

desert petroleum inc.

John Rutherford
Director
Environmental Affairs

ENVIRONMENTAL
PROTECTION

95 APR 26 PM 2:04

April 19, 1995

Ms. Eva Chu
County of Alameda
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

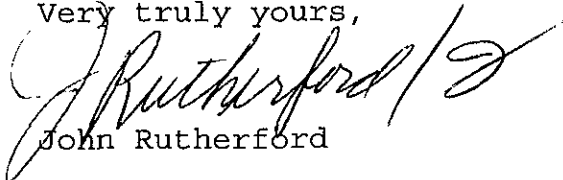
Subject: Quarterly Report of March 13, 1995
2008 First St. Livermore, CA

Dear Ms. Chu:

Enclosed is the Groundwater Monitoring Report for the recent sampling of groundwater monitoring at the subject property.

Any questions regarding this report should be directed to our project manager Mr. Rick Pilat at Remediation Services Int'l., 805-644-5892.

Very truly yours,



John Rutherford

JR:js

cc: R. Pilat
SWRCB
Chron
File

Enclosure



2060 KNOLL DRIVE, SUITE 200, VENTURA, CALIFORNIA 93003
(805) 644-5892 • FAX (805) 654-0720

ENVIRONMENTAL
PROTECTION


95 APR 26 PM 2: 04


QUARTERLY REPORT
of
MARCH 13, 1995
GROUNDWATER SAMPLING AND
WATER QUALITY MONITORING

2008 First street
Livermore, California

Prepared for:
DESERT PETROLEUM
P.O. Box 1601
Oxnard, CA 93032
(805) 644-6784

Prepared by:
RSI - REMEDIATION SERVICE, INT'L
2060 Knoll Drive, Suite 200
Ventura, CA 93003
(805) 644-5892


Michael E. Mulhern
E.G. #1507
Exp. 10/31/96


Richard W. Pilat
RSI Program Director

March 31, 1995

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1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring for the real property located at 2008 First Street, Livermore, Alameda County, California (Figure 1). The site is currently occupied by a retail gasoline station operating under the British Petroleum trade name. Site improvements include three underground storage tanks, two pump islands and an office/garage building (Figure 2).

A site assessment conducted in February, 1988 indicated that both soil and groundwater contained elevated concentrations of petroleum hydrocarbons. One groundwater monitoring well was installed in September, 1988 and three additional wells were installed in June, 1994.

2.0 GROUNDWATER MONITORING

2.1 Groundwater Monitoring Procedures

On March 13, 1995 groundwater monitoring wells MW-1, MW-2, MW-3 and MW-4 were monitored for water quality. The wells were measured for depth to water to an accuracy of 0.01 feet and checked for the presence of free product. The measuring point for each well was the survey point at the top of the well casing on the north side. Approximately 0.42 feet of free product was found in well MW-2; this well was therefore not sampled. The wells which did not contain free product were then purged using a Grundfos Rediflo pump. The pump and hoses were decontaminated between wells using TSP and a standard 3-bucket wash method. Purging continued until temperature, electrical conductivity and pH stabilized or approximately three well volumes had been purged. These measurements, along with all other pertinent data, were recorded on Water Sample Logs (Appendix A). The purged water was placed in 55 gallon DOT drums which were sealed, labeled as pending laboratory analysis and stored on-site.

The wells were allowed to recharge to a minimum of 80 percent, then sampled using disposable polyethylene bailers. The samples were sealed, labeled and placed on blue ice for transportation under standard chain-of-custody to Onsite Environmental, a state certified laboratory in Fremont, California. All samples were analyzed to minimum detection limits for TPH as gasoline and benzene, toluene, ethyl benzene and total xylenes (BTEX) using standard EPA approved methods. Laboratory Reports for Water Sample Analyses are included in Appendix B.

2.2 Groundwater Monitoring Results

As reported on Table 1 and in Appendix A, the groundwater elevation on March 13, 1995 ranged between 455.47 to 457.04 feet above mean sea level. Groundwater gradient was calculated to be approximately 0.011 ft/ft with groundwater flow in a northwesterly direction (Figure 3).

Analytical results for groundwater samples collected on March 13, 1995 are summarized in Table 2 and shown on Figure 4. The complete laboratory report is contained in Appendix B. State of California concentrations for drinking water standards are included in Table 2. TPH was detected in groundwater monitoring wells MW-1, MW-3 and MW-4 at concentrations ranging from 1.3 to 44 mg/L. Benzene was also detected in all three wells at concentrations between 180 to 1,600 µg/L; these concentrations exceed the California Department of Health Services Drinking Water Maximum Contamination Level of 1 part per billion for benzene (CCR Title 22, Section 64444.5).

On March 9, 1995, a representative of RSI and B.J. Angle, the current operator of the property, checked groundwater monitoring well MW-2 for the presence of free product. 0.82 feet of free product was measured in the well. On March 13, 1995, a 0.41 foot thick immiscible layer was measured in the well.

3.0 LIMITATIONS

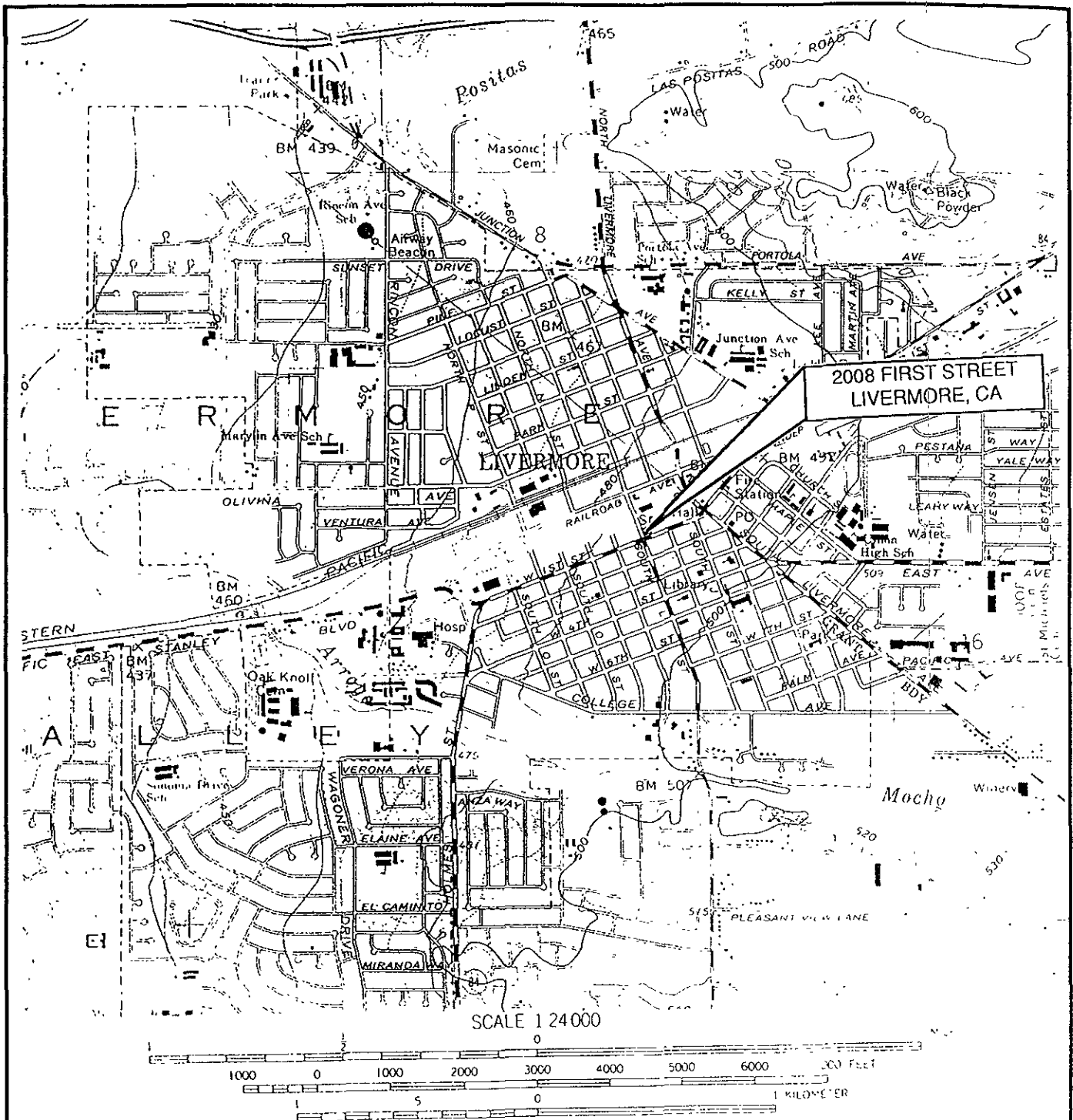
The discussion, conclusion and any recommendations presented in this report are based on the professional performance of the personnel who conducted the investigations, the observations of the field personnel, the results of laboratory analyses performed by a state certified laboratory, any referenced documents and our understanding of the regulations of the State of California and any other applicable local regulations.

Variations in the soil and groundwater conditions may exist beyond the points explored in this and previous investigations.

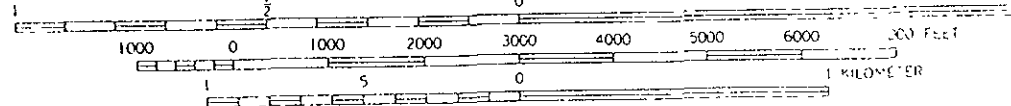
The services performed by Remediation Service, Int'l have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the State of California.

Please note that contamination of soil and/or groundwater must be reported to the appropriate agencies in a timely manner. No other warranty, expressed or implied, is made.

FIGURES

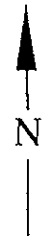


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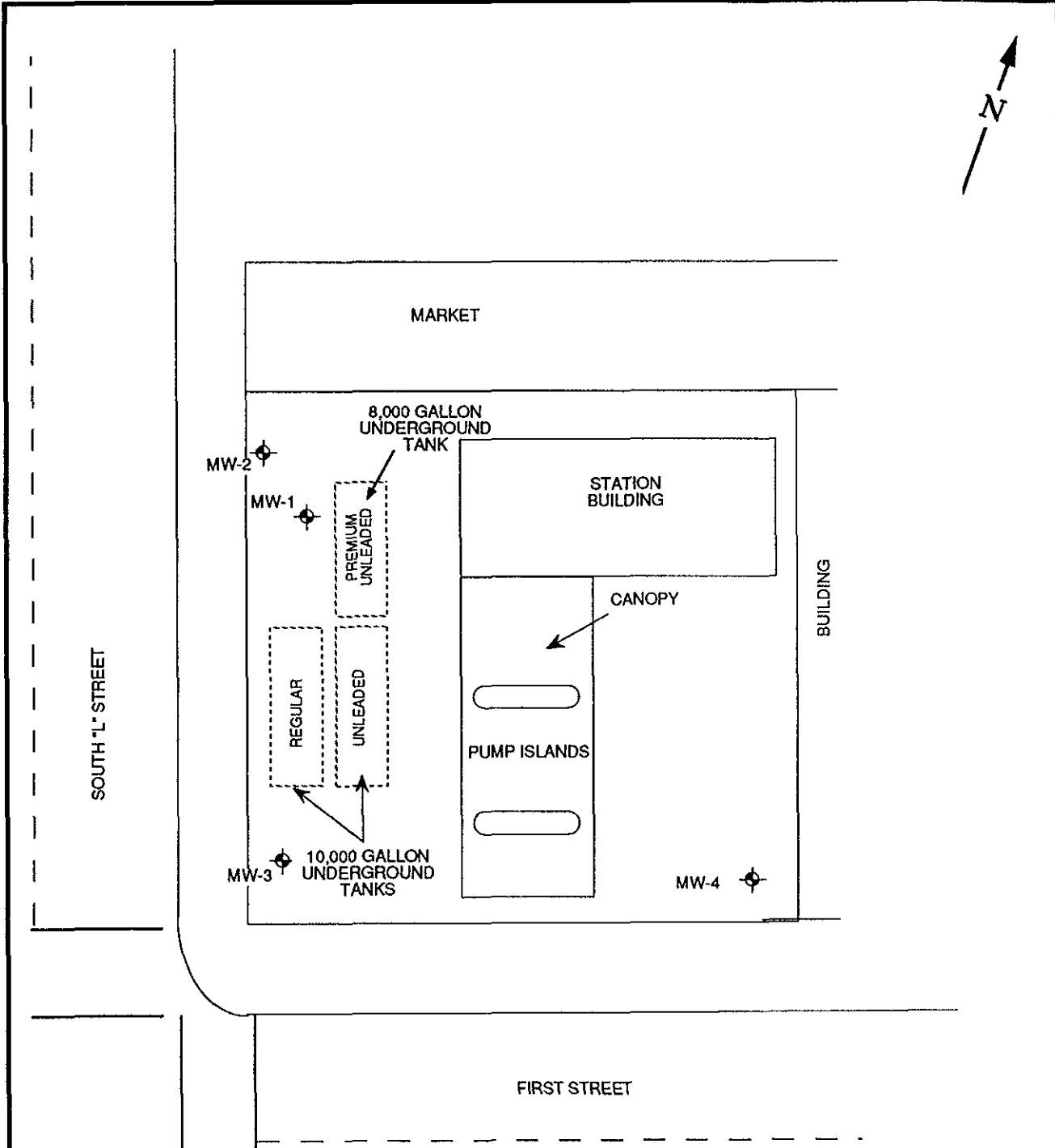
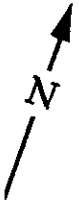


CONTOUR INTERVAL 20 FEET
 DOTTED LINES REPRESENT 10 FOOT CONTOURS
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

FROM U.S.G.S. 7.5' TOPOGRAPHIC
 QUADRANGLE "LIVERMORE,
 CALIFORNIA," 1961, PHOTOREVISED
 1980




2008 FIRST STREET,
 LIVERMORE, CA
 FIGURE 1 LOCATION MAP
 RSI - REMEDIATION SERVICE, INT'L



MAP NOT TO SCALE.
SURVEYED DISTANCE BETWEEN WELLS, 1" = 25'

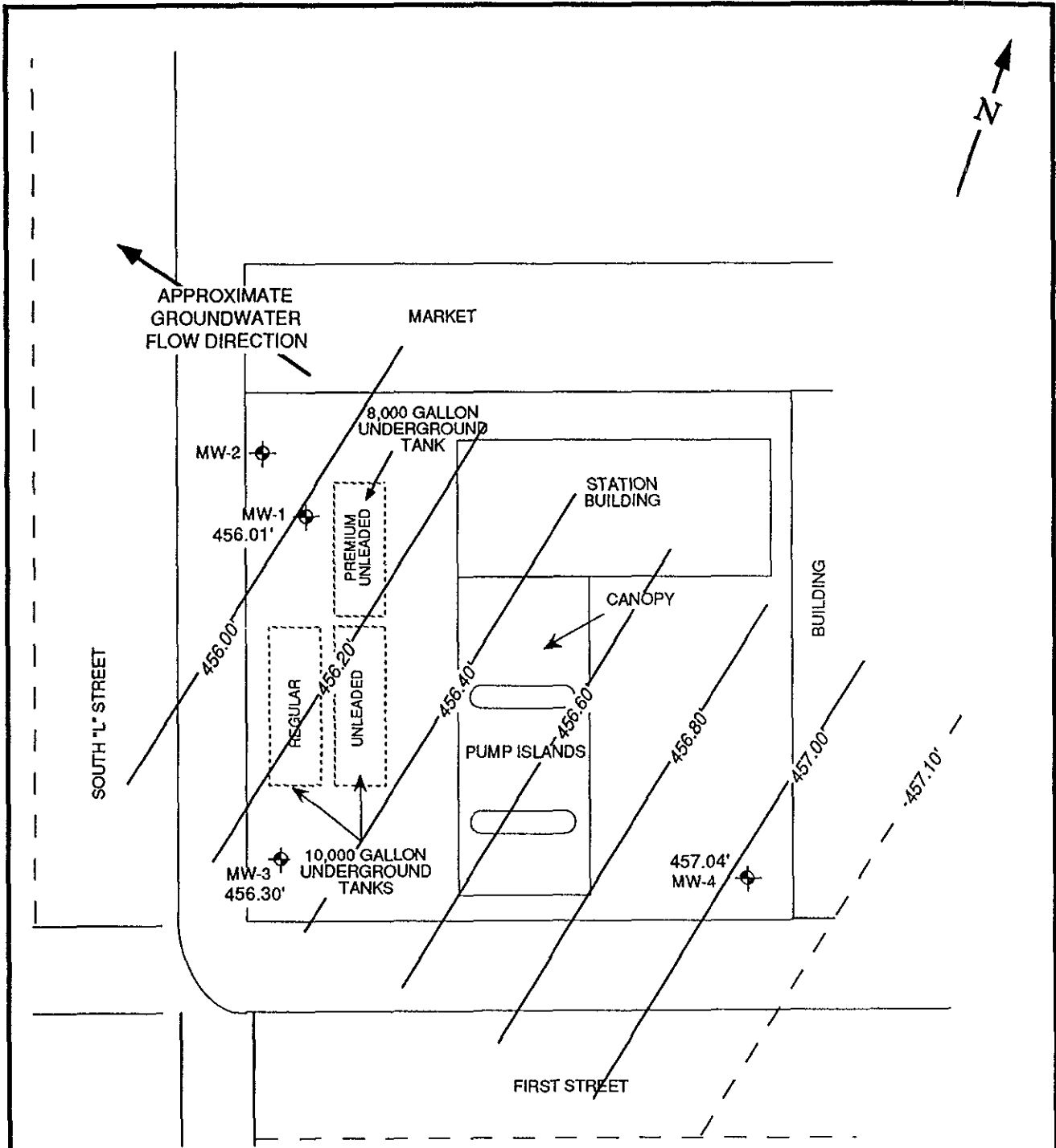
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 GROUNDWATER MONITORING WELL LOCATION



2008 FIRST STREET,
LIVERMORE, CA 94550

FIGURE 2: SITE MAP






MAP NOT TO SCALE.
 SURVEYED DISTANCE BETWEEN WELLS, 1" = 25'.

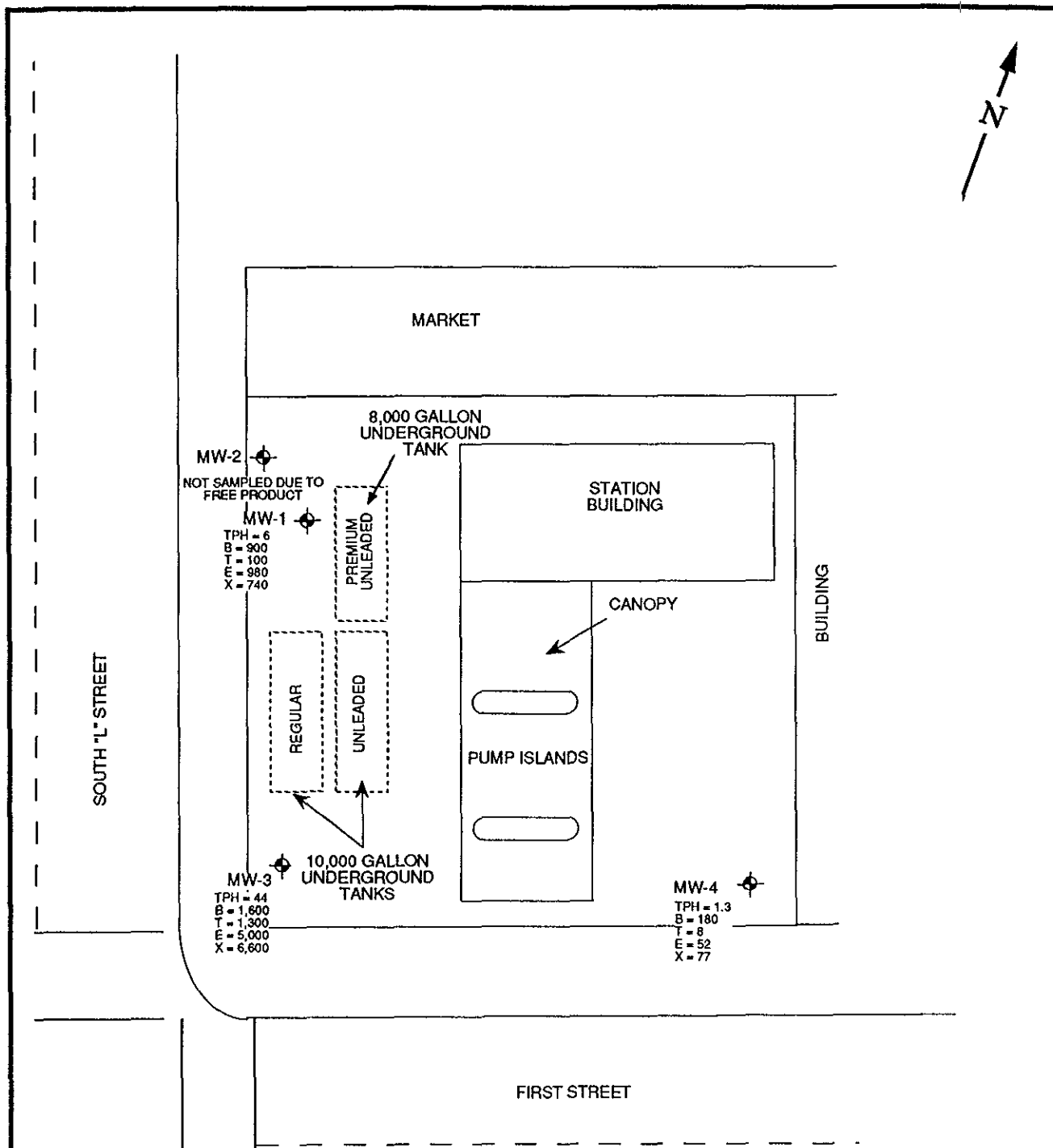
- LEGEND**
- 
 445.71'
 MW-2 GROUNDWATER MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL.
 - 
 446.0' GROUNDWATER ELEVATION CONTOUR LINE

NOTE: GROUNDWATER ELEVATION FOR MW-2 NOT USED IN GRADIENT DUE TO FREE PRODUCT

2008 FIRST STREET,
 LIVERMORE, CA 94550

FIGURE 3: PLOT PLAN WITH
 GROUNDWATER ELEVATION CONTOURS
 MARCH 13, 1995





MAP NOT TO SCALE.
 SURVEYED DISTANCE BETWEEN WELLS, 1" = 25'

LEGEND

⊕ GROUNDWATER MONITORING WELL LOCATION WITH
 TPH CONCENTRATIONS IN mg/L and
 BTEX CONCENTRATIONS IN µg/L

2008 FIRST STREET,
 LIVERMORE, CA 94550

FIGURE 4: PLOT PLAN WITH
 GROUNDWATER ANALYTICAL RESULTS
 MARCH 13, 1995



TABLES

**TABLE 4
GROUNDWATER ELEVATION DATA**

**2008 FIRST STREET
LIVERMORE, CA**

Measurements are in feet.

Well	Date Measured	Depth to Free Product	Depth to Water*	Free Product Thickness	Corrected Depth to Water Table **	Well Head Elevation*	Water Table Elevation*	Change in Elevation
MW-1	9/22/88	—	60.50	—	—	487.00	426.50	
	8/2/90	—	43.10	—	—		443.90	17.40
	10/10/91	—	66.39	—	—		420.61	-23.29
	1/8/92	—	68.72	—	—		418.28	-2.33
	5/11/93	—	34.76	—	—		452.24	33.96
	9/21/93	—	38.70	—	—		448.30	-3.94
	5/22/94	—	33.57	—	—		453.43	5.13
	6/19/94	—	37.51	—	—	484.07	446.56	—
	8/25/94	—	43.27	—	—		440.80	-5.76
	11/22/94	—	40.58	—	—		443.49	2.69
3/13/95	—	28.06	—	—		456.01	12.52	
MW-2	6/19/94	—	38.15	—	—	483.86	445.71	—
	8/25/94	43.47	44.13	0.66	43.63		440.23	-5.48
	11/22/94	40.92	40.96	0.04	40.93		442.93	2.70
	3/9/95	28.47	29.28	0.81	28.67		455.19	12.26
	3/13/95	28.29	28.71	0.42	28.39		455.47	0.28
MW-3	6/19/94	—	37.15	—	—	484.24	447.09	—
	8/25/94	—	42.31	—	—		441.93	-5.16
	11/22/94	—	40.07	—	—		444.17	2.24
	3/13/95	—	27.94	—	—		456.30	12.13
MW-4	6/19/94	—	37.49	—	—	485.04	447.55	—
	8/25/94	—	42.25	—	—		442.79	-4.76
	11/22/94	—	40.59	—	—		444.45	1.66
	3/13/95	—	28.00	—	—		457.04	12.59

*Elevations are in feet above mean sea level.

Well Head Elevations to top of casing surveyed 6/94 to City of Livermore Bench Mark: street monument located at the intersection of 1st. street and S. L street.

Bench Mark elevation = 483.82', based on USGS Sea Level Datum 1929.

**Corrected depth = Depth to water - (Free product thickness x Specific gravity of product).

TABLE 2
SUMMARY OF LABORATORY ANALYSIS OF GROUNDWATER

2008 FIRST STREET
LIVERMORE, CA

TPH & Total Lead Concentrations are in mg/L (parts per million)
BTEX Concentrations are in µg/L (parts per billion)

WELL #	DATE SAMPLED	TPH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	TOTAL LEAD	SOLUBLE LEAD
MW-1	8/2/90	24	1,300	1,300	400	2,700	NA	NA
	10/10/91	2	430	170	100	290	NA	NA
	1/8/92	1	200	120	30	150	NA	NA
	5/11/93	1	66	8	41	90	NA	NA
	9/21/93	2	311	118	33.8	112	NA	NA
	5/22/94	10	690	1100	340	1200	NA	NA
	8/26/94	13	290	690	120	670	NA	ND
	11/22/94	19	400	770	230	1300	NA	NA
3/13/95	6	900	100	980	740	NA	NA	
MW-2	6/19/94	290	18,000	36,000	4,600	26,000	0.016	0.016
	8/26/94	NS*	NS*	NS*	NS*	NS*	NA	NA
	11/22/94	NS*	NS*	NS*	NS*	NS*	NA	NA
	3/13/95	NS*	NS*	NS*	NS*	NS*	NA	NA
MW-3	6/19/94	11	640	580	270	790	ND	ND
	8/26/94	41	1,600	2,300	330	1,800	NA	ND
	11/22/94	18	8,000	10,000	900	5,000	NA	NA
	3/13/95	44	1,600	1,300	5,000	6,600	NA	NA
MW-4	6/19/94	1	12	25	ND	22	0.007	0.007
	8/26/94	1	37	51	9.5	35	NA	ND
	11/22/94	2	110	110	5.8	58	NA	NA
	3/13/95	1.3	180	8	52	77	NA	NA
Title 22 CCR MCL			1	150	700	1,750	—	—

TPH = Total petroleum hydrocarbons (gasoline)
 NA = Not analyzed for this constituent.
 ND = Not detected at or above minimum detection limit.
 NS* = Not sampled due to the presence of free product.

APPENDICES

APPENDIX A
WATER SAMPLE LOGS

WATER SAMPLE LOG

DATE: 3/13/95

PROJECT LOCATION: 2008 First St., Livermore, CA

WELL NUMBER: MW-1

WEATHER CONDITIONS: Rainy, overcast

FIELD OBSERVATIONS: Water present inside well cover.

TOTAL DEPTH OF WELL: 76.20 feet CASING DIAMETER: 2 inches

DEPTH TO FREE PRODUCT: NONE ONE WELL VOLUME = 37.71 gallons

DEPTH TO WATER: 28.06 feet PURGING METHOD: Grundfos Rediflo Pump

DEPTHS MEASURED FROM: Top of well casing, north side.

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (μ mhos/cm)	Comments
11:15	5.0	7.49	60.4	1.98	
11:19	10.0	7.61	59.7	1.31	
11:35	30.0	7.41	59.0	1.32	
11:51	50.0	7.42	59.2	1.31	
12:06	65.0				

TOTAL DISCHARGE: 65.0 gallons WELL VOLUMES REMOVED: 1.7

TIME SAMPLE COLLECTED: 1:30 PM

DEPTH TO WATER AT TIME OF SAMPLE: 28.08 feet PERCENT RECHARGE: 100

METHOD OF SAMPLE COLLECTION: disposable bailer

APPEARANCE OF SAMPLE: Clear, strong product odor present.

AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ml. VOAs

SAMPLE TRANSPORTED TO: Onsite Environmental, Fremont, CA

SAMPLED BY: R. Pilat

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FREE PRODUCT REMOVAL LOG

PROJECT: 2008 First St., Livermore, CA DATE: 3/13/95
 TIME: 2:00 PM

WELL NUMBER: MW-2

WEATHER CONDITIONS: Rainy, overcast

FIELD OBSERVATIONS: Water present in well box.

TOTAL DEPTH OF WELL: 57.00 feet CASING DIAMETER: 4 inches
 DEPTH TO FREE PRODUCT: 28.29 FREE PRODUCT THICKNESS: 0.42 feet
 DEPTH TO WATER: 28.71 feet PURGING METHOD: Vacuum
 DEPTHS MEASURED FROM: Top of well casing, north side.

WELL PURGING DATA

ESTIMATED CONSTITUENT:

- FRESH GASOLINE
- FRESH DIESEL
- FRESH OIL
- DEGRADED GASOLINE
- DEGRADED DIESEL
- DEGRADED OIL

APPEARANCE:

- CLEAR
- AMBER
- BROWN
- GREY
- D. BROWN
- BLACK

- SHEEN
- THIN
- THICK

ODOR:

- GASOLINE ODOR
- DIESEL ODOR
- CHLORINATED SOLVENT ODOR
- OTHER: _____

TOTAL FREE PRODUCT & GROUNDWATER REMOVED: 20 gallons

DEPTH TO WATER, OTHER WELLS:

MW-1 28.06'
 MW-3 27.94'
 MW-4 28.00'

FREE PRODUCT REMOVED BY: R. Pilat
 NM = No measurements taken.

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WATER SAMPLE LOG

DATE: 3/13/95

PROJECT LOCATION: 2008 First St., Livermore, CA

WELL NUMBER: MW-3

WEATHER CONDITIONS: Rainy, overcast

FIELD OBSERVATIONS: Water present inside well cover.

TOTAL DEPTH OF WELL: 60.00 feet CASING DIAMETER: 4 inches

DEPTH TO FREE PRODUCT: NONE ONE WELL VOLUME = 39.24 gallons

DEPTH TO WATER: 27.94 feet PURGING METHOD: Grundfos Redifio Pump

DEPTHS MEASURED FROM: Top of well casing, north side.

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (μ mhos/cm)	Comments
9:15	10.0	7.08	59.5	1.33	
9:30	30.0	7.31	59.6	1.31	
9:45	50.0	7.44	59.2	1.34	
9:57	65.0	7.13	59.3	1.31	

TOTAL DISCHARGE: 65.0 gallons WELL VOLUMES REMOVED: 1.7

TIME SAMPLE COLLECTED: 11:00 AM

DEPTH TO WATER AT TIME OF SAMPLE: 27.95 feet PERCENT RECHARGE: 100

METHOD OF SAMPLE COLLECTION: disposable bailer

APPEARANCE OF SAMPLE: Clear, strong product odor present.

AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ml. VOAs

SAMPLE TRANSPORTED TO: Onsite Environmental, Fremont, CA

SAMPLED BY: R. Pilat

DCI
REMEDIATION SERVICE, INT'L.
2060 KNOLL DR., SUITE 200, VENTURA, CA 93003
(805) 644-5892 • FAX (805) 654-0720

WATER SAMPLE LOG

DATE: 3/13/95

PROJECT LOCATION: 2008 First St., Livermore, CA

WELL NUMBER: MW-4

WEATHER CONDITIONS: Rainy, overcast

FIELD OBSERVATIONS: Water present inside well cover.

TOTAL DEPTH OF WELL: 60.00 feet CASING DIAMETER: 4 inches

DEPTH TO FREE PRODUCT: NONE ONE WELL VOLUME = 39.17 gallons

DEPTH TO WATER: 28.00 feet PURGING METHOD: Grundfos Rediflo Pump

DEPTHS MEASURED FROM: Top of well casing, north side.

WELL PURGING DATA

Time	Discharge (gallons)	pH	Temp in F.	Specific Conductance (μ mhos/cm)	Comments
7:00	2.0	7.04	60.2	1.55	No product odor
7:08	10.0	7.28	60.42	1.57	
7:15	20.0	6.85	59.2	1.55	
7:31	40.0	6.91	59.3	1.56	
7:51	65.0	7.43	59.44	1.55	

TOTAL DISCHARGE: 65.0 gallons WELL VOLUMES REMOVED: 1.7

TIME SAMPLE COLLECTED: 9:00 AM

DEPTH TO WATER AT TIME OF SAMPLE: 28.00 feet PERCENT RECHARGE: 100

METHOD OF SAMPLE COLLECTION: disposable bailer

APPEARANCE OF SAMPLE: Clear, strong product odor present.

AMOUNT AND SIZE OF SAMPLE CONTAINERS: 3 x 40 ml. VOAs

SAMPLE TRANSPORTED TO: Onsite Environmental, Fremont, CA

SAMPLED BY: R. Pilat

RSI
REMEDIAL SERVICE, INT'L.
2060 KNOLL DR., SUITE 200, VENTURA, CA 93003
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APPENDIX B
LABORATORY REPORT
AND
CHAIN OF CUSTODY

On-site
Fremont, CA
(510) 490-8571

2889 Bunsen Ave, Suite A Ventura, CA 93003
805-644-1044 Fax 805-644-0236

Chain of Custody Record Analytical Services Request

CLIENT NAME DESERT PRT.		ADDRESS			TELEPHONE/FAX NUMBER RSI 805 644-589			METHOD OF SHIPMENT/SHIPPING DOCUMENT # 2 FOOT ICE.									
PROJECT NAME/LOCATION DP 795 LINECAMORE				CLIENT PROJECT NO		REQUESTED TURNAROUND TIME 24 HOURS: _____ 10 DAY: _____ 5 DAY: _____			HELP LABS QUOTE # 5 HELP LABS PROJECT # _____								
PROJECT MANAGER PILAT		SAMPLER(S) PILAT		P.O. NO													
SAMPLE IDENTIFICATION NO.	LAB NUMBER	DATE SAMPLED	TIME SAMPLED	CONTAINER #/TYPE	GRA B	COMPOSITE	SOIL	H ₂ O	OTHER	S 2 4 . 2	6 2 4	8 2 6 0.	TPH 9 / MS	8015	8020	GA BAY	REMARKS
MW 4		3/13/95	9:00A	3x VOA										XX	XX		ST. P.O.
MW 3		↓	11:00A	↓										↓	↓		" "
MW 1		↓	1:30 P	↓										↓	↓		" "
CONDITION OF SAMPLE:		RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)			DATE		TIME							
TEMPERATURE UPON RECEIPT:		RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)			DATE		TIME							
SEALS INTACT: YES / NO		RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)			DATE		TIME							
SAMPLE DISPOSAL:		RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)			DATE		TIME							
SEND INVOICE TO:		PAGE _____ OF _____															