



July 14, 1993

Jeff Sharpio
Alameda County Department
of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621-1426

Re: ACDEH STID #1976
Shell Service Station
WIC #204-4380-0303
318 South Livermore Avenue
Livermore, California
WA Job #81-613-203

Dear Mr. Sharpio:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the second quarter 1993 and proposed work for the third quarter 1993.

Second Quarter 1993 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water and collected ground water samples from all four site wells. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A.
- Weiss Associates (WA) compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).
- BTS' field sampling notes indicated that wells MW-1, MW-2 and MW-4 were pressurized. This pressurization likely occurred because ground water has risen about 16 ft beneath the site compared to last quarter. BTS allowed the wells to equilibrate for about 15 minutes prior to gaging.

Anticipated Third Quarter 1993 Activities:

WA will submit a report presenting the results of the third quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

Conclusions and Recommendations:

As indicated in the ACDEH's June 19, 199~~2~~² letter to Dan Kirk of Shell Oil Company¹, this site would be granted case closure if no hydrocarbons or lead were detected during four consecutive quarters of ground water sampling. We began sampling this site on November 13, 199~~2~~² and have attempted to sample all site wells quarterly for the last four quarters. Due to low water levels, not all of the wells could be sampled each quarter. However, each of the wells has been sampled at least twice, including during the most recent quarter when the water levels were about 16 ft higher than in previous quarters. Since 1990 when the wells were first installed, benzene has been detected over Department of Toxic Substances Control (DTSC) maximum contaminant levels for drinking water (MCLs) only once, at 0.0068 parts per million (ppm) in source area well MW-2. This concentration only slightly exceeds the DTSC MCL of 0.001 ppm.

Since no benzene or other hydrocarbons have ever been detected over DTSC MCLs in downgradient well MW-4 despite the recent rise in ground water, and since the low benzene concentrations detected once in source area well MW-2 do not appear to pose any threat to human health or the environment, we request that this site be granted case closure. No - not yet.

¹ ACDEH, June 19, 1992, Letter from hazardous materials specialist Scott Seery to Shell environmental engineer Dan Kirk regarding the Shell service station at 318 South Livermore Avenue, Livermore, California, 2 pp.

Jeff Sharpio
July 14, 1993

3

Weiss Associates



Please call if you have any questions.



Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

N. Scott MacLeod, R.G.
Project Geologist

JMA/NSM:jma

J:\SHELL\600\QMRPTS\613QMJU3.WP

Attachments: Figures
 Tables
 A - Ground Water Monitoring Report and Analytic Data

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520
 Tom Callaghan, Regional Water Quality Control Board, San Francisco Bay Region, 2101
 Webster Street, Oakland, CA 94612

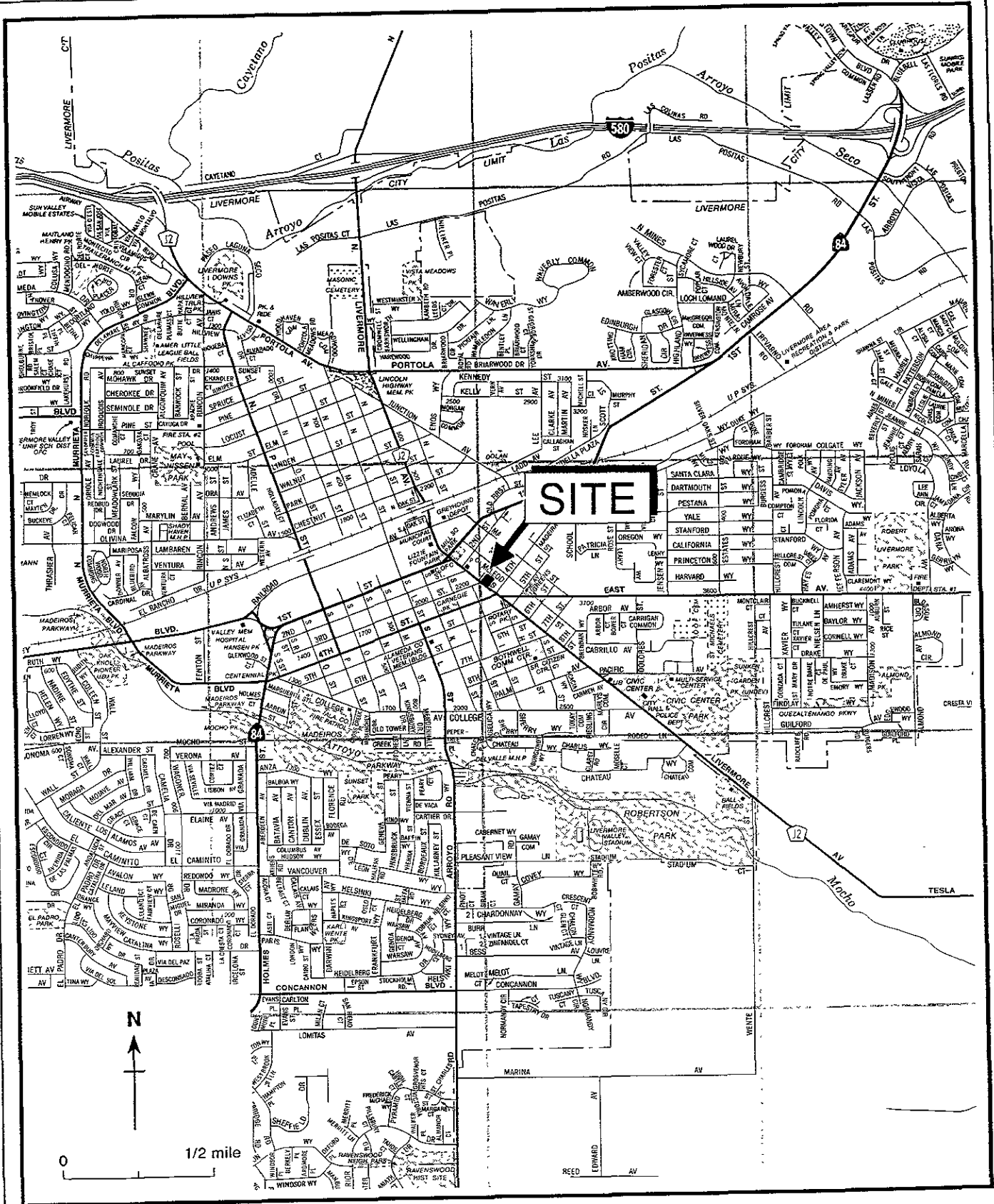
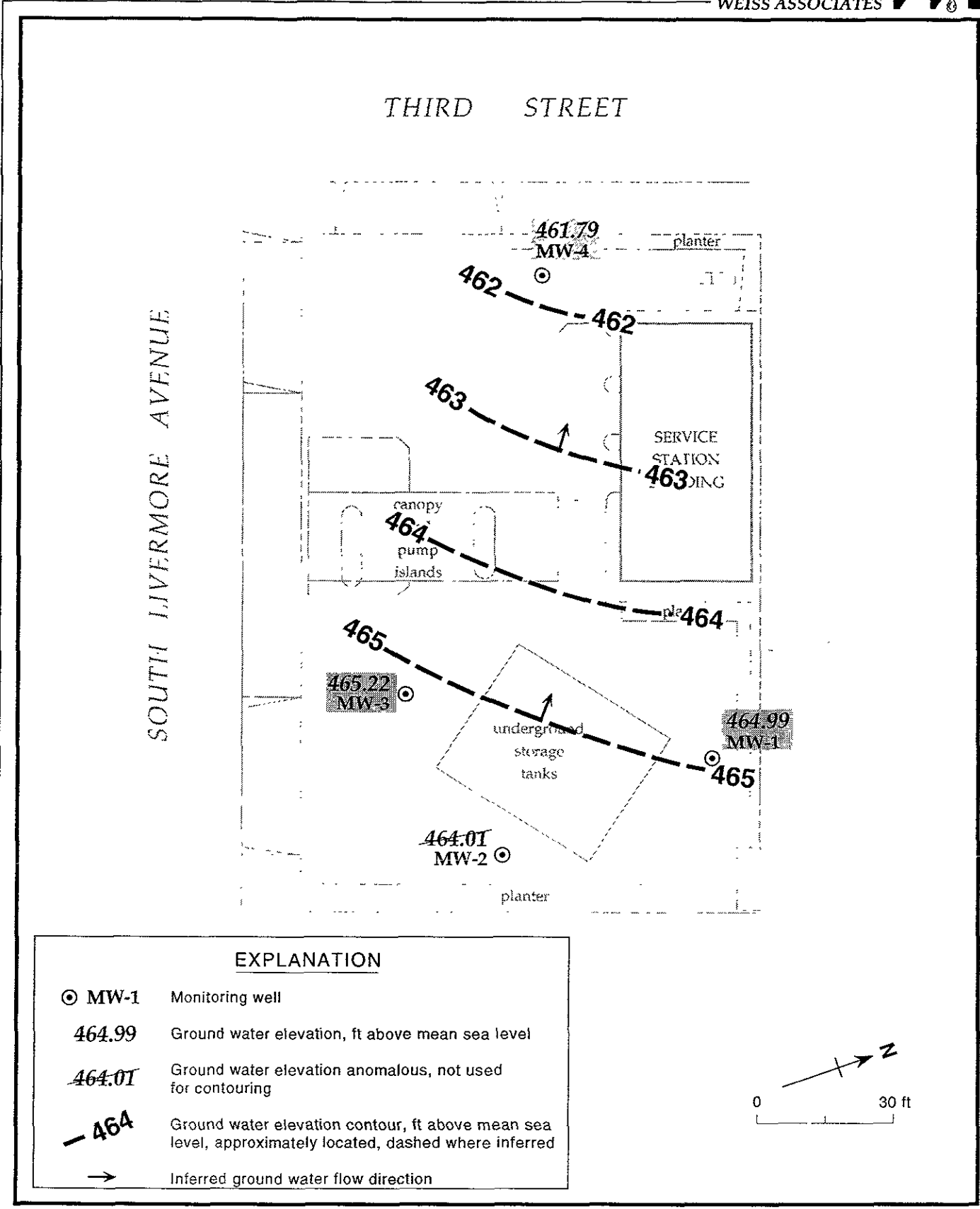


Figure 1. Site Location Map - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California



EXPLANATION

- ⊙ MW-1 Monitoring well
- 464.99 Ground water elevation, ft above mean sea level
- ~~464.01~~ Ground water elevation anomalous, not used for contouring
- 464 Ground water elevation contour, ft above mean sea level, approximately located, dashed where inferred
- Inferred ground water flow direction

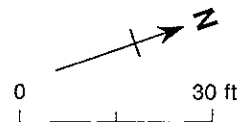


Figure 2. Monitoring Well Locations and Ground Water Elevations - May 27, 1993 - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Table 1. Ground Water Elevations - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	06/21/90	496.08	42.69	453.39
	09/28/90		44.75	451.33
	11/06/90		45.61	450.47
	12/07/90		45.82	450.26
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.47	448.61
	05/27/93		31.09	464.99
MW-2	06/21/90	495.49	42.15	453.34
	09/28/90		44.18	451.31
	11/06/90		44.98	450.51
	12/07/90		45.32	450.17
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.14	448.35
	05/27/93		31.48	464.01
MW-3	06/21/90	494.80	42.07	452.73
	09/28/90		44.15	450.65
	11/06/90		44.93	449.87
	12/07/90		45.56	449.24
	09/02/92		Dry	Dry
	11/13/92		Dry	Dry
	01/25/93		47.02	447.78
	05/27/93		29.58	465.22
MW-4	06/21/90	494.33	42.21	452.12
	09/28/90		44.27	450.06
	11/06/90		45.12	449.21
	12/07/90		45.97	448.36
	09/02/92		50.61	443.72
	11/13/92		Dry	Dry
	01/25/93		47.40	446.93
	05/27/93		32.54	461.79

Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California

Well ID	Date	Depth to Water	TPH-G	B	E	T	X	Lead
			-----parts per million (mg/L)-----					
MW-1	06/21/90	42.69	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	10/02/90	44.75	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	09/02/92	---	---	---	---	---	---	---
	11/13/92	---	---	---	---	---	---	---
	01/25/93	47.47	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
	05/27/93	31.09	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	05/27/93 ^{dup}	31.09	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
MW-2	06/21/90	42.15	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	10/02/90	44.18	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	09/02/92	Dry	---	---	---	---	---	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.14	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
	05/27/93	31.48	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	05/27/93	31.48	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
MW-3	06/21/90	42.07	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	10/02/90	44.15	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	09/02/92	Dry	---	---	---	---	---	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.02	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
	05/27/93	29.58	0.050	0.0068	0.0050	0.0019	0.0057	---
	05/27/93	29.58	0.050	0.0068	0.0050	0.0019	0.0057	---
MW-4	06/21/90	42.21	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	10/02/90	44.27	<0.03	<0.0003	<0.0003	<0.0003	<0.0003	---
	09/02/92	50.61	0.063	<0.0005	<0.0005	<0.0005	<0.0005	0.0033
	09/02/92 ^{dup}	50.61	0.067	<0.0005	<0.0005	<0.0005	<0.0005	---
	11/13/92	Dry	---	---	---	---	---	---
	01/25/93	47.40	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
	01/25/93 ^{dup}	47.40	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
	05/27/93	32.54	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
Trip Blank	09/02/92		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
	01/25/93		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
	05/27/93		<0.05	<0.0005	<0.0005	<0.0005	<0.0005	---
DTSC MCLs			NE	0.001	0.680	0.10 ^a	1.750	0.05

-- Table 2 continues on next page --



Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-4380-0303, 318 South Livermore Avenue, Livermore, California (continued)

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
Lead = Lead by EPA Method 7421
NE = Not established
--- = Not analyzed
<n = Not detected at detection limits of n ppm
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
dup = Duplicate sample

Notes:

a = DTSC recommended action level; MCL not established

ATTACHMENT A
GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

June 22, 1993

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-4380-0303
318 S. Livermore Ave.
Livermore, California

QUARTER:
2nd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930527-N-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of the water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	4	05-27-93	TOC	--	NONE	--	--	31.09	54.58
MW-2	4	05-27-93	TOC	--	NONE	--	--	31.48	52.56
MW-3	4	05-27-93	TOC	--	NONE	--	--	29.58	51.84
MW-4 *	4	05-27-93	TOC	--	NONE	--	--	32.54	54.99

* Sample Dup was a duplicate sample taken from well MW-1.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained in cases where the well dewateres and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

Objective Information Collection

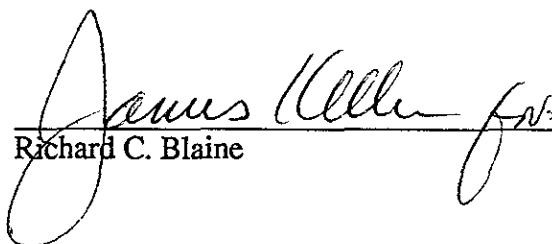
Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc.

performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.


Richard C. Blaine

RCB/cdk

attachments: chain of custody
certified analytical report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Michael Asport



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 5.28.93
Page 1 of 1

Site Address: 318 S. LIVERMORE AVE, LIVERMORE CA

Analysis Required

LAB: ANIMETRIX

WIC#: 204.4380.0303

Shell Engineer: DAN KIRK
Phone No.: 510
Fax #: 675.6168

Consultant Name & Address: BTS 985 TIMOTHY DR
SAN JOSE CA 95122

Consultant Contact: JIM KELLER
Phone No.: 408
Fax #: 995.5535

Comments: BTS # 930527.N.1

Sampled by: Nate Overmeyer

Printed Name: NATE OVERMEYER

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/> 6461		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 6441		48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/> 6442		15 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/> 6443		Other <input type="checkbox"/>
Soil/Air Rem. of Sys. O & M <input type="checkbox"/> 6462		NOTE: Holly Lab as soon as possible of 24/48 hr. SAT.
Water Rem. of Sys. O & M <input type="checkbox"/> 6463		
Other <input type="checkbox"/>		

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	DISSOLVED Pb (7421)	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
① MW-1	5/27			X		4						X	X		40 ml HCL		N	GROUNDWATER	
② MW-2	5/28											X	X						
③ MW-3	5/28											X	X						
④ MW-4	5/28											X	X						
⑤ DUP.	5/27											X	X						
⑥ TB	5/27					2						X			40 ml HCL			TRIP BLANK	

Relinquished by (signature): Nate Overmeyer	Printed Name: NATE OVERMEYER	Date: 6-1-93	Time: 16:35	Received (signature): BENNY S. CARRIZOSA	Printed Name: BENNY S. CARRIZOSA	Date: 6-7-93	Time: 16:35
Relinquished by (signature): BENNY S. CARRIZOSA	Printed Name: BENNY S. CARRIZOSA	Date: 6-1-93	Time: 16:55	Received (signature): Maria Pais	Printed Name: Maria Pais	Date: 6/1/93	Time: 16:55
Relinquished by (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



Inchcape Testing Services

Anamatrix Laboratories

1961 Concourse Drive #E
 San Jose, CA 95131
 Tel: 408-432-8192
 Fax: 408-432-8198

MR. JIM KELLER
 BLAINE TECH
 985 TIMOTHY STREET
 SAN JOSE, CA 95133

Workorder # : 9306012
 Date Received : 06/01/93
 Project ID : 204-4380-0303
 Purchase Order: MOH-B813

The following samples were received at Anamatrix, Inc. for analysis :

ANAMATRIX ID	CLIENT SAMPLE ID
9306012- 1	MW-1
9306012- 2	MW-2
9306012- 3	MW-3
9306012- 4	MW-4
9306012- 5	DUP
9306012- 6	TB

This report consists of 11 pages not including the cover letter, and is organized in sections according to the specific Anamatrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anamatrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anamatrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anamatrix.

Sarah Schoen, Ph.D.
 Laboratory Director

06-15-93

Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9306012
Date Received : 06/01/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9306012- 1	MW-1	WATER	05/27/93	TPHgBTEX
9306012- 2	MW-2	WATER	05/28/93	TPHgBTEX
9306012- 3	MW-3	WATER	05/28/93	TPHgBTEX
9306012- 4	MW-4	WATER	05/28/93	TPHgBTEX
9306012- 5	DUP	WATER	05/27/93	TPHgBTEX
9306012- 6	TB	WATER	05/27/93	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9306012
Date Received : 06/01/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Laura Storr 6/10/93
Department Supervisor Date

Peggie Dawson 6/10/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9306012
Matrix : WATER
Date Sampled : 05/27 & 28/93

Project Number : 204-4380-0303
Date Released : 06/10/93

Reporting Limit	Sample I.D.# MW-1	Sample I.D.# MW-2	Sample I.D.# MW-3	Sample I.D.# MW-4	Sample I.D.# DUP
COMPOUNDS (ug/L)	-01	-02	-03	-04	-05
Benzene	0.5	ND	ND	6.8	ND
Toluene	0.5	ND	ND	1.9	ND
Ethylbenzene	0.5	ND	ND	5.0	ND
Total Xylenes	0.5	ND	ND	5.7	ND
TPH as Gasoline	50	ND	ND	50	ND
% Surrogate Recovery	100%	96%	100%	106%	106%
Instrument I.D.	HP4	HP4	HP4	HP4	HP4
Date Analyzed	06/08/93	06/08/93	06/09/93	06/09/93	06/09/93
RLMF	1	1	1	1	1

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 6/10/93
Analyst Date

Laura Sher 6/10/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9306012
Matrix : WATER
Date Sampled : 05/27/93

Project Number : 204-4380-0303
Date Released : 06/10/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# TB	Sample I.D.# BU0801E3
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		109%	104%
Instrument I.D.		HP4	HP4
Date Analyzed		06/09/93	06/08/93
RLMF		1	1

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Dawson 6/10/93
Analyst Date

Laura Shor 6/10/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
 EPA METHOD 5030 WITH GC/FID
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 204-4380-0303 MW-2	Anamatrix I.D. : 06012-02
Matrix : WATER	Analyst : RD
Date Sampled : 05/28/93	Supervisor : IS
Date Analyzed : 06/08/93	Date Released : 06/10/93
	Instrument ID : HP4

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC MS (ug/L)	% REC MS	REC MD (ug/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	500	0	440	88%	490	98%	11%	48-149
P-BFB				76%		76%		61-139

* Limits established by Anamatrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
 EPA METHOD 5030 WITH GC/FID
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
 Matrix : WATER
 Date Sampled : N/A
 Date Analyzed : 06/08/93

Anamatrix I.D. : LCSW0608
 Analyst : RD
 Supervisor : IS
 Date Released : 06/10/93
 Instrument I.D.: HP4

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	460	92%	67-127
SURROGATE			87%	61-139

* Quality control established by Anamatrix, Inc.

ANAMETRIX REPORT DESCRIPTION

INORGANICS

Analytical Data Report (ADR)

The ADR contains tabulated results for inorganic analytes. All field samples, QC samples and blanks were prepared and analyzed according to procedures in the following references:

- EPA Method 6010/7000/9000 series - "Test Methods for Evaluating Solid Waste," SW-846, EPA, 3rd Edition, November 1986.
- EPA Method 100, 200, 300 series - "Methods for Chemical Analysis of Water and Wastes," EPA, 3rd Edition, 1983.
- Toxicity Characteristic Leaching Procedure (EPA Method 1311) - 40 CFR, Part 268, Appendix 1, June 1990.
- Waste Extraction Test - Results are reported in mg/L of extract according to procedures of CCR Title 22, Section 66261, Appendix II.
- Organic Lead - CCR Title 22, Section 66261, Appendix XI.
- Standard Method 2340B - "Standard Methods for the Examination of Water and Wastewater," APHA, AWWA, WEF, 18th Edition, 1992.

Matrix Spike Report (MSR)

The MSR summarizes percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. MSRs may not be provided with all analytical reports. Anametrix control limit for MSR is 75-125% with 25% for RPD limits.

Laboratory Control Sample Report (LCSR)

The LCSR summarizes percent recovery information for laboratory control spikes on reagent water or soil. This information is a statement of performance for the method, i.e., the samples are properly prepared and analyzed according to the applicable methods. Anametrix control limit for LCSR is 80-120%.

Method Blank Report (MBR)

The MBR summarizes quality control information for reagents used in preparing samples. The absolute value of each analyte measured in the method blank should be below the method reporting limit for that analyte.

Post Digestion Spike Report (PDSR)

The PDSR summarizes percent recovery information for post digestion spikes. A post digestion spike is performed for a particular analyte if the matrix spike recovery is outside of established control limits. Any percent recovery for a post digestion spike outside of established limits for an analyte indicates probable matrix effects and interferences for that analyte. Anametrix control limit for PDSR is 85-115%.

Qualifiers (Q)

Anametrix uses several data qualifiers in inorganic reports. These qualifiers give additional information on the analytes reported. The following is a list of qualifiers and their meanings:

- I - Sample was analyzed at the stated dilution due to spectral interferences.
- U - Analyte concentration was below the method reporting limit. For matrix and post digestion spike reports, a value of "0.0" is entered for calculation of the percent recovery.
- B - Sample concentration was below the reporting limit but above the instrument detection limit. Result is entered for calculation of the percent recovery only.
- H - Spike percent recovery was outside of Anametrix control limits due to interferences from relatively high concentration level of the analyte in the unspiked sample.

Comment Codes

In addition to qualifiers, the following codes are used in the comment section of all reports to give additional information about sample preparation methods:

- A - Sample was prepared for silver based on the silver digestion method developed by the Southern California Laboratory, Department of Health Services, "Acid Digestion for Sediments, Sludges, Soils and Solid Wastes. A Proposed Alternative to EPA SW846, Method 3050." Environmental Science and Technology, 1989, 23, 898-900.
- T - Spikes were prepared after extraction by the Toxicity Characteristic Leaching Procedure (TCLP).
- C - Spikes were prepared after extraction by the California Waste Extraction Test (CWET) method.
- D - Reported results are dissolved, not total, metals.

Reporting Conventions

Analytical values reported are gross values, i.e., not corrected for method blank contamination. Solid matrices are reported on a wet weight basis, unless specifically requested otherwise.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9306012
Date Received : 06/01/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : METALS
Sub-Department: METALS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9306012- 1	MW-1	WATER	05/27/93	7421
9306012- 2	MW-2	WATER	05/28/93	7421
9306012- 3	MW-3	WATER	05/28/93	7421
9306012- 4	MW-4	WATER	05/28/93	7421
9306012- 5	DUP	WATER	05/27/93	7421

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9306012
Date Received : 06/01/93
Project ID : 204-4380-0303
Purchase Order: MOH-B813
Department : METALS
Sub-Department: METALS

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Manuel Ramirez 6/13/93
Department/Supervisor Date

Mona Kameh 6/14/93
Chemist Date

INORGANIC ANALYSIS DATA SHEET
ANAMETRIX, INC. (408) 432-8192

Analyte-Method: Lead-7421
Project I.D. : 204-4380-0303
Matrix : WATER
Reporting Unit: ug/L

Analyst : MK
Supervisor : MW
Date Sampled : 05/27, 05/28/93
Date Released : 06/11/93
Instrument I.D. : AA3

ANAMETRIX SAMPLE I.D.	CLIENT I.D.	DATE PREPARED	DATE ANALYZED	REP. LIMIT	DIL. FACTOR	RESULT	Q
9306012-01	MW-1	06/03/93	06/08/93	3.0	1	ND	
9306012-02	MW-2	06/03/93	06/08/93	3.0	1	ND	
9306012-03	MW-3	06/03/93	06/08/93	3.0	1	ND	
9306012-04	MW-4	06/03/93	06/08/93	3.0	1	ND	
9306012-05	DUP	06/03/93	06/08/93	3.0	1	ND	
MB0603W	METHOD BLANK	06/03/93	06/08/93	3.0	1	ND	

COMMENT: All samples were filtered and preserved at Anametrix on 06/02/93.

LABORATORY CONTROL SAMPLE REPORT
 ANAMETRIX, INC. (408) 432-8192

Anamatrix W.O.# : 9306012
 Spike I.D. : LCS0603W
 Project I.D. : 204-4380-0303
 Matrix : WATER
 Reporting Unit : ug/L

Analyst : MK
 Supervisor : MN
 Date Released : 06/11/93
 Instrument I.D : AA3

ANALYTE-METHOD	DATE PREPARED	DATE ANALYZED	SPIKE AMT.	METHOD SPIKE	% REC.	Q
Lead-7421	06/03/93	06/08/93	20.0	21.2	106.0	

COMMENT: