PIERS
Environmental
Services

Limited Phase II
Site Assessment

for

3744 Depot Road
Hayward, CA Sept. 95

Prepared For:

LOTZ and ASSOCIATES
22320 Foothill Blvd.
Hayward, CA

By:

PIERS Environmental Services
3131 S. Bascom Ave., Suite 5
Campbell, CA 95008

September 12, 1995

PIERS
Environmental Services

3131 S. Bascom Avenue, #5
Campbell, CA 95008

Tel. (408) 559-1248 Fax (408) 559-1224

September 12, 1995

Lotz and Associates
22320 Foothill Blvd.
Hayward, CA 94541

Re: Limited Phase II Environmental Assessment
3744 Depot Road, Hayward, California

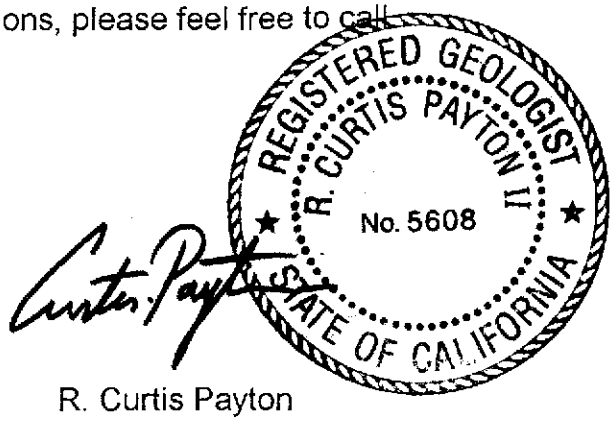
Gentlemen,

PIERS Environmental Services, Inc. has prepared this Limited Phase II Site Environmental Assessment for the above site. If you have questions, please feel free to call.

Sincerely,

PIERS Environmental Services, Inc.

Stuart G. Sblomon, REA No. 4468



R. Curtis Payton
Registered Geologist No. 5608

Limited Phase II Site Assessment

Prepared for:

Lotz and Associates
22320 Foothill Blvd.
Hayward, CA 94541

Site:

3744 Depot Road,
Hayward, California

September 12, 1995

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APPENDICES

1.0 INTRODUCTION AND SITE ENVIRONMENTAL HISTORY

The subject site is currently vacated, and in the process of being sold. A 500 gallon waste oil tank and a 1000 gallon gasoline tank were apparently excavated and removed from the ground in the late 1980's by the previous tenant without a permit. The tanks were subsequently disposed of by the tenant. No soil samples were retrieved at the time of removal, and no tank closure report submitted. Subsequent to the tank removals, the Alameda County Department of Environmental Health (ACDEH) became aware of the situation, and requested that the property owner collect samples from the tank excavations. An environmental consultant apparently collected the required samples, however, a report on the sample results was not forwarded to the agency. The consultant has since closed the business, and no records are available. The previous tenant and property owners (Patricia and Kenneth Hein) are now (assumed) bankrupt, and the property has been foreclosed on by the lender (Jack Lotz and Jesse Allen). Both the former and current owners are now considered the Responsible Parties for the environmental requirements at this site.

2.0 PURPOSES AND OBJECTIVES

This project was performed in accordance with the workplan (**Site Reconnaissance Workplan for 3744 Depot Road, Hayward, California**) submitted to and approved by Ms. Amy Leech of the Alameda County Department of Environmental Health (ACDEH). The objective purposes of the work were to; a) reconstruct - through interviews and reconnaissance the removal of both tanks in order to write a tank removal report on each; b) install borings in the immediate areas of both tanks, and collect samples of the soil and groundwater beneath the former tanks to assess the extent of hydrocarbons in the soil and groundwater, and; c) write a technical report on the findings.

3.0 INVESTIGATION SCOPE OF WORK

3.1 PIERS personnel visited the Property with the previous tenant who was present to witness the tank excavations and recreated (as completely as possible) the details of the tank disposal and the previously existing conditions.

3.2 In accordance with the approved work plan, PIERS installed five temporary exploratory borings, the fifth boring was installed in accordance with the on-site requirements of Amy Leech of the Alameda County Department of Environmental Health in areas depicted on **Figure 1** (attached). Soil samples were collected from each boring, and groundwater grab samples were collected from the down-gradient boring at each tank pit. A third groundwater grab sample was collected from a well discovered along the western property line by Amy Leech during her site visit.

3.3 The samples were analyzed at a State-certified laboratory: the two waste oil tank soil samples, one waste oil tank groundwater sample, and the water sample from the newly discovered well (4 total) were analyzed for TPHg, TPHd, BTEX, Oil and Grease, Lust 5 Metals, Volatile Organic Compounds, and Semi-Volatile Organic Compounds. The two gasoline tank soil samples and one gasoline tank groundwater sample (3 total) were analyzed for TPHg and BTEX.

3.4 The borings were sealed with neat cement in accordance with regulatory agency protocol.

4.0 PREVIOUS TANK REMOVALS AND DISPOSAL

PIERS interviewed Mr. Randy Hein, the son of the previous Property owner. Mr. Hein recalls that the tanks were both excavated in early 1992. Both tanks were reportedly empty upon their removal. The 1000 gallon gasoline tank was apparently placed on a trailer in the yard, and the bung openings left open. The 200 gallon waste oil tank was set on the ground within the covered shed.

The waste oil tank was apparently cut into small pieces sometime in 1994, and trucked (along with other scrap metal) to a metal recycler in Oakland. The name of the recycler was not known. The gasoline tank was cut into scrap pieces in (approximately) early 1995. This also was trucked along with other scrap metal to the Oakland metal recycler. Both tanks were reportedly "dry" when they were cut into pieces.

TAT Environmental apparently collected soil samples in May of 1992 from both excavation pits. Apparently, no laboratory report was ever filed with the Agency, nor could PIERS find a copy of such. Mr. Stuart Solomon, of PIERS Environmental Services, attempted to locate TAT Environmental without success.

No other data was available on the tank removals

5.0 EXPLORATORY BORINGS

On August 29, 1995, PIERS Environmental completed five exploratory borings at the site. Ms. Amy Leech of the ACDEH was present to witness the borings. The fifth boring was added to the workplan as requested by Ms. Leech on site. The borings were located in areas depicted on **Figure 2** attached hereto. The borings were advanced using a clean 3.5 inch hand auger. Soil samples were collected using a pre-cleaned hand driven soil sampler equipped with clean brass liners. The PIERS Sampling Protocol is attached to this document as **Appendix 2**. Gas-SW@7' was located approximately 5 ft. to the southwest of the former gasoline tank. This boring was completed to a total depth of 7 ft.

Below Grade Surface (BGS), and the soil sample collected from the bottom of the hole. Gas-NW@ 7' was positioned approximately 5 ft. to the northwest of the former gasoline tank. This boring was completed to a total depth of 9 ft. BGS, and the soil sample collected at a depth of 7 ft. BGS. A grab groundwater sample was collected from the depth of groundwater (8 ft. BGS), and labeled Gas-GWS. Disp@2' was positioned at the location of the former gasoline dispenser. This boring was advanced to a depth of approximately two feet BGS and the soil sample collected from the bottom of the boring. WO-SW@7' was positioned approximately 5 ft. to the southwest of the former waste oil tank. This boring was advanced to a depth of approximately seven ft. BGS, and the soil sample collected from the bottom of the boring. WO-NW@8.5 ft. was positioned approximately 5 ft. to the northwest of the former waste oil tank and the soil sample collected from a depth of 9.5 ft. BGS. This boring was advanced to a depth of 12 ft. BGS. A grab groundwater sample (WO-GWS) was also collected from this boring. Depth to water was at 10 ft. BGS. A sump/well was discovered along the western property line, approximately 220 ft. from the northern Property line. At the request of Amy Leech, a grab sample of water from this "well" was collected. The sample is labeled MW1-GWS.

5.1 Sampling Detail

The borings were installed using a clean 3 inch hand auger. Soil throughout the borings was inspected for physical evidence of discoloration and contamination. The borings were logged using the Unified Soil Classification System. Each of the borings was advanced to the desired depth, and a clean 2 inch diameter by 6 inch long hand driven sampler was driven into the soil. The 6 inch brass ring was removed from the sampler, sealed, capped, and immediately labeled. The groundwater grab samples were collected by inserting a new disposable bailer into the boring, and extracting the water. Water samples collected from the borings were decanted into clean glassware supplied by the analytical laboratory. A Chain-of-Custody was filled out, with each sample I.D., depth, location, time, and date denoted on the form. The samples were immediately placed on ice and sent to Hull Development Labs, Inc. - a California State Department of Health Services certified laboratory.

The two waste oil tank soil samples, one waste oil tank groundwater sample, and the water sample from the newly discovered well (4 total) were analyzed for TPHg, TPHd, BTEX, Oil and Grease, Lust 5 Metals, Volatile Organic Compounds, and Semi-Volatile Organic Compounds. The two gasoline tank soil samples and one gasoline tank groundwater sample (3 total) were analyzed for TPHg and BTEX.

The legal Chain of Custody and laboratory chemical analyses results can be found in **Appendix 1** attached hereto. Boring logs are contained in **Appendix 3**.

6.0 SUBSURFACE CONDITIONS

Sediments encountered in each boring consisted of primarily, high plasticity dark olive gray clay from approximately 1 ft. below grade surface and black to dark-brown silty organic clay from about 4 ft. below grade to the bottom of the holes. The soil stratification was generally consistent in each of the borings. **Groundwater was encountered at a depth of approximately 8.5 ft. To 10.5 ft. BGS.** Boring logs are presented in **Appendix 3**.

7.0 ANALYTICAL LAB TEST RESULTS

Table 1:

(ND= Not Detected at or above laboratory method reporting limit -- NR= Not Run)

TEST	*B9593 Gas-SW@7'*	*B9594 Gas-NW@7'*	*B9596 Disp@2'*	[redacted]	[redacted]	[redacted]	[redacted]	*B9600 MW1-GWS*
Sample Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	[redacted]	[redacted]	[redacted]
TRPH (O&G)	NR	NR	NR	1,100 ppm	3,300 ppm	NR	390 ppm	[redacted]
Semi-Volatiles	NR	NR	NR	ND	2,795 ppb	NR	57 ppb	ND
Volatiles	NR	NR	NR	9.1 ppb	396.3 ppb	NR	141 ppb	ND
TPHd	NR	NR	NR	9.4 ppm	56 ppm	NR	600 ppb	ND
TPHg	ND	[redacted]	ND	2 ppm	2 ppm	43,000 ppb	ND	ND
Benzene	ND	[redacted]	ND	9.1 ppb	63 ppb	300 ppb	103 ppb	ND
Toluene	ND	[redacted]	ND	ND	9.3 ppb	360 ppb	ND	ND
Ethyl-Benzene	[redacted]	[redacted]	ND	ND	171 ppb	1,400 ppb	17 ppb	ND
Xylenes	ND	[redacted]	[redacted]	ND	55 ppb	10,000 ppb	21 ppb	ND
Cad.	NR	NR	NR	ND	ND	NR	ND	ND
Chrom.	NR	NR	NR	24 ppm	27 ppm	NR	ND	ND
Lead	NR	NR	NR	11 ppm	12 ppm	NR	ND	ND
Nickel	NR	NR	NR	36 ppm	43 ppm	NR	[redacted]	ND
Zinc	NR	NR	NR	37 ppm	[redacted]	NR	ND	ND

8.0 BOREHOLE SEALING

The boreholes were sealed to the surface using a cement slurry.

9.0 CONCLUSIONS AND RECOMMENDATIONS

Gasoline Tank:

Groundwater in the area of the former gasoline tank has been impacted. The extent of the groundwater plume should be delineated. This could be accomplished by installing several exploratory borings, and collecting grab samples of the groundwater. Once the extremities of the plume are defined, a plan for remediation and groundwater monitoring can be formulated.

Waste Oil Tank:

Soil and groundwater in the vicinity of the former waste oil tank has been impacted by a variety of constituents including Oil and Grease, Semi-Volatile Organic Compounds, Volatile Organic Compounds, and Gasoline and Diesel Petroleum Hydrocarbons. The extent of the soil and groundwater plumes should be delineated. This could also be accomplished by installing several exploratory borings, and collecting soil and grab samples of the groundwater. Once the extremities of the plume are defined, a plan for remediation and groundwater monitoring can be formulated.

Existing Monitoring Well:

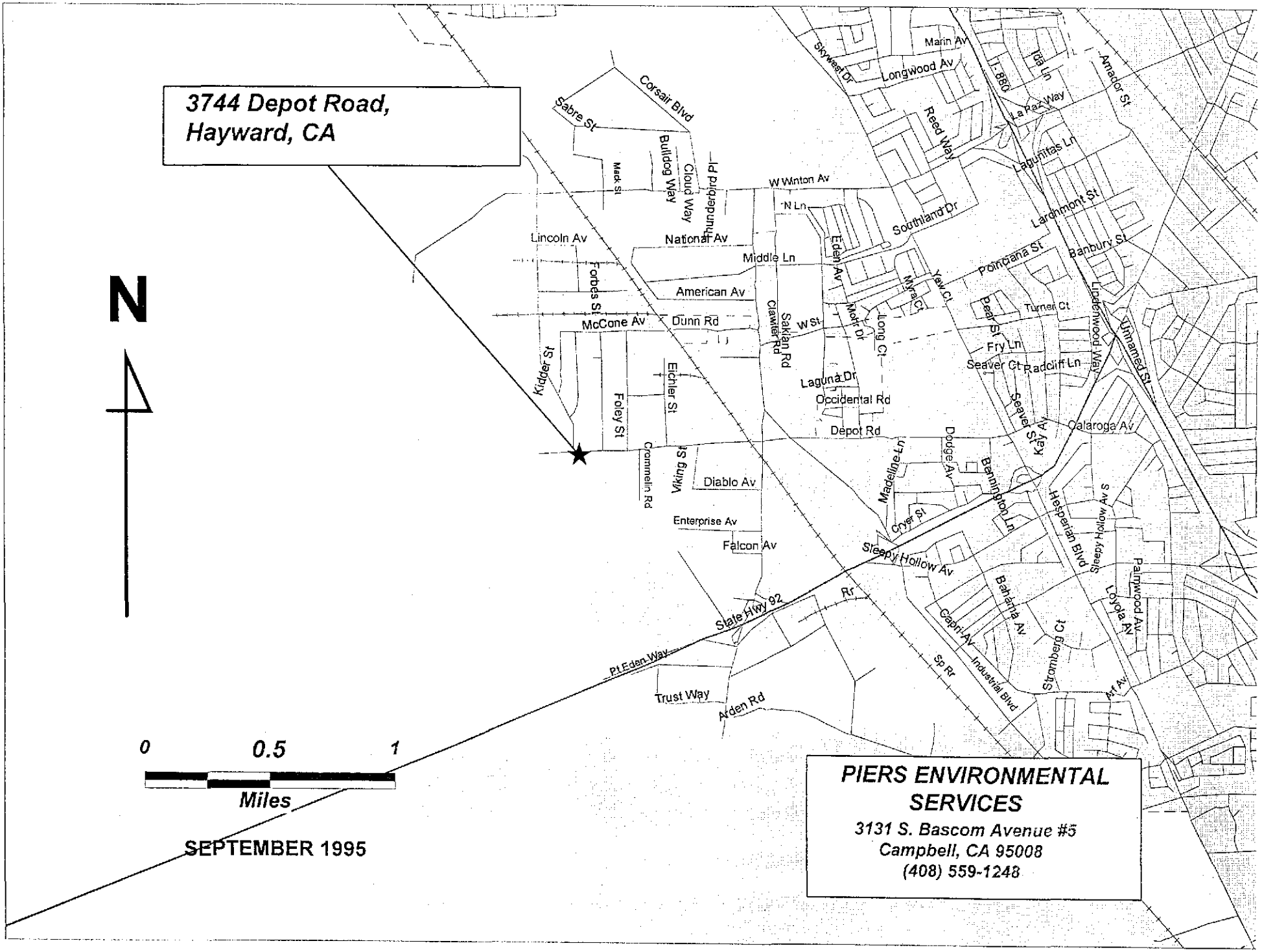
Groundwater collected from MW-1 contained only Total Recoverable Petroleum Hydrocarbons (TRPH). The presence of TRPH may have been caused by run-off. PIERS recommends that the well casing be secured in order to prevent future run-off intrusion, and that the well be used as a third point of groundwater elevation monitoring for future gradient studies. Additional monitoring in the future may show a reduction of TRPH after well head rehabilitation. The well casing can be surveyed along with the (assumed) additionally required well on site.

Possibly screened in a lower zone

10.0 LIMITATIONS

10.0 LIMITATIONS

A Phase II investigation does not guarantee that the property has not been environmentally impacted. Samples are taken from suspected areas only, and may not be representative of conditions elsewhere on the site. PIERS Environmental shall not be responsible for conditions or consequences arising from facts and information that were withheld or concealed, or not fully disclosed at the time this evaluation was performed. Conclusions and recommendations made in this report for this site and are based on the data and available information reviewed during the assessment. This preliminary site assessment was prepared to assist in decisions regarding this property, and its possible environmental hazards. This report must be reviewed in the context of the entire document, and any previous work and documents prepared for this site. PIERS Environmental is not responsible for analytical laboratory errors and reporting. No warranties are expressed or implied.


3744 Depot Road,
Hayward, CA
N
0
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1
Miles
SEPTEMBER 1995
PIERS ENVIRONMENTAL SERVICES
3131 S. Bascom Avenue #5
Campbell, CA 95008
(408) 559-1248
Corsair Blvd
Sabre St
Bulldog Way
Cloud Way
Thunderbird Pl
Mack St
W Winton Av
N Ln
Lincoln Av
National Av
Middle Ln
American Av
McCone Av
Dunn Rd
Forbes St
Kidder St
Foley St
Eichler St
Crommelin Rd
Viking St
Diablo Av
Enterprise Av
Falcon Av
Depot Rd
Laguna Dr
Occidental Rd
Clawiter Rd
Sakian Rd
W St
Mohr Dr
Long Ct
Eden Av
Myra Ct
Yew Ct
Southland Dr
Skyview Dr
Marin Av
Longwood Av
I-880
Reed Way
La Paz Way
Lagunitas Ln
Amador St
Lardmont St
Banbury St
Poinciana St
Pearl St
Turner Ct
Fry Ln
Seaver Ct
Radcliff Ln
Lindenwood Way
Unnamed St
Seaver St Way
Calaroga Av
Dodge Av
Madeline Ln
Bennington Ln
Cryer St
Hesperian Blvd
Sleepy Hollow Av S
Sleepy Hollow Av
Bahama Av
Capri Av
Stromberg Ct
Loyola Av
Palmwood Av
Art Av
Industrial Blvd
So Pr
Rr
State Hwy 92
Pt Eden Way
Trust Way
Arden Rd

FACSIMILE

To: Amy Leech - ACDEH
Fax #: (510) 337-9335
Re: 3744 Depot Road Map Replacement
Date: November 3, 1984 1994 ?
Pages: 2, including this cover sheet.

Dear Amy,

Please replace Figure 2 of our Depot Road Assessment Report with this revised map. We have added dimentional measurements to show proximity of various points. The hard copy original has been mailed. We apologize for the delay in getting this to you. Please feel free to call me if you have any questions whatsoever.

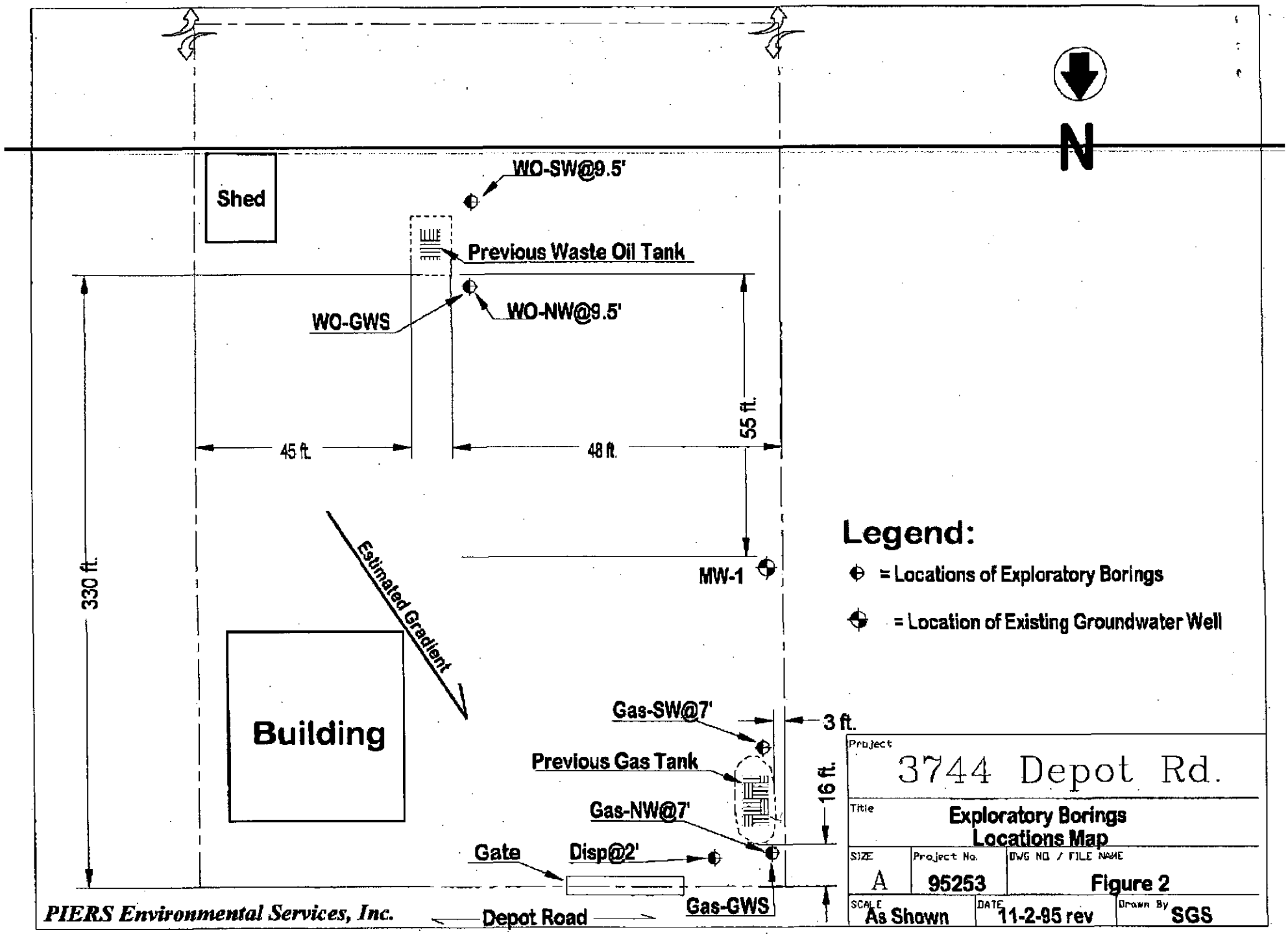
Very truly yours,

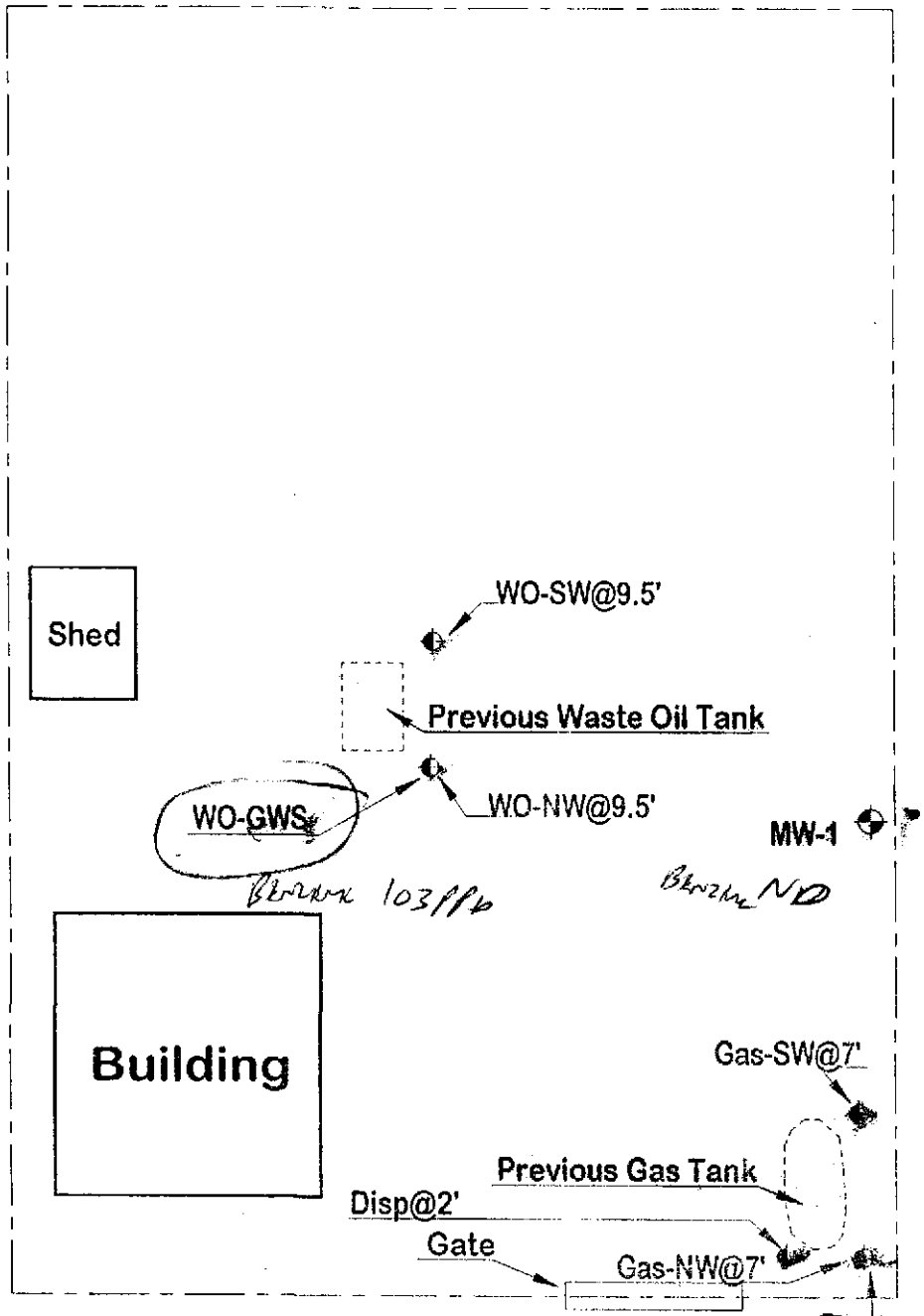
Stuart G. Solomon

From the desk of...

Stuart G. Solomon
President
PIERS Environmental Services, Inc.
3131 S. Bascom Ave. Suite 5
Campbell, CA 95008

(408) 559-1248
Fax: (408) 559-1224





N

Scale?

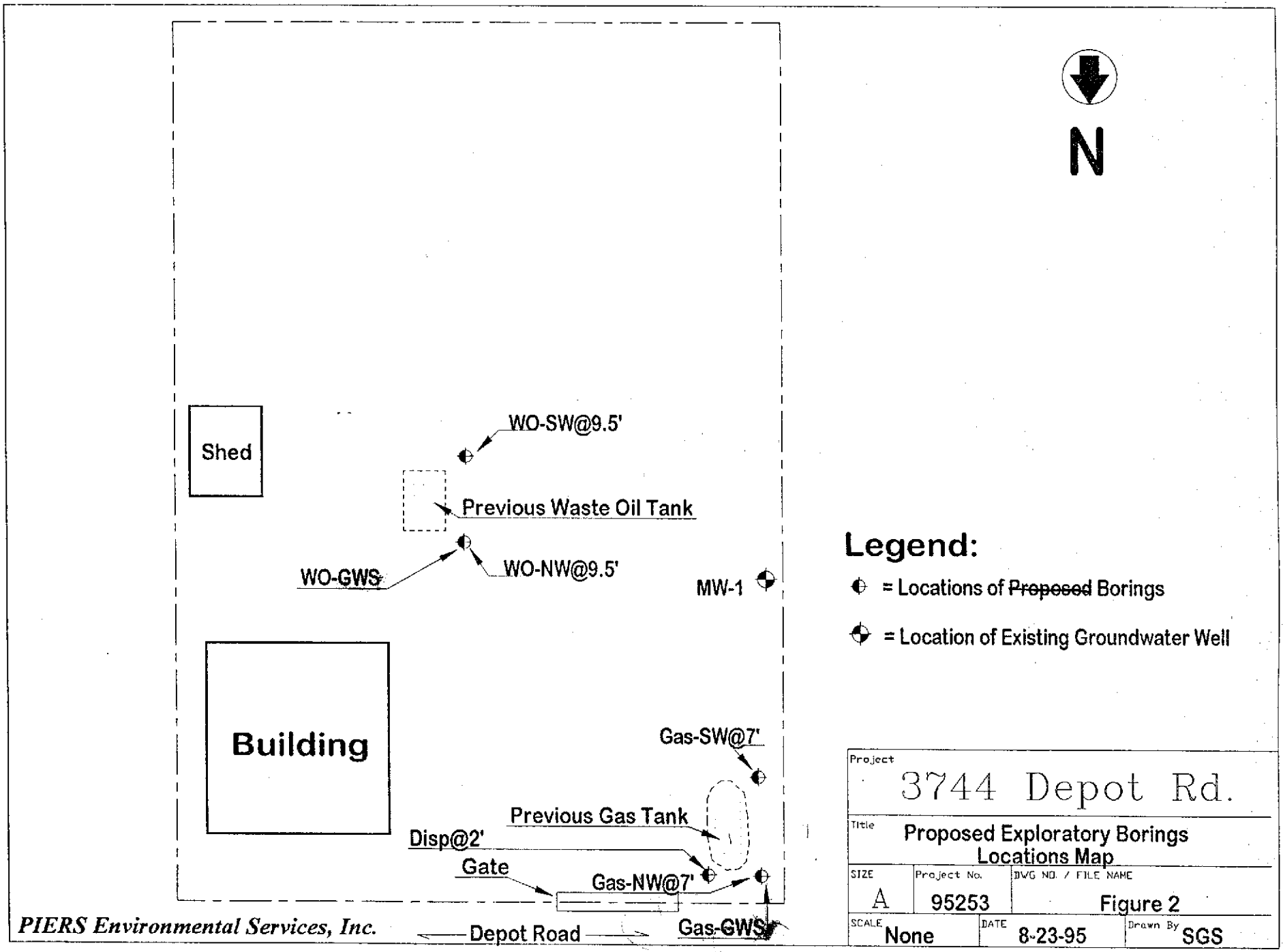
Legend:

= Locations of ~~Proposed~~ Borings

= Location of Existing Groundwater Well

Project: 3744 Depot Rd.			
Title: Exploratory Borings Locations Map			
SIZE: A	Project No.: 95253	DWG NO. / FILE NAME: Figure 2	
SCALE: None	DATE: 8-23-95	Drawn By: SGS	

PIERS Environmental Services, Inc.


N
Shed
WO-SW@9.5'
Previous Waste Oil Tank
WO-GWS
WO-NW@9.5'
MW-1
Building
Gas-SW@7'
Previous Gas Tank
Disp@2'
Gate
Gas-NW@7'
Gas-GWS
Depot Road
Legend:
= Locations of ~~Proposed~~ Borings
= Location of Existing Groundwater Well
PIERS Environmental Services, Inc.
Project
3744 Depot Rd.
Title
Proposed Exploratory Borings
Locations Map
SIZE
A
Project No.
95253
DWG NO. / FILE NAME
Figure 2
SCALE
None
DATE
8-23-95
Drawn By
SGS

APPENDIX 1

ANALYTICAL LABORATORY TEST RESULTS AND CHAIN OF CUSTODY

Hull Development Labs, Inc.

CA ELAP# 136

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

18 September, 1995

Stu Solomon
Piers Environmental Services
3131 South Bascom Avenue, Suite 5
Campbell, CA 95008

Dear Stu:

Please find enclosed the hard copy report for subcontracted Volatile Organics by 8240, and Semivolatile Organics by 8270 analyses.
Project:
Samples Submitted: 08/29/95

This follows up the report package faxed to you on 09/11/95 and mailed on 09/12/95 which included a copy of this analysis. Please insert the enclosed hard copy into your Hull Labs report package for your files.

If you have any questions or need additional information please feel free to call me at (408) 735-1550 X24. We appreciate your business

Sincerely,

Allan Aks

AA/slh
shell/entech/aasubltr.doc

Hull Development Labs

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • Telephone: (408) 735-1550 (800) 287-1799 • Fax: (408) 735-1554

Chain of Custody/Analysis Work Order

Client: PIERS
Address:

Contact: Stu Solomon
Telephone #: 408-558-1248
Date Received: 8/30/95
Turn Around: Norm

Project ID: LOTZ
Purchase Order #:

Sampler/Company: ERS B. Halsted
Telephone #: 415 325-3216

Special Instructions/Comments

LAB USE ONLY

Samples arrived chilled and intact:
Yes No

Notes:

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPH/G BTEX	TPH/d	8270	O&G	LUFT Metals			
B9593	GAS-SWE7'		soil	8/29/95	10:30		(1) 2x3 Brass	X							
B9594	GAS-NWE7'		"	"	11:00		"	X							
B9595	GAS-GWS		water	"	10:45 am		(2) 40 ml VOA	X							
B9596	DISPE 2'		Soil	"	11:15		(1) 2x3 Brass	X							
B9597	WO-SWE7'		Soil		11:50		(2) 2x3 Brass	X	X	X	X	X			
B9598	WO-NWE5'		"		1:15		"	X	X	X	X	X			
B9599	WO-GWS		water		2:30		(4) 1 liter Ambers (2) 40 ml VOA	X	X	X	X	X			
B9600	MW1-GWS		water		12:30		(4) 1 liter Amber (4) 40 ml VOA	X	X	X	X	X			

Relinq. By:	Received By:	Date	Time
[signature]	Chu Tang	8/30/95	4:40
Relinq. By:	Received By:	Date	Time
Relinq/ By:	Received By:	Date	Time

Advanced Technology Laboratories

September 6, 1995

ELAP No.: 1838

Hull Development Labs
525 Del Rey Ave. Ste. E
Sunnyvale, CA 94086

ATTN: Mr. Mike Golden

Client's Project #: Piers
Lab No.: 7794-001/004

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Edgar P. Caballero
Laboratory Director
EPC/kk

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Hull Development Labs, Inc
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix: [redacted]
Units: [redacted]
Extraction Method: 3510

w0/UST — Domestic well

EPA Method 8270

Lab No.:		Method Blank		7794-003		7794-004	
Client Sample I.D.:		--		B9599		B9600	
Date Sampled:		--		08/30/95		08/30/95	
QC Batch #:		958270W085		958270W085		958270W085	
Date Extracted:		09/06/95		09/06/95		09/06/95	
Date Analyzed:		09/07/95		09/07/95		09/07/95	
Analyst Initials:		SP		SP		SP	
Dilution Factor:		1		1.2		1.2	
ANALYTE	MDL	DLR		DLR		DLR	
Phenol	10	10	ND	12	ND	12	ND
bis (2-Chloroethyl)ether	10	10	ND	12	ND	12	ND
2-Chlorophenol	10	10	ND	12	ND	12	ND
1,3-Dichlorobenzene	10	10	ND	12	ND	12	ND
1,4-Dichlorobenzene	10	10	ND	12	ND	12	ND
Benzyl Alcohol	20	20	ND	24	ND	24	ND
1,2-Dichlorobenzene	10	10	ND	12	ND	12	ND
2-Methylphenol	10	10	ND	12	ND	12	ND
bis(2-chloroisopropyl)ether	10	10	ND	12	ND	12	ND
n-Nitroso-di-n-propylamine	10	10	ND	12	ND	12	ND
4-Methylphenol	10	10	ND	12	ND	12	ND
Hexachloroethane	10	10	ND	12	ND	12	ND
Nitrobenzene	10	10	ND	12	ND	12	ND
Isophorone	10	10	ND	12	ND	12	ND
2-Nitrophenol	10	10	ND	12	ND	12	ND
2,4-Dimethylphenol	10	10	ND	12	ND	12	ND
bis(2-Chloroethoxy)methane	10	10	ND	12	ND	12	ND
2,4-Dichlorophenol	10	10	ND	12	ND	12	ND
Benzoic Acid	50	50	ND	60	ND	60	ND
1,2,4-Trichlorobenzene	10	10	ND	12	ND	12	ND
Naphthalene	10	10	ND	12	[illegible]	12	ND
4-Chloroaniline	20	20	ND	24	ND	24	ND
Hexachlorobutadiene	10	10	ND	12	ND	12	ND
4-Chloro-3-methylphenol	20	20	ND	24	ND	24	ND
2-Methylnaphthalene	10	10	ND	12	[illegible]	12	ND
Hexachlorocyclopentadiene	20	20	ND	24	ND	24	ND
2,4,6-Trichlorophenol	10	10	ND	12	ND	12	ND
2,4,5-Trichlorophenol	15	15	ND	18	ND	18	ND
2-Chloronaphthalene	10	10	ND	12	ND	12	ND
2-Nitroaniline	50	50	ND	60	ND	60	ND
Dimethylphthalate	10	10	ND	12	ND	12	ND
Acenaphthylene	10	10	ND	12	ND	12	ND
2,6-Dinitrotoluene	10	10	ND	12	ND	12	ND
3-Nitroaniline	50	50	ND	60	ND	60	ND

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: ______ Date: 9/7/95
Yun Pan
Department Supervisor

Client: Hull Development Labs, Inc
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix: Water
Units: ug/l
Extraction Method: 3510

w/o Domestic Wash

EPA Method 8270 (Cont'd)

Lab No.:	Method Blank		7794-003		7794-004	
Client Sample I.D.:	--		B9599		B9600	
ANALYTE	MDL	DLR		DLR		DLR
Acenaphthene	10	10	ND	12	ND	12
2,4-Dinitrophenol	50	50	ND	60	ND	60
Dibenzofuran	10	10	ND	12	ND	12
4-Nitrophenol	50	50	ND	60	ND	60
2,4-Dinitrotoluene	10	10	ND	12	ND	12
Fluorene	10	10	ND	12	ND	12
Diethylphthalate	10	10	ND	12	ND	12
4-Chlorophenyl-phenyl ether	10	10	ND	12	ND	12
4-Nitroaniline	50	50	ND	60	ND	60
4,6-Dinitro-2-methylphenol	50	50	ND	60	ND	60
n-Nitrosodiphenylamine	10	10	ND	12	ND	12
4-Bromophenyl-phenyl ether	10	10	ND	12	ND	12
Hexachlorobenzene	10	10	ND	12	ND	12
Pentachlorophenol	50	50	ND	60	ND	60
Phenanthrene	10	10	ND	12	ND	12
Anthracene	10	10	ND	12	ND	12
Di-n-butylphthalate	10	10	ND	12	ND	12
Fluoranthene	10	10	ND	12	ND	12
Pyrene	10	10	ND	12	ND	12
Butylbenzylphthalate	10	10	ND	12	ND	12
Benzo[a]anthracene	10	10	ND	12	ND	12
3,3'-Dichlorobenzidine	20	20	ND	24	ND	24
Chrysene	10	10	ND	12	ND	12
bis(2-Ethylhexyl)phthalate	10	10	ND	12	[illegible]	12
Di-n-octylphthalate	10	10	ND	12	ND	12
Benzo[b]fluoranthene	10	10	ND	12	ND	12
Benzo[k]fluoranthene	10	10	ND	12	ND	12
Benzo[a]pyrene	10	10	ND	12	ND	12
Indeno[1,2,3-cd]pyrene	10	10	ND	12	ND	12
Dibenz[a,h,]anthracene	10	10	ND	12	ND	12
Benzo[g,h,i]perylene	10	10	ND	12	ND	12

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____
Yun Pan
Department Supervisor

Date: 9/8/95

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report - WATER (ug/l)

Method : C:\HPCHEM\1\METHODS\8270-3.M
Title : 8270 TCL
Last Update : Wed Aug 30 11:36:57 1995
Response via : Continuing Calibration

Non-Spiked Sample: SB1328.D

	Spike Sample	Spike Duplicate Sample
File ID :	SS1329.D	SS1330.D
Sample :	BLANK WATER MS 11-1ml W085	BLANK WATER MSD 11-1ml WO85
Acq Time:	30 Aug 95 12:33 pm	30 Aug 95 1:15 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Phenol	ND	200	71	66	35	33	8	42	12-110
2-Chlorophenol	ND	200	131	118	66	59	10	40	27-123
1,4-Dichlorobenzene	0.0	100	47	48	47	48	2	28	36- 97
n-Nitroso-di-n-propy	0.0	100	45	41	45	41	9	38	41-116
1,2,4-Trichlorobenze	0.0	100	59	60	59	60	1	28	39- 98
4-Chloro-3-methylphe	0.0	200	163	155	81	77	5	42	23- 97
Acenaphthene	ND	100	77	73	77	73	5	31	46-118
4-Nitrophenol	0.0	200	90	91	45	46	1	50	10- 80
,4-Dinitrotoluene	0.0	100	88	81	88	81	8	38	24- 94
Pentachlorophenol	0.0	200	164	149	82	75	9	50	9-103
Pyrene	0.0	100	87	83	87	83	4	31	26-127

QC Batch #: 958270W085

Reviewed/Approved By: _____ Date: 9/7/95

Yun Pan
Organics Supervisor

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers

Date Received: 09/01/95
Matrix: Soil
Units: ug/kg
Extraction Method: 3550

w/o SW '1'
w/o NW 9.5'

EPA Method 8270

Lab No.:	Method Blank	7794-001	7794-002
Client Sample I.D.:	--	B9597	B9598
Date Sampled:	--	08/30/95	08/30/95
QC Batch #:	958270S084	958270S084	958270S084
Date Extracted:	09/05/95	09/05/95	09/05/95
Date Analyzed:	09/06/95	09/06/95	09/06/95
Analyst Initials:	SP	SP	SP
Dilution Factor:	1	1	1

ANALYTE	MDL	DLR		DLR		DLR	
Phenol	330	330	ND	330	ND	330	ND
bis (2-Chloroethyl)ether	330	330	ND	330	ND	330	ND
2-Chlorophenol	330	330	ND	330	ND	330	ND
1,3-Dichlorobenzene	330	330	ND	330	ND	330	ND
1,4-Dichlorobenzene	330	330	ND	330	ND	330	ND
Benzyl Alcohol	660	660	ND	660	ND	660	ND
1,2-Dichlorobenzene	330	330	ND	330	ND	330	ND
2-Methylphenol	330	330	ND	330	ND	330	ND
bis(2-chloroisopropyl)ether	330	330	ND	330	ND	330	ND
n-Nitroso-di-n-propylamine	330	330	ND	330	ND	330	ND
4-Methylphenol	330	330	ND	330	ND	330	ND
Hexachloroethane	330	330	ND	330	ND	330	ND
Nitrobenzene	330	330	ND	330	ND	330	ND
Isophorone	330	330	ND	330	ND	330	ND
2-Nitrophenol	330	330	ND	330	ND	330	ND
2,4-Dimethylphenol	330	330	ND	330	ND	330	ND
bis(2-Chloroethoxy)methane	330	330	ND	330	ND	330	ND
2,4-Dichlorophenol	330	330	ND	330	ND	330	ND
Benzoic Acid	1650	1650	ND	1650	ND	1650	ND
1,2,4-Trichlorobenzene	330	330	ND	330	ND	330	ND
Naphthalene	330	330	ND	330	ND	330	[redacted]
4-Chloroaniline	660	660	ND	660	ND	660	ND
Hexachlorobutadiene	330	330	ND	330	ND	330	ND
4-Chloro-3-methylphenol	660	660	ND	660	ND	660	ND
2-Methylnaphthalene	330	330	ND	330	ND	330	[redacted]
Hexachlorocyclopentadiene	660	660	ND	660	ND	660	ND
2,4,6-Trichlorophenol	330	330	ND	330	ND	330	ND
2,4,5-Trichlorophenol	500	500	ND	500	ND	500	ND
2-Chloronaphthalene	330	330	ND	330	ND	330	ND
2-Nitroaniline	1650	1650	ND	1650	ND	1650	ND
Dimethylphthalate	330	330	ND	330	ND	330	ND
Acenaphthylene	330	330	ND	330	ND	330	ND
2,6-Dinitrotoluene	330	330	ND	330	ND	330	ND
3-Nitroaniline	1650	1650	ND	1650	ND	1650	ND

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____
Yun Pan
Department Supervisor

Date: 9/7/95

The cover letter is an integral part of this analytical report.

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers

Date Received: 09/01/95
Matrix: Soil
Units: ug/kg
Extraction Method: 3550

w/o SW 7'

w/o NW 9.5'

EPA Method 8270 (Cont'd)

Lab No.:	Method Blank		7794-001		7794-002	
Client Sample I.D.:	--		B9597		B9598	
ANALYTE	MDL	DLR		DLR		DLR	
Acenaphthene	330	330	ND	330	ND	330	ND
2,4-Dinitrophenol	1650	1650	ND	1650	ND	1650	ND
Dibenzofuran	330	330	ND	330	ND	330	ND
4-Nitrophenol	1650	1650	ND	1650	ND	1650	ND
2,4-Dinitrotoluene	330	330	ND	330	ND	330	ND
Fluorene	330	330	ND	330	ND	330	ND
Diethylphthalate	330	330	ND	330	ND	330	ND
4-Chlorophenyl-phenyl ether	330	330	ND	330	ND	330	ND
4-Nitroaniline	1650	1650	ND	1650	ND	1650	ND
4,6-Dinitro-2-methylphenol	1650	1650	ND	1650	ND	1650	ND
n-Nitrosodiphenylamine	330	330	ND	330	ND	330	ND
4-Bromophenyl-phenyl ether	330	330	ND	330	ND	330	ND
Hexachlorobenzene	330	330	ND	330	ND	330	ND
Pentachlorophenol	1650	1650	ND	1650	ND	1650	ND
Phenanthrene	330	330	ND	330	ND	330	ND
Anthracene	330	330	ND	330	ND	330	ND
Di-n-butylphthalate	330	330	ND	330	ND	330	ND
Fluoranthene	330	330	ND	330	ND	330	ND
Pyrene	330	330	ND	330	ND	330	ND
Butylbenzylphthalate	330	330	ND	330	ND	330	ND
Benzo[a]anthracene	330	330	ND	330	ND	330	ND
3,3'-Dichlorobenzidine	660	660	ND	660	ND	660	ND
Chrysene	330	330	ND	330	ND	330	ND
bis(2-Ethylhexyl)phthalate	330	330	ND	330	ND	330	ND
Di-n-octylphthalate	330	330	ND	330	ND	330	ND
Benzo[b]fluoranthene	330	330	ND	330	ND	330	ND
Benzo[k]fluoranthene	330	330	ND	330	ND	330	ND
Benzo[a]pyrene	330	330	ND	330	ND	330	ND
Indeno[1,2,3-cd]pyrene	330	330	ND	330	ND	330	ND
Dibenz[a,h,]anthracene	330	330	ND	330	ND	330	ND
Benzo[g,h,i]perylene	330	330	ND	330	ND	330	ND

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____
Yun Pan
Department Supervisor

Date: 9/7/95

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report - SOIL (ug/kg)

Method : C:\HPCHEM\1\METHODS\8270-3.M
Title : 8270 TCL
Last Update : Wed Aug 30 10:34:03 1995
Response via : Continuing Calibration

Non-Spiked Sample: S01321.D

	Spike Sample	Spike Duplicate Sample
File ID :	SS1322.D	SS1323.D
Sample :	7794-2 MS SOIL E-9/5/95 SO84	7794-2 MSD SOIL E-9/5/95 SO84
Acq Time:	29 Aug 95 6:55 pm	29 Aug 95 7:37 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Phenol	ND	200	160	149	79	74	7	35	26- 90
2-Chlorophenol	ND	200	154	144	77	72	7	50	25-102
1,4-Dichlorobenzene	0.0	100	53	52	53	52	2	27	28-104
n-Nitroso-di-n-propy	ND	100	58	58	57	57	0	38	41-126
1,2,4-Trichlorobenze	0.0	100	63	64	63	64	2	23	38-107
4-Chloro-3-methylphe	ND	200	182	164	91	82	10	33	26-103
Acenaphthene	ND	100	77	73	77	73	5	19	31-137
-Nitrophenol	ND	200	227	195	113	97	15	50	11-114
2,4-Dinitrotoluene	ND	100	87	80	86	78	10	47	28- 89
Pentachlorophenol	ND	200	140	117	70	58	18	47	35-142
Pyrene	ND	100	91	89	86	83	3	36	35-142

QC Batch #: 958270S084

Reviewed/Approved By: _____ Date: 9/7/95

Yun Pan
Organics Supervisor

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix: Soil
Units: ug/kg
Date Amended: 09/11/95

w/o-SW 17

w/o NW 9.5'

EPA Method 8240

Lab No.:	Method Blank	7794-001	7794-002
Client Sample I.D.:	--	B9597	B9598
Date Sampled:	--	08/30/95	08/30/95
QC Batch #:	958240S2079	958240S2079	958240S2079
Date Analyzed:	09/11/95	09/11/95	09/11/95
Analyst Initials:	RR	RR	RR
Dilution Factor:	1	1	1

ANALYTE	MDL	DLR		DLR		DLR	
Chloromethane	5	5	ND	5	ND	5	ND
Vinyl Chloride	5	5	ND	5	ND	5	ND
Bromomethane	5	5	ND	5	ND	5	ND
Chloroethane	5	5	ND	5	ND	5	ND
Trichlorofluoromethane	5	5	ND	5	ND	5	ND
Acetone	50	50	ND	50	ND	50	[illegible]
1,1-Dichloroethene	5	5	ND	5	ND	5	ND
Carbon Disulfide	5	5	ND	5	ND	5	ND
Methylene Chloride	25	25	ND	25	ND	25	ND
trans-1,2-Dichloroethene	5	5	ND	5	ND	5	ND
1,1-Dichloroethane	5	5	ND	5	ND	5	ND
Chloroform	5	5	ND	5	ND	5	ND
1,2-Dichloroethane	5	5	ND	5	ND	5	ND
Vinyl Acetate	5	5	ND	5	ND	5	ND
2-Butanone	50	50	ND	50	ND	50	ND
1,1,1-Trichloroethane	5	5	ND	5	ND	5	ND
Carbon Tetrachloride	5	5	ND	5	ND	5	ND
Benzene	5	5	ND	5	ND	5	[illegible]
1,2-Dichloropropane	5	5	ND	5	ND	5	ND
Trichloroethene	5	5	ND	5	ND	5	ND
Bromodichloromethane	5	5	ND	5	ND	5	ND
2-Chloroethyl Vinyl Ether	5	5	ND	5	ND	5	ND
cis-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
trans-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
1,1,2-Trichloroethane	5	5	ND	5	ND	5	ND
Dibromochloromethane	5	5	ND	5	ND	5	ND
Bromoform	5	5	ND	5	ND	5	ND
4-Methyl-2-Pentanone	50	50	ND	50	ND	50	ND
Toluene	5	5	ND	5	ND	5	[illegible]
2-Hexanone	50	50	ND	50	ND	50	ND
Tetrachloroethene	5	5	ND	5	ND	5	ND
Chlorobenzene	5	5	ND	5	ND	5	ND
Ethylbenzene	5	5	ND	5	ND	5	[illegible]
Xylene (Total)	5	5	ND	5	ND	5	[illegible]
Styrene	5	5	ND	5	ND	5	ND
1,1,2,2-Tetrachloroethane	5	5	ND	5	ND	5	ND
1,3-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,4-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,2-Dichlorobenzene	5	5	ND	5	ND	5	ND

Additional 8240 Analytes

Acrolein	50	50	NA	50	NA	50	NA
Acrylonitrile	50	50	NA	50	NA	50	NA

MDL = Method Detection Limit
ND = Not Detected (Below DLR).
DLR = MDL X Dilution Factor
NA = Not Analyzed

Reviewed/Approved By: _____
Yun Pan
Department Supervisor

Date: 9/11/95

The cover letter is an integral part of this analytical report

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report - SOIL (ug/kg)

Method : C:\HPCHEM\1\METHODS\8240X.M
Title : VOA 8240-624 TCL
Last Update : Tue Sep 05 13:31:21 1995
Response via : Continuing Calibration

Non-Spiked Sample: V04851.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS4857.D	VS4858.D
Sample :	7792-001 50 ppb MS 8240 SOIL	7792-001 50 ppb MSD 8240 SOIL
Acq Time:	5 Sep 95 10:53 pm	5 Sep 95 11:24 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	50	48	48	97	96	1	23	37-166
Benzene	0.0	50	49	49	97	98	0	21	68-133
Trichloroethene	0.0	50	44	44	88	87	1	23	65-129
Toluene	0.0	50	51	51	100	101	1	21	74-136
Chlorobenzene	0.0	50	45	44	91	88	3	19	83-122

QC Batch # 95824OS2079

Reviewed/Approved By: _____ Date: 9/7/95

Yun Pan
Organics Supervisor

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix: Water
Units: ug/l

EPA Method 8240

Lab No.:	Method Blank	7794-003	7794-004
Client Sample I.D.:	--	B9599	B9600
Date Sampled:	--	08/30/95	08/30/95
QC Batch #:	95824W2078	95824W2078	95824W2078
Date Analyzed:	09/05/95	09/05/95	09/05/95
Analyst Initials:	RR	RR	RR
Dilution Factor:	1	1	1

ANALYTE	MDL	DLR		DLR		DLR	
Chloromethane	5	5	ND	5	ND	5	ND
Vinyl Chloride	5	5	ND	5	ND	5	ND
Bromomethane	5	5	ND	5	ND	5	ND
Chloroethane	5	5	ND	5	ND	5	ND
Trichlorofluoromethane	5	5	ND	5	ND	5	ND
Acetone	50	50	ND	50	ND	50	ND
1,1-Dichloroethene	5	5	ND	5	ND	5	ND
Carbon Disulfide	5	5	ND	5	ND	5	ND
Methylene Chloride	20	20	ND	20	ND	20	ND
trans-1,2-Dichloroethene	5	5	ND	5	ND	5	ND
1,1-Dichloroethane	5	5	ND	5	ND	5	ND
Chloroform	5	5	ND	5	ND	5	ND
1,2-Dichloroethane	5	5	ND	5	ND	5	ND
Vinyl Acetate	5	5	ND	5	ND	5	ND
2-Butanone	50	50	ND	50	ND	50	ND
1,1,1-Trichloroethane	5	5	ND	5	ND	5	ND
Carbon Tetrachloride	5	5	ND	5	ND	5	ND
Benzene	5	5	ND	5	103	5	ND
1,2-Dichloropropane	5	5	ND	5	ND	5	ND
frichloroethene	5	5	ND	5	ND	5	ND
Bromodichloromethane	5	5	ND	5	ND	5	ND
2-Chloroethyl Vinyl Ether	5	5	ND	5	ND	5	ND
cis-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
trans-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
1,1,2-Trichloroethane	5	5	ND	5	ND	5	ND
Dibromochloromethane	5	5	ND	5	ND	5	ND
Bromoform	5	5	ND	5	ND	5	ND
4-Methyl-2-Pentanone	50	50	ND	50	ND	50	ND
Toluene	5	5	ND	5	ND	5	ND
2-Hexanone	50	50	ND	50	ND	50	ND
Tetrachloroethene	5	5	ND	5	ND	5	ND
Chlorobenzene	5	5	ND	5	ND	5	ND
Ethylbenzene	5	5	ND	5	17	5	ND
Xylene (Total)	5	5	ND	5	21	5	ND
Styrene	5	5	ND	5	ND	5	ND
1,1,2,2-Tetrachloroethane	5	5	ND	5	ND	5	ND
1,3-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,4-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,2-Dichlorobenzene	5	5	ND	5	ND	5	ND

Additional 8240 Analytes

Acrolein	50	50	NA	50	NA	50	NA
Acrylonitrile	50	50	NA	50	NA	50	NA

MDL = Method Detection Limit
ND = Not Detected (Below DLR).
DLR = MDL X Dilution Factor
NA = Not Analyzed

Reviewed/Approved By: _____
Yun Pan
Department Supervisor

Date: 9/7/95

The cover letter is an integral part of this analytical report

Spike Recovery and RPD Summary Report - WATER (ug/L)

Method : C:\HPCHEM\1\METHODS\8240X.M
Title : VOA 8240-624 TCL
Last Update : Tue Sep 05 13:31:21 1995
Response via : Continuing Calibration

Non-Spiked Sample: VB4844.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS4855.D	VS4856.D
Sample :	Blank Water 50 ppb MS 8240	Blank Water 50 ppb MSD 8240
Acq Time:	5 Sep 95 9:50 pm	5 Sep 95 10:21 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	50	46	46	93	92	1	19	49-154
Benzene	0.0	50	46	45	92	90	2	15	67-128
Trichloroethene	0.0	50	44	43	88	85	3	16	67-130
Toluene	0.0	50	45	43	89	86	4	15	74-123
Chlorobenzene	0.0	50	44	44	88	87	2	14	80-122

QC Batch # 958240W2078

Reviewed/Approved By: _____ Date: 9/7/95

Yun Pan
Organics Supervisor

Hull Development Labs, Inc.

CA ELAP# 1369

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Subcontract Chain of Custody

Subcontract Lab: Advanced Technology		Date Sent: 8/31/95	Project Name: PIERS		Due Date: 9/8/95	
Sample ID and Source	Matrix	Required Analysis	Date Taken	Time Taken	Containers	Pres?
B9597	Soil	8240,8270	8/29/95		Brass tube	
B9598	Soil	8240,8270	8/29/95		Brass tube	
B9599	Water	8240,8270	8/29/95		2X1LAmber 2 x 40ml VOA	
B9600	Water	8240,8270	8/29/95		2X1LAmber 2 x 40ml VOA	

Relinquished By:	Received By:	Date:	Time:
Allen Ayer	Cal Overnight	8/31/95	4:40PM
Relinquished By: Cal Overnight	Received By: Tri Nguyen	Date: 9/15/95	Time: 12pm
Relinquished By:	Received By:	Date:	Time:

Fax results to (408) 735-1554

Environmental Analysis Since 1983

Hull Development Labs

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • Telephone: (408) 735-1550 (800) 287-1799 • Fax: (408) 735-1554

Chain of Custody/Analysis Work Order

Client: PIERS
Address:

Contact: Stu Soloman
Telephone #: 407-551-1248
Date Received: 8/30/95
Turn Around: Norm

Project ID:
Purchase Order #:

Sampler/Company: ERS B. Halsted
Telephone #: 415 325-3216

Special Instructions/Comments

LAB USE ONLY

Samples arrived chilled and intact: Yes No

Notes:

8/31/95 + per Stu Soloman

Sample Information / Requested Analysis

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPH G BTEX	TPH d	8270/ 4240	O & G	LUFT metals			
B9593	GAS-SWE 7'		soil	8/29/95	10:30	(1)	2x3 Brass	X							
B9594	GAS-NWE 7'		"	"	11:00	1	"	X							
B9595	GAS-GWS		water	"	10:45 am	(2)	40 ml VOA	X							
B9596	DISPO 2'		soil	"	1:15	(1)	2x3 Brass	X							
B9597	WO-SWE 7'		soil		11:50	(2)	2x3 Brass	X	X	X	X	X			
B9598	WO-NWE 5'		"		1:15		"	X	X	X	X	X			
B9599	WO-GWS		water		2:30	(4) (2)	1 liter Ambers 40 ml VOA	X	X	X	X	X			
B9600	MW1-GWS		water		12:30	(4) (4)	1 liter Amber 40 ml VOA	X	X	X	X	X			

Relinq. By: [signature]	Received By: Chi Tang	Date 8/30/95	Time 4:40
Relinq. By:	Received By:	Date	Time
Relinq/ By:	Received By:	Date	Time

Hull Development Labs, Inc.

CA ELAP# 13

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/30/95
Date Analyzed:	9/6/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Soil Sample Analysis:

Sample ID	Sample Date	Sample Time	Lab #	DF	TPH-Gas	Benzene	Toluene	Ethyl Benzene	Xylene
Gas-SW@7'	8/29/95	1030	B9593	1	ND	ND	ND	0.014	ND
Gas-NW@7'	8/29/95	1100	B9594	1	7.0	0.012	0.014	0.08	1.0
DISP@2'	8/29/95	1115	B9596	1	ND	ND	ND	ND	0.073

1. PQL=Dilution Factor x MDL
2. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Summary of Methods and Detection Limits:

	TPH-Gas	Benzene	Toluene	Ethylbenzene	Xylenes
EPA Method #	8015M	8020	8020	8020	8020
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	1.0 mg/kg	0.005 mg/kg	0.005 mg/kg	0.005 mg/kg	0.005 mg/kg

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above PQL

Hull Development Labs, Inc.

CA ELAP# 136

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/30/95
Date Analyzed:	9/6/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Water Sample Analysis:

Test	*GAS-GWS*	*Units*	*MDL*	*EPA Method #*
Sample Matrix	**Water**			
Sample Date	8/29/95			
Sample Time	1045			
Lab #	B9595			
DF-Gas/BTEX	100			
TPH-Gas	**43,000**	µg/liter	50.0 µg/l	8015M
Benzene	**300**	µg/liter	0.5 µg/l	8020
Toluene	**360**	µg/liter	0.5 µg/l	8020
Ethyl Benzene	**1,400**	µg/liter	0.5 µg/l	8020
Xylenes	**10,000**	µg/liter	0.5 µg/l	8020

1. PQL=DF x MDL
2. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above PQL

Hull Development Labs, Inc.

CA ELAP# 136

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/29/95
Date Analyzed:	9/7/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Soil Sample Analysis:

Test	*WO-SW@7'*	*WO-NW@9.5'*	*Units*	*MDL*	*EPA Method #*
Sample Matrix	Soil	Soil			
Sample Date	8/29/95	8/29/95			
Sample Time	1115	1150			
Lab #	B9597	B9598			
TRPH	**1,100**	**3,300**	mg/kg	50.0 mg/kg	418.1
Semivolatile Organics	**ND**	**2,795**	µg/kg	See Report	8270
Volatile Organics	**9.1**	**396.3**	µg/kg	See Report	8240
DF-Diesel	1	1			
TPH-Diesel	**9.4**	**56**	mg/kg	1.0 mg/kg	8015M
DF-Gas/BTEX	1	1			
TPH-Gas	**2**	**2**	mg/kg	1.0 mg/kg	8015M
Benzene	**0.0091**	**0.063**	mg/kg	0.005 mg/kg	8240
Toluene	**ND**	**0.0093**	mg/kg	0.005 mg/kg	8240
Ethyl Benzene	**ND**	**0.171**	mg/kg	0.005 mg/kg	8240
Xylenes	**ND**	**0.055**	mg/kg	0.005 mg/kg	8240

1. PQL=DF x MDL
2. EPA 8240 & EPA 8270 analysis performed by Advanced Technology Laboratories (CAELAP #1838); see ATL report for individual compounds, detection limits, and analysis dates
3. Remaining analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above PQL

Hull Development Labs, Inc.

CA ELAP# 13(

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/29/95
Date Analyzed:	9/6/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Soil Sample Analysis:

Test	*WO-SW@7'*	*WO-NW@9.5'*	*Units*	*MDL*	*EPA Method #*
Sample Matrix	Soil	Soil			
Sample Date	8/29/95	8/29/95			
Sample Time	1115	1150			
Lab #	B9597	B9598			
Cadmium	**ND**	**ND**	mg/kg	0.5 mg/kg	7130
Chromium	**24**	**27**	mg/kg	0.5 mg/kg	7190
Lead	**11**	**12**	mg/kg	0.5 mg/kg	7420
Nickel	**36**	**43**	mg/kg	0.5 mg/kg	7520
Zinc	**37**	**34**	mg/kg	0.5 mg/kg	7950

Analysis performed by Hull Development Labs, Inc. (CAELAP #1369

Michael N. Golden, Lab Director

MDL=Method Detection Limit

ND=None Detected at or above MDL

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix: Soil
Units: ug/kg

W0 SD @ 7'
W0-BD @ 9.5'

EPA Method 8240

Lab No.:	Method Blank			7794-001		7794-003	
Client Sample I.D.:	--			B9597		B9598	
Date Sampled:	--			08/30/95		08/30/95	
QC Batch #:	95824052079			95824052079		95824052079	
Date Analyzed:	09/05/95			09/05/95		09/05/95	
Analyst Initials:	RR			RR		RR	
Dilution Factor:	1			1		1	
ANALYTE	MDL	DLR		DLR		DLR	
Chloromethane	5	5	ND	5	ND	5	ND
Vinyl Chloride	5	5	ND	5	ND	5	ND
Bromomethane	5	5	ND	5	ND	5	ND
Chloroethane	5	5	ND	5	ND	5	ND
Trichlorofluoromethane	5	5	ND	5	ND	5	ND
Acetone	50	50	ND	50	ND	50	[illegible]
1,1-Dichloroethene	5	5	ND	5	ND	5	ND
Carbon Disulfide	5	5	ND	5	ND	5	ND
Methylene Chloride	20	20	ND	20	ND	20	ND
trans-1,2-Dichloroethene	5	5	ND	5	ND	5	ND
1,1-Dichloroethane	5	5	ND	5	ND	5	ND
Chloroform	5	5	ND	5	ND	5	ND
1,2-Dichloroethane	5	5	ND	5	ND	5	ND
Vinyl Acetate	5	5	ND	5	ND	5	ND
2-Butanone	50	50	ND	50	ND	50	ND
1,1,1-Trichloroethane	5	5	ND	5	ND	5	ND
Carbon Tetrachloride	5	5	ND	5	ND	5	ND
Benzene	5	5	ND	5	[illegible]	5	63
1,2-Dichloropropane	5	5	ND	5	ND	5	ND
Trichloroethene	5	5	ND	5	ND	5	ND
Bromodichloromethane	5	5	ND	5	ND	5	ND
2-Chloroethyl Vinyl Ether	5	5	ND	5	ND	5	ND
cis-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
trans-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
1,1,2-Trichloroethane	5	5	ND	5	ND	5	ND
Dibromochloromethane	5	5	ND	5	ND	5	ND
Bromoform	5	5	ND	5	ND	5	ND
4-Methyl-2-Pentanone	50	50	ND	50	ND	50	ND
Toluene	5	5	ND	5	ND	5	9.3
2-Hexanone	50	50	ND	50	ND	50	ND
Tetrachloroethene	5	5	ND	5	ND	5	ND
Chlorobenzene	5	5	ND	5	ND	5	ND
Ethylbenzene	5	5	ND	5	ND	5	[illegible]
Xylene (Total)	5	5	ND	5	ND	5	64
Styrene	5	5	ND	5	ND	5	ND
1,1,2,2-Tetrachloroethane	5	5	ND	5	ND	5	ND
1,3-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,4-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,2-Dichlorobenzene	5	5	ND	5	ND	5	ND
Additional 8240 Analytes							
Acrolein	50	50	NA	50	NA	50	NA
Acrylonitrile	50	50	NA	50	NA	50	NA

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
NA = Not Analyzed

Reviewed/Approved By: [signature]
Yup Pan
Department Supervisor

Date: 9/7/95

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers

Date Received: 09/01/95
Matrix: Soil
Units: ug/kg
Extraction Method: 3550

EPA Method 8270

Lab No.:	Method Blank	7794-001	7794-002
Client Sample I.D.:	--	B9597	B9598
Date Sampled:	--	08/30/95	08/30/95
QC Batch #:	9582705084	9582705084	9582705084
Date Extracted:	09/05/95	09/05/95	09/05/95
Date Analyzed:	09/06/95	09/06/95	09/06/95
Analyst Initials:	SP	SP	SP
Dilution Factor:	1	1	1

ANALYTE	MDL	DLR		DLR		DLR	
Phenol	330	330	ND	330	ND	330	ND
bis (2-Chloroethyl)ether	330	330	ND	330	ND	330	ND
2-Chlorophenol	330	330	ND	330	ND	330	ND
1,3-Dichlorobenzene	330	330	ND	330	ND	330	ND
1,4-Dichlorobenzene	330	330	ND	330	ND	330	ND
Benzyl Alcohol	660	660	ND	660	ND	660	ND
1,2-Dichlorobenzene	330	330	ND	330	ND	330	ND
2-Methylphenol	330	330	ND	330	ND	330	ND
bis(2-chloroisopropyl)ether	330	330	ND	330	ND	330	ND
n-Nitroso-di-n-propylamine	330	330	ND	330	ND	330	ND
4-Methylphenol	330	330	ND	330	ND	330	ND
Hexachloroethane	330	330	ND	330	ND	330	ND
Nitrobenzene	330	330	ND	330	ND	330	ND
Isophorone	330	330	ND	330	ND	330	ND
2-Nitrophenol	330	330	ND	330	ND	330	ND
2,4-Dimethylphenol	330	330	ND	330	ND	330	ND
bis(2-Chloroethoxy)methane	330	330	ND	330	ND	330	ND
2,4-Dichlorophenol	330	330	ND	330	ND	330	ND
Benzoic Acid	1650	1650	ND	1650	ND	1650	ND
1,2,4-Trichlorobenzene	330	330	ND	330	ND	330	ND
Naphthalene	330	330	ND	330	ND	330	[illegible]
4-Chloroaniline	660	660	ND	660	ND	660	ND
Hexachlorobutadiene	330	330	ND	330	ND	330	ND
4-Chloro-3-methylphenol	660	660	ND	660	ND	660	ND
2-Methylnaphthalene	330	330	ND	330	ND	330	[illegible]
Hexachlorocyclopentadiene	660	660	ND	660	ND	660	ND
2,4,6-Trichlorophenol	330	330	ND	330	ND	330	ND
2,4,5-Trichlorophenol	500	500	ND	500	ND	500	ND
2-Chloronaphthalene	330	330	ND	330	ND	330	ND
2-Nitroaniline	1650	1650	ND	1650	ND	1650	ND
Dimethylphthalate	330	330	ND	330	ND	330	ND
Acenaphthylene	330	330	ND	330	ND	330	ND
2,6-Dinitrotoluene	330	330	ND	330	ND	330	ND
3-Nitroaniline	1650	1650	ND	1650	ND	1650	ND

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____
Yun Pan
Department Supervisor

Date: 9/7/95

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers

Date Received: 09/01/95
Matrix: Soil
Units: ug/kg
Extraction Method: 3550

EPA Method 8270 (Cont'd)

Lab No.:	Method Blank		7794-001		7794-002	
Client Sample I.D.:	--		B9597		B9598	
ANALYTE	MDL	DLR		DLR		DLR
Acenaphthene	330	330	ND	330	ND	330
2,4-Dinitrophenol	1650	1650	ND	1650	ND	1650
Dibenzofuran	330	330	ND	330	ND	330
4-Nitrophenol	1650	1650	ND	1650	ND	1650
2,4-Dinitrotoluene	330	330	ND	330	ND	330
Fluorene	330	330	ND	330	ND	330
Diethylphthalate	330	330	ND	330	ND	330
4-Chlorophenyl-phenyl ether	330	330	ND	330	ND	330
4-Nitroaniline	1650	1650	ND	1650	ND	1650
4,6-Dinitro-2-methylphenol	1650	1650	ND	1650	ND	1650
n-Nitrosodiphenylamine	330	330	ND	330	ND	330
4-Bromophenyl-phenyl ether	330	330	ND	330	ND	330
Hexachlorobenzene	330	330	ND	330	ND	330
Pentachlorophenol	1650	1650	ND	1650	ND	1650
Phenanthrene	330	330	ND	330	ND	330
Anthracene	330	330	ND	330	ND	330
Di-n-butylphthalate	330	330	ND	330	ND	330
Fluoranthene	330	330	ND	330	ND	330
Pyrene	330	330	ND	330	ND	330
Butylbenzylphthalate	330	330	ND	330	ND	330
Benzo[a]anthracene	330	330	ND	330	ND	330
3,3'-Dichlorobenzidine	660	660	ND	660	ND	660
Chrysene	330	330	ND	330	ND	330
Bis(2-Ethylhexyl)phthalate	330	330	ND	330	ND	330
Di-n-octylphthalate	330	330	ND	330	ND	330
Benzo[b]fluoranthene	330	330	ND	330	ND	330
Benzo[k]fluoranthene	330	330	ND	330	ND	330
Benzo[a]pyrene	330	330	ND	330	ND	330
Indeno[1,2,3-cd]pyrene	330	330	ND	330	ND	330
Dibenz[a,h]anthracene	330	330	ND	330	ND	330
Benzo[g,h,i]perylene	330	330	ND	330	ND	330

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____
Yun Pan
Department Supervisor

Date: 9/7/95

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report - WATER (ug/L)

Method : C:\HPCHEM\1\METHODS\8240X.M
Title : VOA 8240-624 TCL
Last Update : Tue Sep 05 13:31:21 1995
Response via : Continuing Calibration

Non-Spiked Sample: VB4844.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS4855.D	VS4856.D
Sample :	Blank Water 50 ppb MS 8240	Blank Water 50 ppb MSD 8240
Acq Time:	5 Sep 95 9:50 pm	5 Sep 95 10:21 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	50	46	46	93	92	1	19	49-154
Benzene	0.0	50	46	45	92	90	2	15	67-128
Trichloroethene	0.0	50	44	43	88	85	3	16	67-130
Toluene	0.0	50	45	43	89	86	4	15	74-123
Chlorobenzene	0.0	50	44	44	88	87	2	14	80-122

QC Batch # 958240W2078

Reviewed/Approved By: _____ Date: 9/7/95

Yun Pan
Organics Supervisor

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report - SOIL (ug/kg)

Method : C:\HPCHEM\1\METHODS\8240X.M
Title : VOA 8240-624 TCL
Last Update : Tue Sep 05 13:31:21 1995
Response via : Continuing Calibration

Non-Spiked Sample: V04851.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS4857.D	VS4858.D
Sample :	7792-001 50 ppb MS 8240 SOIL	7792-001 50 ppb MSD 8240 SOIL
Acq Time:	5 Sep 95 10:53 pm	5 Sep 95 11:24 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	50	48	48	97	96	1	23	37-166
Benzene	0.0	50	49	49	97	98	0	21	68-133
Trichloroethene	0.0	50	44	44	88	87	1	23	65-129
Toluene	0.0	50	51	51	100	101	1	21	74-136
Chlorobenzene	0.0	50	45	44	91	88	3	19	83-122

QC Batch # 958240S2079

Reviewed/Approved By: _____ Date: 9/7/95

Yun Pan
Organics Supervisor

Spike Recovery and RPD Summary Report - SOIL (ug/kg)

Method : C:\HPCHEM\1\METHODS\8270-3.M
Title : 8270 TCL
Last Update : Wed Aug 30 10:34:03 1995
Response via : Continuing Calibration

Non-Spiked Sample: S01321.D

	Spike Sample	Spike Duplicate Sample
File ID :	SS1322.D	SS1323.D
Sample :	7794-2 MS SOIL E-9/5/95 SO84	7794-2 MSD SOIL E-9/5/95 SO84
Acq Time:	29 Aug 95 6:55 pm	29 Aug 95 7:37 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Phenol	ND	200	160	149	79	74	7	35	26- 90
2-Chlorophenol	ND	200	154	144	77	72	7	50	25-102
1,4-Dichlorobenzene	0.0	100	53	52	53	52	2	27	28-104
n-Nitroso-di-n-propy	ND	100	58	58	57	57	0	38	41-126
1,2,4-Trichlorobenze	0.0	100	63	64	63	64	2	23	38-107
4-Chloro-3-methylphe	ND	200	182	164	91	82	10	33	26-103
Acenaphthene	ND	100	77	73	77	73	5	19	31-137
4-Nitrophenol	ND	200	227	195	113	97	15	50	11-114
2,4-Dinitrotoluene	ND	100	87	80	86	78	10	47	28- 89
Pentachlorophenol	ND	200	140	117	70	58	18	47	35-142
Pyrene	ND	100	91	89	86	83	3	36	35-142

QC Batch #: 9582705084

Reviewed/Approved By: _____ Date: 9/7/95
Yun Pan
Organics Supervisor

HULL DEVELOPMENT LABS INC. 525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
FOR GASOLINE ANALYSIS

GASOLINE
QC sample No.: BLANK SPIKE & DUP Date analyzed: 08-31-95

Matrix: WATER

Units: ug/L Dilution factor: 1

COMPOUND	SA ug/L	SR ug/L	MS ug/L	MS PR	MSD ug/L	MSD PR	RPD	QC LIMITS (ADVISORY) RPD	QC LIMITS (ADVISORY) PR
GASOLINE	226	0	220	97	197	87	11	25	50-150

MS = Spike sample
MSD = Spike sample duplicate
SR = Sample result
SA = Spike added

NC = Not calculated
** = Out of limits

RPD = 100 x (MS-MSD)/((MS+MSD)/2)

PR = 100 x ((MS or MSD) - SR)/SA

HULL DEVELOPMENT LABS INC.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
FOR DIESEL ANALYSIS

DIESEL
QC sample No.: BLANK SPIKE & DUP

Date analyzed: 09-07-95
Date extracted: 08-28-95
QC batch: DS089507

Matrix: SOIL

Units: mg/Kg

Dilution factor: 1

COMPOUND	SA mg/Kg	SR mg/Kg	MS mg/Kg	MS PR	MSD mg/Kg	MSD PR	RPD	QC LIMITS (ADVISORY) RPD	QC LIMITS (ADVISORY) PR
DIESEL	25	0	21	84	21	84	0	25	50-150

MS = Spike sample
MSD = Spike sample duplicate
SR = Sample result
SA = Spike added

NC = Not calculated
** = Out of limits

RPD = 100 x (MS-MSD)/((MS+MSD)/2)

PR = 100 x ((MS or MSD) - SR)/SA

HULL DEVELOPMENT LABS INC.

525 Del Rey Avenue suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
BTEX

QC sample No.: BLANK SPIKE & DUP Date analyzed: 08-31-95

Matrix: WATER

Units: ug/L Dilution factor: 1

COMPOUND	SA ug/L	SR ug/L	MS ug/L	MS PR	MSD ug/L	MSD PR	RPD	QC LIMITS (ADVISORY) RPD	PR
BENZENE	20	0	19	95	19	95	0	25	50-150
TOLUENE	20	0	20	100	19	95	5	25	50-150

MS = Spike sample
MSD = Spike sample duplicate
SR = Sample result
SA = Spike added

NC = Not calculated
** = Out of limits

RPD = 100 x (MS-MSD)/((MS+MSD)/2)

PR = 100 x ((MS or MSD) - SR)/SA

Hull Development Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: SM5520F/EPA 418.1

QC Batch : 95083
Matrix: Soil
Units: mg/kg

Date Analyzed: 8/28/95

PARAMETER	SA mg/kg	SR mg/kg	MS mg/kg	MS PR	MSD mg/kg	MSD PR	RPD	QC LIMITS RPD	QC LIMITS PR
TRPH	50	0	43	86	45	90	5%	25	50-150

Definition of Terms:

SA: Spike Added
SR: Sample Result
MS: Matrix Spike Result
MSD (PR): Matrix Spike % Recovery
MSD: Matrix Spike Duplicate Result
MSD (PR): Matrix Spike Duplicate % Recovery
RPD: Matrix Spike Recovery % Variance

LAB DIRECTOR: M. Golden

Hull Development Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Flame Atomic Absorption

QC Batch #: 95083
Matrix: Soil
Units: mg/kg

Date Analyzed: 8/25/95
Extraction Method: TTLC

PARAMETER	Method #	SA mg/kg	SR mg/kg	MS mg/kg	MS %R	MSD mg/kg	MSD %R	QC LIMITS %R
Antimony	7040	4.9	2.0	6.2	86%	6.1	83%	50- 150
Barium	7080	23.8	15.8	33.5	75%	35.0	81%	50- 150
Beryllium	7090	15.2	0.0	14.0	92%	14.5	95%	50- 150
Cadmium	7130	9.0	0.0	9.3	103%	9.1	101%	50- 150
Chromium	7190	16.7	17.3	29.3	72%	31.7	86%	50- 150
Cobalt	7200	10.1	7.2	20.5	132%	20.0	127%	50- 150
Copper	7210	19.6	23.4	42.5	97%	40.0	85%	50- 150
Lead	7420	16.2	19.1	36.5	107%	35.0	98%	50- 150
Molybdenum	7480	9.4	0.0	8.5	90%	8.3	88%	50- 150
Nickel	7520	13.5	23.4	36.0	93%	35.0	86%	50- 150
Silver	7760	6.5	0.0	7.1	108%	6.9	106%	50- 150
Thallium	7840	12.7	0.0	7.0	55%	7.1	56%	50- 150
Vanadium	7910	9.4	0.0	8.1	86%	8.0	85%	50- 150
Zinc	7950	19.9	78.5	100.5	110%	96.0	88%	50- 150

Definition of Terms:

- na: Not Analyzed in QC batch
- SA: Spike Added
- SR: Sample Result
- MS: Matrix Spike Result
- MS (%R) Matrix Spike % Recovery
- MSD Matrix Spike Duplicate Result
- MSD (%R) Matrix Spike Duplicate % Recovery

LAB DIRECTOR: M. Golden

Hull Development Labs, Inc.

CA ELAP# 13

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/30/95
Date Analyzed:	9/6/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Water Sample Analysis:

Test	[illegible]-WG5	[illegible]W1-GW5	*Units*	*MDL*	*EPA Method #*
Sample Matrix	Water	Water			
Sample Date	8/29/95	8/29/95			
Sample Time	230	1230			
Lab #	B9599	B9600			
TRPH	**390**	**2.9**	mg/liter	0.50 mg/l	418.1
Volatile Organics	**141**	**ND**	µg/liter	See Report	8240
Semivolatile Organics	**57**	**ND**	µg/liter	See Report	8270
DF-Diesel	1	1			
TPH-Diesel	**600**	**ND**	µg/liter	50.0 µg/l	8015M
DF-Gas	1000	1			
TPH-Gas	**ND**	**ND**	µg/liter	50.0 µg/l	8015M
Benzene	**103**	**ND**	µg/liter	5.0 µg/l	8240
Toluene	**ND**	**ND**	µg/liter	5.0 µg/l	8240
Ethyl Benzene	**17**	**ND**	µg/liter	5.0 µg/l	8240
Xylenes	**21**	**ND**	µg/liter	5.0 µg/l	8240

1. PQL=DF x MDL
2. Sample diluted for TPH-Gasoline analysis due to matrix interferences
3. EPA 8240 and 8270 analysis performed by Advanced Technology Laboratories (CAELAP #1838); see ATL report for individual compounds and detection limits
4. BTEX analysis performed by EPA method 8240 due to matrix interferences using EPA method 8020
5. Remaining analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above PQL

Hull Development Labs, Inc.

CA ELAP# 13(

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Piers Environmental Services
3131 South Bascom Ave., Suite 5
Campbell, CA 95008
Attn: Stu Solomon

Date:	9/11/95
Date Received:	8/30/95
Date Analyzed:	8/31/95
Project:	
Sampled By:	ERS

Certified Analytical Report

Water Sample Analysis: Domestic Well.

Test	*WO-WGS*	*MW1-GWS*	*Units*	*MDL*	*EPA Method #*
Sample Matrix	Water	Water			
Sample Date	8/29/95	8/29/95			
Sample Time	230	1230			
Lab #	B9599	B9600			
Cadmium	**ND**	**ND**	mg/liter	0.05 mg/l	213.1
Chromium	**ND**	**ND**	mg/liter	0.05 mg/l	218.1
Lead	**ND**	**ND**	mg/liter	0.05 mg/l	239.1
Nickel	**0.085**	**ND**	mg/liter	0.05 mg/l	249.1
Zinc	**ND**	**ND**	mg/liter	0.10 mg/l	289.1

Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

MDL=Method Detection Limit

ND=None Detected at or above MDL

Client: Hull Development Labs, Inc.
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix:
Units:

W10 Domestic well.

Lab No.:	Method Blank	7794-003		7794-004	
Client Sample I.D.:	--	B9599		B9600	
Date Sampled:	--	08/30/95		08/30/95	
QC Batch #:	95824W2078	95824W2078		95824W2078	
Date Analyzed:	09/05/95	09/05/95		09/05/95	
Analyst Initials:	RR	RR		RR	
Dilution Factor:	1	1		1	

ANALYTE	MDL	DLR		DLR		DLR	
Chloromethane	5	5	ND	5	ND	5	ND
Vinyl Chloride	5	5	ND	5	ND	5	ND
Bromomethane	5	5	ND	5	ND	5	ND
Chloroethane	5	5	ND	5	ND	5	ND
Trichlorofluoromethane	5	5	ND	5	ND	5	ND
Acetone	50	50	ND	50	ND	50	ND
1,1-Dichloroethene	5	5	ND	5	ND	5	ND
Carbon Disulfide	5	5	ND	5	ND	5	ND
Methylene Chloride	20	20	ND	20	ND	20	ND
trans-1,2-Dichloroethene	5	5	ND	5	ND	5	ND
1,1-Dichloroethane	5	5	ND	5	ND	5	ND
Chloroform	5	5	ND	5	ND	5	ND
1,2-Dichloroethane	5	5	ND	5	ND	5	ND
Vinyl Acetate	5	5	ND	5	ND	5	ND
2-Butanone	50	50	ND	50	ND	50	ND
1,1,1-Trichloroethane	5	5	ND	5	ND	5	ND
Carbon Tetrachloride	5	5	ND	5	ND	5	ND
Benzene	5	5	ND	5	103	5	ND
1,2-Dichloropropane	5	5	ND	5	ND	5	ND
Trichloroethene	5	5	ND	5	ND	5	ND
Bromodichloromethane	5	5	ND	5	ND	5	ND
2-Chloroethyl Vinyl Ether	5	5	ND	5	ND	5	ND
cis-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
trans-1,3-Dichloropropene	5	5	ND	5	ND	5	ND
1,1,2-Trichloroethane	5	5	ND	5	ND	5	ND
Dibromochloromethane	5	5	ND	5	ND	5	ND
Bromoform	5	5	ND	5	ND	5	ND
4-Methyl-2-Pentanone	50	50	ND	50	ND	50	ND
Toluene	5	5	ND	5	ND	5	ND
2-Hexanone	50	50	ND	50	ND	50	ND
Tetrachloroethene	5	5	ND	5	ND	5	ND
Chlorobenzene	5	5	ND	5	ND	5	ND
Ethylbenzene	5	5	ND	5	17	5	ND
Xylene (Total)	5	5	ND	5	21	5	ND
Styrene	5	5	ND	5	ND	5	ND
1,1,2,2-Tetrachloroethane	5	5	ND	5	ND	5	ND
1,3-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,4-Dichlorobenzene	5	5	ND	5	ND	5	ND
1,2-Dichlorobenzene	5	5	ND	5	ND	5	ND

Additional 8240 Analytes:

Acrolein	50	50	NA	50	NA	50	NA
Acrylonitrile	50	50	NA	50	NA	50	NA

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
NA = Not Analyzed

Reviewed/Approved By: _____ Date: 9/7/95
Yun Pan
Department Supervisor

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Hull Development Labs, Inc
Attn: Mr. Mike Golden

Client's Project: Piers
Date Received: 09/01/95
Matrix:
Units: ug/l
Extraction Method: 3510

W/O domestic

Lab No.:	Method Blank	7794-003	7794-004
Client Sample I.D.:	--	B9599	B9600
Date Sampled:	--	08/30/95	08/30/95
QC Batch #:	958270W085	958270W085	958270W085
Date Extracted:	09/06/95	09/06/95	09/06/95
Date Analyzed:	09/07/95	09/07/95	09/07/95
Analyst Initials:	SP	SP	SP
Dilution Factor:	1	1.2	1.2

ANALYTE	MDL	DLR		DLR		DLR	
Phenol	10	10	ND	12	ND	12	ND
bis (2-Chloroethyl)ether	10	10	ND	12	ND	12	ND
2-Chlorophenol	10	10	ND	12	ND	12	ND
1,3-Dichlorobenzene	10	10	ND	12	ND	12	ND
1,4-Dichlorobenzene	10	10	ND	12	ND	12	ND
Benzyl Alcohol	20	20	ND	24	ND	24	ND
1,2-Dichlorobenzene	10	10	ND	12	ND	12	ND
2-Methylphenol	10	10	ND	12	ND	12	ND
bis(2-chloroisopropyl)ether	10	10	ND	12	ND	12	ND
n-Nitroso-di-n-propylamine	10	10	ND	12	ND	12	ND
4-Methylphenol	10	10	ND	12	ND	12	ND
Hexachloroethane	10	10	ND	12	ND	12	ND
Nitrobenzene	10	10	ND	12	ND	12	ND
Isophorone	10	10	ND	12	ND	12	ND
2-Nitrophenol	10	10	ND	12	ND	12	ND
2,4-Dimethylphenol	10	10	ND	12	ND	12	ND
bis(2-Chloroethoxy)methane	10	10	ND	12	ND	12	ND
2,4-Dichlorophenol	10	10	ND	12	ND	12	ND
Benzoic Acid	50	50	ND	60	ND	60	ND
1,2,4-Trichlorobenzene	10	10	ND	12	ND	12	ND
Naphthalene	10	10	ND	12	ND	12	ND
4-Chloroaniline	20	20	ND	24	ND	24	ND
Hexachlorobutadiene	10	10	ND	12	ND	12	ND
4-Chloro-3-methylphenol	20	20	ND	24	ND	24	ND
2-Methylnaphthalene	10	10	ND	12	ND	12	ND
Hexachlorocyclopentadiene	20	20	ND	24	ND	24	ND
2,4,6-Trichlorophenol	10	10	ND	12	ND	12	ND
2,4,5-Trichlorophenol	15	15	ND	18	ND	18	ND
2-Chloronaphthalene	10	10	ND	12	ND	12	ND
2-Nitroaniline	50	50	ND	60	ND	60	ND
Dimethylphthalate	10	10	ND	12	ND	12	ND
Acenaphthylene	10	10	ND	12	ND	12	ND
2,6-Dinitrotoluene	10	10	ND	12	ND	12	ND
3-Nitroaniline	50	50	ND	60	ND	60	ND

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____
Yun Pan
Department Supervisor

Date: 9/7/95

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Hull Development Labs, Inc
Attn: Mr. Mike Golden

Pg. 2 of 2

Client's Project: Piers
Date Received: 09/01/95
Matrix: Water
Units: ug/l
Extraction Method: 3510

(MW-1 (W-3)

EPA Method 8270 (Cont'd)

Lab No.:		Method Blank	7794-003		7794-004	
Client Sample I.D.:		--	B9599		B9600	
ANALYTE	MDL	DLR	DLR		DLR	
Acenaphthene	10	10	ND	12	ND	12	ND
2,4-Dinitrophenol	50	50	ND	60	ND	60	ND
Dibenzofuran	10	10	ND	12	ND	12	ND
4-Nitrophenol	50	50	ND	60	ND	60	ND
2,4-Dinitrotoluene	10	10	ND	12	ND	12	ND
Fluorene	10	10	ND	12	ND	12	ND
Diethylphthalate	10	10	ND	12	ND	12	ND
4-Chlorophenyl-phenyl ether	10	10	ND	12	ND	12	ND
4-Nitroaniline	50	50	ND	60	ND	60	ND
4,6-Dinitro-2-methylphenol	50	50	ND	60	ND	60	ND
n-Nitrosodiphenylamine	10	10	ND	12	ND	12	ND
4-Bromophenyl-phenyl ether	10	10	ND	12	ND	12	ND
Hexachlorobenzene	10	10	ND	12	ND	12	ND
Pentachlorophenol	50	50	ND	60	ND	60	ND
Phenanthrene	10	10	ND	12	ND	12	ND
Anthracene	10	10	ND	12	ND	12	ND
Di-n-butylphthalate	10	10	ND	12	ND	12	ND
Fluoranthene	10	10	ND	12	ND	12	ND
Pyrene	10	10	ND	12	ND	12	ND
Butylbenzylphthalate	10	10	ND	12	ND	12	ND
Benzo[a]anthracene	10	10	ND	12	ND	12	ND
3,3'-Dichlorobenzidine	20	20	ND	24	ND	24	ND
Chrysene	10	10	ND	12	ND	12	ND
Bis(2-Ethylhexyl)phthalate	10	10	ND	12	ND	12	ND
Di-n-octylphthalate	10	10	ND	12	ND	12	ND
Benzo[b]fluoranthene	10	10	ND	12	ND	12	ND
Benzo[k]fluoranthene	10	10	ND	12	ND	12	ND
Benzo[a]pyrene	10	10	ND	12	ND	12	ND
Indeno[1,2,3-cd]pyrene	10	10	ND	12	ND	12	ND
Dibenz[a,h]anthracene	10	10	ND	12	ND	12	ND
Benzo[g,h,i]perylene	10	10	ND	12	ND	12	ND

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL x Dilution Factor
NA = Not Analyzed

Approved/Reviewed By: _____ Date: 9/8/95
Yun Pan
Department Supervisor

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report - WATER (ug/l)

Method : C:\HPCHEM\1\METHODS\8270-3.M
Title : 8270 TCL
Last Update : Wed Aug 30 11:36:57 1995
Response via : Continuing Calibration

Non-Spiked Sample: SB1328.D

	Spike Sample	Spike Duplicate Sample
File ID :	SS1329.D	SS1330.D
Sample :	BLANK WATER MS 11-1ml W085	BLANK WATER MSD 11-1ml W085
Acq Time:	30 Aug 95 12:33 pm	30 Aug 95 1:15 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Phenol	ND	200	71	66	35	33	8	42	12-110
2-Chlorophenol	ND	200	131	118	66	59	10	40	27-123
1,4-Dichlorobenzene	0.0	100	47	48	47	48	2	28	36- 97
n-Nitroso-di-n-propy	0.0	100	45	41	45	41	9	38	41-116
1,2,4-Trichlorobenze	0.0	100	59	60	59	60	1	28	39- 98
4-Chloro-3-methylphe	0.0	200	163	155	81	77	5	42	23- 97
Acenaphthene	ND	100	77	73	77	73	5	31	46-118
4-Nitrophenol	0.0	200	90	91	45	46	1	50	10- 80
2,4-Dinitrotoluene	0.0	100	88	81	88	81	8	38	24- 94
Pentachlorophenol	0.0	200	164	149	82	75	9	50	9-103
Pyrene	0.0	100	87	83	87	83	4	31	26-127

QC Batch #: 958270W085

Reviewed/Approved By: _____ Date: 9/7/95
Yun Pan
Organics Supervisor

Hull Development Labs, Inc.

CA ELAP# 1369

575 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Subcontract Chain of Custody

Subcontract Lab: Advanced Technology	Date Sent: 8/31/95	Project Name: PIERS			Due Date: 9/8/95	
Sample ID and Source	Matrix	Required Analysis	Date Taken	Time Taken	Containers	Preserv?
B9597	Soil	8240,8270	8/29/95		Brass tube	
B9598	Soil	8240,8270	8/29/95		Brass tube	
B9599	Water	8240,8270	8/29/95		2X1LAmber 2 x 40ml VOA	
B9600	Water	8240,8270	8/29/95		2X1LAmber 2 x 40ml VOA	

Relinquished By	Received By	Date	Time
[signature]	Cal Oversight	8/31/95	4:40PM
Cal Oversight	Marina Parnes	9-1-95	12:24pm

Fax results to (408) 735-1554

Environmental Analysis Since 1983

HULL DEVELOPMENT LABS INC. 525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
FOR GASOLINE ANALYSIS

GASOLINE
QC sample No.: BLANK SPIKE & DUP Date analyzed: 08-31-95

Matrix: WATER

Units: ug/L Dilution factor: 1

COMPOUND	SA ug/L	SR ug/L	MS ug/L	MS PR	MSD ug/L	MSD PR	RPD	QC LIMITS (ADVISORY) RPD	QC LIMITS (ADVISORY) PR
GASOLINE	226	0	220	97	197	87	11	25	50-150

MS = Spike sample
MSD = Spike sample duplicate
SR = Sample result
SA = Spike added

NC = Not calculated
** = Out of limits

RPD = 100 x (MS-MSD)/((MS+MSD)/2)

PR = 100 x ((MS or MSD) - SR)/SA

HULL DEVELOPMENT LABS INC. 525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
FOR DIESEL ANALYSIS

DIESEL
QC sample No.: BLANK SPIKE & DUP

Date analyzed: 09-08-95
Date extracted: 08-08-95
QC batch: DW099501

Matrix: WATER

Units: ug/L

Dilution factor: 1

COMPOUND	SA ug/L	SR ug/L	MS ug/L	MS PR	MSD ug/L	MSD PR	RPD	QC LIMITS (ADVISORY) RPD	QC LIMITS (ADVISORY) PR
DIESEL	950	0	967	102	959	101	1	25	50-150

MS = Spike sample
MSD = Spike sample duplicate
SR = Sample result
SA = Spike added

NC = Not calculated
** = Out of limits

RPD = 100 x (MS-MSD)/((MS+MSD)/2)

PR = 100 x ((MS or MSD) - SR)/SA

HULL DEVELOPMENT LABS INC. 525 Del Rey Avenue suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY
BTEX

QC sample No.: BLANK SPIKE & DUP Date analyzed: 08-31-95

Matrix: WATER

Units: ug/L Dilution factor: 1

COMPOUND	SA ug/L	SR ug/L	MS ug/L	MS PR	MSD ug/L	MSD PR	RPD	QC LIMITS (ADVISORY) RPD	QC LIMITS (ADVISORY) PR
BENZENE	20	0	19	95	19	95	0	25	50-150
TOLUENE	20	0	20	100	19	95	5	25	50-150

MS = Spike sample
MSD = Spike sample duplicate
SR = Sample result
SA = Spike added

NC = Not calculated
** = Out of limits

RPD = 100 x (MS-MSD)/((MS+MSD)/2)

PR = 100 x ((MS or MSD) - SR)/SA

Hull Development Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Flame Atomic Absorption

QC Batch #: WM-9538
Matrix: Water
Units: mg/l

Date Analyzed: 8/31/95

PARAMETER	Method #	SA mg/l	SR mg/l	MS mg/l	MS %R	MSD mg/l	MSD %	QC LIMITS %R	QC LIMITS RPD
Antimony	204.1	na	na	na	na	na	na	70- 130	20.00
Barium	208.1	na	na	na	na	na	na	70- 130	20.00
Beryllium	210.1	na	na	na	na	na	na	70- 130	20.00
Cadmium	213.1	1.00	0.04	1.04	101	1.03	99	70- 130	20.00
Chromium	218.1	1.00	0.08	1.10	102	1.09	101	70- 130	20.00
Cobalt	219.1	na	na	na	na	na	na	70- 130	20.00
Copper	220.1	1.00	0.09	1.07	99	1.08	99	70- 130	20.00
Lead	239.1	1.00	0.14	1.12	98	1.12	98	70- 130	20.00
Molybdenum	246.1	na	na	na	na	na	na	70- 130	20.00
Nickel	249.1	1.00	0.03	1.04	101	1.04	101	70- 130	20.00
Silver	270.1	1.00	0.02	1.01	99	1.02	100	70- 130	20.00
Thallium	279.1	na	na	na	na	na	na	70- 130	20.00
Vanadium	286.1	na	na	na	na	na	na	70- 130	20.00
Zinc	289.1	1.00	0.23	1.21	98	1.22	99	70- 130	20.00
Iron	236.1	1.00	0.00	0.89	89	0.92	92	70- 130	20.00
Magnesium	242.1	1.00	0.00	0.94	94	0.93	93	70- 130	20.00

Definition of Terms:

na: Not analyzed in QC batch
SA: Spike Added
SR: Sample Result
MS: Matrix Spike Result
MS (%R) Matrix Spike % Recovery
MSD Matrix Spike Duplicate Result
MSD (%R) Matrix Spike % Recovery

LAB DIRECTOR: M. Golden

Hull Development Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: SM5520F/EPA 418.1

QC Batch : 95091
Matrix: Water
Units: mg/l

Date Analyzed: 9/6/95

PARAMETER	SA mg/l	SR mg/l	MS mg/l	MS PR	MSD mg/l	MSD PR	RPD	QC LIMITS RPD	PR
TRPH	80	0	76	95	73	91	4%	25	50-150

Definition of Terms:

SA: Spike Added
SR: Sample Result
MS: Matrix Spike Result
MSD (PR): Matrix Spike % Recovery
MSD: Matrix Spike Duplicate Result
MSD (PR): Matrix Spike Duplicate % Recovery
RPD: Matrix Spike Recovery % Variance

LAB DIRECTOR: M. Golden

APPENDIX 2

PIERS SOIL SAMPLING PROTOCOL

PIERS
Environmental
Services

3131 S. Bascom Avenue, #5
Campbell, CA 95008

Tel. (408) 559-1248 Fax (408) 559-1224

PIERS ENVIRONMENTAL SERVICES, INC.

DRILLING, SEALING, WELL CONSTRUCTION AND SAMPLING PROTOCOL
Last Rev. 7/95

Exploratory Boring Drilling and Sealing

Exploratory boring and well construction, and borehole sealing procedures follow guidelines recommended by the USEPA, California Regional Water Quality Control Board, and modified as required by City, local or water district agencies. Drilling is performed only under approved permits and boreholes are sealed upon completion. Hand augured bore holes are installed using a 3 ½ inch diameter stainless steel hollow core hand auger which has been steam-cleaned or cleaned in detergent and water, rinsed with clean tap water and finally rinsed with or distilled water, and air-dried prior to use.

Soil Sampling Procedures

1. Driven (or hydraulically pushed) soil sampling will commence at a depth of 5 feet below surface grade. The samples will be taken at 5 foot increments and at intervals of geologic interest or obvious contamination. Additional sampling and/or continuous coring may be done at the discretion of the supervising geologist. All logging will be done using the Unified Soil Classification System, together with pertinent geologic observations.

2. Soil sampling tools (split spoons, cores, etc.) will be disassembled, steam-cleaned or cleaned in detergent and water, rinsed with clean tap water and finally rinsed with distilled water, and air-dried prior to taking each sample. The cleaned tools will then be reassembled with similarly cleaned, dry brass sample liners and carefully lowered into the hollow stem augers for the collection of the next sample. The drill rig will be decontaminated as needed and at the discretion of the field personnel.

3. When sampling stockpile soils or during excavations, the soil sample will be collected by the following procedure; a clean brass liner will be pushed into the stockpile or soil in the excavator bucket. About two inches of soil will be brushed away and the liner pushed into the soil. The liner is then removed, sealed, labeled and logged onto chain-of-custody forms and packed in a chilled ice chest.

4. The soil samples from the bottom portion of the sampling tool (if in good condition) will be retained for chemical testing. The samples will be labeled and sealed in the field in their original liners. Sample liner ends will be sealed with Teflon sheeting, and capped with clean plastic Capplugs.

5. The remaining soil sample will be extruded from the other rings in the field and lithologically logged. Sampler shoe cuttings, drill rig response and bit penetration rate will also be logged, when appropriate. The cuttings and the soils samples not retained for chemical analysis will be placed in 55-gallon drums or covered on plastic sheeting until their chemical disposition is determined, and then properly disposed.

6. All samples retained for chemical analysis will be stored on ice in a clean, covered cooler-box for transport to the Laboratory.

Reconnaissance Groundwater Sampling Procedures

1. Reconnaissance groundwater sample, handling, and storage will follow applicable guidance documents of the Environmental Protection Agency and Regional Water Quality Control Board and local agency guidelines for the investigation.

2. Reconnaissance groundwater samples will be collected in the field in temporarily cased exploratory boreholes using clean Teflon or disposal bailers. The samples will be collected from temporarily cased exploratory boreholes. All sample containers will be properly prepared, sealed, labeled, and identified. Label information will include the date, sampler name, sampling time, and identification number, and the project name and number.

3. The sample will be delivered to a State Certified Laboratory within two days of collection. Samples will be kept on ice and/or refrigerated continuously for shipment to the Laboratory.

4. The sealed sample will only be opened by Laboratory personnel who will perform the chemical analysis.

5. The samples will be analyzed according to the approved EPA Method and storage for the requested analysis.

6. Groundwater sampling will begin 24 hours following well development, following the procedures detailed below for monitoring well sampling. Depth to water measurements are made to the nearest 0.01 foot with respect to a surveyed datum (project or known) and wells are checked for separate phase product. Boreholes are sealed following water sampling.

Well Construction

1. The proper permits will be obtained from the appropriate agency or Water District, using a Well Inspector as required to be present to witness the installation of the annular seal. The soils borings will be drilled with a continuous-flight hollow-stem auger of at least 3 inches Inside Diameter (ID) and 6 to 8 inches Outside Diameter (OD). All augers will be thoroughly steam-cleaned prior to visiting the site. The augers will be steamed cleaned between borings at a location well away from the proposed borings or adequate clean auger will be available to complete all of the wells without reusing auger sections.

2. A geologic drilling log will be made of the materials encountered and sample depth for each boring. The soils/sediment lithology will be logged using the Unified Soil Classification System. The log will include field descriptions of the soil lithologic variations, moisture conditions, geologic data, and any unusual characteristics which may indicate the presence of chemical contamination.

3. The borings will be advanced to a depth of 45 feet if a saturated zone is not encountered (in absence of other depth specifications). If a saturated zone is encountered, the boring will advance no further than 15 feet below first encountered groundwater or 5 feet into the underlying clay aquitard. A seal will be placed in the over drilled portion of the aquitard.

4. During the drilling operations, California DOT approved 55-gallon drums will be on site to contain potentially contaminated soils and rinse water.

5. Where borings are completed as groundwater monitoring wells, 2-inch ID schedule 40 PVC blank pipe will be used. Usual well screen selection will be 2 inch ID Schedule 40 PVC pipe with 0.020 inch machine slot. Sections will be threaded and screwed together; glues will not be used. Screens will extend 3-5 feet above first encountered groundwater. The annulus of the perforated section will be packed with clean #3 or #4 Monterey Sand, or equivalent, to a point about 2-feet above the screen interval. Final well design will be adjusted in the field to site specific subsurface conditions, and will be placed so as not to interconnect two possible aquifers. Screens will extend a nominal length above first encountered groundwater for floating product detection. A 1-2 foot thick bentonite seal will be placed on top of the sandpack. A cement annular seal which extends to the surface will be placed by tremie line from the bottom to top of the remaining annular space above the bentonite.

6. The top of the well casing will be locked to prevent contamination and tampering. Above-grade or at-grade well completion will depend upon the final well location. Above-grade completion will require a 6 inch diameter locking, steel protective casing and a Christy, or equivalent, traffic box and concrete pad.

Well Development

1. Wells will be developed until the water is free of fine-grained sediments and/or until field measurements of pH, and electrical conductivity have stabilized. Approximately 4 to 10 well volumes of water will be removed during development of the well. Duration of development will be specific for each well and continue until the water clears and sand content is minimal or ceases.

2. Equipment inserted into the well during development will be decontaminated by washing or steam cleaning prior to and after its use. Development water will be collected in California DOT approved 55-gallon drums.

Ground Water Monitoring Well Sampling

1. Depth to groundwater will be measured to the nearest 0.01 foot, and the well checked for presence of separate phase product. If present, the apparent thickness of the product will be measured. The well will not be sampled if separate phase product is present.

2. The standing well volume calculated, and 4 to 10 well volumes will be purged from the well prior to sampling. Measurements of conductivity, temperature and the pH of the water will be taken until parameters have stabilized to indicate that aquifer water is entering the well.

3. The groundwater samples will be collected using a new disposable bailer or clean Teflon Bailer. A field log will record sampling measurements and observations.

4. The Teflon Bailer (if selected) will be thoroughly steam-cleaned or cleaned with detergent and water, rinsed with tap water, and finally rinsed with de-ionized or distilled water prior to the collection of each sample. A separate clean bailer will be used to sample each individual well.

5. All water retained for chemical analysis will be placed in clean, borosilicate, 40ml VOA vial with a Teflon septum cap, or clean amber glass one-liter bottles and other sample containers as appropriate for water sampling purposes and test parameters. Each sample vial or bottle is topped-off to avoid air space, and will be inverted to check for air bubbles, and filled to minimum headspace. Samples will be placed on ice, blue ice, or refrigerated at 4 degrees Centigrade at all times.

6. Water samples blanks of distilled water will be poured through the sampling bailer (if a disposable bailer is not used) and placed in clean sample collection bottles or vials. One water sample blank will be taken for each set of water samples collected from each boring or well when using Teflon Bailers..

7. All sampling equipment will be decontaminated following each sampling event, prior to use the next monitoring well.

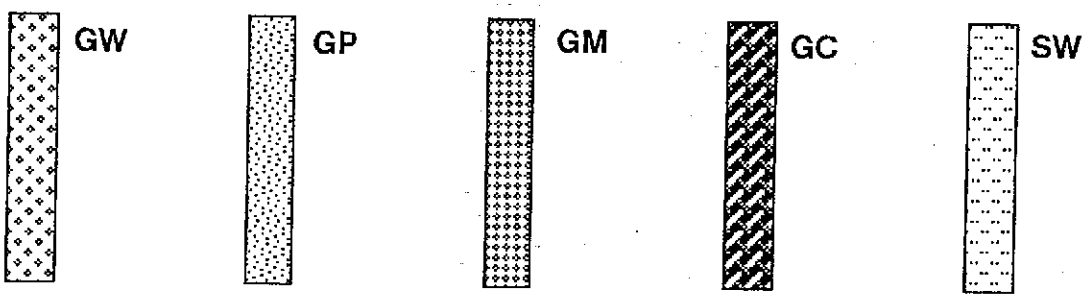
Sample Records and Chain of Custody

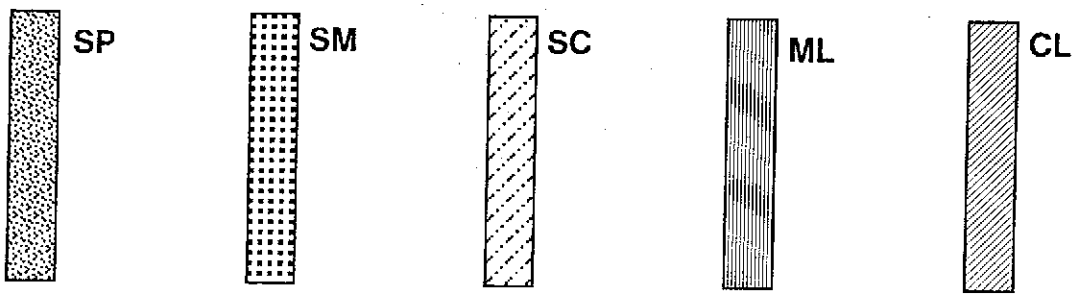
1. Sample records for each sample will contain information on sample type and source; PIERS Environmental Services project number, sampler name, sampling date, location, Laboratory name, sampling method, and any significant conditions that may affect the sampling.

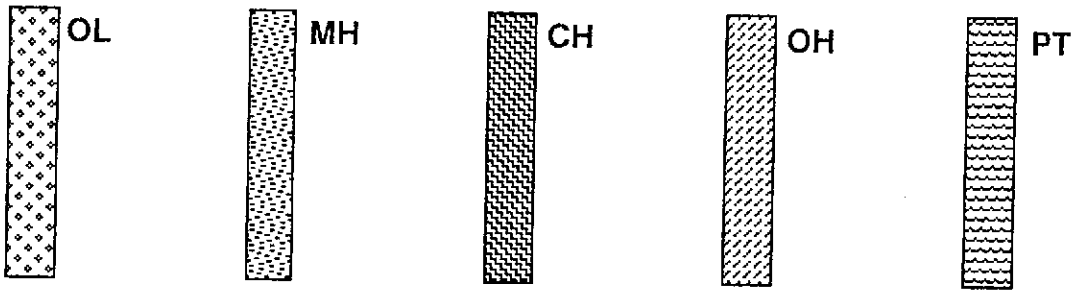
2. A signature Chain-of-custody and transference documentation will be strictly maintained at all times.

3. A copy of the Laboratory sample results and the completed Chain-of-Custody will be provided with the technical report.

PIERS Environmental USCS Soil Classification Symbols



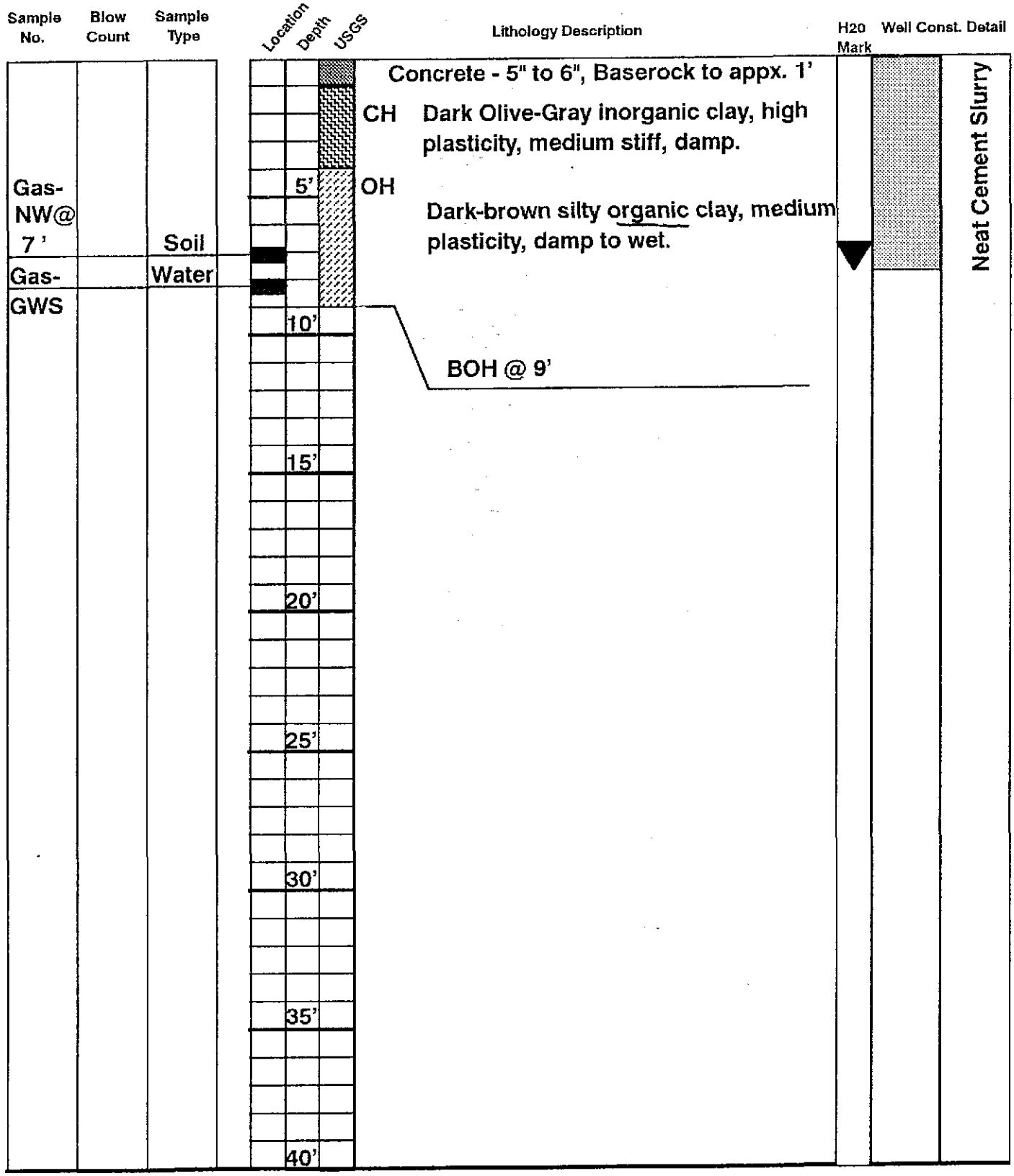




▼ Groundwater Level Indicator

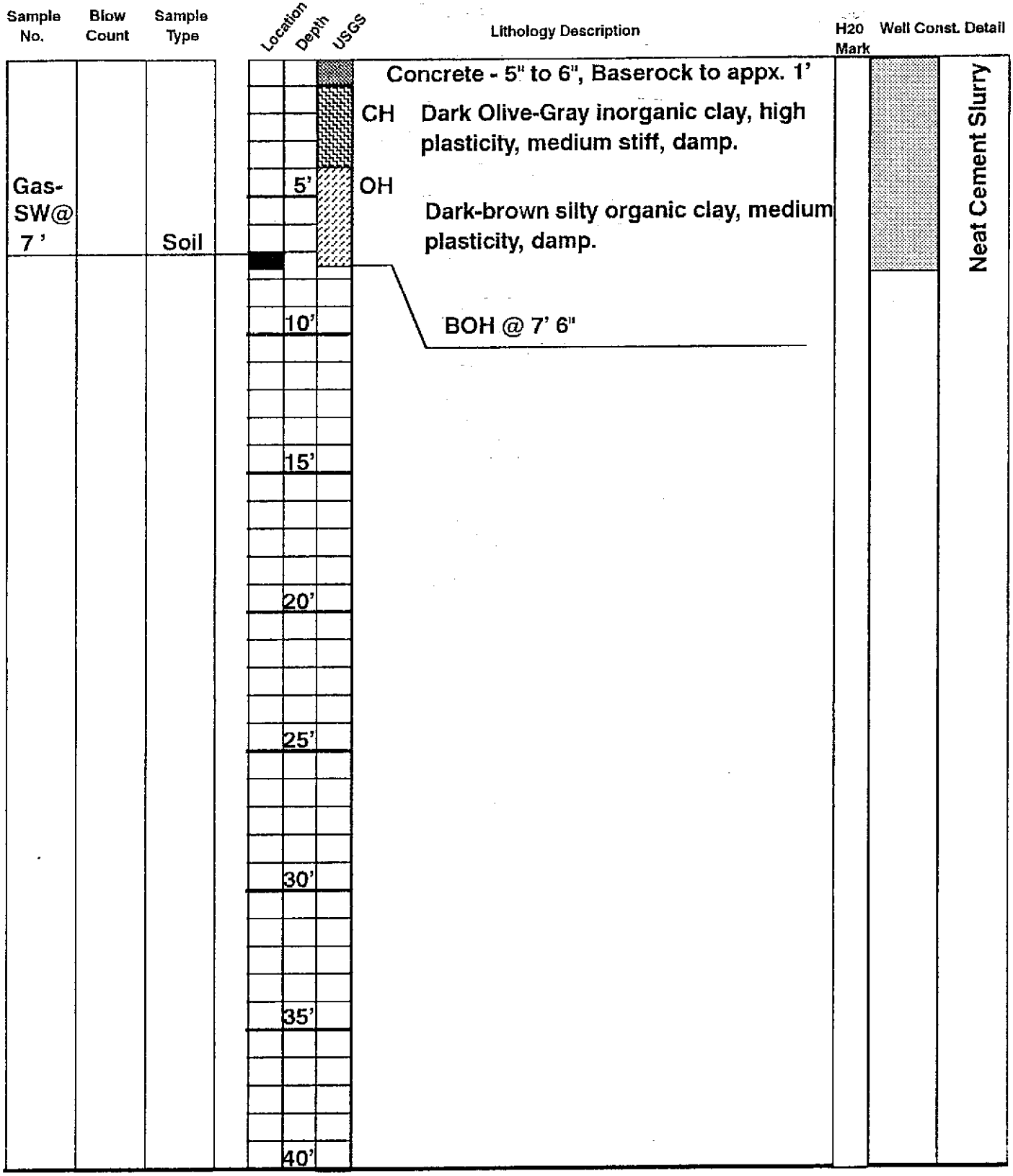
PIERS Environmental Services — Exploratory Boring Log

Project No. 95253 Client: Lotz and Associates Boring # ~~Gas-NW~~ Date: 6-1-95
Location: 3744 Depot Rd., Hayward, CA Logged By: B. Halsted
Drilling Method: 3.5 inch Hand Auger Permit: Amy Leech - ACDEH Page 1 of 1



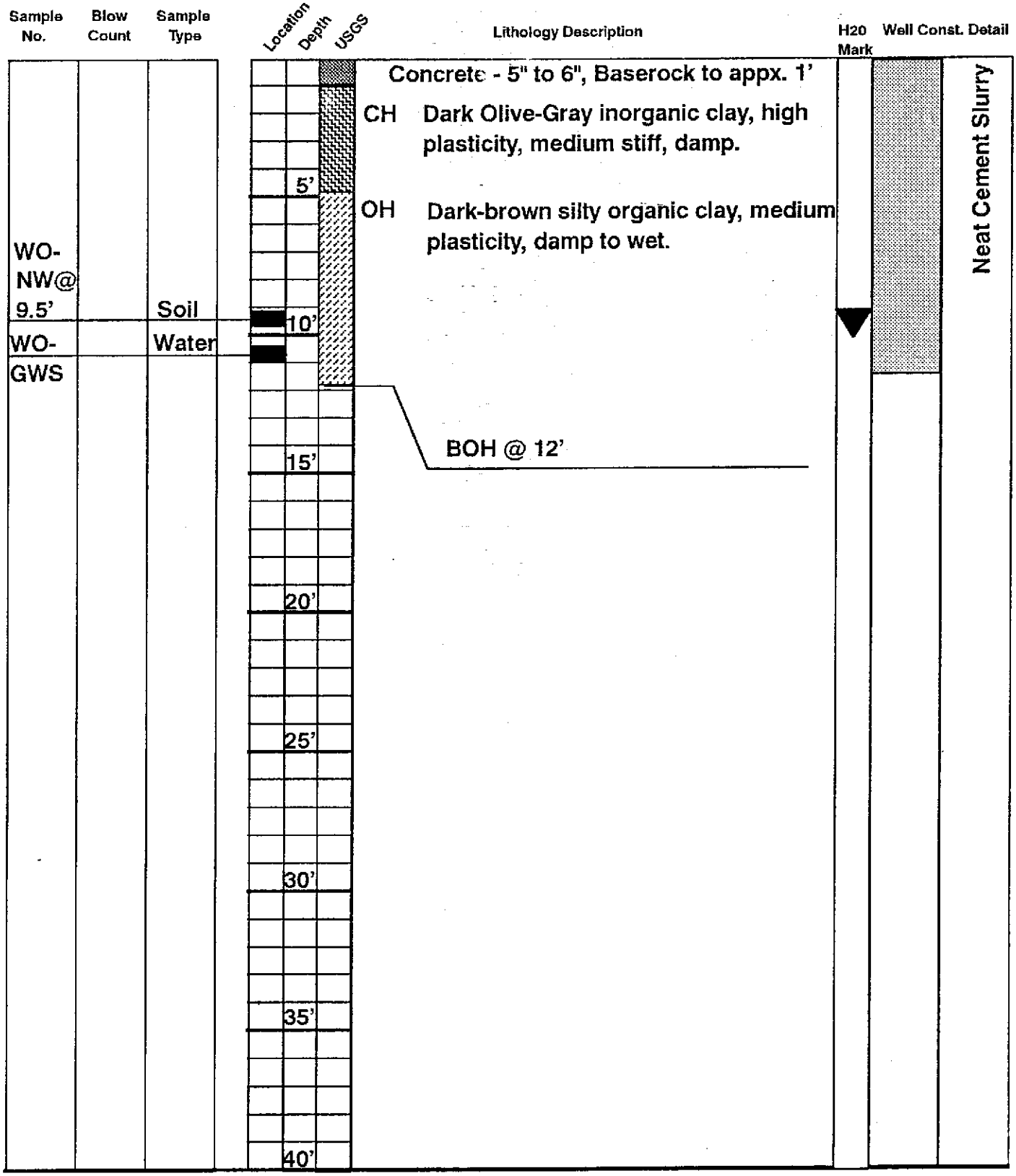
PIERS Environmental Services Exploratory Boring Log

Project No. 95253 Client: Lotz and Associates Boring # ~~Gas-SW~~ Date: 6-1-95
Location: 3744 Depot Rd., Hayward, CA Logged By: B. Halsted
Drilling Method: 3.5 inch Hand Auger Permit: Amy Leech - ACDEH Page 1 of 1



PIERS Environmental Services — Exploratory Boring Log

Project No. 95253 Client: Lotz and Associates Boring # WO-NW Date: 6-1-95
Location: 3744 Depot Rd., Hayward, CA Logged By: B. Halsted
Drilling Method: 3.5 inch Hand Auger Permit: Amy Leech - ACDEH Page 1 of 1



PIERS Environmental Services Exploratory Boring Log

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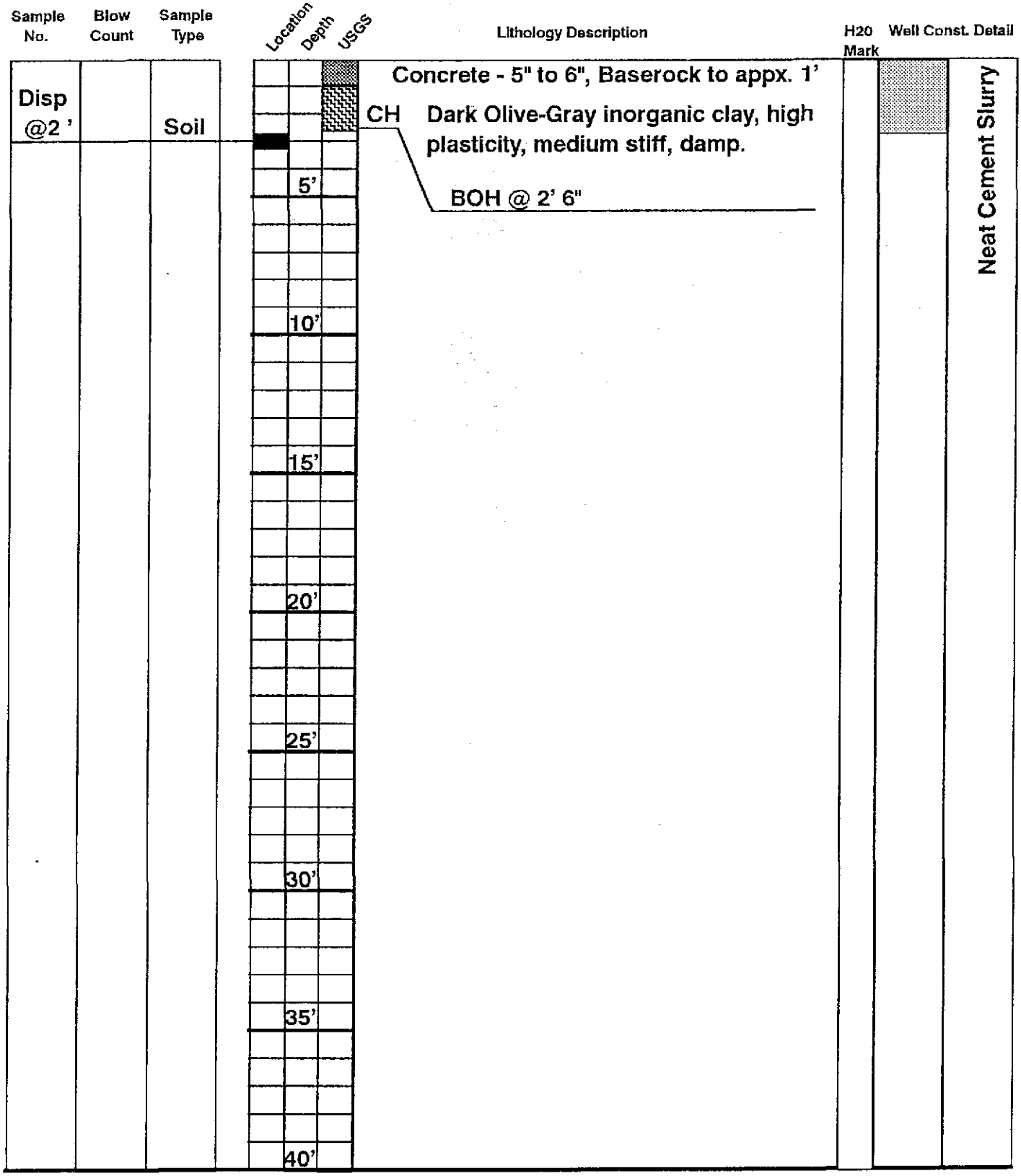
Drilling Method: 3.5 inch Hand Auger Permit: Amy Leech - ACDEH Page 1 of 1



PIERS Environmental Services — Exploratory Boring Log

Project No. 95253 Client: Lotz and Associates Boring # WO-SW Date: 6-1-95
Location: 3744 Depot Rd., Hayward, CA Logged By: B. Halsted
Drilling Method: 3.5 inch Hand Auger Permit: Amy Leech - ACDEH Page 1 of 1