE BOUNDARIES ONLY. ACTUAL BOUNDARIES MAY BE GRADUAL. LOGS REPRESENT SUBSURFACE CONDITIONS AT THE BORING LOCATION AT THE TIME OF DRILLING ONLY.



**UNIFIED SOIL CLASSIFICATION SYSTEM  
AND SYMBOL KEY**

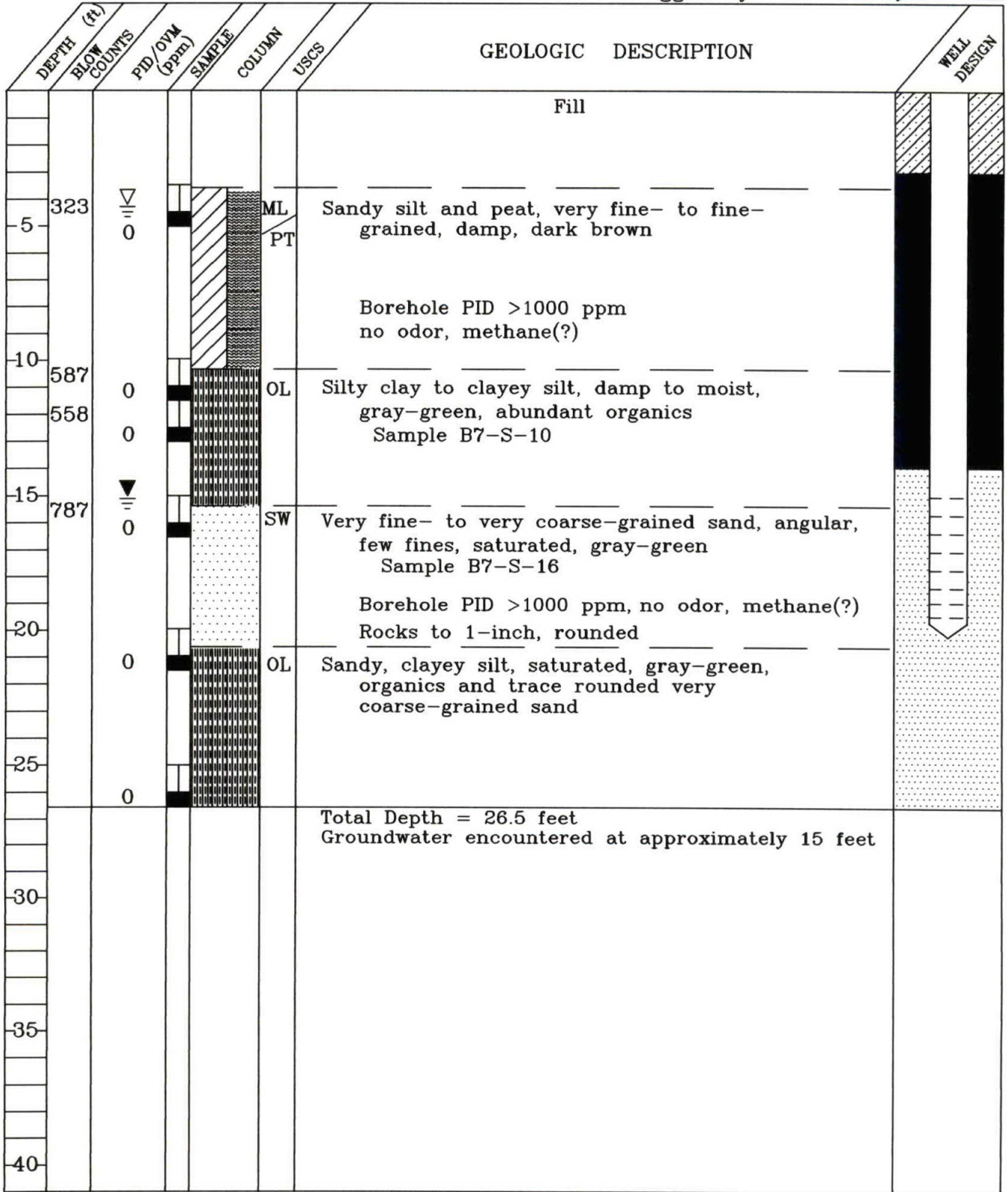
**PLATE  
Appendix**

**PROJECT**      USCS



Project No.: 31001 Boring: B8 Plate: APPENDIX  
 Site: Former Texaco 63-232-0037 Date: 6/30/97  
 Drill Contractor: Cascade Drilling, Inc.

Sample Method: 18" Split Spoon Geologist: JOHN MEYER  
 Drill Rig: Limited Access Bore Hole Diameter: 10" Signature: \_\_\_\_\_  
 Location: Southwestern property corner near alley Registration: OR G1769  
8701 Greenwood Ave. N. Seattle, WA Logged by: J. Meyer



Well Diameter: 4-inch, Slot Size: 0.010, Sand Size: 2/12, Grout: Bentonite



# NORTH CREEK ANALYTICAL

Environmental Laboratory Services

BOTHELL ■ (425) 481-9200 ■ FAX 485-2992  
SPOKANE ■ (509) 924-9200 ■ FAX 924-9290  
PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI  
1921 Edmonds Drive SE  
Renton, WA 98055

Project: Texaco Greenwood  
Project Number: 31001  
Project Manager: John Meyer

Sampled: 6/30/97  
Received: 7/2/97  
Reported: 7/21/97 13:21

## ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
B8-S-10	B707059-01	Soil	6/30/97
B8-S-16	B707059-02	Soil	6/30/97

North Creek Analytical, Inc.

*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.*

  
Matthew Essig, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508  
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132



# NORTH CREEK ANALYTICAL


Environmental Laboratory Services

BOTHELL ■ (425) 481-9200 ■ FAX 485-2992  
 SPOKANE ■ (509) 924-9200 ■ FAX 924-9290  
 PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
--	---	---

**Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A  
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>B8-S-10</b>				<b><u>B707059-01</u></b>			<b><u>Soil</u></b>	
Gasoline Range Hydrocarbons	0770341	7/11/97	7/12/97		5.00	ND	mg/kg dry	
Benzene	"	"	"		0.0500	ND	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		54.5	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		65.7	"	
<b>B8-S-16</b>				<b><u>B707059-02</u></b>			<b><u>Soil</u></b>	
Gasoline Range Hydrocarbons	0770341	7/11/97	7/12/97		5.00	ND	mg/kg dry	
Benzene	"	"	"		0.0500	<b>0.108</b>	"	
Toluene	"	"	"		0.0500	ND	"	
Ethylbenzene	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.100	ND	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		74.4	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		79.8	"	

  
 Matthew Essig, Project Manager



# NORTH CREEK ANALYTICAL

Environmental Laboratory Services

BOTHELL ■ (425) 481-9200 ■ FAX 485-2992  
 SPOKANE ■ (509) 924-9200 ■ FAX 924-9290  
 PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
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**Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)  
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b><u>B7-S-10</u></b>				<b><u>B707059-01</u></b>			<b><u>Soil</u></b>	
Diesel Range Hydrocarbons	0770142	7/3/97	7/7/97		10.0	11.9	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	73.4	"	1
Surrogate: 2-FBP	"	"	"	50.0-150		71.2	%	
<b><u>B7-S-16</u></b>				<b><u>B707059-02</u></b>			<b><u>Soil</u></b>	
Diesel Range Hydrocarbons	0770142	7/3/97	7/7/97		10.0	ND	mg/kg dry	
Heavy Oil Range Hydrocarbons	"	"	"		25.0	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		66.0	%	

  
 Matthew Essig, Project Manager



**NORTH  
CREEK  
ANALYTICAL**  
*Environmental Laboratory Services*

BOTHELL ■ (425) 481-9200 ■ FAX 485-2992  
 SPOKANE ■ (509) 924-9200 ■ FAX 924-9290  
 PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
--	---	---

**Total Metals by EPA 6010/7000 Series Methods  
North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>B7-S-10</u> Lead	0770575	7/18/97	7/18/97	<u>B707059-01</u> EPA 7420	10.0	ND	Soil mg/kg dry	
<u>B7-S-16</u> Lead	0770575	7/18/97	7/18/97	<u>B707059-02</u> EPA 7420	10.0	12.1	Soil mg/kg dry	

North Creek Analytical, Inc.

*\*Refer to end of report for text of notes and definitions.*

  
Matthew Essig, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508  
 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132



**NORTH  
CREEK  
ANALYTICAL**  
*Environmental Laboratory Services*

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ERI  
1921 Edmonds Drive SE  
Renton, WA 98055

Project: Texaco Greenwood  
Project Number: 31001  
Project Manager: John Meyer

Sampled: 6/30/97  
Received: 7/2/97  
Reported: 7/21/97 13:21

**Dry Weight Determination  
North Creek Analytical - Bothell**

Sample Name	Lab ID	Matrix	Result	Units
B8-S-10	B707059-01	Soil	54.2	%
B8-S-16	B707059-02	Soil	72.1	%

North Creek Analytical, Inc.

  
Matthew Essig, Project Manager

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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
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**Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A/Quality Control**  
 North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recov. %	RPD Limit	RPD %	Notes*
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<u>Batch: 0770341</u>		<u>Date Prepared: 7/11/97</u>		<u>Extraction Method: MeOH Extraction</u>					
<u>Blank</u>									
<u>0770341-BLK1</u>									
Gasoline Range Hydrocarbons	7/12/97			ND	mg/kg dry	5.00			
Benzene	"			ND	"	0.0500			
Toluene	"			ND	"	0.0500			
Ethylbenzene	"			ND	"	0.0500			
Xylenes (total)	"			ND	"	0.100			
Surrogate: 4-BFB (FID)	"	4.00		3.03	"	50.0-150	75.7		
Surrogate: 4-BFB (PID)	"	4.00		3.42	"	50.0-150	85.5		
<u>LCS</u>									
<u>0770341-BS1</u>									
Gasoline Range Hydrocarbons	7/12/97	25.0		20.0	mg/kg dry	75.0-125	80.0		
Surrogate: 4-BFB (FID)	"	4.00		3.12	"	50.0-150	78.0		
<u>Duplicate</u>									
<u>0770341-DUP1</u> <u>B707221-03</u>									
Gasoline Range Hydrocarbons	7/12/97		ND	ND	mg/kg dry			50.0	
Surrogate: 4-BFB (FID)	"	4.54		3.26	"	50.0-150	71.8		
<u>Duplicate</u>									
<u>0770341-DUP2</u> <u>B707221-07</u>									
Gasoline Range Hydrocarbons	7/14/97		ND	ND	mg/kg dry			50.0	
Surrogate: 4-BFB (FID)	"	4.52		3.30	"	50.0-150	73.0		
<u>Matrix Spike</u>									
<u>0770341-MS1</u> <u>B707221-01</u>									
Benzene	7/14/97	0.529	ND	0.431	mg/kg dry	60.0-140	81.5		
Toluene	"	0.529	ND	0.511	"	60.0-140	96.6		
Ethylbenzene	"	0.529	ND	0.450	"	60.0-140	85.1		
Xylenes (total)	"	1.59	ND	1.41	"	60.0-140	88.7		
Surrogate: 4-BFB (PID)	"	4.23		3.44	"	50.0-150	81.3		
<u>Matrix Spike Dup</u>									
<u>0770341-MSD1</u> <u>B707221-01</u>									
Benzene	7/14/97	0.529	ND	0.437	mg/kg dry	60.0-140	82.6	20.0	1.34
Toluene	"	0.529	ND	0.469	"	60.0-140	88.7	20.0	8.53
Ethylbenzene	"	0.529	ND	0.460	"	60.0-140	87.0	20.0	2.21
Xylenes (total)	"	1.59	ND	1.40	"	60.0-140	88.1	20.0	0.679
Surrogate: 4-BFB (PID)	"	4.23		3.12	"	50.0-150	73.8		

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\*Refer to end of report for text of notes and definitions.

  
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
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**Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control  
 North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 0770142</b>			<b>Date Prepared: 7/3/97</b>		<b>Extraction Method: EPA 3550</b>				
<b>Blank</b>			<b>0770142-BLK1</b>						
Diesel Range Hydrocarbons	7/7/97			ND	mg/kg dry	10.0			
Heavy Oil Range Hydrocarbons	7/8/97			ND	"	25.0			
Surrogate: 2-FBP	7/6/97	11.7		8.81	"	50.0-150	75.3		
<b>LCS</b>			<b>0770142-BS1</b>						
Diesel Range Hydrocarbons	7/7/97	68.0		67.2	mg/kg dry	59.0-135	98.8		
Surrogate: 2-FBP	7/6/97	11.7		9.70	"	50.0-150	82.9		
<b>Duplicate</b>			<b>0770142-DUP1</b>		<b>B707095-01</b>				
Diesel Range Hydrocarbons	7/7/97			34400	mg/kg dry			50.0	
Surrogate: 2-FBP	7/6/97	13.0		16.7	"	50.0-150	128		
<b>Duplicate</b>			<b>0770142-DUP2</b>		<b>B707059-02</b>				
Diesel Range Hydrocarbons	7/7/97		ND	ND	mg/kg dry			50.0	
Surrogate: 2-FBP	"	16.2		12.8	"	50.0-150	79.0		

  
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
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**Total Metals by EPA 6010/7000 Series Methods/Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<u>Batch: 0770575</u>	<u>Date Prepared: 7/18/97</u>				<u>Extraction Method: EPA 3050</u>					
<u>Blank</u>	<u>0770575-BLK1</u>									
Lead	7/18/97			ND	mg/kg dry	10.0				
<u>LCS</u>	<u>0770575-BS1</u>									
Lead	7/18/97	50.0		49.0	mg/kg dry	75.0-125	98.0			
<u>LCS</u>	<u>0770575-BS2</u>									
Lead	7/18/97	44.3		43.0	mg/kg dry	75.0-125	97.1			
<u>Duplicate</u>	<u>0770575-DUP1</u>		<u>B707059-01</u>							
Lead	7/18/97		ND	ND	mg/kg dry			20.0		
<u>Matrix Spike</u>	<u>0770575-MS1</u>		<u>B707059-01</u>							
Lead	7/18/97	91.3	ND	94.9	mg/kg dry	75.0-125	104			
<u>Matrix Spike Dup</u>	<u>0770575-MSD1</u>		<u>B707059-01</u>							
Lead	7/18/97	90.4	ND	92.2	mg/kg dry	75.0-125	102	20.0	1.94	

  
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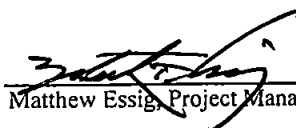


ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood Project Number: 31001 Project Manager: John Meyer	Sampled: 6/30/97 Received: 7/2/97 Reported: 7/21/97 13:21
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**Notes and Definitions**

#	Note
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- 1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
- 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
- Recov. Recovery
- RPD Relative Percent Difference

  
Matthew Essig, Project Manager



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# TEXACO CHAIN OF CUSTODY REPORT

Work Order #: **B707059**

CONSULTANT: <b>ERI</b> PROJECT MANAGER: <b>John Meyer</b> ADDRESS: <b>1921 Edmonds Dr SE Renton, WA 98055</b> PHONE: <b>(425) 227-0280</b> FAX: <b>(425) 227-0225</b>			<b>TEXACO INFORMATION</b> TEXACO PROJECT MANAGER: <b>T. Geijer</b> TEXACO FACILITY NUMBER: <b>63-232-0037</b> SITE ADDRESS: <b>8701 Greenwood Ave N Seattle, WA 98148</b>				<b>TURNAROUND REQUEST in Business Days</b> Organic & Inorganic Analyses * <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 5 <input type="checkbox"/> 3 <input type="checkbox"/> 1 Air Analyses * <input type="checkbox"/> 3 <input type="checkbox"/> 1 OTHER Specify: _____ <small>* Standard Turnaround for Organic &amp; Inorganic Analyses is 10 Days          * Standard Turnaround for Air Analyses is 3 Days</small>					
PROJECT NAME: <b>Texaco Greenwood</b> PROJECT NUMBER: <b>31001</b> SAMPLED BY: <b>Meyer</b>			State Hydrocarbon Methods (please circle): <input checked="" type="checkbox"/> WA OR AK ID Analysis Request: <table border="1" style="width:100%; text-align: center; font-size: small;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-GBTEX</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-D</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-D Extended</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-418.1</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH-HCID</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Diss Lead</td> </tr> </table>				TPH-GBTEX	TPH-D	TPH-D Extended	TPH-418.1	TPH-HCID	Total Diss Lead
TPH-GBTEX	TPH-D	TPH-D Extended	TPH-418.1	TPH-HCID	Total Diss Lead							
NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	TPH-GBTEX	TPH-D	TPH-D Extended	TPH-418.1	TPH-HCID	Total Diss Lead	MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED	
B707059-01	1. <del>BB</del> -5-10	6/29/97	X	X			X		S	1		
-02	2. <del>BB</del> -5-16	6/29/97	X	X			X		S	1		
	3.											
	4.											
	5.											
	6.											
	7.											
	8.											
	9.											
	10.											

RELINQUISHED BY: <b>[Signature]</b> PRINT NAME: <b>John Meyer</b> FIRM: <b>ERI</b>	DATE: <b>7/4/97</b> TIME:	RECEIVED BY: <b>[Signature]</b> PRINT NAME: <b>Dave Skaggs</b> FIRM: <b>NCS</b>	DATE: <b>7-2-97</b> TIME: <b>10:34</b>
RELINQUISHED BY: <b>[Signature]</b> PRINT NAME: <b>David Skaggs</b> FIRM: <b>NCS</b>	DATE: <b>7-2-97</b> TIME: <b>12:00</b>	RECEIVED BY: <b>[Signature]</b> PRINT NAME: <b>D. HEINE</b> FIRM: <b>NCA B</b>	DATE: <b>7/2/97</b> TIME: <b>12:00</b>

ADDITIONAL REMARKS: 13.0  
w/o  
COSA

PAGE \_\_\_\_\_ OF \_\_\_\_\_



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ERI  
1921 Edmonds Drive SE  
Renton, WA 98055

Project: Texaco Greenwood #63-232-0037  
Project Number: 31001  
Project Manager: John Meyer

Sampled: 8/7/97  
Received: 8/8/97  
Reported: 8/25/97 15:05

## ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-8	B708121-01	Water	8/7/97

North Creek Analytical, Inc.

*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.*

  
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# NORTH CREEK ANALYTICAL

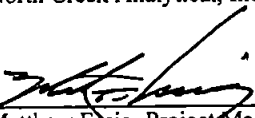
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A  
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>MW-8</b>				<b>B708121-01</b>			<b>Water</b>	
Gasoline Range Hydrocarbons	0870315	8/11/97	8/11/97		50.0	123	ug/l	
Benzene	"	"	"		0.500	15.8	"	
Toluene	"	"	"		0.500	0.777	"	
Ethylbenzene	"	"	"		0.500	1.45	"	
Xylenes (total)	"	"	"		1.00	20.4	"	
Surrogate: 4-BFB (FID)	"	"	"	50.0-150		99.8	%	
Surrogate: 4-BFB (PID)	"	"	"	50.0-150		99.2	"	

  
 Matthew Essig, Project Manager



# NORTH CREEK ANALYTICAL

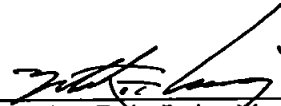
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)**  
**North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>MW-8</u>				<u>B708121-01</u>			<u>Water</u>	
Diesel Range Hydrocarbons	0870304	8/11/97	8/13/97		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50.0-150		105	%	

  
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# NORTH CREEK ANALYTICAL

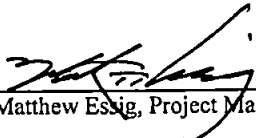
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Total Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>MW-8</u> Lead	0870704	8/21/97	8/25/97	<u>B708121-01</u> EPA 7421	0.00200	ND	<u>Water</u> mg/l	

  
 Matthew Essig, Project Manager



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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Dissolved Metals by EPA 6000/7000 Series Methods  
 North Creek Analytical - Bothell**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>MW-8</u> Lead	0870466	8/15/97	8/15/97	<u>B708121-01</u> EPA 7421	0.00200	ND	<u>Water</u> mg/l	

  
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Gasoline Hydrocarbons (Toluene to Dodecane) and BTEX by WTPH-G and EPA 8020A/Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 0870315</b>			<b>Date Prepared: 8/11/97</b>			<b>Extraction Method: EPA 5030</b>				
<b>Blank</b>			<b>0870315-BLK1</b>							
Gasoline Range Hydrocarbons	8/11/97			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	1.00				
Surrogate: 4-BFB (FID)	"	48.0		44.8	"	50.0-150	93.3			
Surrogate: 4-BFB (PID)	"	48.0		53.6	"	50.0-150	112			
<b>LCS</b>			<b>0870315-BS1</b>							
Gasoline Range Hydrocarbons	8/11/97	500		533	ug/l	80.0-120	107			
Surrogate: 4-BFB (FID)	"	48.0		49.6	"	50.0-150	103			
<b>Duplicate</b>			<b>0870315-DUP1 B708081-08</b>							
Gasoline Range Hydrocarbons	8/11/97		11400	11300	ug/l			25.0	0.881	
Surrogate: 4-BFB (FID)	"	48.0		48.0	"	50.0-150	100			
<b>Duplicate</b>			<b>0870315-DUP2 B708070-01</b>							
Gasoline Range Hydrocarbons	8/11/97		127	122	ug/l			25.0	4.02	1
Surrogate: 4-BFB (FID)	"	48.0		50.0	"	50.0-150	104			
<b>Matrix Spike</b>			<b>0870315-MS1 B708081-02</b>							
Benzene	8/11/97	10.0	ND	10.3	ug/l	70.0-130	103			
Toluene	"	10.0	ND	10.5	"	70.0-130	105			
Ethylbenzene	"	10.0	ND	10.0	"	70.0-130	100			
Xylenes (total)	"	30.0	ND	28.6	"	70.0-130	95.3			
Surrogate: 4-BFB (PID)	"	48.0		46.3	"	50.0-150	96.5			
<b>Matrix Spike Dup</b>			<b>0870315-MSD1 B708081-02</b>							
Benzene	8/11/97	10.0	ND	10.2	ug/l	70.0-130	102	15.0	0.976	
Toluene	"	10.0	ND	10.2	"	70.0-130	102	15.0	2.90	
Ethylbenzene	"	10.0	ND	9.84	"	70.0-130	98.4	15.0	1.61	
Xylenes (total)	"	30.0	ND	28.2	"	70.0-130	94.0	15.0	1.37	
Surrogate: 4-BFB (PID)	"	48.0		46.4	"	50.0-150	96.7			

Matthew Essig, Project Manager



# NORTH CREEK ANALYTICAL

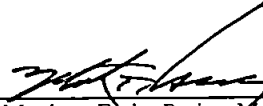
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ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 0870304</b>		<b>Date Prepared: 8/11/97</b>			<b>Extraction Method: EPA 3520/600 Series</b>					
<b>Blank</b>										
Diesel Range Hydrocarbons	8/15/97			ND	mg/l	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.750				
Surrogate: 2-FBP	8/12/97	0.351		0.335	"	50.0-150	95.4			
<b>LCS</b>										
Diesel Range Hydrocarbons	8/12/97	2.04		2.02	mg/l	52.0-131	99.0			
Surrogate: 2-FBP	"	0.351		0.346	"	50.0-150	98.6			
<b>Duplicate</b>										
Diesel Range Hydrocarbons	8/13/97		B708132-05 53.0	51.9	mg/l			44.0	2.10	
Surrogate: 2-FBP	"	0.662		0.658	"	50.0-150	99.4			
<b>Duplicate</b>										
Diesel Range Hydrocarbons	8/12/97		B708121-01 ND	ND	mg/l			44.0		
Surrogate: 2-FBP	"	0.662		0.615	"	50.0-150	92.9			

  
 Matthew Essig, Project Manager



# NORTH CREEK ANALYTICAL

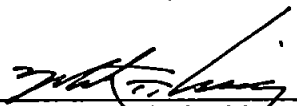
Environmental Laboratory Services

BOTHELL ■ (425) 481-9200 ■ FAX 485-2992  
 SPOKANE ■ (509) 924-9200 ■ FAX 924-9290  
 PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Total Metals by EPA 6000/7000 Series Methods/Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<u>Batch: 0870704</u>		<u>Date Prepared: 8/21/97</u>			<u>Extraction Method: EPA 3020</u>					
<u>Blank</u>		<u>0870704-BLK1</u>								
Lead	8/25/97			ND	mg/l	0.00200				
<u>LCS</u>		<u>0870704-BS1</u>								
Lead	8/25/97	0.0260		0.0261	mg/l	75.0-125	100			
<u>Duplicate</u>		<u>0870704-DUP1</u>			<u>B708121-01</u>					
Lead	8/25/97		ND	ND	mg/l				20.0	
<u>Matrix Spike</u>		<u>0870704-MS1</u>			<u>B708121-01</u>					
Lead	8/25/97	0.0260	ND	0.0259	mg/l	70.0-130	99.6			
<u>Matrix Spike Dup</u>		<u>0870704-MSD1</u>			<u>B708121-01</u>					
Lead	8/25/97	0.0260	ND	0.0248	mg/l	70.0-130	95.4	20.0	4.31	

  
 Matthew Essig, Project Manager



# NORTH CREEK ANALYTICAL


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 PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI 1921 Edmonds Drive SE Renton, WA 98055	Project: Texaco Greenwood #63-232-0037 Project Number: 31001 Project Manager: John Meyer	Sampled: 8/7/97 Received: 8/8/97 Reported: 8/25/97 15:05
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**Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<u>Batch: 0870466</u>		<u>Date Prepared: 8/15/97</u>		<u>Extraction Method: EPA 3020</u>						
<u>Blank</u>		<u>0870466-BLK1</u>								
Lead	8/15/97			ND	mg/l	0.00200				
<u>LCS</u>		<u>0870466-BS1</u>								
Lead	8/15/97	0.0260		0.0254	mg/l	75.0-125	97.7			
<u>Duplicate</u>		<u>0870466-DUP1</u>		<u>B708038-01</u>						
Lead	8/15/97		ND	ND	mg/l				20.0	
<u>Matrix Spike</u>		<u>0870466-MS1</u>		<u>B708038-01</u>						
Lead	8/15/97	0.0260	ND	0.0255	mg/l	70.0-130	98.1			
<u>Matrix Spike Dup</u>		<u>0870466-MSD1</u>		<u>B708038-01</u>						
Lead	8/15/97	0.0260	ND	0.0254	mg/l	70.0-130	97.7	20.0	0.409	

  
 Matthew Essig, Project Manager



# NORTH CREEK ANALYTICAL

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 PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

ERI  
 1921 Edmonds Drive SE  
 Renton, WA 98055


Project: Texaco Greenwood #63-232-0037  
 Project Number: 31001  
 Project Manager: John Meyer

Sampled: 8/7/97  
 Received: 8/8/97  
 Reported: 8/25/97 15:05

## Notes and Definitions

#	Note
1	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
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

  
 Matthew Essig, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508  
 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

**TEXACO CHAIN OF CUSTODY REPORT**

Work Order #: **B708121**

CONSULTANT: **ERI**  
 PROJECT MANAGER: **Mejer**  
 ADDRESS: **1921 Edmund Dr SE Renton, WA 98055**  
 PHONE: **(425) 227-0280** FAX: **x 225**  
 PROJECT NAME: **Greenwood**  
 PROJECT NUMBER: **31001**  
 SAMPLED BY: **Mejer**

TEXACO INFORMATION  
 TEXACO PROJECT MANAGER: **T. Geiger**  
 TEXACO FACILITY NUMBER: **63-232-0037**  
 SITE ADDRESS: **2701 Greenway & Ave Seattle WA**

TURNAROUND REQUEST in Business Days

Organic & Inorganic Analyses \*  
 10  5  3  1  
 Air Analyses \*  
 3  1

State Hydrocarbon Methods (please circle): **WA OR AK ID**  
 Analysis Request:  
 TPH-G/BTEX  TPH-D  TPH-D Extended  TPH-418.1  TPH-HCID  **TPH-Dist Lead**

OTHER Specify: \_\_\_\_\_  
 \* Standard Turnaround for Organic & Inorganic Analyses is 10 Days  
 \* Standard Turnaround for Air Analyses is 3 Days

NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME	TPH-G/BTEX	TPH-D	TPH-D Extended	TPH-418.1	TPH-HCID	TPH-Dist Lead
B708121-01	1. MW-8	8/7/97	X		X			X
	2.							
	3.							
	4.							
	5.							
	6.							
	7.							
	8.							
	9.							
	10.							

MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED
W	5	Total 3 Dis. Pb

RELINQUISHED BY: **[Signature]** DATE: **8/8/97**  
 PRINT NAME: **John Mejer** FIRM: **ERI** TIME: \_\_\_\_\_  
 RELINQUISHED BY: **[Signature]** DATE: **8/8**  
 PRINT NAME: **Erica Casanova** FIRM: **NCS** TIME: **1224**

RECEIVED BY: **[Signature]** DATE: **8/8**  
 PRINT NAME: **Erica Casanova** FIRM: **N.C.S.** TIME: **0938**  
 RECEIVED BY: **[Signature]** DATE: **8/8/97**  
 PRINT NAME: **Lisa Hurley** FIRM: **NCA** TIME: **1224**

ADDITIONAL REMARKS:



**Customer Job Report**

Gross &amp; Tare Weight Codes: M=Manual; S=Scale; T=Trk File

Job Number Name	SiteAddress	SiteCity	State	ZipCode			
A03 -- 00623 TEXACO #63-232-0037	8701 GREENWOOD AVENUE	SEATTLE	WA	00000			
Load #	Date & Time Out	Transporter #	Truck & Trailer Number	Gross (lb)	Tare (lb)	Net (lb)	Net Wt (tons)
43	06/30/97 07:55	3ESECOR	JOHN	18,000M	16,140M	1,860	0.93
Completed Loads	Manifests Received	Completed Weight	Estimated Weight	TOTAL Net Wt:			
74.00%	37	15,854.20%	5.00(tons)	0.93 (tons)			

# Manifest

## TPS Technologies Soil Recycling

Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment: Consultant	Transporter Truck #:	Facility #: A03	Given by TPS: 00623	Load #: 043			
Generator's Name and Billing Address: TEXACO EH&S 3400 - 188th STREET SW SUITE 630 LYNNWOOD, WA 98037 USA			Generator's Phone #: (206) 771-6090		Generator's US EPA ID No.			
			Person to Contact: THERESA GEIJER		Customer Account Number with TPS: 1001513			
			FAX#: (206) 771-7786					
Consultant's Name and Billing Address: ERI 1921 EDMONDS DRIVE SE RENTON, WA 98055 USA			Consultant's Phone #: (425) 227-0280					
			Person to Contact: JOHN MEYER		Customer Account Number with TPS: 1002230			
			FAX#: (425) 227-0225					
Generation Site (Transport from): (name & address) TEXACO #63-232-0037 8701 GREENWOOD AVENUE SEATTLE, WA 00000 USA			Site Phone #:		BTEX Levels			
			Person to Contact:		TPH Levels			
			FAX#:		AVG. Levels			
Designated Facility (Transport to): (name & address) TPS Technologies Inc. 2800 - 104th Street Court South Tacoma, WA 98444-6766 USA			Facility Phone #: (206) 584-8430		Facility Permit Numbers			
			Person to Contact: Renee Avelino					
			FAX#: (206) 584-8309					
Transporter Name and Mailing Address: ESE CORPORTATION 11011 WALLER ROAD EAST TACOMA, WA 98446 USA			Transporter's Phone #: (206) 535-3112		Transporter's US EPA ID No.:			
			Person to Contact: WES JOHNSON		Transporter's DOT No.:			
			FAX#: (206) 535-3298		Customer Account Number with TPS: 3ESECOR			
Description of Soil		Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>		0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>		3 DRUMS-PCS	18000	16140	18600
Sand <input type="checkbox"/> Organic <input type="checkbox"/> Clay <input type="checkbox"/> Other <input type="checkbox"/>		0 - 10% <input type="checkbox"/> 10 - 20% <input type="checkbox"/> 20% - over <input type="checkbox"/>	Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Other <input type="checkbox"/>			193		
List any exception to items listed above:								
Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.								
Print or Type Name: Generator <input type="checkbox"/> Consultant <input type="checkbox"/>			Signature and date:			Month	Day	Year
X								
Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.								
Print or Type Name:			Signature and date:			Month	Day	Year
John Meyer			[Signature]			6	30	97
Discrepancies:								
Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:								
Print or Type Name:			Signature and date:					
RENEE AVELINO - CSM			[Signature]			6/30/97		

Generator and/or Consultant

Transporter

Recycling Facility

Please print or type.



**Woodworth & Company, Inc.**  
**GENERAL CONTRACTORS**

1200 East D Street / Tacoma, Washington 98421  
 Telephone (253) 383-3585

LAKEVIEW PIT TICKET

Contractors Lic. # WOODW 377NO



Ticket # 304676  
 Wwaster REBA



TOM

**CAUTION: HOT ASPHALT WILL BURN YOU!**

RECEIVED \*

CUSTOMER:		PURCHASE ORDER:		JOB LOAD	JOB TONS
T.P.S. 81384				TOTAL	
				DAILY	0.93

DATE	PLANT	SILO #	JOB	PLANT	TRUCK	SEQUENCE	REFERENCE
6/30/97			63-		DD		
TIME							
13:06							
MIXTURE			GROSS	TARE	NET WT. TONS	PRICE	TOTAL
200 CONT. SOIL			18000	16140	0.93		

SPECIAL INSTRUCTIONS	1860 Net LB K	WAWH00
	Net Metric Tons 0.84	TAX % PAY THIS AMOUNT

PIT B160

CUBIC  
YDS

REMARKS

X

SCALE OPERATOR

