LUST # 2298
TEXACO
KING / SEATTLE

EMCON
18912 North Creek Parkway • Suite 100 • Bothell, Washington 98011-8016 • (206) 485-5000 • Fax (206) 486-9766

RECEIVED
AUG 21 1995
DEPT. OF ECOLOGY

August 8, 1995
Project 40368-013.009

RECEIVED
AUG 14 1995

Ms. Theresa Geijer
Texaco Environmental Services
3400 188th Street SW, Suite 630
Lynnwood, Washington 98037

SR 9/20/95

Re: Groundwater Sampling Report
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Dear Ms. Geijer:

This letter report documents recent groundwater sampling activities that EMCON conducted at Texaco Service Station 63-232-0037, 8701 Greenwood Avenue North Seattle, Washington (Figure 1). On June 28, 1995, EMCON measured groundwater depth in five monitoring wells, sampled them, and submitted the groundwater samples for laboratory analysis.

Attached are a site vicinity map, a June 28, 1995, groundwater data map, historical tables of groundwater monitoring data and groundwater laboratory results, the field sampling data sheets, a chain-of-custody form, and laboratory report for the June 28, 1995, sampling event.

If you have any questions about this report, please call.

Sincerely,

EMCON

John K. Meyer
Project Manager

James Bailey, R.G.
Supervising Hydrogeologist

Attachments: Figures 1 and 2
Tables 1 and 2
Field Sample Data Sheets, June 28, 1995
Laboratory Report and Chain-of-custody Documentation

B\L:\DATA\0368-TEX\13\GEIJER-L.728-95\llb:3

Recvd 9/13/95 AM

Independent Action Report Update

Site Name: TEXACO

Inc. #: 2298 Date of Report: 8-8-95

County: KING Date Report Rec'd: 8-21-95

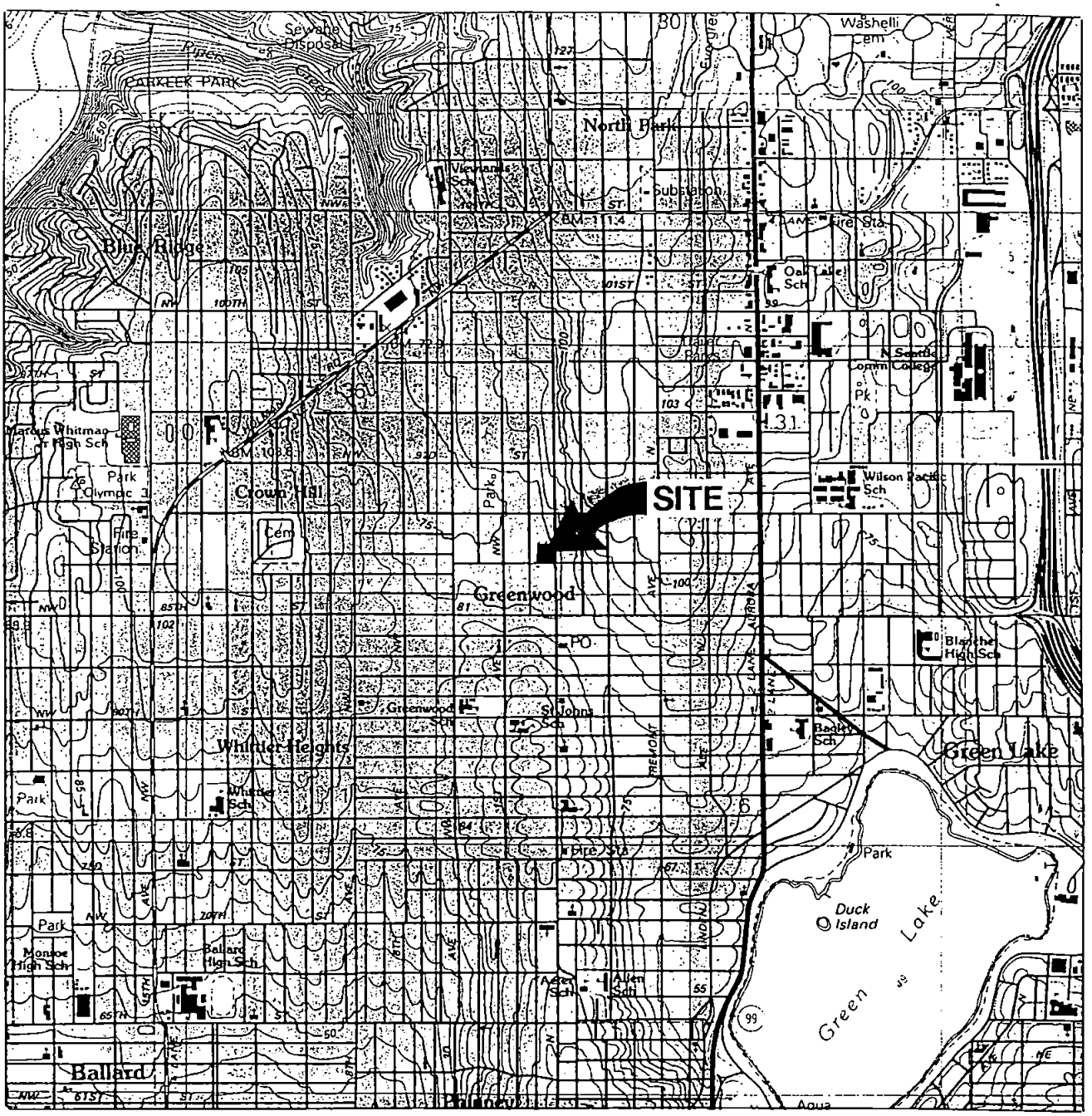
Reviewed by: John Bails

Comments (please include: free prod., tank info., contaminant migration, GW depth & flow, conc. trends, PCS treated?):

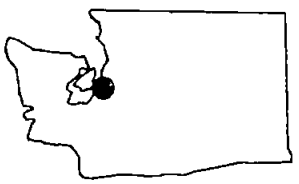
SAMPLED 5 ON-SITE WELLS. 6-28-95
BENZENE IN WELLS AGW-1, AGW-2 & AGW-6 at .6 to 5.3 ppb
CONCENTRATIONS GENERALLY UNCHANGED FROM FEBRUARY 95.

REMEDIATION OPERATED FROM 12-94 TO 6-27-95.

PLAN TO CONTINUE QUARTERLY GW MONITORING



SOURCE: U.S.G.S. 7.5' x 15' Quadrangle, Seattle North, WA.



WASHINGTON

N

0 2000 4000

SCALE (Ft.)

EMCON

DATE 3-95
DWN. MLP
REV.
APPR.
PROJECT NO.
0368-013.11

Figure 1
TEXACO SERVICE STATION
8701 GREENWOOD AVENUE NORTH
SEATTLE, WASHINGTON

SITE LOCATION MAP

LUST # 2298
TEXACO

RECEIVED
AUG 21 1995
DEPT. OF ECOLOGY

Texaco Refining
and Marketing Inc

3400 188th Street SW
Suite 630
Lynnwood WA 98037

August 14, 1995

ENV - SERVICE STATIONS
Second Quarter 1995 Groundwater Monitoring and Sampling Data
Texaco Facility #63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

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

Dear Mr. Nye:

Enclosed please find a copy of the above-referenced groundwater monitoring and sampling data. The field activities were conducted by Texaco's environmental consultant, EMCON Northwest, Inc. of Bothell, Washington. The site vicinity is shown in Figure 1.

Groundwater was monitored and sampled in the five on-site monitoring wells (AGW-1, AGW-2, AGW-5, AGW-6 and AGW-7) on June 28, 1995. Depth to water in the monitoring wells ranged from 1.26 to 5.93 feet bgs (below ground surface) on June 28, 1995, with a groundwater flow direction toward the south.. The groundwater flow direction has been consistent over several monitoring events. Groundwater contours for the June 1995 monitoring event are shown in Figure 2.

Groundwater samples were collected from the existing monitoring wells on June 28, 1995 for chemical analysis of gasoline-, diesel-, and oil-range hydrocarbons, BTEX (benzene, toluene, ethylbenzene and xylenes) compounds and total lead. Benzene was detected in monitoring wells AGW-1, AGW-2 and AGW-6 at concentrations ranging from 0.6 to 5.3 µg/l. Additionally, ethylbenzene and/or xylenes were detected in AGW-1, AGW-2 and AGW-6 at concentrations up to 7 µg/l. Concentrations detected during the June sampling event are generally similar to concentrations detected during the last sampling event (February 1995). Chemical analytical data for this and previous sampling events are presented in Table 2. Chemical analytical data for June 1995 are also shown in Figure 2.

The remediation system that operated at this site since December 1994, was decommissioned on June 27, 1995 to allow for development of the property. Groundwater monitoring and sampling will continue on a quarterly basis. If you have any questions regarding this submittal, please contact me at (206) 774-6090, extension 224.

Sincerely,

T.A. Geijer

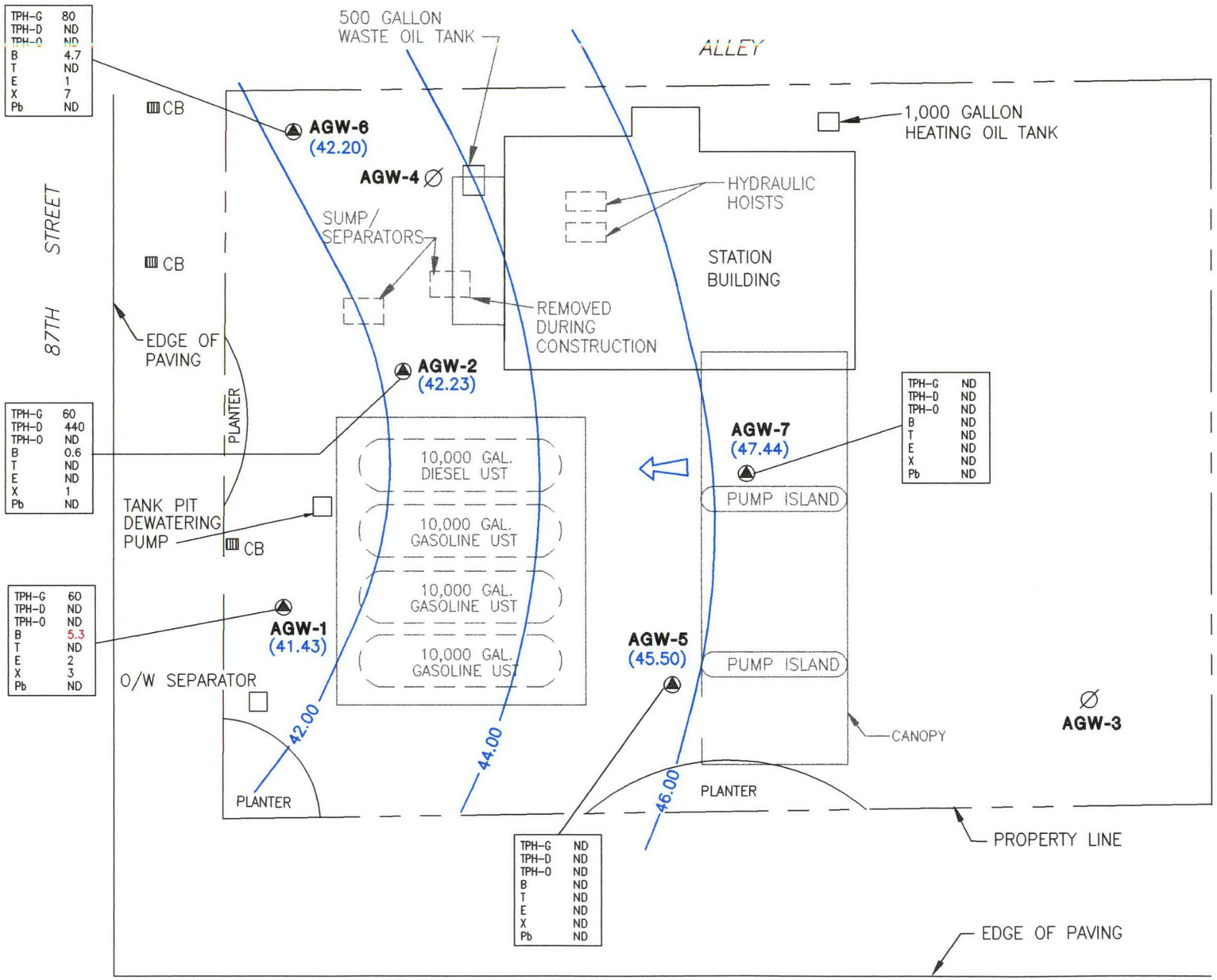
Theresa A. Geijer, R.G.
Project Coordinator

TAG:ejn
p:\tag\greenw\2qt95gw.cov

Enclosure

RLane-File-UCPFile (w/enclosure)
PNWRead (w/o enclosure)

PR: EJN



LEGEND:

- **AGW-1** ▲ Monitoring Well Location and Well Number
- **AGW-3** ∅ Decommissioned Monitoring Well
- **TNK-1** ⊕ Tank Basin Observation Well
- CB ▥ Catch Basin
- —— 42.00 —— Groundwater Elevation Contour
- (41.43) Relative Groundwater Elevation
- ⇨ Inferred Groundwater Flow Direction

TPH-G	60
TPH-D	ND
TPH-O	ND
B	5.3
T	ND
E	2
X	3
Pb	ND

Laboratory Results in Parts per Billion

TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-O = Total Petroleum Hydrocarbons as Oil
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
Pb = Total Lead
ND = Not Detected at or Above Method Reporting Limits
-- = Not Analyzed

Numbers in Red equal or exceed MTCA Method A Cleanup Levels

Contours may not reflect potential effects of the UST complex.

N

0 20 40

SCALE (ft)

EMCON

DATE	7-95
DWN.	
REV.	
APPR.	
PROJECT NO.	40368-013.009

Figure 2
8701 GREENWOOD AVENUE NORTH
SEATTLE, WASHINGTON
GROUNDWATER DATA (JUNE 28, 1995)

I=20 08-01-95 G:\DWG\0368\013\09BLC01

Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-1	4.5 - 19.5	47.36	04/03/91	3.18	None	44.18	—
			05/15/91	—	None	—	—
			08/15/91	0.62	None	46.74	+2.56
			11/21/91	0.70	None	46.88	+0.14
			03/06/92	0.47	None	46.89	+0.01
			11/06/92	0.46	None	46.90	+0.01
			03/26/93	0.49	None	46.87	-0.03
			06/09/93	0.42	None	46.94	+0.07
		47.36*	03/17/94	1.99	None	45.37	-1.57
			11/10/94	1.21	None	46.15	+0.78
			02/24/95	6.90	None	40.46	-5.69
			06/28/95	5.93	None	41.43	+0.97
AGW-2	4.5 - 19.0	47.59	04/03/91	3.43	None	44.16	—
			05/15/91	—	None	—	—
			08/15/91	1.65	None	45.94	+1.78
			11/21/91	1.30	None	46.29	+0.35

Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-2			03/06/92	1.14	None	46.45	+0.16
(continued)			11/06/92	1.18	None	46.41	-0.04
			03/26/93	1.18	None	46.41	0.00
			06/09/93	1.06	None	46.53	+0.12
		47.64*	03/17/94	2.18	None	45.46	-0.07
			11/10/94	1.57	None	46.07	+0.61
			02/24/95	5.84	None	41.80	-4.27
			06/28/95	5.41	None	42.23	+0.43
AGW-3	4.5 - 19.0	49.10	03/29/91	—	None	49.10	—
Well Decommissioned							
AGW-4	4.5 - 19.5	47.97	04/03/91	4.61	None	43.36	—
			05/15/91	—	None	—	—
			08/15/91	2.76	None	45.21	+1.85
			11/21/91	2.45	None	45.52	+0.31
			03/06/92	2.45	None	45.52	0.00
			11/06/92	3.21	None	44.79	-0.76
			03/26/93	3.03	None	44.94	+0.18
			06/09/93	2.66	None	45.31	+0.37
Well Decommissioned							

Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-5	4.5 - 19.5	49.47	04/03/91	2.78	None	46.69	—
			05/15/91	—	None	—	—
			08/15/91	1.53	None	47.94	+1.25
			11/21/91	2.40	None	47.07	-0.87
			03/06/92	1.45	None	48.02	+0.95
			11/06/92	2.27	None	47.20	-0.82
			03/26/93	2.05	None	47.42	+0.22
			06/09/93	1.95	None	47.52	+0.10
		49.11*	03/17/94	1.65*	None	47.46	-0.06
			11/10/94	3.52	None	45.59	-1.87
			02/24/95	3.79	None	45.32	-0.27
			06/28/95	3.61	None	45.50	+0.18
AGW-6	14.0 - 24.0	46.17*	03/17/94	.51	None	45.66	—
			11/10/94	1.58	None	44.59	-1.07
			02/24/95	2.62	None	43.55	-1.04
			06/28/95	3.97	None	42.20	-1.35

Table 1

Groundwater Monitoring Data
Texaco Service Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Well Number	Screened Interval (feet bgs)	Top of Casing Elevation (feet)	Date	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (feet)	Groundwater Elevation Change Since Last Measurement (feet)
AGW-7	16.0 - 26.0	48.70	03/17/94	.05	None	48.65	—
			11/10/94	0.00	None	48.70	+0.05
			02/24/95	1.64	None	47.06	-1.64
			06/28/95	1.26	None	47.44	+0.38

NOTE: * = Resurveyed March 16, 1994.

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-1	04/03/91	ND	—	—	ND	ND	ND	ND	—
	05/15/91	—	—	—	440	1,000	92	670	—
	08/15/91	361,000	—	—	1,400	7,400	1,000	8,100	ND
	11/21/91	47,000	ND	ND	680	6,400	2,000	13,000	—
	03/06/92	48,000	ND	ND	710	3,200	1,400	8,700	ND
	11/06/92	37,000	—	—	95.1	260	1,400	8,200	ND
	03/26/93	18,400	—	—	42.8	27	397	1,450	ND
	06/09/93	15,000	—	—	35.2	23	415	1,530	ND
	03/17/94	1,960	730	ND	17.8	8	24	104	ND
	11/10/94	ND	840	ND	2.2	ND	ND	2	ND
	*11/10/94	ND	—	—	2.2	ND	ND	2	—
	02/24/95	180	ND	ND	4.8	ND	6	6	ND
	02/24/95	190	—	—	5.3	ND	6	7	—
	06/28/95	60	ND	ND	5.3	ND	2	3	ND
	06/28/95	60	ND	ND	5.3	ND	2	3	ND

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-2	04/03/91	—	—	—	ND	ND	ND	ND	—
	05/15/91	—	—	—	ND	ND	ND	ND	—
	08/15/91	1,030	—	—	250	220	15	86	ND
	11/21/91	7,300	ND	1,200	910	1,300	260	1,200	—
	03/06/92	24,000	ND	1,100	870	3,700	760	4,900	ND
	11/06/92	3,230	—	—	152	98	175	804	ND
	03/26/93	3,390	340	ND	113	33	149	642	ND
	06/09/93	3,270	ND	ND	108	18	164	666	3
	03/17/94	470	270	ND	18.4	ND	17	68	ND
	11/10/94	470	ND	ND	11.5	ND	10	72	ND
	02/24/95	110	ND	ND	2.8	ND	2	14	ND
	06/28/95	60	440	ND	0.6	ND	ND	1	ND
AGW-3 Well Decommissioned	03/29/91	—	—	—	ND	ND	ND	ND	—

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-4	04/03/91	—	—	—	2.6	20	2.7	31	—
	05/15/91	—	—	—	8.4	19	2.4	20	—
	08/15/91	1,200	3,260	—	11	4	1	7	4
	11/21/91	3,500	ND	2,040	660	700	21	133	—
	03/06/92	ND	ND	800	139	182	3	18	ND
	11/06/92	90	—	—	20.9	13	4	17	ND
	03/26/93	999	480	ND	31.8	35	51	246	ND
	06/09/93	1,900	1,060	ND	61.1	64	108	533	ND
	03/17/94	—	—	—	—	—	—	—	—
Well Decommissioned									
AGW-5	04/03/91	—	—	—	30	10	5	7	—
	05/15/91	—	—	—	220	53	3.5	12	—
	08/15/91	—	—	—	9.4	ND	ND	ND	ND
	11/21/91	100	ND	ND	2.5	ND	ND	ND	—
	03/06/92	ND	ND	ND	0.9	ND	ND	ND	ND
	11/06/92	ND	—	—	ND	ND	ND	ND	ND
	03/26/93	ND	—	—	ND	ND	ND	ND	ND

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-5	06/09/93	ND	—	—	ND	ND	ND	ND	ND
(cont.)	03/17/94	ND	ND	ND	ND	ND	ND	ND	ND
	11/10/94	ND	ND	ND	ND	ND	ND	ND	ND
	02/24/95	ND	ND	ND	30.6	1	2	ND	ND
	06/28/95	ND	ND	ND	ND	ND	ND	ND	ND
AGW-6	03/17/94	300	ND	ND	10.6	1	14	56	4
	11/10/94	200	ND	ND	7.4	ND	6	29	ND
	02/24/95	460	ND	ND	8.3	2	8	20	ND
	06/28/95	80	ND	ND	4.7	ND	1	7	ND

Table 2

Groundwater Laboratory Results
Texaco Station 63-232-0037
8701 Greenwood Avenue North
Seattle, Washington

Monitoring Well		Results of Analyses (µg/L)							
		Ecology Method WTPH-G	Ecology Method WTPH-D (extended)		EPA Method 5030/602				EPA Method 7421
Well Number	Date	TPH-G	TPH-D	TPH-O	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total Lead
MTCA Method A Cleanup Levels[a]		1,000	1,000	1,000	5	40	30	20	5
AGW-7	03/17/94	ND	ND	ND	ND	ND	ND	ND	ND
	11/10/94	ND	ND	ND	ND	ND	ND	ND	ND
	02/24/95	ND	ND	ND	ND	ND	ND	ND	ND
	06/28/95	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: Shaded values equal or exceed MTCA Method A Cleanup Levels.
- ND = not detected at or above method reporting limit.
- µg/L = micrograms per liter; approximates parts per billion.
- — = not analyzed.
- * = results for duplicate sample, designated AGW-8-1194.
- TPH-G = total petroleum hydrocarbons as gasoline.
- TPH-D = total petroleum hydrocarbons as diesel.
- TPH-O = total petroleum hydrocarbons as oil.

[a] Chapter 173-340 WAC, *The Model Toxics Control Act Cleanup Regulation; Method A Cleanup Levels.* Amended December 1993.

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW- 1
Site Address: 8701 Greenwood Ave. N. Seattle, WA **Sample ID** AGW- 1 -0695
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 70 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
6/28/95	0815	19.40	5.93	13.47		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	9
X 3	27

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	9	6.44	14	410			
2	"	18	7.27	14	343			
3	"	27	7.28	14	333			
4								
5								

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	6/28/95	0915	DB	2	40	glass	HCl	yes	no
WTPH-D ext	"	"	PP	1	1000	"	none	"	"
Total Pb	"	"	PP	1	500	poly	HNO3	"	"

Total Bottles (include duplicate count): 6 **Duplicate ID:** AGW-8-0695 **Time:** 0900

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
yellow tint	cloudy	HCL	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Matthew Melton
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW- 2
Site Address: 8701 Greenwood Ave. N. Seattle, WA **Sample ID** AGW- 2 -0695
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather:	(Part) Sun	(Part) Cloudy	Rain		Temperature: 70 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
6/28/95	0830	19.65	5.41	14.24		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	4
X 3	12

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	9	6.81	14	344			
2	↓	10	6.86	14	348			
3	↓	27	7.11	14	342			
4								
5								

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	6/28/95	0930	DB	2	40	glass	HCl	yes	no
WTPH-D ext	↓	↓	PP	1	1000	"	none	↓	↓
Total Pb	↓	↓	PP	1	500	poly	HNO3	↓	↓

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
none	clear	HCL0	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Matthew Melton
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood Well ID: AGW-5

Site Address: 8701 Greenwood Ave. N. Seattle, WA Sample ID AGW- 5 -0695

EMCON Contact: John Meyer Client Contact: Theresa Geijer Project #: 0368-013.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 80 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
6/28/95	0820	19.11	3.61	15.50		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	10
X 3	30

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	10	7.15	17	291			
2	"	20	7.40	17	290			
3	"	30	—	—	—			
4								
5								

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	6/28/95	1200	DB	2	40	glass	HCl	yes	no
WTPH-D ext	"	"	PP	1	1000	"	none	"	"
Total Pb	"	"	PP	1	500	poly	HNO3	"	"

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
none	clear	slight HCL	D.I. Water	Distilled water	Hexane	

Notes:

DRY @ 1.5 P.V. — RECHARGE — DRY @ 2 P.V. RECHARGE — SAMPLE.

SAMPLER: Matthew Melton
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood **Well ID:** AGW-6
Site Address: 8701 Greenwood Ave. N. Seattle, WA **Sample ID** AGW-6-0695
EMCON Contact: John Meyer **Client Contact:** Theresa Geijer **Project #:** 0368-013.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 80 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
6/28/95	0819	23.82	3.97	19.85		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 (4"=0.653) 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	13
X 3	39

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	13	8.05	15	323			
2	"	26	8.41	16	323			
3	"	39	8.03	15	322			
4								
5								

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	6/28/95	1132	DB	2	40	glass	HCl	yes	no
WTPH-D ext	"	"	PP	1	1000	"	none	"	"
Total Pb	"	"	PP	1	500	poly	HNO3	"	"

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
gray	turbid	none	D.I. Water	Distilled water	Hexane	

Notes: DAY 2 1 p.v. — RECHARGE — PURGE TO 3 p.v., SAMPLE

SAMPLER: Matthew Melton
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

EMCON
18912 North Creek Parkway, Suite 100
Bothell, Washington 98011-8016
Office: (206) 485-5000 Fax: (206) 486-9766

Project Name: Texaco-Greenwood Well ID: AGW-7
Site Address: 8701 Greenwood Ave. N. Seattle, WA Sample ID AGW-7-0695
EMCON Contact: John Meyer Client Contact: Theresa Geijer Project #: 0368-013.009

Weather: (Part) Sun | (Part) Cloudy | Rain | | Temperature: 75 °F

WATER LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness]

Date	Time	DT-Bottom	DT-Water	DTB-DTW	DT-Product	DTP-DTW
6/28/95	0821	25.40	1.26	24.14		

Well dia. = Gal/ft: 1"=0.041 2"=0.163 4"=0.653 6"=1.469 10"=4.080 12"=5.875

[Water Col x Gal/ft]

	Volume (gal)
X 1	15
X 3	45

WATER QUALITY DATA

Pore Vol	Method §	Purged (gal)	pH	Temp (°C)	E Cond (µS)	Turbidity (NTU)	Diss O2 (mg/l)	Other
1	PP	15	7.50	14	313			
2	"	30	7.77	14	309			
3	"	45	7.65	13.5	317			
4								
5								

§ METHOD: (SB) Submersible Pump (PP) Peristaltic Pump (DB) Disposable Bailer (PTB) PVC/Teflon Bailer (Ded B) Dedicated Bailer (DP) Dedicated Pump

GROUNDWATER SAMPLING DATA (if product is detected, do NOT sample)

Parameter	Date	Time	Method §	# Bottles	Volume (ml)	Type	Preservative	Ice	Filter
GAS/BTEX	6/28/95	1050	DB	2	40	glass	HCl	yes	no
WTPH-D ext	"	"	PP	1	1000	"	none	"	"
Total Pb	"	"	PP	1	500	poly	HNO3	"	"

Total Bottles (include duplicate count): 4 **Duplicate ID:** Time:

Water Characterization			Decontamination Materials			
Color	Clarity	Odor	Liquinox	Methanol	HCl	Nitric
none	clear	slight HCl	D.I. Water	Distilled water	Hexane	

Notes:

SAMPLER: Matthew Melton
(PRINTED NAME) (SIGNATURE)

ORIGINAL IS IN PROJECT FILING

Columbia Analytical Services inc.

RECEIVED
JUL 14 1995

July 12, 1995

Service Request No.: B950523

John Meyer
EMCON Northwest
18912 N Creek Parkway
Suite 210
Bothell, WA 98011

Re: **Texaco - Greenwood/Project #0368-013.009**

Dear John:

Attached are the results of the sample(s) submitted to our laboratory on June 29, 1995. For your reference, these analyses have been assigned our service request number B950523.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results only apply to samples analyzed.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin B. Elliott
Laboratory Manager

CBE/bdr

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	B950523
Project:	Texaco - Greenwood	**Date Collected:**	6/28/95
Sample Matrix:	Water	**Date Received:**	6/29/95
		Date Extracted:	NA
		Date Analyzed:	7/3,4/95

BTEX and Total Petroleum Hydrocarbons as Gasoline
EPA Methods 5030A/8020 and Washington DOE Method WTPH-G
Units: μg/L (ppb)

	Analyte:	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**TPH as Gasoline**
	Method Reporting Limit:	0.5	1	1	1	50
Sample Name	**Lab Code**					
AGW-1-0695	B950523-01	5.3	ND	2	3	60
AGW-2-0695	B950523-02	0.6	ND	ND	1	60
AGW-5-0695	B950523-03	ND	ND	ND	ND	ND
AGW-6-0695	B950523-04	4.7	ND	1	7	80
AGW-7-0695	B950523-05	ND	ND	ND	ND	ND
AGW-8-0695	B950523-06	5.3	ND	2	3	60
Method Blank	B950523-MB	ND	ND	ND	ND	ND

Approved By: Ch. Elliott Date: 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON	**Service Request:**	B950523
Project:	Texaco - Greenwood	**Date Collected:**	6/28/95
Sample Matrix:	Water	**Date Received:**	6/29/95
		Date Extracted:	7/5/95
		Date Analyzed:	7/6-7/95

Total Petroleum Hydrocarbon as Diesel and Oil
Washington DOE Method WTPH-D
Units: µg/L (ppb)

Analyte:	**Diesel**	**Oil***
Method Reporting Limit:	250	750

Sample Name	**Lab Code**		
AGW-1-0695	B950523-01	ND	ND
AGW-2-0695	B950523-02	440 (a)	ND
AGW-5-0695	B950523-03	ND	ND
AGW-6-0695	B950523-04	ND	ND
AGW-7-0695	B950523-05	ND	ND
Method Blank	B950523-MB	ND	ND

* Quantified using 30 weight motor oil as a standard.

a Quantified as diesel. The sample contained components that eluted in the diesel range, but the chromatogram did not match the typical diesel fingerprint.

Approved By: Cole-Ellis Date: 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON
Project: Texaco-Greenwood / # 0368-013.009
Sample Matrix: Water

Service Request: K9504045
Date Collected: 6/28/95
Date Received: 6/30/95
Date Extracted: 7/5/95
Date Analyzed: 7/6/95

Total Lead
EPA Method 7421
Units: µg/L (ppb)

Sample Name	Lab Code	MRL	Result
AGW-1-0695	K9504045-001	2	ND
AGW-2-0695	K9504045-002	2	ND
AGW-5-0695	K9504045-003	2	ND
AGW-6-0695	K9504045-004	2	ND
AGW-7-0695	K9504045-005	2	ND
Method Blank	K9504045-MB	2	ND

Approved By: _____ Date: 7/12/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON
Project: Texaco - Greenwood
Sample Matrix: Water

Service Request: B950523
Date Collected: 6/28/95
Date Received: 6/29/95
Date Extracted: NA
Date Analyzed: 7/3,4/95

Surrogate Recovery Summary
BTEX and Total Petroleum Hydrocarbons as Gasoline
EPA Methods 5030A/8020 and Washington DOE Method WTPH-G

Sample Name	**Lab Code**	**Percent Recovery** 4-BFB (PID - BTEX)	**Percent Recovery** 4-BFB (FID - GAS)
AGW-1-0695	B950523-01	102	103
AGW-2-0695	B950523-02	101	100
AGW-5-0695	B950523-03	100	99
AGW-6-0695	B950523-04	101	101
AGW-7-0695	B950523-05	101	99
AGW-8-0695	B950523-06	101	100
Method Blank	B950523-MB	99	100
CAS Acceptance Limits:		86-116	86-116

Approved By: Cu - Elliott   Date: 7/12/95

SUR2/111594
0523PHC.DJ1 - BTXwSUR 7/12/95

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	EMCON	**Service Request:**	B950523
Project:	Texaco - Greenwood	**Date Collected:**	6/28/95
Sample Matrix:	Water	**Date Received:**	6/29/95
		Date Extracted:	7/5/95
		Date Analyzed:	7/6-7/95

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel and Oil
Washington DOE Method WTPH-D

Sample Name	Lab Code	Percent Recovery p-Terphenyl
AGW-1-0695	B950523-01	123
AGW-2-0695	B950523-02	123
AGW-5-0695	B950523-03	121
AGW-6-0695	B950523-04	117
AGW-7-0695	B950523-05	128 (a)
Method Blank	B950523-MB	119

CAS Acceptance Limits: 59-124

a Outside of acceptance limits. Since no target analytes were detected in the sample, it is the opinion of CAS that the quality of the sample data has not been significantly affected by the elevated recovery.

Approved By: _____ Date: 7/14/95

EMCON — CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

DATE 6-28-95 PAGE 1 OF 1

PROJECT NAME TEXACO-GREENWOOD # 0368-013.009
~~PROJECT~~ STATION # 63-232-0037
COMPANY/ADDRESS 8701 GREENWOOD AVE N. SEATTLE
JOHN MEYER PHONE 485-5000
SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH - HCID State:	TPH - G State: WA	BTEX ✓	TPH - D State: WA	OIL ✓	TPH - 418.1 State: WA	TPH - Other	Halogenated or Aromatic Volatiles 601/8010 ___ 602/8020	Volatile Organics GC/MS 624-8240	Base/Neu/Acid Organics GC/MS 625/8270	Pesticides/PCBS 8080 PCB ONLY	PAH 8310 8100 GC HPCL	TCLP Metals ___ Semi VOA ___ VOA	Pest/Herb	Metals Total ✓ DISS List Below PB	Cyanide	pH, Cond Cl, SO_4, PO_4 F, Br NO_2 NO_3 (Circle)	NH_3 - N, COD, Total-P TKN, TOC TOX (Circle)	REMARKS
AGW-1-0695	6.28.95	0915		WATER	4		X		X											X				
-2-		0930			4		X		X											X				
-5-		1200			4		X		X											X				
-6-		1130			4		X		X											X				
-7-		1050			4		X		X											X				
-8-		0900			2		X																	

RELINQUISHED BY:
Signature
MATTHEW MELTON
Printed Name
EMCON
Firm
6.29.95 / 1625
Date/Time

RECEIVED BY:
DJ Mosier
Signature
DJ MOSIER
Printed Name
CAS
Firm
062995 1625
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
✓ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
✓ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O.# ___
Bill To ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping to: ___
Condition: ___
K95-4045
Lab No: B950523

RELINQUISHED BY:
B. Regan
Signature
B. Regan
Printed Name
CAS Bothell
Firm
06/29/95 1635
Date/Time

RECEIVED BY:
Lori K. Hawn
Signature
Lori K. Hawn
Printed Name
CAS-K
Firm
6/30/95 1000
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
TOTAL LEAD SAMPLES WERE NOT PRESERVED.