GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
19033 W. Valley Highway, Suite D-104, Kent, WA 98032 USA

November 30, 1994

Project No. 020605375

SR 4/13/95 DM

DEPARTMENT OF ECOLOGY
4016 NWRO/TCP TANK UNIT
INTERIM CLEANUP REPORT ✓
SITE CHARACTERIZATION
FINAL CLEANUP REPORT
OTHER _____
AFFECTED MEDIA: SOIL ✓
OTHER _____ GW ✓
INSPECTOR (INIT.) WSM DATE 3-23-95

Mr. Bob Vasquez
The Southland Corporation
3146 Gold Camp Drive #300
Rancho Cordova, CA 95670

RE: THIRD QUARTER 1994 GROUNDWATER MONITORING RESULTS
SOUTHLAND SITE #14392
9 NICKERSON STREET
SEATTLE, WA

Dear Mr. Vasquez:

Groundwater Technology, Inc. (GTI) completed the monitoring and sampling at the above referenced site in accordance with Southland Environmental Work Order No. 14392-5 dated January 18, 1994. The methods and results of the monitoring are documented below.

General Introduction

In January 1993, one 10,000-gallon regular leaded gasoline underground storage tank (UST) and the associated piping were closed in-place. In March 1993, the in-place closure report was submitted. The remaining USTs were taken out of service (product and dispensers removed) in September 1993. In March, 1994, three USTS and all associated piping were removed. In June 1994, a UST Decommissioning report was submitted. On September 7, 1994, the three on-site monitoring wells were gauged and sampled by GTI personnel.

Groundwater Elevation Data

Prior to well purging and groundwater sample collection on September 7, 1994, GTI personnel gauged the three monitoring wells (Figure 1, Attachment I) to determine the depth to groundwater and the depth to liquid-phase hydrocarbons, if present. Depth to groundwater was measured using an Oil Recovery Systems, Inc. (ORS) Interface Probe™ (IP). The IP was cleaned using Alconox and distilled water prior to use at each well. The well gauging and groundwater elevation data are presented in Table 1. The groundwater elevation data were used to prepare a groundwater elevation map (Figure 1).

Groundwater elevations in the monitoring wells ranged from 21.27 to 22.13 feet, relative to an arbitrary benchmark. The groundwater flow direction is toward the northwest at a gradient of 0.02.

Groundwater Sampling and Analytical Results

The monitoring wells were purged of approximately three (3) casing volumes, or until dry, prior to sampling. Each well was purged using a clean bailer or by pumping using a diaphragm-pump and clean, dedicated suction-tubing. Bailers were scrubbed with an Alconox solution and rinsed with

distilled water prior to use at each well. Purge water was treated by pumping through two 55-gallon granular activated carbon canisters to remove any organic compounds, and discharged on site.

Wells which recharged slowly were allowed to recover to within 60 percent of the static water level, prior to sample collection, or for two hours, whichever came first. Each well was sampled within 8 hours of purging, using a dedicated disposable bailer.

The samples were decanted into laboratory-supplied 40 milliliter bottles preserved with hydrochloric acid (HCl) and stored in chilled coolers for overnight shipment to GTEL Environmental Laboratories in Concord, California. A chain of custody form was filled-out and accompanied the samples to the laboratory.

Each sample was analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 5030/8020 and total petroleum hydrocarbons-as-gasoline (TPH-G) by Washington Department of Ecology method WTPH-G. The analytical data are summarized in Table 2. Figure 2 (Attachment I) depicts the dissolved BTEX and TPH-G concentrations. Dissolved BTEX and TPH-G concentrations above the Model Toxics Control Act Method A Compliance Cleanup Levels (CCL[a]s) were detected in the sample obtained from MW-1. Total lead concentrations above CCL[a]s were detected in the sample obtained from MW-3. The laboratory analytical reports and the chain of custody forms for the September 7, 1994 groundwater sampling event are attached.

Recommendations

Based on the groundwater monitoring and analytical data collected to date, Groundwater Technology recommends semi-annual sampling of the monitoring wells to determine whether dissolved hydrocarbons are migrating or concentrations are changing with time.

If you have any questions or comments regarding this report please feel free to contact us.

Sincerely,

GROUNDWATER TECHNOLOGY, INC.

Elizabeth C. Cornell
Geologist

Stan Haskins
Project Manager

ECC:ak
Attachments

Independent Action Report Update

Site Name: Southland # 14392

Inc. #: 4016 Date of Report: 11-30-94

County: King Date Report Rec'd: ?

Reviewed by: W. Moon

Comments: (please include: free prod., tank info., media, contaminant migration, GW conc. trends, PCS treated/fate?):

Downgradient well, MW-1, cont w/B at 1300 ppb & G at 3000 ppb. Cont most likely extends off site underneath street. Extent unknown.

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION DATA				
Well ID	Date	TOC (ft)	DTW (ft)	GWE (ft)
MW-1	04/24/92	30.36	7.85	22.51
	09/10/93	30.36	8.69	21.67
	01/31/94	30.36	8.39	21.97
	09/07/97	30.36	9.09	21.27
MW-2	04/24/92	30.00	7.35	22.65
	09/10/93	30.00	8.16	21.84
	01/31/94	30.00	7.59	22.41
	09/07/94	30.00	8.58	21.42
MW-3	04/24/92	30.17	6.57	23.60
	09/10/93	30.17	7.50	22.67
	01/31/94	30.17	7.11	23.06
	09/07/94	30.17	8.04	22.13

DTW = Depth to water, referenced to TOC.
GWE = Groundwater elevation
TOC = Top of casing elevation

Elevations are based on an assumed TOC elevation of 30 feet for MW-2.

TABLE 2
CUMULATIVE GROUNDWATER ANALYTICAL RESULTS

Well ID	Sample Date	Benzene µg/L	Toluene µg/L	Ethyl-benzene µg/L	Total Xylenes µg/L	TPH-G µg/L	Total Lead µg/L
MW-1	04/24/92	130	5	ND	550	5,400	--
	09/10/93	190	17	58	35	840	--
	01/31/94	1,400	430	230	440	4,100	<5
	09/07/94	1,300	85	270	390	3,000	--
MW-2	04/24/92	ND	ND	ND	ND	ND	--
	09/10/93	<0.3	<0.3	<0.3	<0.5	<10	--
	01/31/94	<0.3	<0.3	<0.3	<0.5	<10	<5
	09/07/94	<0.3	<0.3	<0.3	<0.5	<10	--
MW-3	04/24/92	ND	ND	ND	ND	ND	--
	09/10/93	<0.3	<0.3	<0.3	<0.5	<10	--
	01/31/94	<0.3	<0.3	<0.3	<0.5	<10	10
	09/07/94	<0.3	<0.3	<0.3	<0.5	<10	--
MTCA-CCL[a]		5	40	30	20	1,000	5

TPH-G = Total petroleum hydrocarbons-as-gasoline
ND = Not detected at the method detection limits.
-- = Not sampled or analyzed
< = Less than the method detection limits
µg/L = Micrograms per liter
MTCA-CCL[a] = Model Toxics Control Act Method A Compliance Cleanup Level

SOURCE: USGS SEATTLE NORTH QUADRANGLE, WASHINGTON - KING COUNTY. 7.5 MINUTE SERIES, 1968

EXPLANATION

▲ SITE LOCATION

N

SCALE 1:24000

1000 0 1000 2000 3000 4000 5000 FEET

THE SOUTHLAND CORPORATION
7-ELEVEN FACILITY NO. 14392
9 NICKERSON STREET
SEATTLE, WASHINGTON
020605375

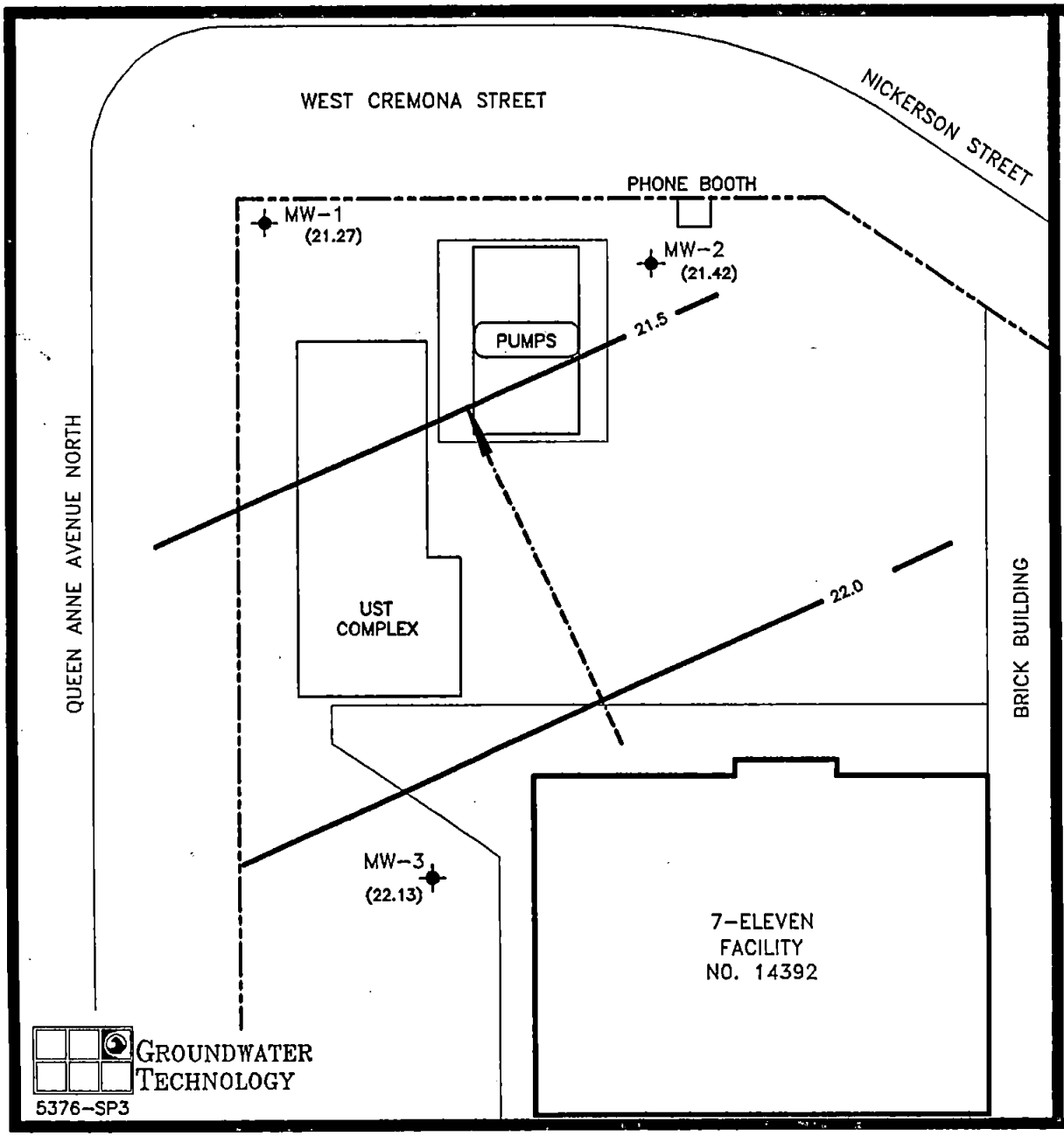
DRAWN BY: L. CORNELL DATE: 04-11-94
DRAFTED BY: C. YOUNG DATE: 04-11-94
CHECKED BY:_____ DATE:_____

SITE LOCATION
FIGURE 1

GROUNDWATER TECHNOLOGY, INC.

0000-SL

Figure 1



EXPLANATION

- MONITORING WELL
- APPROXIMATE PROPERTY BOUNDARY
- (21.97) GROUNDWATER ELEVATION IN FEET
- 22.0 GROUNDWATER CONTOUR (CONTOUR INTERVAL = 0.5 FT)
- GROUNDWATER FLOW LINE (WITH DIRECTION ARROW)

N

0 10 20

APPROX. SCALE IN FEET

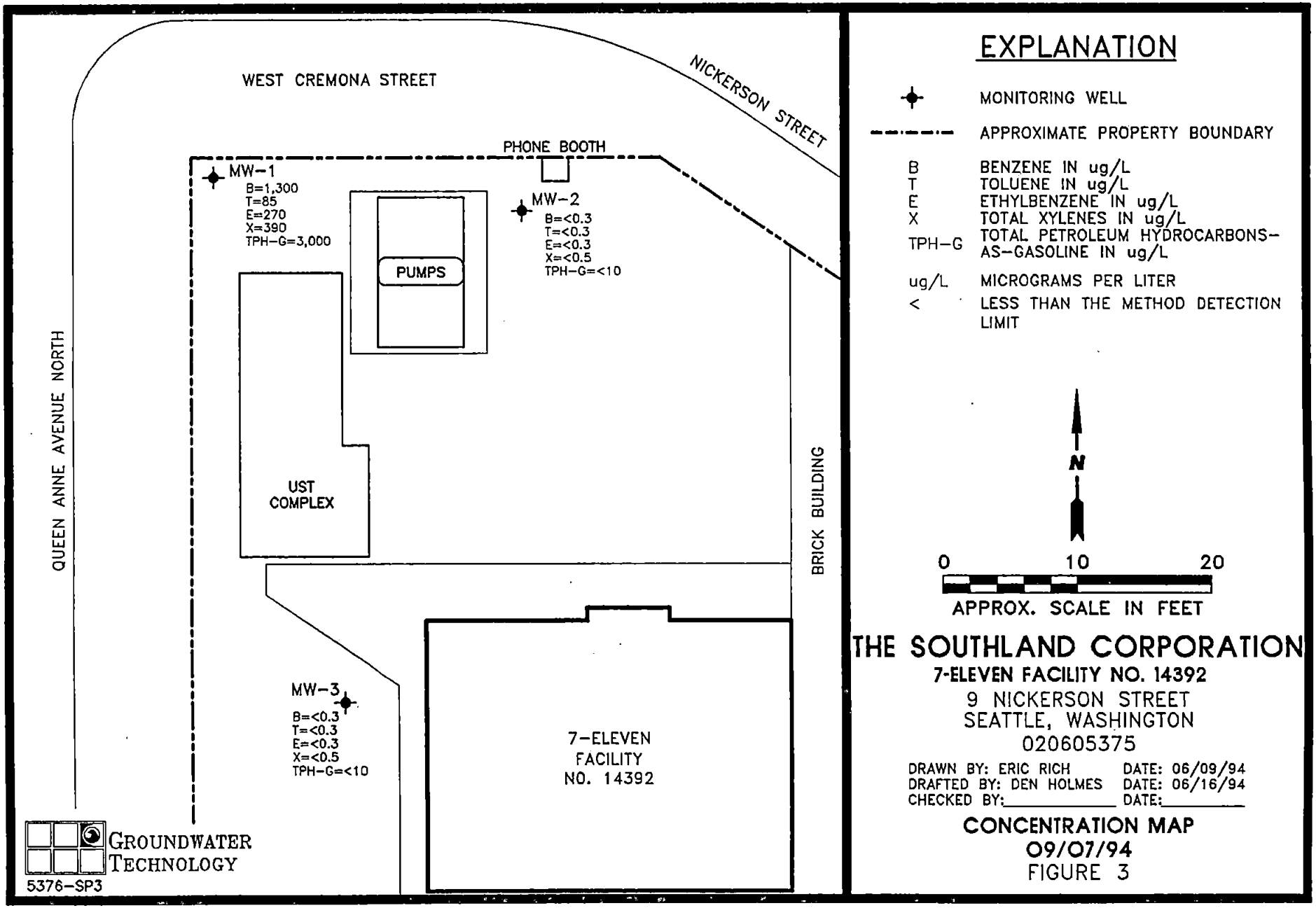
THE SOUTHLAND CORPORATION

7-ELEVEN FACILITY NO. 14392

9 NICKERSON STREET
SEATTLE, WASHINGTON
020605375

DRAWN BY: ERIC RICH DATE: 06/09/94
DRAFTED BY: DEN HOLMES DATE: 06/16/94
CHECKED BY:_____ DATE:_____

GROUNDWATER GRADIENT MAP
09/07/94
FIGURE 2



EXPLANATION

✦	MONITORING WELL
---·---	APPROXIMATE PROPERTY BOUNDARY
B	BENZENE IN ug/L
T	TOLUENE IN ug/L
E	ETHYLBENZENE IN ug/L
X	TOTAL XYLENES IN ug/L
TPH-G	TOTAL PETROLEUM HYDROCARBONS-AS-GASOLINE IN ug/L
ug/L	MICROGRAMS PER LITER
<	LESS THAN THE METHOD DETECTION LIMIT

N

0 10 20

APPROX. SCALE IN FEET

THE SOUTHLAND CORPORATION

7-ELEVEN FACILITY NO. 14392

9 NICKERSON STREET
SEATTLE, WASHINGTON
020605375

DRAWN BY: ERIC RICH DATE: 06/09/94
DRAFTED BY: DEN HOLMES DATE: 06/16/94
CHECKED BY:_____ DATE:_____

CONCENTRATION MAP
09/07/94
FIGURE 3

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

4080 Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 Inside CA
(800) 423-7143 Outside CA
(510) 825-0720 FAX

RECEIVED
SEP 19 1994

September 15, 1994

Stan Haskins
Groundwater Technology, Inc.
19033 W. Valley, D-104
Seattle, WA 98032

RE: GTEL Client ID: 020605375
Login Number: C4090099
Project ID (number): 020605375.6304
Project ID (name): SOUTHLAND, Seattle, WA

Dear Stan Haskins:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 09/08/94 under Chain-of-Custody Number(s) 27558.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by Washington Department of Ecology under Certification Number C054.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Rashmi Shah
Laboratory Director

GTEL Client ID: 020605375
Login Number: C4090099
Project ID (number): 020605375.6304
Project ID (name): SOUTHLAND, Seattle, WA

ANALYTICAL RESULTS

Volatile Organics
Method: EPA 8020
Matrix: Aqueous

GTEL Sample Number	C4090099-01	C4090099-02	C4090099-03	--
Client ID	MW 1	MW 2	MW 3	--
Date Sampled	09/07/94	09/07/94	09/07/94	--
Date Analyzed	09/13/94	09/13/94	09/13/94	--
Dilution Factor	5.00	1.00	1.00	--

Analyte	Reporting Limit	Units	Concentration:			
Benzene	0.3	ug/L	1300	< 0.3	< 0.3	--
Toluene	0.3	ug/L	85.	< 0.3	< 0.3	--
Ethylbenzene	0.3	ug/L	270	< 0.3	< 0.3	--
Xylenes (total)	0.5	ug/L	390	< 0.5	< 0.5	--
TPH as GAS	10.	ug/L	3000	< 10.	< 10.	--
BFB (Surrogate)	--	%	85.4	85.4	83.7	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020:

"Test Methods for Evaluating Solid Waste, Physical and Chemical Methods, SW-846", Third Edition, Revision 1, US EPA November 1986. Bromofluorobenzene surrogate recovery acceptability limits are 62-129%. TPH as gasoline quantitated as per the state of Washington Department of Ecology, Appendix L, April, 1992.

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL Client ID: 020605375 QUALITY CONTROL RESULTS
Login Number: C4090099 Volatile Organics
Project ID (number): 020605375.6304 Method: EPA 8020
Project ID (name): SOUTHLAND, Seattle, WA Matrix: Aqueous

Method Blank Results

QC Batch No: Q091394-1
Date Analyzed: 13-SEP-94

Analyte	Method:EPA 8020 Concentration: ug/L
Benzene	< 0.30
Toluene	< 0.30
Ethylbenzene	< 0.30
Xylenes (Total)	< 0.50
TPH as Gasoline	< 10

Notes:

GTEL ENVIRONMENTAL LABORATORIES, INC.

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080 PIKE LANE, SUITE C
CONCORD, CA 94520
(510) 685-7852
(800) 423-7143

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

27558

any Name: GroundWater Tech.
Phone #: 251-5441
FAX #: 206-251-8452
any Address: 19033 W Valley Hwy #104 Kent WA 98032
Site location: 9th & Nickerson. Seattle, WA. #14392
t Manager: S. HASKINS
Client Project ID: (#) 020605375-6304
(NAME) 5+10 - 9th Nickerson
t that the proper field sampling lures were used during the collection e samples.
Sampler Name (Print): GENE Sosey

Field Sample ID	GTEL Lab # (Lab use only)	# Containers	Matrix: WATER	SOIL	AIR	SLUDGE	PRODUCT	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	UNPRESERVED	OTHER (SPECIFY)	Sampling: DATE	TIME
1	01	3	X						X			X			9-7-94	12:10
2	02	3	X						X			X			9-7-94	12:05
3	03	3	X						X			X			9-7-94	12:15

ANALYSIS REQUEST

BTEX/602 ☐ 8020 ☐ with MTBE ☐	BTEX/Gas Hydrocarbons PID/FID ☐ with MTBE ☐	Hydrocarbons GC/FID Gas ☐ Diesel ☐ Screen ☐	Hydrocarbon Profile (SIMDIS) ☐	Oil and Grease 413.1 ☐ 413.2 ☐ SM 503 ☐	TPH/IR 418.1 ☐ SM 503 ☐	EDB by 504 ☐ DBCP by 504 ☐	EPA 503.1 ☐ EPA 502.2 ☐	EPA 601 ☐ EPA 8010 ☐	EPA 602 ☐ EPA 8020 ☐	EPA 608 ☐ 8080 ☐ PCB only ☐	EPA 624/PPL ☐ 8240/TAL ☐ NBS (+15) ☐	EPA 625/PPL ☐ 8270/TAL ☐ NBS (+25) ☐	EPA 610 ☐ 8310 ☐	EP TOX Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi-VOA ☐ Pest ☐ Herb ☐	EPA Metals - Priority Pollutant ☐ TAL ☐ RCRA ☐	CAM Metals TTLC ☐ STLC ☐	Lead 239.2 ☐ 200.7 ☐ 7420 ☐ 7421 ☐ 6010 ☐	Organic Lead ☐	Corrosivity ☐ Flash Point ☐ Reactivity ☐	OTHER: BTEX-WTPH-G
																				X

TAT
y (24 hr) ☐
lited (48 hr) ☐
iness Days ☐
ess Days ☐

Special Handling
GTEL Contact
Quote/Contract #
Confirmation #
PO #

QA / QC LEVEL
☐ CLP ☐ OTHER

SPECIAL DETECTION LIMITS

SPECIAL REPORTING REQUIREMENTS
FAX ☐

REMARKS
40

Lab Use Only Lot #
Storage Location:
Work Order # C4090099

USTODY ECORD

	Date	Time	
Relinquished by Sampler: Gene Sosey	9-7-94	4:30	Received by:
Relinquished by:			Received by: Fed Ex
Relinquished by:	9-8-94	9:20	Received by Laboratory: Kevin Molander

Waybill #

91