H2OGEOL
A GROUNDWATER CONSULTANCY

Ms. Eva Chu
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

May 06, 1996

RE: Fourth consecutive quarter (2nd Quarter, 1996) groundwater monitoring and Request for Case Closure: 1628 Webster Street, Alameda, California.

Dear Ms. Chu;

This letter report provides the results of the fourth consecutive quarter (Second Quarter, 1996) sampling of the monitoring wells at 1628 Webster Street, Alameda, California (Figure 1). Case closure is also requested at this time based on site and vicinity conditions.

Depth to water in each monitoring well was measured to +/- 0.01 feet using a Solinst Model 101 water level meter on April 10, 1996. The depth to water was converted to potentiometric surface elevation by subtracting the measured depths to water from the casing top elevation. This information is presented below.

WELL AND GROUNDWATER ELEVATIONS
APRIL 10, 1996

Well Number	Top of Casing Elevation (feet, msl)	Time of Depth measurement	Depth to Water (feet)	Groundwater Surface Elevation (feet, msl)
MW-1	14.71	10:09	5.00	9.71
MW-2	15.69	10:08	5.35	10.34
MW-3	14.71	10:07	4.86	9.85

The groundwater flow direction (more precisely direction of groundwater gradient, since the horizontal hydraulic conductivity anisotropy is unknown) for the triangle with a well at each apex is N 28.2° W at a gradient of 0.00587. Figure 2 is a potentiometric surface map showing well locations and groundwater surface contours as measured on April 10, 1996. Historic water level information follows.

MW-1	07/11/95	06:27	5.44	9.27
	10/11/95	09:59	6.28	8.43
	01/11/96	09:19	5.81	8.90
	04/10/96	10:09	5.00	9.71
MW-2	07/11/95	06:26	5.81	9.88
	10/11/95	10:00	6.65	9.04
	01/11/96	09:20	6.14	9.55
	04/10/96	10:08	5.35	10.34
MW-3	07/11/95	06:23	5.41	9.30
	10/11/95	10:02	6.43	8.28
	01/11/96	09:21	5.81	8.90
	04/10/96	10:07	4.86	9.85

GROUNDWATER FLOW DIRECTION AND GRADIENT

07/11/95	N	06.4°	E	at a gradient of	0.00491
10/11/95	N	33.6°	E	at a gradient of	0.00559
01/11/96	N	00.7°	E	at a gradient of	0.00516
04/10/96	N	28.2°	W	at a gradient of	0.00587
AVERAGE	N	3.1°	E	at a gradient of	0.00538

Following water level measurements the groundwater surface at each monitoring well was checked for free product, observation of sheen, and odor. No free product or sheen was found. Groundwater from monitoring well MW-1 possessed a septic odor.

The monitoring wells were purged by pumping with an "ES-60" submersible pump marketed for monitoring well purging by Enviro-Tech Services Co. of Martinez, California. Field measured water quality parameters were measured using a Cambridge Scientific Industries Hydac™ Conductivity Temperature pH Tester. Well purging activities and the field measured water quality parameters are documented in Attachment A. For each well, purging continued until specific conductance stabilized to +/- 5% on consecutive readings.

Groundwater samples were collected directly from the end of the pump discharge tubing while the pump was discharging at a rate of less than one liter per minute. Samples for TPH-D were collected in a one liter amber glass bottle. Groundwater samples for TPH-G plus BTEX were collected in 40-mL glass vials with Teflon™ septum lids.

Groundwater sample bottles were labeled and placed in an ice chest with 2 Liter plastic bottles containing ice. Chain-of-Custody forms were filled out and were delivered with the ice chest to Chromalab, Inc. of Pleasanton, California, a state certified laboratory.

Groundwater samples from monitoring wells MW-2 and MW-3 were found not to contain detectable concentrations of petroleum hydrocarbons. Monitoring well MW-1 was found not to contain petroleum hydrocarbons in the range of diesel but did contain 950 µg/L of TPH-Gasoline, 13 µg/L Benzene, 1.7 µg/L Toluene, 14 µg/L Ethylbenzene, and 9.1 µg/L total Xylene isomers. The laboratory report and Chain-of-Custody documentation is contained in Attachment B. The historic groundwater sample analytical results are summarized below.

All concentrations are expressed in micrograms per liter (µg/L).

Well	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1						
07/11/95	<50	6,300	16	3.0	28	88
10/11/95	1,800*	2,600	53	13	52	44
01/11/96	<50	480	24	2.8	29	18
04/10/96	<50	950	13	1.7	14	9.1
MW-2						
07/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
10/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
01/11/96	<50	<50	<0.5	<0.5	<0.5	<0.5
04/10/96	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-3						
07/11/95	<50	<50	<0.5	<0.5	<0.5	<0.5
10/11/95	120	<50	<0.5	<0.5	<0.5	<0.5
01/11/96	<50	<50	<0.5	<0.5	<0.5	<0.5
04/10/96	<50	<50	<0.5	<0.5	<0.5	<0.5

* "Hydrocarbons were found in the range of diesel but do not resemble a diesel fingerprint."

No further sampling is scheduled at 1628 Webster Street, Alameda, California. The undersigned respectfully requests case closure for this site for the reasons outlined below.

Upgradient monitoring well MW-2 and downgradient monitoring well MW-3 have been persistently free of TPH-gasoline and the aromatic hydrocarbons benzene, toluene, ethylbenzene, and total xylene isomers. Trace diesel (120 µg/L) was reported in MW-3 in October, 1995, otherwise these two wells have been free of TPH-diesel detected components.

MW-1 was installed through residual soils containing analytes detected through both the TPH-diesel and TPH-gasoline analyses. All four aromatic hydrocarbons were detected at greater than 100 µg/L in the soil sample. Consequently the groundwater encountered at this location also persistently reports the presence of TPH-gasoline and the aromatic hydrocarbons.

Over the last four quarters of groundwater monitoring the apparent groundwater flow direction has ranged from north-northeast to north-northwest, as had been previously reported at nearby sites.

Due north of the site, across Pacific Avenue, is the location of the former Duffy's Diner. Duffy's Diner was the site of a tank removal several years ago. This site was granted closure since it lacked evidence of contamination from its own tank(s) or from any nearby tanks.

Diagonally across the Webster Street/Pacific Avenue intersection lies 1701 Webster Street. This address is northwest of 1628 Webster Street and has been granted a clean closure due to the persistent lack of groundwater contamination.

Thus, it is unlikely that any groundwater contamination that may be implied from the presence of TPH-gasoline and the aromatic hydrocarbons in the groundwater sampled from MW-1 has not migrated across either Webster Street or Pacific Avenue. This is consistent with recent Regional Board summary findings and indicates that case closure is appropriate at this time.

Please do not hesitate to call me at (510) 373-9211 should you have any questions.

Sincerely,

Gary D. Lowe, R.G., C.E.G., C.H.
Principal, Hydrogeologist
Sole Proprietor

xc: Mrs. Jean Ratto Larkin, 778 Augusta Drive, Morage, CA, 94566

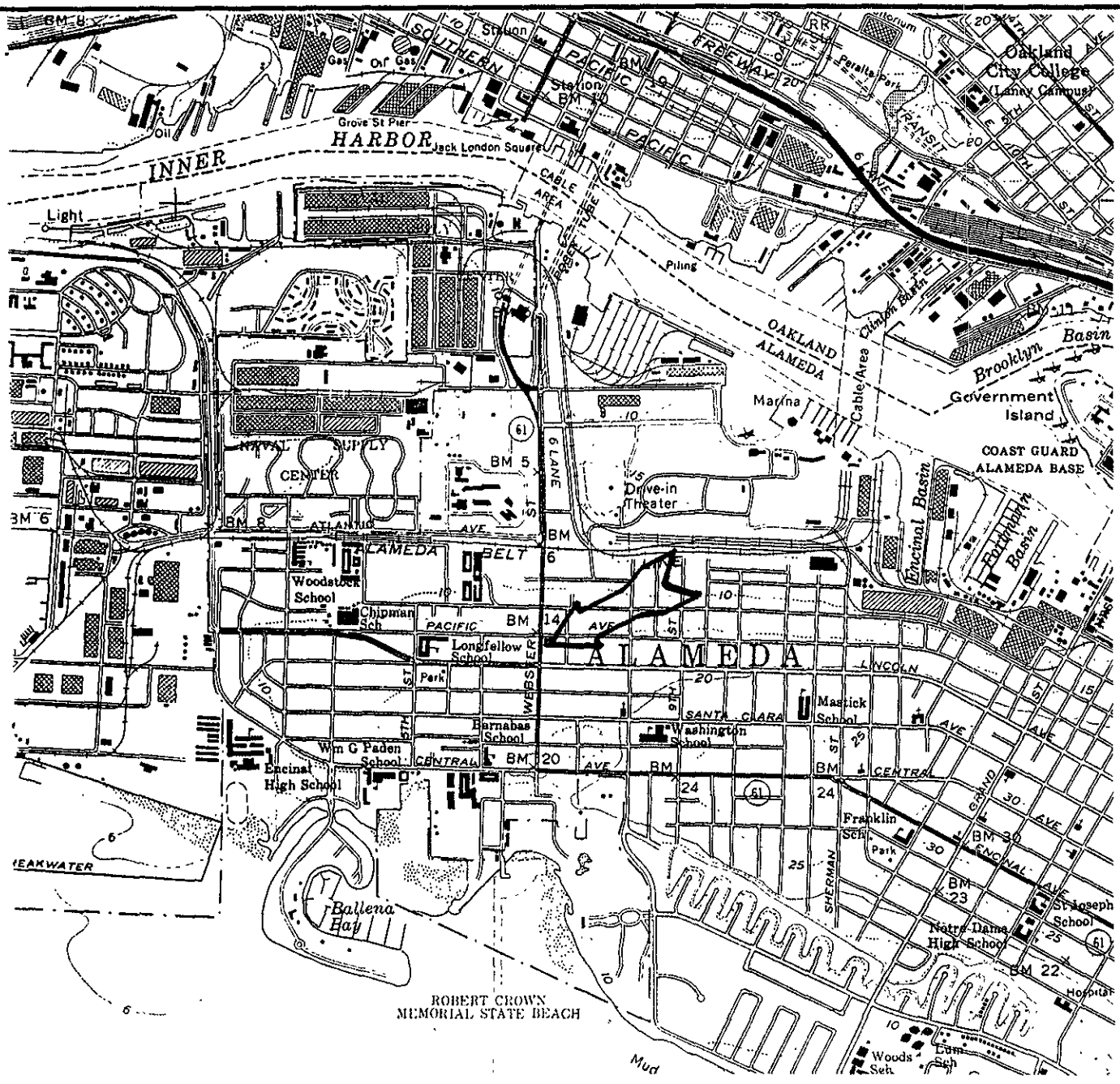
Mr. Robert F. Campbell, FITZGERALD, ABBOTT & BEARDSLEY, 1221 Broadway 21st Floor, Oakland, CA, 94612-1837

Mr. Christopher Berka/Ms. Clair Cormier, MCCUTCHEN, DOYLE, BROWN & ENERSEN, Market Post Tower, Suite 1500, 55 South Market Street, San José, CA , 95113

Mr. Norman A. Dupont, PAUL, HASTINGS, JANOFSKY & WALKER, 23rd Floor, 555 South Flower Street, Los Angeles, CA, 90071-2371

Mr. Martin Katz, TEXACO ENVIRONMENTAL SERVICES, 108 Cutting Boulevard, Richmond, CA 94804

Mr. Jeff Smith, PHILLIPS PETROLEUM COMPANY, 13D2 Phillips Building, Bartlesville, OK, 74004



Base from U.S. Geological Survey Oakland West 7.5 Minute Series Topographic Map

NORTH

1000 0 1000 2000 3000 4000 6000 FEET

CALIF

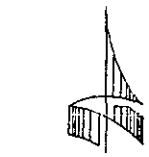
H2OGEOL

SITE LOCATION MAP

1628 WEBSTER STREET
ALAMEDA, CALIFORNIA

FIGURE

1



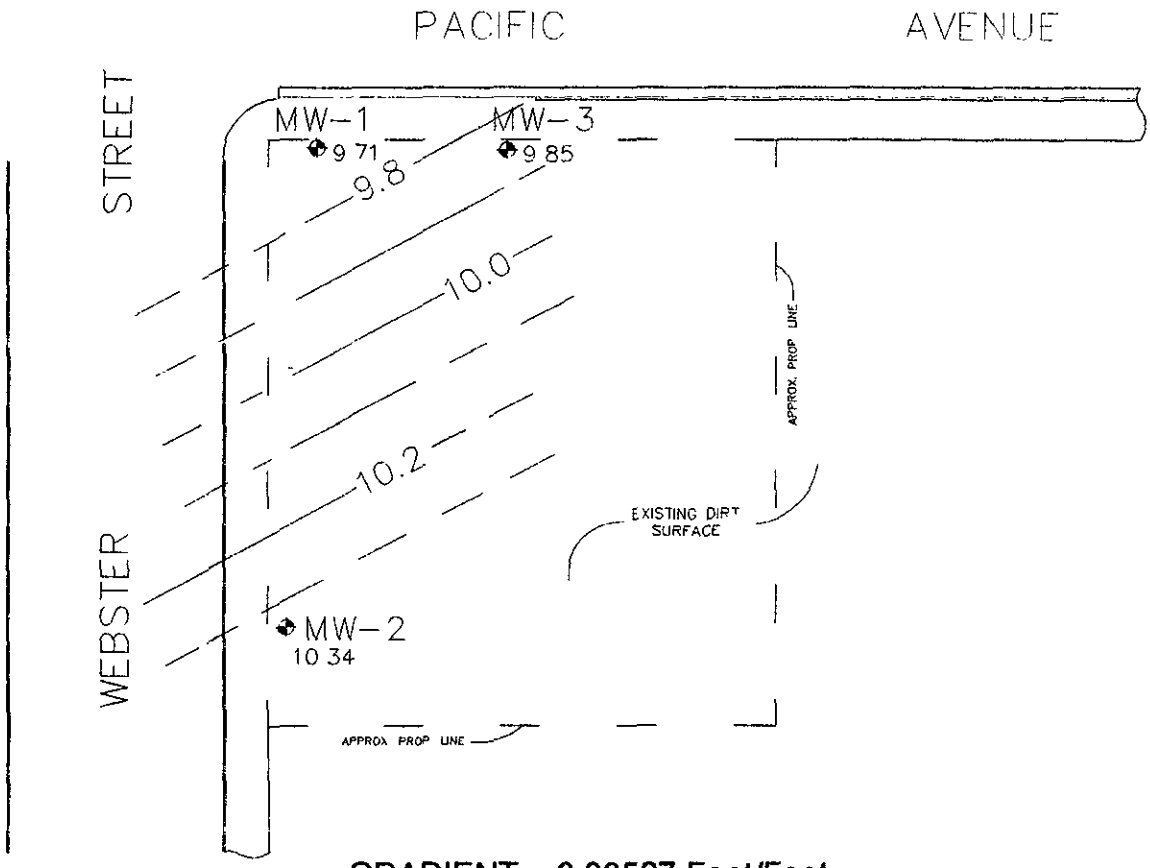
SCALE. 1" = 50'

MW-3 MONITORING WELL NAME/NUMBER

MONITORING WELL LOCATION

8.28 GROUNDWATER ELEVATION AT WELL

8.70 POTENTIOMITRIC SURFACE CONTOUR AND CONTOUR ELEVATION



GRADIENT = 0.00587 Feet/Foot

DIRECTION OF GRADIENT = N 28.2° W

(Approximate groundwater flow direction, uncorrected for hydraulic conductivity anisotropy).

Well survey by Ron Archer, Civil Engineer, Inc July 14, 1995
Top of casing elevations: MW-1, 14 98; MW-2, 15.95, MW-3, 15 09

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POTENTIOMETRIC SURFACE MAP
APRIL 10, 1996
1628 WEBSTER STREET
ALAMEDA, CALIFORNIA

FIGURE
2

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P.O.Box 2165 ▪ Livermore, California 94551 ▪ 510-373-9211

ATTACHMENT A

FIELD DATA SHEET
LOG OF WELL SAMPLING ACTIVITIES

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-1 Project Name: 1648 Webster Street, Alameda, California Date: 04/10/96

Sampled by: G. Lowe & R. Vorst Weather Conditions: Clear, breezy, 68°F

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 19.50

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.66 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.7 / 5.04 Well Borehole Volume: _____

Purging Method:
- Centrifugal Pump/Peristaltic Pump
- Grundfos Submersible Pump
- Centrifugal Pump/ES-60 Submersible
- ES-60 Submersible Pump X

Sampling Method:
- Peristaltic Pump
- Grundfos Submersible Pump
- ES-60 Sub. Pump < 1L/min. X
- Teflon Bailer

Purging Rate: See below Total Discharge: 8.1 Casing Volumes Purged: 4.8

Comments: odor to the water

Waste Water Disposal: To property site drum.

Starting Time: 11:05

Time Pump on: 11:13

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.		Dil. Factor		S.C. (µS/cm)	Color
04/10/96	11:17	3.3	7.11	64.4		x		=	834	Lt. Brown
"	11:20	6.0	7.16	64.4		x		=	688	" "
"	11:22	7.1	7.16	64.4		x		=	658	colors less
"	11:23	7.5	7.10	64.3		x		=	663	"
"	11:24	7.9	7.14	64.4		x		=	667	"
"	11:25	8.1	7.12	64.3		x		=	671	"
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		

Sample Identification: 1628/MW-1 Sample Time: 11:26

TURBIDITY ANALYSIS

Finishing Time: 11:44 Time Analyzed: _____ NTU Value: _____

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-2 Project Name: 1648 Webster Street, Alameda, California Date: 04/10/96

Sampled by: G. Lowe & R. Vorst Weather Conditions: clear, calm, 65°F

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 15.50

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.35 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.6/ 4.9 Well Borehole Volume: _____

Purging Method:
- Centrifugal Pump/Peristaltic Pump
- Grundfos Submersible Pump
- Centrifugal Pump/ES-60 Submersible
- ES-60 Submersible Pump X

Sampling Method:
- Peristaltic Pump
- Grundfos Submersible Pump
- ES-60 Sub. Pump < 1L/min. X
- Teflon Bailer

Purging Rate: See below Total Discharge: 6.2 Casing Volumes Purged: 3.8

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 10:12

Time Pump on: 10:14

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.		Dil. Factor		S.C. (µS/cm)	Color
04/10/96	10 : 18	3.1	7.04	63.9		x		=	367	colorless
"	10 : 22	4.6	7.04	63.7		x		=	372	colorless
"	10 : 25	5.4	6.99	63.7		x		=	364	"
"	10 : 27	5.8	6.89	63.4		x		=	367	"
"	10 : 29	6.2	6.99	63.6		x		=	361	"
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		

Sample Identification: 1628/MW-2 Sample Time: 10:32

TURBIDITY ANALYSIS

Finishing Time: 10:40 Time Analyzed: _____ NTU Value: _____

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-3 Project Name: 1648 Webster Street, Alameda, California Date: 04/10/96

Sampled by: G. Lowe & R. Vorst Weather Conditions: Clear, 67°F, Calm

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 15.50

Measuring Point: Top of PVC Casing Initial Depth to Water: 4.86 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.7 / 5.1 Well Borehole Volume: _____

Purging Method:
- Centrifugal Pump/Peristaltic Pump
- Grundfos Submersible Pump
- Centrifugal Pump/ES-60 Submersible
- ES-60 Submersible Pump X

Sampling Method:
- Peristaltic Pump
- Grundfos Submersible Pump
- ES-60 Sub. Pump <1L/min. X
- Teflon Bailer

Purging Rate: See below Total Discharge: 7.6 Casing Volumes Purged: 4.5

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 10:40

Time Pump on: 10:43

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.		Dil. Factor		S.C. (µS/cm)	Color
04/10/96	10:46	3.8	7.25	68.7		x		=	369	Lt. yellow
"	10:49	5.7	7.24	66.1		x		=	370	" "
"	10:51	6.3	7.28	64.8		x		=	364	" "
"	10:53	6.8	7.24	64.6		x		=	364	" "
"	10:56	7.4	7.24	64.7		x		=	361	" "
"	10:57	7.6	7.27	64.5		x		=	362	" "
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		

Sample Identification: 1628/MW-3 Sample Time: 10:58

TURBIDITY ANALYSIS

Finishing Time: 11:05 Time Analyzed: _____ NTU Value: _____

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ATTACHMENT B

LABORATORY ANALYTICAL RESULTS
AND CHAIN-OF-CUSTODY DOCUMENTATION

CHROMALAB, INC.

Environmental Services (SDB)

April 18, 1996 *Submission #:* 9604590

H2O GEOL

Atten: Gary Lowe

Project: RATTO-LARKIN PROPERTY
Received: April 10, 1996

re: 3 samples for Gasoline and BTEX compounds analysis.
Method: *EPA 5030/8015M/8020*

Matrix: WATER
Sampled: April 10, 1996 *Run#:* 1072 *Analyzed:* April 15, 1996

Spl#	CLIENT SPL ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
82222	4628/MW-1	950	13	1.7	14	9.1
82223	4628/MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
82224	4628/MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
Reporting Limits		50	0.50	0.50	0.50	0.50
Blank Result		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		110	101	96.9	101	107

Billy Thach
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-373-9222 GC 04/24

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • *Facsimile* (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

April 24, 1996 *Submission #:* 9604590

H2O GEOL
Atten: Gary Lowe

Project: RATTO-LARKIN PROPERTY
Received: April 10, 1996

re: 3 samples for TPH - Diesel analysis.
Method: *EPA 3510/8015M*

Matrix: WATER *Extracted:* April 11, 1996
Sampled: April 10, 1996 *Run#:* 1045 *Analyzed:* April 11, 1996

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
82224	4628/MW-3	N.D.	50	N.D.	93.4	1.0

Matrix: WATER *Extracted:* April 11, 1996
Sampled: April 10, 1996 *Run#:* 1045 *Analyzed:* April 12, 1996

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
82222	4628/MW-1	N.D.	50	N.D.	93.4	1.0
82223	4628/MW-2	N.D.	50	N.D.	93.4	1.0

Dennis Mayugba
Chemist

Alex Tam
Semivolatiles Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

10/82222-82224

27319

CHAIN OF CUSTODY

H_2OGEOL A GROUNDWATER CONSULTANCY

P.O. BOX 2165
LIVERMORE, CALIFORNIA 94551-2165

DATE: 04/10/96 PAGE 1 of 1

Sample Source:
Ratto-Larkin Property
1628 Webster Street
Alameda. CA

SAMPLER(S): Gary D. Lowe & Richard C. Vorst

SAMPLER'S SIGNATURE:

SUBM #: 9604590 REP: GC
CLIENT: H2OGEOL
DUE: 04/24/96
REF #:27319

SAMPLE RECIEPT:
TOTAL No of CONTAINERS
CHAIN OF CUSTODY SEALS
REC'D GOOD CONDITION/COLD
CONFORMS TO RECORD
LAB NO.

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH-gasoline (5030/8015M) plus BTEX (EPA 602/8020)	TPH-diesel (EPA 3550/8015M)	NUMBER OF CONTAII
1628/MW-1	04/10/96	11 : 26	water		X	X	3
1628/MW-2	04/10/96	10 : 32	water		X	X	3
1628/MW-3	04/10/96	10 : 58	water		X	X	3

Please note special pricing
per Gary Cook
10-DAY TAT

RELINQUISHED BY:
SIGNATURE — TIME
PRINTED NAME: Gary D. Lowe — DATE
COMPANY: H_2OGEOL — 04/10/96

RELINQUISHED BY: Laboratory Currier
SIGNATURE — TIME
PRINTED NAME — DATE
COMPANY

RECEIVED BY: Laboratory Currier
SIGNATURE — TIME
PRINTED NAME — DATE
COMPANY

RECEIVED BY LABORATORY:
SIGNATURE — TIME: 1454
PRINTED NAME: Chris Rowley — DATE: 4/10/96
COMPANY: CHROMALAB, INC. — 04/10/96