Final 1999 Groundwater Monitoring Well Sampling Report and Request for No Further Action Status

of

3744 Depot Road
Hayward, California

4/99

Performed For:
Mr. Eric Freeberg
River Bend Properties, Inc.
PO Box 9440
Rancho Santa Fe, CA 92067-4440

Prepared By:
PIERS Environmental Services, Inc.
1330 S. Bascom Avenue, Suite F
San Jose, CA 95128

April 1999

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

April 20, 1999

Mr. Eric Freeberg
River Bend Properties, Inc.
P.O. Box 9440
Rancho Santa Fe, CA 92067-4440

AND

Mr. Amir Gholami
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: **Final 1999 Groundwater Monitoring Well Sampling Report and Request for No Further Action Status; 3744 Depot Road, Hayward, California**

Please find attached the Groundwater Monitoring Well Sampling Report and Request for a No Further Action Status for 3744 Depot Road, Hayward, California. PIERS is pleased to have been of service to you on this project. If you have any questions, please do not hesitate to call the undersigned.

Very truly yours,

REGISTERED PROFESSIONAL ENGINEER
SAMUEL H. HALSTED
C14095
3-31-01
DATE
CIVIL
STATE OF CALIFORNIA

Stuart Solomon
Senior Consultant

Samuel H. Halsted
Professional Engineer
C.E. No. 14095

TABLE OF CONTENTS

1.0 INTRODUCTION AND ENVIRONMENTAL HISTORY

The subject Property at 3744 Depot Road, Hayward, California, is located in a commercial/industrial district of Hayward, California, and is currently occupied by an automotive recycler. 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 a 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 were available. The previous tenant and property owners (Patricia and Kenneth Hein) are now (assumed) bankrupt, and the property was foreclosed on by the lender (Jack Lotz and Jesse Allen). The property was then sold to River Bend Properties, Inc., who is the current owner.

PIERS Environmental Services performed a "Limited Phase II Environmental Assessment" on the Property in August 1995. The PIERS report on this assessment is dated September 12, 1995, and is on file with the Alameda County Department of Environmental Health (ACDEH). In the PIERS investigation, five exploratory borings were installed at the site. 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 (ACDEH representative) during her site visit. An overview of the significant findings resulting from laboratory analyses of these soil and groundwater samples is as follows:

- Up to 3300 Parts Per Million (PPM) of Oil and Grease, and 2795 Parts Per Billion (PPB) of Semi-Volatile Organic Compounds (SVOC's) was discovered in soil sampled from the immediate area of the former waste oil tank. 390 PPM of Oil and Grease, and up to 600 PPB of Volatile Organic Compounds (VOC's) were detected in a sample of groundwater collected from the immediate area down-gradient from the former waste oil tank.

- Groundwater sampled in the immediate area down-gradient from the former gasoline tank was found to contain 43,000 PPB of Total Petroleum Hydrocarbons as Gasoline (TPHg), and 300 PPB of Benzene.

In order to meet the requirements of the ACDEH and the Regional Water Quality Control Board (RWQCB), PIERS performed a Preliminary Site Assessment to delineate and assess the extent of soil and groundwater impact, and to formulate a plan for site closure. This work was performed in accordance with a workplan submitted to the ACDEH on July

2, 1996, and included drilling four exploratory borings and converting two of them to groundwater monitoring wells. The scope of work included soil and groundwater grab sampling from the exploratory borings, installation of the two groundwater monitoring wells, development and sampling of the two new wells plus a third existing well located on site, and hydraulic gradient characterization. A report detailing the results of this investigation was prepared by PIERS, and is entitled ***Preliminary Site Assessment, Groundwater Well Installation and 1st Quarterly Report.*** This report is dated February 10, 1997, and is on file with the ACDEH.

Soil and groundwater sample results from this initial groundwater investigation indicated that there had been little, if any, migration of contaminants outside of the immediate vicinity of both former tanks. PIERS had suggested that over-excavating soils in the immediate vicinity of the two former tank pits should be sufficient to remedy any threat. After reviewing the data contained in the PIERS report, Amy Leech, the case worker at the ACDEH suggested that over-excavation may not be warranted, and recommended evaluating the next sampling event to determine if it was even necessary.

On April 29, 1997, PIERS performed another sampling event of the three groundwater wells located on the site. Samples were tested for chemical constituents as per the requests of Amy Leech. No detectable chemical constituents were present in water from any of the three wells during this sampling event. Amy Leech apparently left the employ of the ACDEH shortly thereafter, and, although she had indicated verbally that based on the latest sampling results, she intended to recommend site closure, she was not able to complete the cycle before leaving. Over the next year, the case was referred to two other oversight employees of the ACDEH, and finally ended up being delivered to Amir Gholami.

During their review of the data presented in each of the sampling events, the ACDEH noted a discrepancy in one of the reported gradient studies. After the initial "Limited Phase II Site Assessment" had been performed in September 1995, the regional gradient was estimated (but not accurately measured) to flow in a northerly direction. Measured gradient during the initial 1997 sampling, by mistake, had estimate the flow to be northerly. On November 3rd, 1998, PIERS submitted an amendment letter to the ACDEH which corrected the gradient to show a southerly flow, calculated to be approximately .002 ft. per foot (relatively "flat").

On March 1, 1999, Amir Gholami submitted a letter to the Property owner requesting that an additional round of sampling be performed in order to consider the site for closure. The following reports on this sampling event.

2.0 FIELD SAMPLING AND LABORATORY METHODS

The following table briefly describes the current well status:

Table 1. Monitoring Well Sampling Data

Well No.	*Depth Water*	*Depth to Elev ft.**	*Casing*	*Damage Product*	*Floating*
MW # 1	5.76	4.26	10.02	None	None
MW # 2	5.63	4.82	10.45	None	None
MW # 3	5.33	4.73	10.06	None	None

* Measured to a City of Hayward Bench Mark at Cabot Blvd. and Depot Road

2.1 Sampling Procedures:

On March 30, 1999, the three wells located at the subject Property were purged and sampled in accordance with applicable sampling protocols provided by the Regional Water Quality Control Board and the Alameda County Department of Environmental Health.

The PIERS sample technician proceeded to purge a minimum of four well volumes (a calculation was done for each well following depth to water sounding measurements) of groundwater from each well using a new disposable bailer for MW-1 and MW-2, and a clean 2 inch Whale well-sampling pump for MW-3. The wells were then allowed to re-charge. Between each well volume, conductivity, pH, and water temperature readings were obtained and noted on the **Groundwater Sampling Information Sheets** (See Appendix A). Once the minimum number of well volumes was purged and stabilization of the readings was noted, the sample was collected from the well. Purge water was stored on-site in 55 gallon DOT approved drums. The well sampling information sheets containing data on temperature, conductivity, pH, depth to water, and well volumes purged can be found in Appendix A. A copy of the Chain-of-Custody form and the Laboratory Analysis Results can be found in Appendix B.

A new disposable bailer was used to obtain a groundwater sample from each well. Samples were placed in two 40 milliliter voa clear glass bottles for MW-1 and MW-2, and two 1 liter amber glass bottles for MW-2 and MW-3, leaving no headspace. The containers were immediately labeled and placed on ice for transport to Entech Analytical Laboratories, Inc. in Sunnyvale, California **(a State Certified Lab)** for the requested analyses under Chain-of-Custody documentation. As per the instructions

from the case worker, Mr. Amir Gholami of the ACDEH, Entech Analytical Labs tested the groundwater samples from MW-1 and MW-2 for Total Petroleum Hydrocarbons quantified as Gasoline (TPHg), and for Benzene, Toluene, Ethyl benzene, and Total Xylenes (BTEX) using EPA Method 8015M/8020. The sample from MW-2 was also tested for Total Recoverable Petroleum Hydrocarbons (TRPH) by EPA Method 418.1. The water sample from MW-2 was also tested for Volatile Organic Compounds (VOC's) by EPA Method 8240, and for Semi-Volatile Organic Compounds (SVOC's) by EPA Method 8270.

2.2 Analytical Laboratory Results:

The analytical results for the groundwater samples revealed the following;

Table 2. Groundwater Sample Analytical Data

TEST	*MW-1*	*MW-2*
TRPH (418.1)	NA	ND
TPHd (8015m)	NA	ND
TPHg (8015m)	ND	ND
Benzene (8020)	ND	ND
Toluene (8020)	ND	ND
Ethyl Benzene (8020)	ND	ND
MTBE (8020)	ND	9.3 ppb
Total Xylenes (8020)	ND	ND
tert-Butanol (8240)	NA	ND
MTBE (8240)	NA	ND
Diisopropyl ether (8240)	NA	ND
Ethyl-tert-butyl ether (8240)	NA	ND
tert-Amylmethyl ether (8240)	NA	ND
Bromodichloromethane (8240)	NA	5.5 ppb
Dibromochloromethane (8240)	NA	8.4 ppb
All other 8240 constituents	NA	ND
All Semi-volatile constituents (3510C)	NA	ND

ND - None detected; (see laboratory report for reporting limits)
NA - Not Analyzed

The laboratory analysis reports are presented in **Appendix B**.

2.3 Discussion of Findings:

MW-1 was found to contain no detectable chemical constituents as tested.

Trace elements of Bromodichloromethane (5.5 PPB) and Dibromochloromethane (8.4 PPB) were detected in water from **MW-2**. These are both naturally occurring, tri-halomethanes which can form when common halogens (such as chlorine or bromine) and organic materials come into contact. These chemicals are not associated with fuels or solvents, and at trace levels, pose no health or environmental threat. As indicated in the MW-2 well boring log, subsurface sediments in the immediate vicinity contain significant organic materials (OH). This could explain the trace occurrences of these two tri-halomethanes.

MTBE was reported in MW-2 detected at 9.3 by EPA Method 8020. It is common knowledge, however, that this method can and does frequently indicate false positives for this chemical constituent. EPA Method 8240 (VOC's) is the recommended test to verify and quantify MTBE. **The 8240 test on MW-2 indicated a Non-Detect for MTBE**.

2.4 Groundwater Gradient Data:

The groundwater flow direction was calculated, and estimated to be North Northwesterly at a flow rate of approximately .0017 ft. per foot (nearly a flat gradient). **Figure 2** shows the respective locations of the wells, and the gradient calculations.

3.0 CONCLUSIONS AND RECOMMENDATIONS

- MW-1 and MW-2 are positioned in the immediate vicinity of and estimated down-gradient from the former gasoline and waste oil tanks. The May, 1997 and the current gradient studies indicate a Northerly groundwater flow. One of the previous gradient studies performed in February, 1997 indicated a Southerly flow. In each study, however, the gradient was found to be relatively flat. Based on this data, it appears that the wells are appropriately positioned with relation to the location of the former tanks.

- Groundwater samples from MW-1 and MW-2 on site have never been found to contain detectable petroleum constituents. The initial sampling performed in July, 1996 detected 32 PPB of Di-n-butylphthalate in MW-2, which, according to the Merck Index Encylopedia for Chemicals and Drugs is a chemical used in insect repellant. This constituent was not detected in any of the subsequent sampling events. PIERS speculated that the chemical may have come from the sampler's gloves or clothing. As mentioned earlier, these are both naturally occurring, tri-halomethanes which can

form when common halogens (such as chlorine or bromine) and organic materials come into contact. These chemicals are not associated with fuels or solvents, and at these trace levels, pose no potential health or environmental threat. As indicated in the MW-2 well boring log, subsurface sediments in the immediate vicinity contain significant organic materials (OH). This could explain the trace occurrences of these two tri-halomethanes.

- Both of the former tank excavation pits were left open after the tanks had been removed, and allowed to aerate for more than two years. Aromatic fuels, VOC's, or SVOC's in soil and groundwater in the immediate vicinity would likely have dissipated and/or biologically degraded over this extended period of time. Both tank pits were observed and noted to significant contain plants and foliage prior to they're being backfilled - indicating significant biological activity.

- Based on an evaluation of all sampling data presented to date, it does not appear that the previous fuel tanks at this site have posed a significant impact to soil or groundwater in their vicinity. PIERS recommends that this site be granted a no-further-action status, and that the case be closed.

4.0 LIMITATIONS

The sampling and related report for this site were performed using recommended current guidance documents of the Regional Water Quality Control Board. The statements, conclusions, and recommendations are based on present site conditions. PIERS Environmental Services, Inc. is not responsible for laboratory errors and no warranty or guarantee is implied thereon.

If you have any questions regarding this report, please do not hesitate to call PIERS.

Attachments:

Figure 1. Site Vicinity Map
Figure 2. Site Map with Well Locations and Gradient Study

Appendices:
A. Groundwater Sampling Information Sheets
B. Chemical Analytical Data and Chain-of-Custody Form

FIGURE 1

Site Vicinity Map

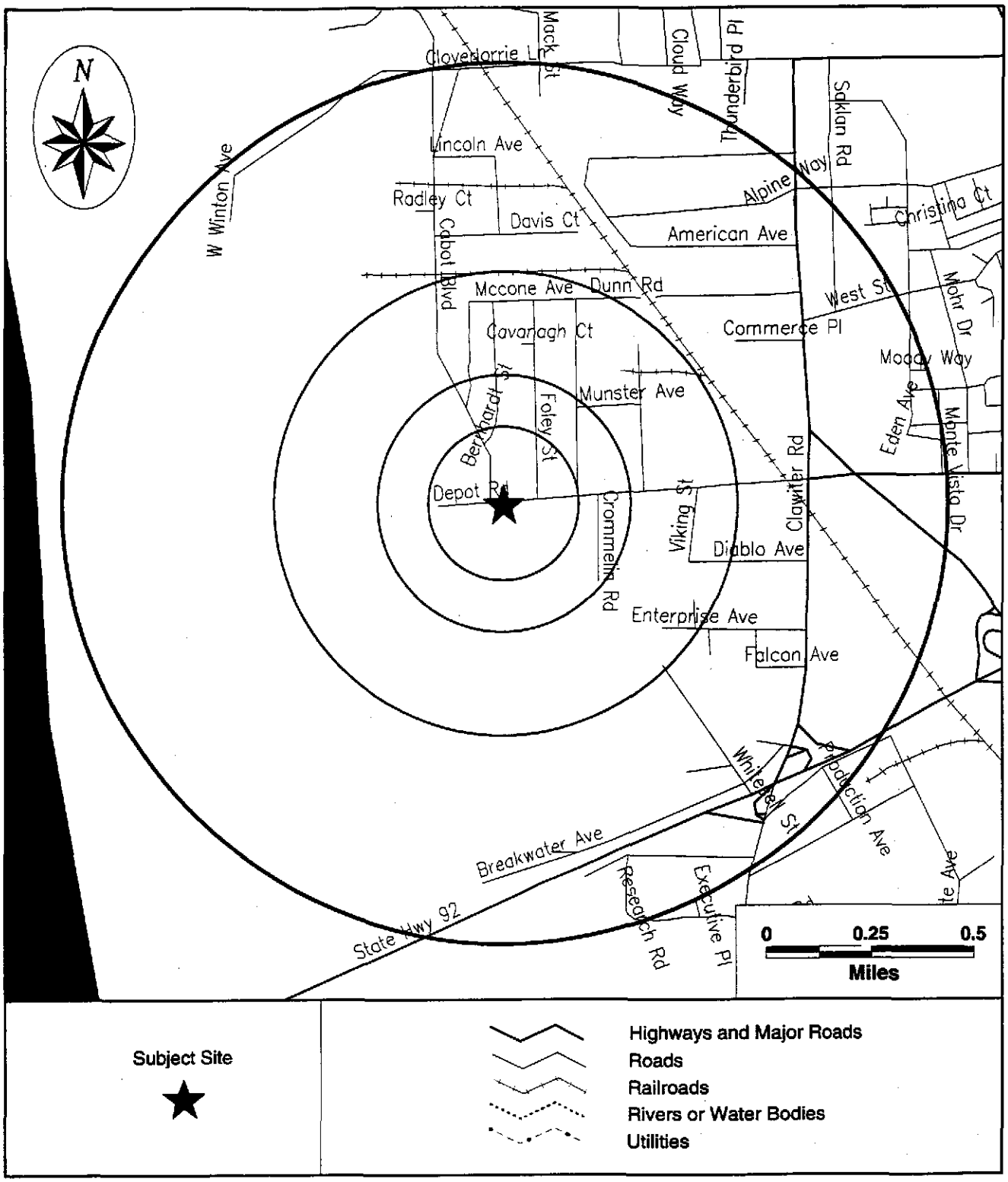


FIGURE 1
SITE VICINITY MAP

3744 DEPOT ROAD
HAYWARD, CALIFORNIA

NOT TO SCALE
APRIL 1999

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE. SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224

FIGURE 2

Site Map with Well Locations

JAMES RASP P.E.
Civil and Structural Engineering
5134 Elrose Avenue
San Jose, California 95124
(408) 448-6768

JOB 96121 / FIERS ENVIRONMENTAL
SHEET NO. 1 OF 1
CALCULATED BY JRASP DATE 12/96
CHECKED BY _____ DATE _____
SCALE 1" = 50'

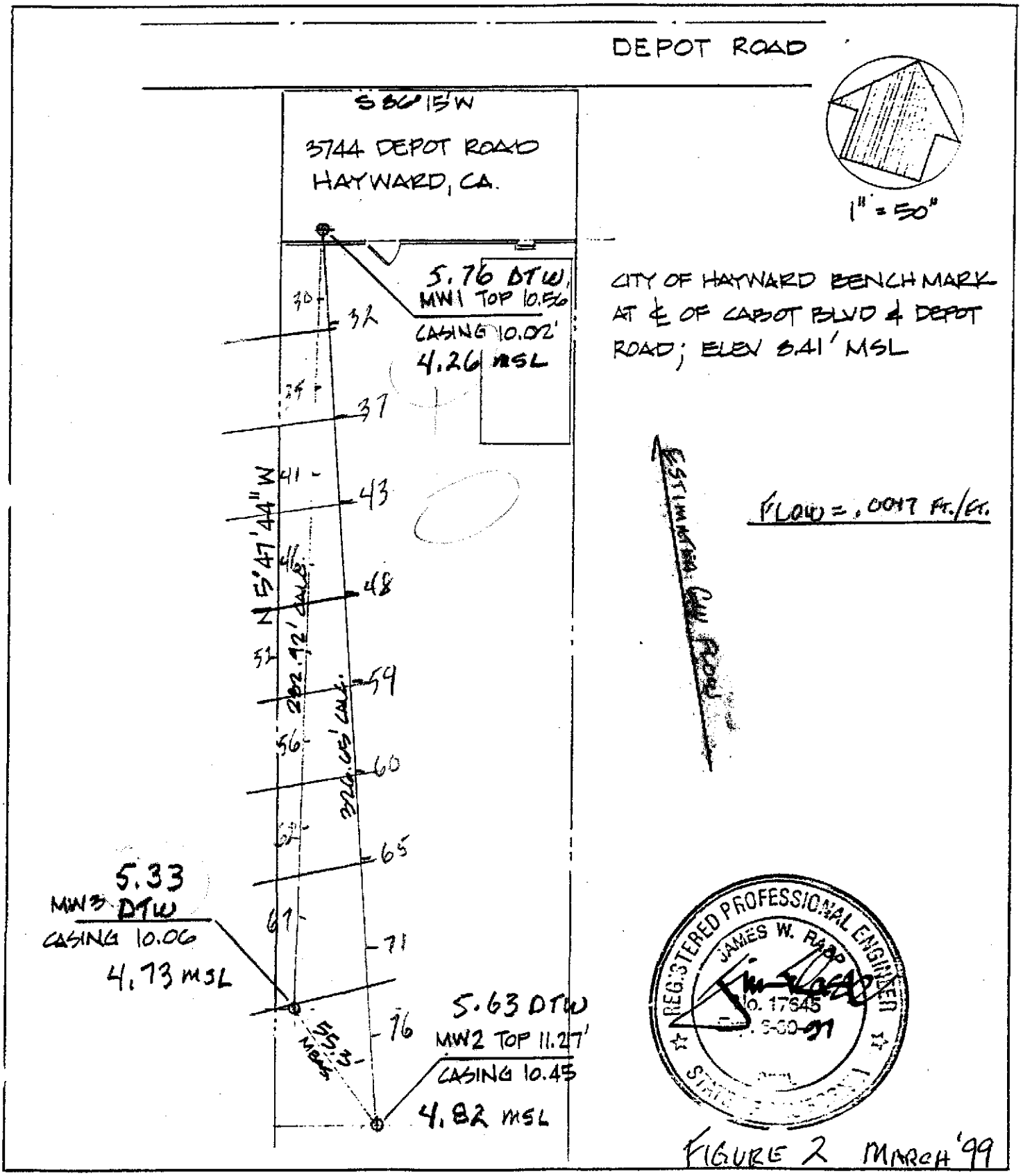


FIGURE 2 MARCH '99

APPENDIX A

Groundwater Sampling Information Sheets

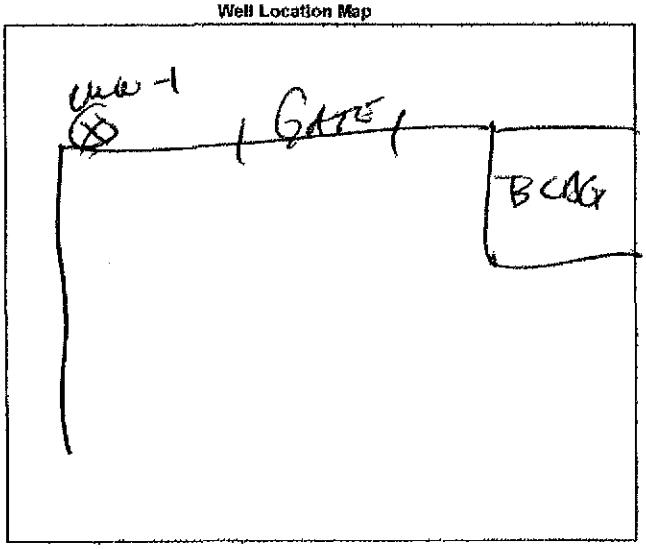
CGS Sampling Specialists *1172 Delmas Street, San Jose, California 95125 (408) 286-7009*

WATER-QUALITY SAMPLING INFORMATION

Project Name: Depot Road
Address: 3744 Depot Rd
Samplers Name: Eric Lissuk
Sampling Method: Disp Bailer
Analyses Requstd: 8015/8020
Number/Types of Sample Bottles: 2 40 mL VOAs
Method of Shipmt: Gel Ice

Date: 3-30-99
Project No.: Depot Rd.
Sample No: MW1

Well Location Map



Groundwater Well Data

Well No.: MW-1
Well Diameter (in.): 2
Well Head Elevation: 10.02
Depth to Water (Static - ft.): 5.76
Total Well Depth (ft.): 15.0
Height of Water Column (in ft.): 9.24
Water Volume in Well (gal): 1.48
Water in Well Box ?: No
Silt Removal Necessary?: No
Well Depth After Silt Removal: —

2-inch casing = 0.16 gal/ft
4-inch casing = 0.65 gal/ft
5-inch casing = 1.02 gal/ft
6-inch casing = 1.47 gal/ft

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN	TEMP. (F)	pH (s.u.)	Cond. (mhos/cm)	Purge Volumes X	Purge Volumes Vol.	REMARKS
	5.76	0	61.1	8.13	9.09	X	0	No Odor
	—	1.5	60.0	7.91	9.83	+ -	1	
	—	3.0	57.9	7.48	9.81	+ -	2	
	—	4.5	59.1	7.33	9.79	+ -	3	
	—	6.0	59.0	7.30	9.80	+ -	4	
	6.56	7.5	59.1	7.30	9.81	+ -	4+	Sample

COMMENTS:

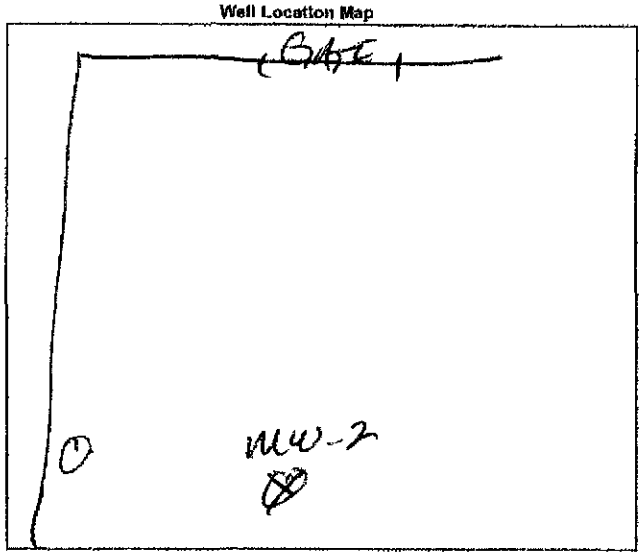
CGS Sampling Specialists *1172 Delmas Street, San Jose, California 95125 (408) 286-7009*

WATER-QUALITY SAMPLING INFORMATION

Project Name: Depot Rd
Address: 3744 Depot Rd
Samplers Name: Chris Lisbon
Sampling Method: Disp. Bailer
Analyses Requstd: 418.1/8015/8020/8240/3510C
Number/Types of Sample Bottles: 2/40ml/2-1LTR
Method of Shipmt: On Ice

Date: 3/30/99
Project No.:
Sample No: MW-2

Well Location Map



Groundwater Well Data

Well No.: MW-2
Well Diameter (in.): 2
Well Head Elevation: 10.45
Depth to Water (Static - ft.): 5.63
Total Well Depth (ft.): 15.20
Height of Water Column (in ft.): 9.57
Water Volume in Well (gal): 1.53
Water in Well Box ?: /
Silt Removal Necessary?: /
Well Depth After Silt Removal: /

2-inch casing = 0.16 gal/ft
4-inch casing = 0.65 gal/ft
5-inch casing = 1.02 gal/ft
6-inch casing = 1.47 gal/ft

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN	TEMP. (F)	pH (s.u.)	Cond. (mhos/cm)	Purge Volumes X	Purge Volumes Vol.	REMARKS
	5.63	0	62.0	8.45	9.43	X	0	X 0 ODOR
	/	1.5	61.2	7.89	9.80	+-	1	
	/	3.0	60.5	7.69	9.69	+-	2	
	/	4.5	60.0	7.58	9.73	+-	3	
	/	6.0	59.9	7.51	9.73	+-	4	
	6.60	7.5	59.8	7.50	9.79	+-	4+	SAMPLE

COMMENTS:

CGS Sampling Specialists *1172 Delmas Street, San Jose, California 95125 (408) 286-7009*

WATER-QUALITY SAMPLING INFORMATION

Project Name: Depot Rd
Address: 3244 Depot Rd
Samplers Name: CHRISSOL
Sampling Method:
Analyses Requstd: Monitor Only
Number/Types of Sample Bottles:
Method of Shipmt:

Date: 11-30-99
Project No.:
Sample No: MW-3

Well Location Map

Groundwater Well Data

Well No.:
Well Diameter (in.):
Well Head Elevation:
Depth to Water (Static - ft.): 5.33
Total Well Depth (ft.):
Height of Water Column (in ft.):
Water Volume in Well (gal):
Water in Well Box ?:
Silt Removal Necessary?:
Well Depth After Silt Removal:

2-inch casing = 0.16 gal/ft
4-inch casing = 0.65 gal/ft
5-inch casing = 1.02 gal/ft
6-inch casing = 1.47 gal/ft

TIME	DEPTH TO WATER (feet)	VOLUME WITHDRAWN	TEMP. (F)	pH (s.u.)	Cond (mhos/cm)	Purge Volumes X	Vol.	REMARKS

COMMENTS:

APPENDIX B

CHEMICAL ANALYTICAL DATA AND

CHAIN-OF-CUSTODY FORMS

Entech Analytical Labs, Inc.

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: 1330 S. Bascom #F
SJ
Contact: B. Halsted
Telephone #: 408 559-1248
Date Received: 4/5/99
Turn Around: Norm

Project ID: Riverbend
Purchase Order #:

Sampler/Company: B. Halsted PIERS
Telephone #: 408 559-1248

Special Instructions/Comments

LAB USE ONLY

Samples arrived chilled and intact:
Yes No

Notes:
No MTBE per Stu Solomon on MW1 4-14-99 AA

Sample Information

Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container
G8558	MW1		water	3/30/99	2:45		(2) 40ml VOA
G8559	MW2		"	"	2:30		(3) 40ml VOA 2 1 Liter Amb

Requested Analysis

Lab #	TPH/g BTEX MTBE	TPH/d	418.1	8270	8240 +O2			
G8558	X							
G8559	X	X	X	X	X			

Relinq. By:	Received By:	Date 4/5/99	Time 915
Relinq. By:	Received By:	Date	Time
Relinq/ By:	Received By:	Date	Time

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

Piers Environmental Services
1330 South Bascom Avenue
San Jose, CA 95128
Attn: Ben Halsted

Date: 4/13/99
Date Received: 4/5/99
Project: Riverbend
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW1			MW-2							
Sample Date	3/30/99			3/30/99							
Sample Time	2:45			2:30							
Lab #	G8558			G8559							
	Result	DF	DLR	Result	DF	DLR				PQL	Method
Results in mg/Liter:											
Analysis Date				4/7/99							
TRPH	na			ND	1.0	5.0				5.0	418.1
Results in µg/Liter:											
Analysis Date				4/12/99							
TPH-Diesel	na			ND	1.0	50				50	8015M
Analysis Date	4/9/99			4/9/99							
TPH-Gas	ND	1.0	50	ND	1.0	50				50	8015M
MTBE	na			9.3	1.0	5.0				5.0	8020
Benzene	ND	1.0	0.50	ND	1.0	0.50				0.50	8020
Toluene	ND	1.0	0.50	ND	1.0	0.50				0.50	8020
Ethyl Benzene	ND	1.0	0.50	ND	1.0	0.50				0.50	8020
Xylenes (total)	ND	1.0	0.50	ND	1.0	0.50				0.50	8020
Analysis Date				4/9/99							
tert-Butanol	na			ND	1.0	20				20	8240
MTBE	na			ND	1.0	5.0				5.0	8240
Diisopropyl ether	na			ND	1.0	5.0				5.0	8240
Ethyl-tert-butyl ether	na			ND	1.0	5.0				5.0	8240
tert-Amylmethyl ether	na			ND	1.0	5.0				5.0	8240

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

- na: not analyzed
- Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #I-2346)

Michelle L. Anderson, Lab Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

April 13, 1999

Ben Halsted
Piers Environmental Services
1330 South Bascom Avenue
San Jose, CA 95128

Subject:	1 Water Sample
Lab #'s:	G8559
Project Name:	Riverbend
Project Number:	
Method(s):	EPA 8240
	EPA 8270-ATL
Subcontract Lab:	Advanced Technology Laboratories (CAELAP #1838)

Dear Ben Halsted,

Chemical analysis on the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#I-2346). If you have any questions regarding procedures or results, please call me at 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# I-2346

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

Certified Analytical Report
Volatile Organic Compounds by EPA Method 8240

Client: Piers Environmental Services
Sample Matrix: Water
Sample Date/Time: 3/30/99 2:30
Lab #: G8559
Client ID: MW-2

Date Reported: 4/13/99
Date Received: 4/5/99
Date Analyzed: 4/9/99
Dilution Factor: 1

Compound	Value	PQL	DLR	Compound	Value	PQL	DLR
Acetone	ND	20	20	1,1-Dichloroethene	ND	5	5
Allyl Chloride	ND	20	20	trans-1,2-Dichloroethene	ND	5	5
Benzene	ND	5	5	1,2-Dichloropropane	ND	5	5
Benzyl Chloride	ND	20	20	cis-1,3-Dichloropropene	ND	5	5
Bromodichloromethane	**5.5**	5	5	trans-1,3-Dichloropropene	ND	5	5
Bromoform	ND	5	5	Ethyl Benzene	ND	5	5
Bromomethane	ND	5	5	2-Hexanone	ND	20	20
2-Butanone	ND	20	20	Iodomethane	ND	5	5
Carbon Disulfide	ND	5	5	Methylene Chloride	ND	5	5
Carbon Tetrachloride	ND	5	5	4-Methyl-2-Pentanone	ND	20	20
Chlorobenzene	ND	5	5	Styrene	ND	5	5
Chloroethane	ND	5	5	1,1,1,2-Tetrachloroethane	ND	5	5
Chloroform	ND	5	5	1,1,2,2-Tetrachloroethane	ND	5	5
Chloromethane	ND	5	5	Tetrachloroethene	ND	5	5
Dibromochloromethane	**8.4**	5	5	Toluene	ND	5	5
1,2-Dibromo 3-Chloropropane	ND	5	5	1,1,1-Trichloroethane	ND	5	5
1,2-Dibromoethane (EDB)	ND	5	5	1,1,2-Trichloroethane	ND	5	5
Dichlorodifluoromethane	ND	5	5	Trichloroethene	ND	5	5
1,2- Dichlorobenzene	ND	5	5	Trichlorofluoromethane	ND	5	5
1,3- Dichlorobenzene	ND	5	5	1,2,3-Trichloropropane	ND	5	5
1,4- Dichlorobenzene	ND	5	5	Vinyl Acetate	ND	10	10
1,1-Dichloroethane	ND	5	5	Vinyl Chloride	ND	5	5
cis-1,2-Dichloroethene	ND	5	5	Xylenes (total)	ND	5	5
1,2-Dichloroethane	ND	5	5				

Surrogate	Recovery (%)
Dibromofluoromethane	115
Toluene-d8	104
4-Bromofluorobenzene	90

1. Results are reported in ug/Liter (ppb)
2. DLR= DF x PQL
3. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #I-2346)

Michelle L. Anderson, Lab Director

ND: None Detected at or above DLR
DLR: Detection Reporting Limit

PQL: Practical Quantitation Limit
DF: Dilution Factor

April 9, 1999

ELAP No.: 1838

Entech Analytical Labs, Inc.
525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

ATTN: Michelle Anderson

Client's Project: Piers
Lab No.: 34685-001

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 (562) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Cheryl De Los Reyes
Technical Operations Manager
CDR/jh

Enclosures

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

Client: Entech Analytical Labs, Inc.
Attn: Michelle Anderson

Client's Project: Piers
Date Received: 04/07/99
Matrix: Water
Units: µg/l
Extraction Method: 3510C

EPA Method 8270C

Lab No.:	Method Blank	34685-001										
Client Sample I.D.:	--	G8559(MW2)										
Date Sampled:	--	03/30/99										
QC Batch #:	S998270W080	S998270W080										
Date Extracted:	04/07/99	04/07/99										
Date Analyzed:	04/07/99	04/07/99										
Analyst Initials:	ZL	ZL										
Dilution Factor:	1	1										

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

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

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

Client: Entech Analytical Labs, Inc.
Attn: Michelle Anderson

Client's Project: Piers
Date Received: 04/07/99
Matrix: Water
Units: µg/l
Extraction Method: 3510C

EPA Method 8270C

Lab No.:		Method Blank		34685-001									
Client Sample I.D.:		—		G8559(MW2)									
ANALYTE	MDL	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results	DLR	Results
Acenaphthene	10	10	ND	10	ND								
2,4-Dinitrophenol	20	20	ND	20	ND								
Dibenzofuran	10	10	ND	10	ND								
4-Nitrophenol	20	20	ND	20	ND								
2,4-Dinitrotoluene	10	10	ND	10	ND								
Fluorene	10	10	ND	10	ND								
Diethylphthalate	10	10	ND	10	ND								
4-Chlorophenyl-phenyl ether	10	10	ND	10	ND								
4-Nitroaniline	10	10	ND	10	ND								
4,6-Dinitro-2-methylphenol	20	20	ND	20	ND								
n-Nitrosodiphenylamine	10	10	ND	10	ND								
4-Bromophenyl-phenyl ether	10	10	ND	10	ND								
Hexachlorobenzene	10	10	ND	10	ND								
Pentachlorophenol	20	20	ND	20	ND								
Phenanthrene	10	10	ND	10	ND								
Anthracene	10	10	ND	10	ND								
Di-n-butylphthalate	10	10	ND	10	ND								
Fluoranthene	10	10	ND	10	ND								
Pyrene	10	10	ND	10	ND								
Butylbenzylphthalate	10	10	ND	10	ND								
Benzo[a]anthracene	10	10	ND	10	ND								
3,3'-Dichlorobenzidine	20	20	ND	20	ND								
Chrysene	10	10	ND	10	ND								
bis(2-Ethylhexyl)phthalate	10	10	ND	10	ND								
Di-n-octylphthalate	10	10	ND	10	ND								
Benzo[b]fluoranthene	10	10	ND	10	ND								
Benzo[k]fluoranthene	10	10	ND	10	ND								
Benzo[a]pyrene	10	10	ND	10	ND								
Indeno[1,2,3-cd]pyrene	10	10	ND	10	ND								
Dibenz[a,h,]anthracene	10	10	ND	10	ND								
Benzo[g,h,i]perylene	10	10	ND	10	ND								

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

Approved/Reviewed By: _____
Lee Ingvaldson
Department Supervisor

Date: 04/12/99

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

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

Method : D:\HPCHEM\1\METHODS\8270A.M (RTE Integrator)
Title : EPA 8270C Advanced Technology Laboratory
Last Update : Mon Apr 05 16:33:19 1999
Response via : Initial Calibration

Non-Spiked Sample: SB0407A.D

	Spike Sample	Spike Duplicate Sample
File ID :	SMS0407A.D	SMD0407A.D
Sample :	WATER MS BLANK e:04/07/99 W080	WATER MS BLANK e:04/07/99 W080
Acq Time:	7 Apr 1999 7:22 pm	7 Apr 1999 7:58 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Phenol	0.0	200	54	55	27	27	3	21	12- 78
2-Chlorophenol	0.0	200	125	124	63	62	1	24	30- 91
1,4-Dichlorobenzene	0.0	100	65	65	65	65	1	18	36- 87
N-Nitroso-di-n-propy	0.0	100	84	83	84	83	1	21	31-114
1,2,4-Trichlorobenze	0.0	100	72	72	72	72	0	18	38-100
4-Chloro-3-methylphe	0.0	200	154	152	77	76	1	16	35-102
Acenaphthene	0.0	100	75	74	75	74	1	17	46- 94
4-Nitrophenol	0.0	200	69	75	35	37	8	58	10- 91
2,4-Dinitrotoluene	0.0	100	79	79	79	79	1	20	42-115
Pentachlorophenol	0.0	200	237	237	118	119	0	51	8-125
Pyrene	0.0	100	86	85	86	85	1	16	36-114

QC Batch # S998270W080

Reviewed/Approved By: _____ Date: 04/12/99

Lee Ingvaldson
Department Supervisor

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: TOTAL RECOVERABLE PETROLEUM HYDROCARBONS
Laboratory Control Samples

QC Batch ID: WTRPHIR990401
Matrix: Water
Units: mg/L

Date Analyzed: 04/07/99
Spiked Sample: Blank Spike

PARAMETER	SA mg/L	SR mg/L	SP mg/L	**SP PR**	SPD mg/L	**SPD PR**	RPD	QC LIMITS RPD	QC LIMITS PR
TRPH	20	0	20	**100**	22	**110**	9.5	25	70-130

Definition of Terms:

RPD: Relative Percent Difference (Duplicate Analyses)
SA: Spike Added
SR: Sample Result
SP: Spike Result
SP (PR): Spike % Recovery
SPD: Spike Duplicate Result
SPD (PR): Spike Duplicate % Recovery

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suit
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2990409
Matrix: Water
Units: µg/L

Date Analyzed: 04/09/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP % R**	SPD 30.83	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<0.50	40	ND	35	**88**	40	**100**	12.4	25	81-115
Toluene	8020	<0.50	40	ND	35	**87**	40	**99**	13.3	25	82-115
Ethyl Benzene	8020	<0.50	40	ND	35	**88**	40	**100**	12.6	25	81-116
Xylenes	8020	<0.50	120	ND	104	**86**	121	**101**	15.9	25	83-115
Gasoline	8015	<50.0	500	ND	434	**87**	433	**87**	0.3	25	75-125

Note: LCS and LCSD results reported for the following Parameters:
All

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Ave., Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

Volatile Organic Compounds

QC Batch #: WGCMS990408 Date analyzed: 04/08/99
Matrix: Water Spiked Sample: Blank Spike
Units: µg/L

PARAMETER	Method #	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
1,1- Dichloroethene	8240/8260	25	ND	26	**105**	27	**106**	1.1	25	50-150
Methyl-tert-butyl eth	8240/8260	25	ND	28	**113**	27	**109**	3.2	25	50-150
Benzene	8240/8260	25	ND	27	**106**	26	**104**	2.3	25	50-150
Trichloroethene	8240/8260	25	ND	27	**109**	27	**106**	3.0	25	50-150
Toluene	8240/8260	25	ND	27	**108**	26	**104**	3.4	25	50-150
Chlorobenzene	8240/8260	25	ND	29	**115**	27	**110**	5.0	25	50-150

Definition of Terms:

- na: Not Analyzed in QC batch
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Spikes

QC Batch #: DW990404
Matrix: Water
Units: µg/L

Date analyzed: 04/09/99
Date extracted: 04/09/99
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	**SP %R**	SPD µg/L	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Diesel	8015M	<50.0	950	ND	892	94	900	95	0.9	25	51-137

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

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

Subcontract Chain of Custody

Subcontract Lab: ATL		Date Sent: 04/06/99	Project Name: Piers		Due Date: 04/12/99	
Sample ID and Source	Matrix	Required Analysis	Date Taken	Time Taken	Containers	Pres?
G8559 (mw2)	W	8270	3/30/99		1x1 LTR Amb	

Relinquished By:	Received By:	Date:	Time:
Ngtuazo via Cal	Overnight	04/06/99	6pm
Relinquished By:	Received By: Diane Galvan	Date: 4-7-99	Time: 10:00
Relinquished By:	Received By:	Date:	Time:

Notes: _____