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

February 01, 1996

RE: Third consecutive quarter (1st Quarter, 1996) groundwater monitoring: 1628 Webster Street, Alameda, California.

Dear Ms. Chu;

This letter report provides the results of the third consecutive quarter (First Quarter, 1996) sampling of the monitoring wells at 1628 Webster Street, Alameda, California (Figure 1).

Depth to water in each monitoring well was measured to +/- 0.01 feet using a Solinst Model 101 water level meter on January 11, 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
JANUARY 11, 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	09:19	5.81	8.90
MW-2	15.69	09:20	6.14	9.55
MW-3	14.71	09:21	5.81	8.90

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 0.7° E at a gradient of 0.00516. Figure 2 is a potentiometric surface map showing well locations and groundwater surface contours as measured on January 11, 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
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
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

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
AVERAGE	N	13.6° E at a gradient of 0.00522

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.

The purge pump was slowly removed from each well while running to allow a sweeping of the wellbore, preventing significant surging of the wellbore and drainage of the discharge tubing into the well.

Groundwater samples for TPH-D were collected directly from the end of the pump discharge tubing into a one liter amber glass bottle. Groundwater samples for TPH-G plus BTEX were collected using a precleaned Teflon™ bailer suspended from a new nylon twine line.

Water samples were transferred, in duplicate, from the bailer to 40-mL glass vials with Teflon™ septum lids using a precleaned Teflon™ pepcock type bottom emptying device.

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 480 µg/L of TPH-Gasoline, 24 µg/L Benzene, 2.8 µg/L Toluene, 29 µg/L Ethylbenzene, and 18 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
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
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

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

California*Primary MCL's					
na	na	1	na	680	1,750
US E.P.A.*Primary MCL's					
na	na	5	1,000	700	10,000

na - not available

Marshack, Jon B., D. Env. 1991, A Compilation of Water Quality Goals, Central Valley Regional Water Quality Control Board.

The fourth consecutive quarter (Second Quarter, 1996) sampling event at 1628 Webster Street, Alameda, California is scheduled for the week of April 08, 1996.

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

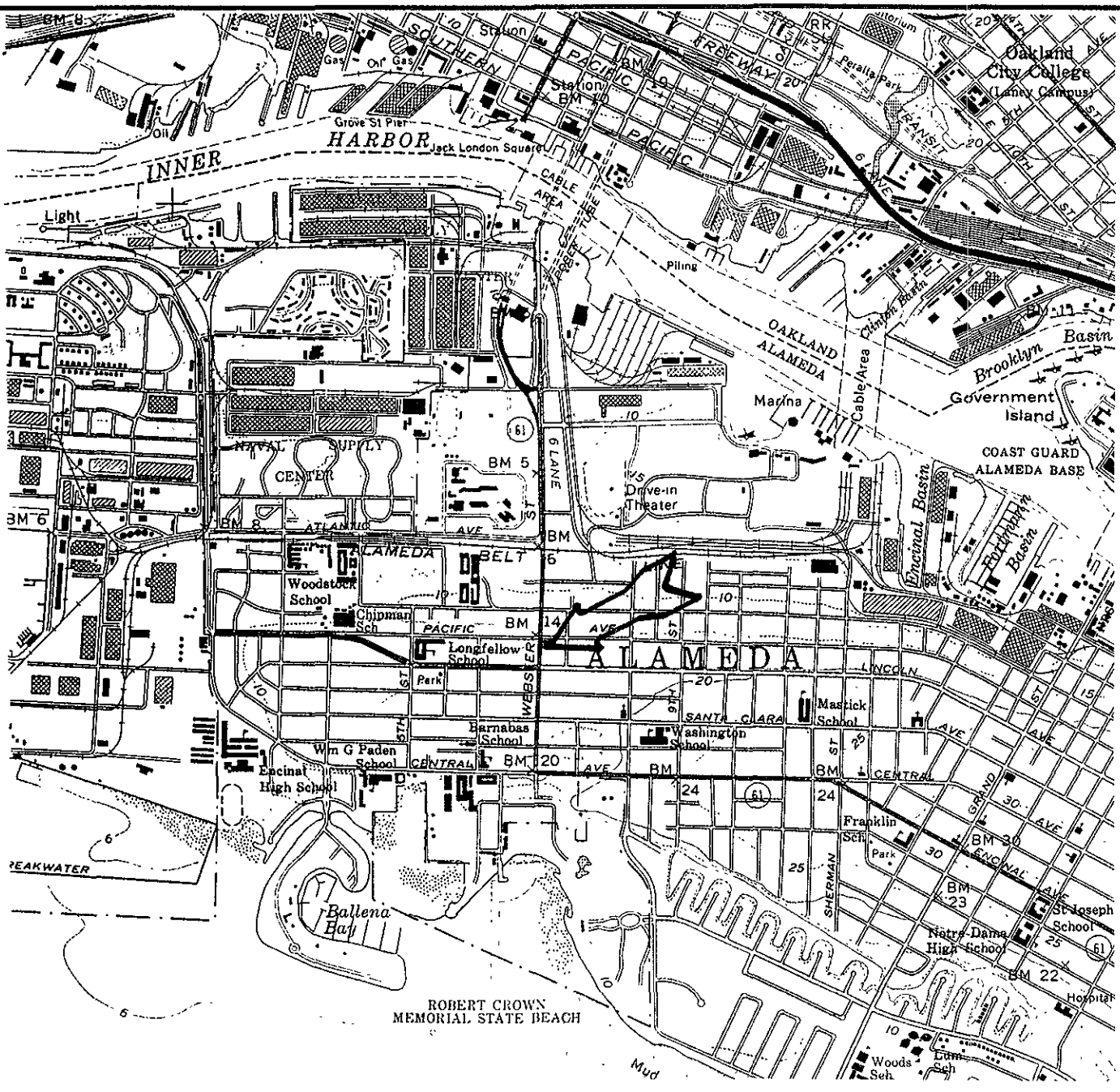
Mr. Robert F. Campbell, FITZGERALD, ABBOTT & BEARDSLEY, 1221 Broadway 21st Floor, Oakland, CA, 94612-1837

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 5000 FEET

CALIF

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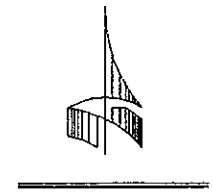
SITE LOCATION MAP

1628 WEBSTER STREET
ALAMEDA, CALIFORNIA

FIGURE

1



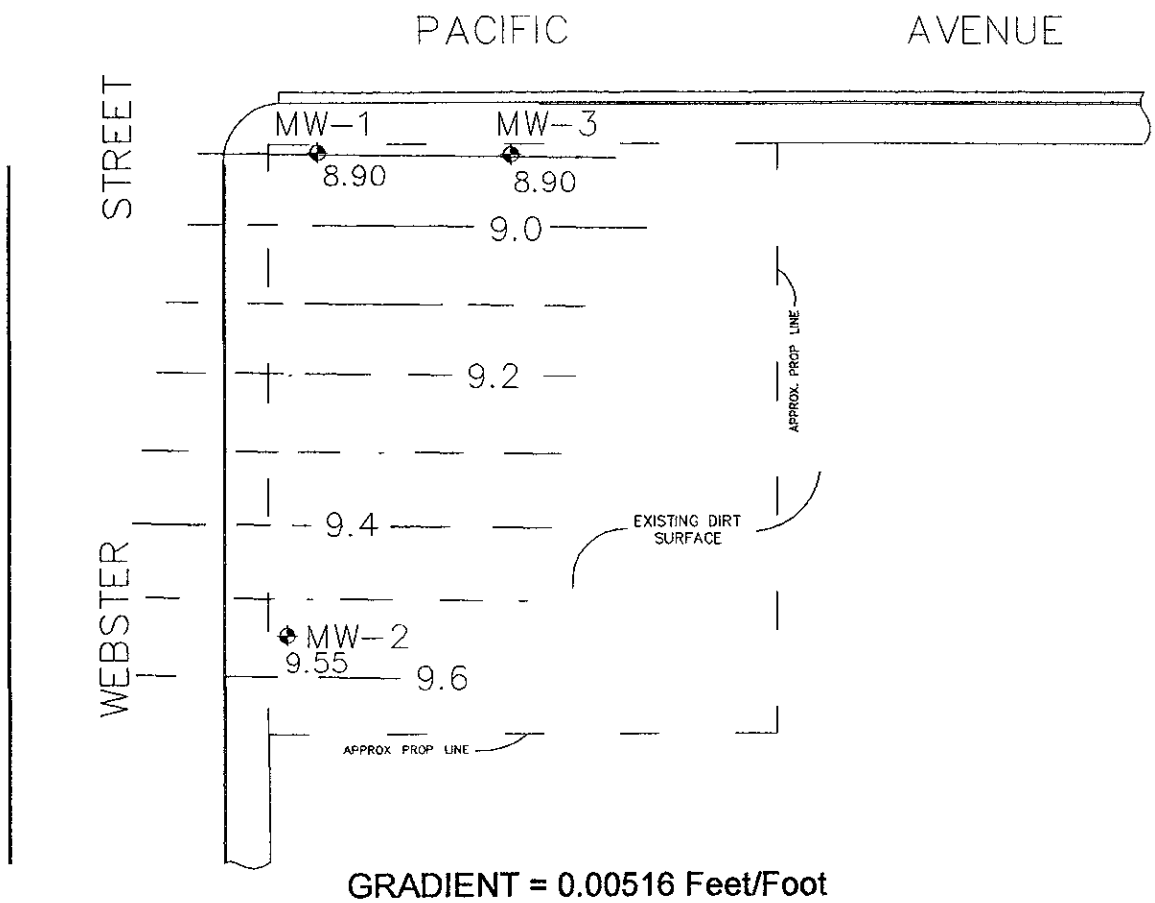
SCALE: 1" = 50'

MW-3 MONITORING WELL NAME/NUMBER

MONITORING WELL LOCATION

8.28 GROUNDWATER ELEVATION AT WELL

8.70 POTENTIOMITRIC SURFACE CONTOUR AND CONTOUR ELEVATION



GRADIENT = 0.00516 Feet/Foot

DIRECTION OF GRADIENT = N 0.7°E

(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
JANUARY 11, 1996
1628 WEBSTER STREET
ALAMEDA, CALIFORNIA

FIGURE
2

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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: 01/11/96

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

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 15.5

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.81 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.59 / 4.76 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 Submersible Pump; Teflon Bailer

Purging Rate: See below Total Discharge: 5.7 Casing Volumes Purged: 3.6

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 10:41

Time Pump on: 10:45

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.		Dil. Factor		S.C. (µS/cm)	Color
01/11/96	10:48	3.6	6.90	66.1		x		=	942	Lt. Brown
"	10:51	4.0	6.88	66.1		x		=	947	" "
"	10:54	4.9	6.91	65.9		x		=	936	" "
"	10:56	5.2	6.89	66.1		x		=	940	" "
"	10:58	5.7	6.90	66.0		x		=	941	" "
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		

Sample Identification: 1628/MW-1 Sample Time: 11:00

TURBIDITY ANALYSIS

Finishing Time: 11:21 Time Analyzed: _____ NTU Value: _____

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-2 Project Name: 1648 Webster Street, Alameda, California Date: 01/11/96

Sampled by: G. Lowe & R. Vorst Weather Conditions: Clear, 65°F, breezy

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 19.5

Measuring Point: Top of PVC Casing *Initial Depth to Water:* 6.14 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.49 / 4.5 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 Submersible Pump
- Teflon Bailer

Purging Rate: See below Total Discharge: 5-7 *Casing Volumes Purged:* 3.8

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 9:29

Time Pump on: 9:32

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.		Dil. Factor		S.C. (µS/cm)	Color
01/11/96	9:35	3.8	7.59	63.5		x		=	433	Lt. Brown
"	9:37	4.3	7.45	63.7		x		=	453	" "
"	9:39	4.9	7.35	63.5		x		=	555	" "
"	9:41	5.1	7.22	63.5		x		=	554	" "
"	9:43	5.3	7.21	63.5		x		=	555	" "
"	9:44	5.5	7.23	63.4		x		=	551	" "
"	9:46	5.7	7.19	63.5		x		=	550	" "
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		

Sample Identification: 1628/MW-2 Sample Time: 9:48

TURBIDITY ANALYSIS

Finishing Time: 9:57 Time Analyzed: _____ NTU Value: _____

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-3 Project Name: 1648 Webster Street, Alameda, California Date: 01/11/96

Sampled by: G. Lowe & R. Vorst Weatner Conditions: clear, 65°F, breezy

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 15.5

Measuring Point: Top of PVC Casing Initial Depth to Water: 5.81 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.59 / 4.8 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 Submersible Pump; Teflon Bailer

Purging Rate: See below Total Discharge: 6.4 Casing Volumes Purged: 4.0

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 9:57

Time Pump on: 10:08

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.		Dil. Factor		S.C. (µS/cm)	Color
01/11/96	10:16	4.7	7.47	66.6		x		=	620	Lt. brown
"	10:19	5.4	7.36	66.1		x		=	620	" "
"	10:22	5.9	7.39	67.1		x		=	628	" "
"	10:26	6.2	7.37	67.2		x		=	630	" "
"	10:	6.4	7.40	67.0		x		=	630	" "
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		
	:					x		=		

Sample Identification: 1628/MW-3 Sample Time: 10:30

TURBIDITY ANALYSIS

Finishing Time: 10:41 Time Analyzed: _____ NTU Value: _____

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ATTACHMENT B

LABORATORY ANALYTICAL REPORT
SAMPLE CHAIN OF CUSTODY

CHROMALAB, INC.

Environmental Services (SDB)

January 19, 1996 *Submission #:* 9601535

H2O GEOL

Atten: Gary Lowe

Project: RATTO-LARKIN PROPERTY *Project#:* 1628 WEBSTER ST, ALAMEDA
Received: January 11, 1996

re: 3 samples for TPH - Diesel analysis.
Method: EPA 3550/8015M

Matrix: WATER *Extracted:* January 16, 1996
Sampled: January 11, 1996 *Run#:* 521 *Analyzed:* January 17, 1996

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
77968	1628/MW-1	N.D.	50	N.D.	99.8	1
77969	1628/MW-2	N.D.	50	N.D.	99.8	1
77970	1628/MW-3	N.D.	50	N.D.	99.8	1

Kayvan Kimyai
Chemist

Alex Tam
Semivolatiles Supervisor

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

CHROMALAB, INC.

Environmental Services (SDB)

January 22, 1996 *Submission #:* 9601535

H2O GEOL

Atten: Gary Lowe

Project: RATTO-LARKIN PROPERTY *Project#:* 1628 WEBSTER ST, ALAMEDA
Received: January 11, 1996

re: 3 samples for Gasoline and BTEX compounds analysis.

Method: EPA 5030/8015M/8020

Matrix: WATER
Sampled: January 11, 1996 *Run#:* 532 *Analyzed:* January 16, 1996

Spl#	CLIENT SPL ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	DIL'N FACTOR
77968	1628/MW-1	480	24	2.8	29	18	1
77969	1628/MW-2	N.D.	N.D.	N.D.	N.D.	N.D.	1
77970	1628/MW-3	N.D.	N.D.	N.D.	N.D.	N.D.	1
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 (%)		100	106	103	109	102	

Billy Thach
Chemist

Marianne Alexander
Gas/BTEX Supervisor

510-373-9222 GC

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

535/77963-77970

25921 ~~25916~~ ~~25920~~ mg 1/11/96

CHAIN OF CUSTODY

H_2OGEOL A GROUNDWATER CONSULTANCY

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

DATE: 01/11/96 PAGE 1 of 1

Sample Source:
Ratto-Larkin Pr
1628 Webster
Alameda, CA

SUBM #: 9601535 REF
CLIENT: H2OGEOL
DUE: 01/25/96
REF #:25921

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

SAMPLER'S SIGNATURE: Gary D Lowe

ANA

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 CONTAINERS
1628/MW-1	01/11/96	11:00	water		X	X							3
1628/MW-2	01/11/96	09:48	water		X	X							3
1628/MW-3	01/11/96	10:30	water		X	X							3

Please note special pricing
per Gary Cook
10-DAY TAT

RELINQUISHED BY:
SIGNATURE Gary D Lowe
PRINTED NAME Gary D. Lowe
COMPANY H_2OGEOL
TIME 1630
DATE 01/11/96

RELINQUISHED BY: Laboratory Currier
SIGNATURE
PRINTED NAME
COMPANY
TIME
DATE

RECEIVED BY: Laboratory Currier
SIGNATURE
PRINTED NAME
COMPANY
TIME
DATE

RECEIVED BY LABORATORY:
SIGNATURE Mimie Pak
PRINTED NAME Mimie Pak
COMPANY CHROMALAB, INC.
TIME 1/11/96 1630
DATE 01/11/96