



TRANSMITTAL LETTER

FROM: J. Michael Asport

DATE: June 19, 1992

TO: Kevin Tinsley
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621-1426

VIA: X First Class Mail
_____ Fax _____ pages
_____ UPS (Surface)
_____ Federal Express
_____ Courier

SUBJECT: Shell Service Station
WIC #204-0072-0502
2160 Otis Drive
Alameda, California

JOB: 81-429-01

AS: _____ We discussed on the telephone on _____
_____ You requested _____
_____ We believe you may be interested
 X Is required

06 JUN 21 1992

WE ARE SENDING: X Enclosed
_____ Under Separate Cover Via _____

Quarterly status report for the subject site

FOR: _____ Your information
 X Your use
_____ Your review & comments
_____ Return to you

PLEASE: X Keep this material
_____ Return within 2 weeks
_____ Acknowledge receipt

MESSAGE: Please call if you have any questions.

cc: Kurt Miller, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Tom Callaghan, California Regional Water Quality Control Board, San Francisco Bay,
2101 Webster Street, Suite 500, Oakland, California 94612



June 9, 1992

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

Re: Shell Service Station
WIC #204-0072-0502
2160 Otis Drive
Alameda, California
WA Job #81-429-01

Dear Mr. Tinsley:

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 1992 and proposed work for the third quarter 1992.

Second Quarter 1992 Activities:

- EMCON Associates (EMCON) of San Jose, California measured depths to ground water and collected ground water samples from the three site wells. EMCON's report describing these activities and analytic results for ground water is included as Attachment A.
- Weiss Associates (WA) used EMCON's ground water elevation calculations to prepare a ground water elevation contour map (Figure 2).

Anticipated Third Quarter 1992 Activities:

WA will submit a report presenting the results of the third quarter 1992 ground water sampling and ground water depth measurements. The report will include tabulated chemical

Kevin Tinsley
June 9, 1992

2

Weiss Associates



analytic results and a ground water elevation contour map.

Please call if you have any questions.



Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

Joseph P. Theisen, C.E.G.
Senior Hydrogeologist

JMA/JPT:jma

E:\ALL\SHELL\400\429QMMY2.WP

Attachments: Figures
A - EMCON's Ground Water Monitoring Report

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

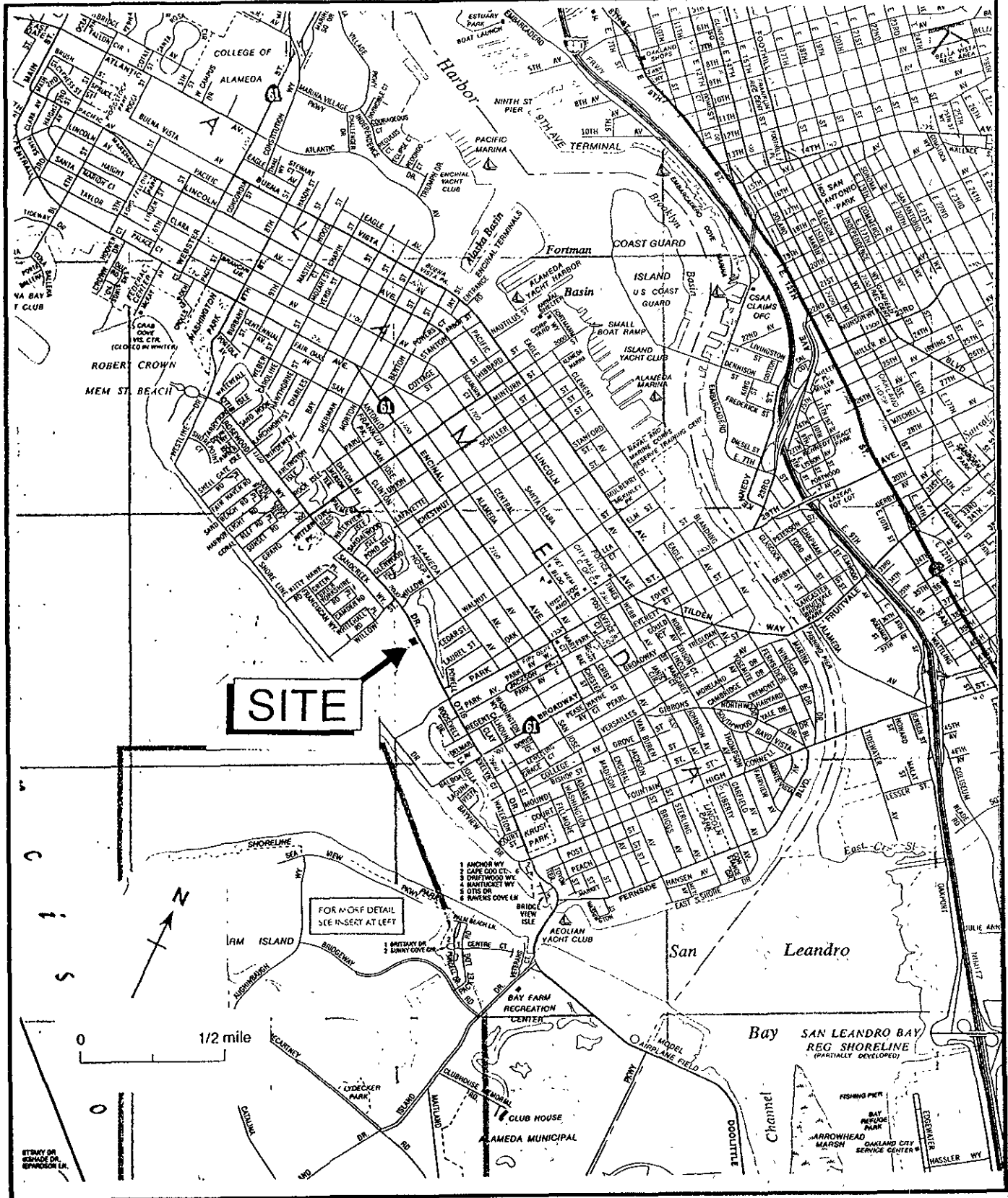


Figure 1. Site Location Map - Shell Service Station, WIC# 204-0072-0502, 2160 Otis Drive, Alameda, CA

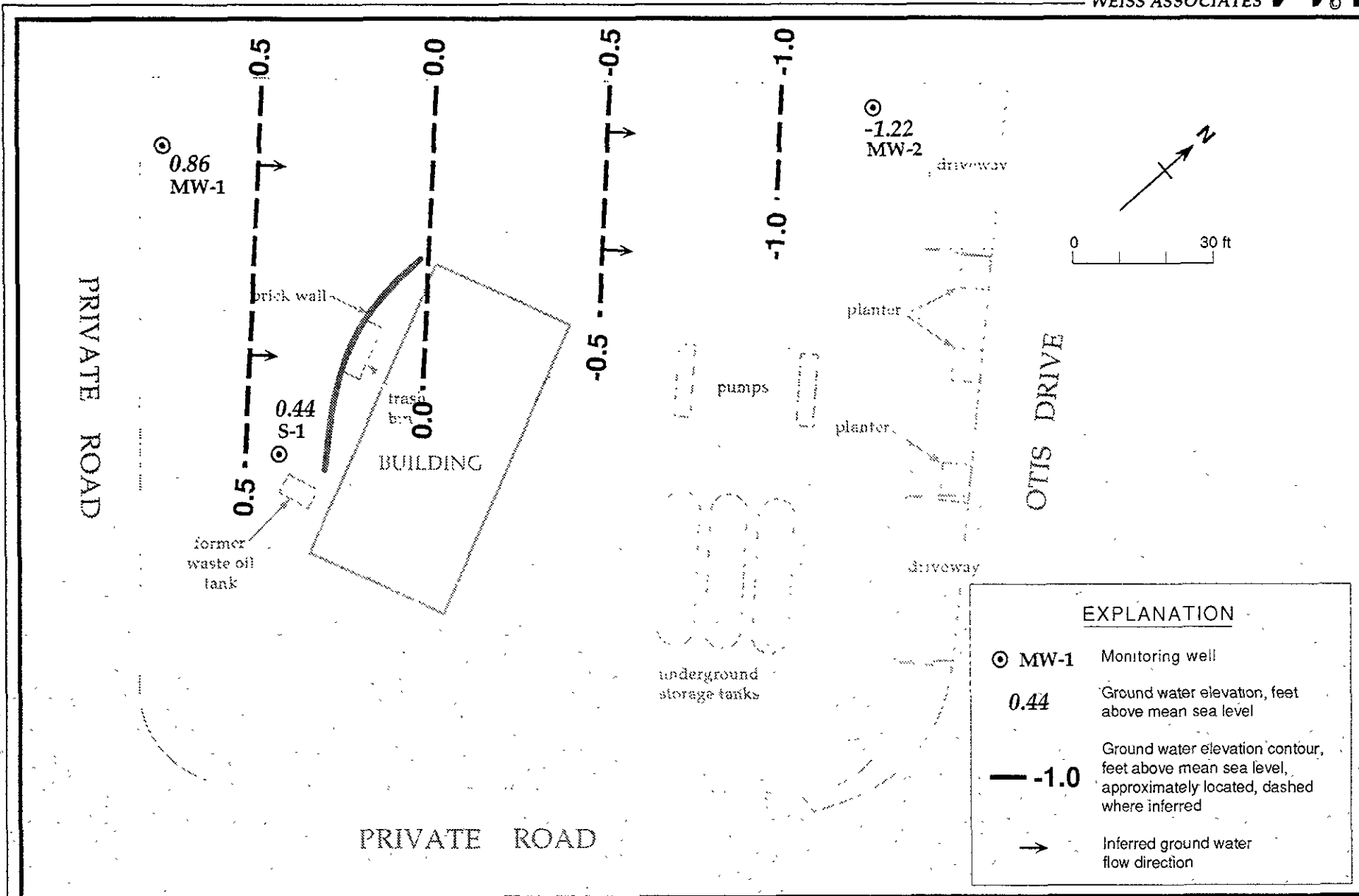


Figure 2. Ground Water Elevation Contours - April 23, 1992 - Shell Service Station WIC #204-0072-0502, 2160 Otis Drive, Alameda, California

ATTACHMENT A
GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

May 19, 1992
Project: G67-30.01
WIC#: 204-0072-0502

Mr. David Elias
Weiss Associates
5500 Shellmound Street
Emeryville, California 94608-2411

Re: Second quarter 1992 ground-water monitoring report, Shell Oil
Company, 2160 Otis Drive, Alameda, California

Dear Mr. Elias:

This letter presents the results of the second quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 2160 Otis Drive, Alameda, California (figure 1). Second quarter monitoring was conducted on April 23, 1992. The site is monitored quarterly.

GROUND-WATER LEVEL SURVEY

A water-level survey preceded the purging and sampling of the monitoring wells. The wells included in the survey are identified in figure 2 (supplied by Weiss Associates). During the survey, wells MW-1, MW-2, and S-1 were measured for depth to water, floating product thickness, and total depth. Depth to water and floating product thickness were measured to the nearest 0.01 foot with an oil/water interface probe. No floating product was observed in any wells. Total depth was measured to the nearest 0.1 foot. Results of the second quarter water-level survey, and available data from four previous surveys, are summarized in table 1.

SAMPLING AND ANALYSIS

Ground-water samples were collected from wells MW-1, MW-2, and S-1 on April 23, 1992. Prior to sample collection, the wells were purged with dedicated polyvinyl chloride bailers. During the purging operation, ground water was monitored for pH, electrical conductivity, and temperature as a function of volume of water removed. Purging continued until these parameters were stable and a minimum of three casing volumes of ground water were removed. Well S-1 was evacuated to dryness before three casing volumes were removed. The well was allowed to recharge for up to 24 hours. Samples were collected after the well had recharged to a level sufficient for sample collection. Field measurements from second quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the

G673001B.DOC



monitoring wells was contained in a 55-gallon drum. The drum was identified with a Shell-approved label and secured for on-site storage.

Ground-water samples were collected with a Teflon® bailer, labeled, placed on ice, and transported to a Shell-approved and state-certified analytical laboratory for analysis. Shell chain-of-custody documents accompanied all samples to the laboratory.

All equipment that was placed down a well or that came in contact with ground water was steam cleaned with deionized water prior to use at each well.

Quality control samples for second quarter monitoring included a trip blank. All water samples collected during second quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Additional ground-water samples collected from well MW-2 were analyzed for halogenated volatile organic compounds (VOCs) by U.S. Environmental Protection Agency method 601.

ANALYTICAL RESULTS

Analytical results for the second quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2 (TPH-g and BTEX) and table 3 (VOCs). The original certified analytical report and a copy of the final chain-of-custody document are attached.

If you have any questions, please call.

Very truly yours,

EMCON Associates



David Larsen
Environmental Sampling Coordinator



Orrin Childs
Environmental Sampling Supervisor

DL/OC:dl

Attachments: Table 1 - Monitoring well field measurement data
Table 2 - Summary of analytical results (TPH-g and BTEX)
Table 3 - Summary of analytical results (VOCs)
Figure 1 - Site location map
Figure 2 - Monitoring well locations
Certified analytical report
Chain-of-custody document

Table 1
Monitoring Well Field Measurement Data
Second Quarter 1992

Shell Station: 2160 Otis Drive
Alameda, California
WIC #: 204-0072-0502

Date: 05/19/92
Project Number: G67-30.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Ground-water Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-1	04/09/91	6.00	4.96	1.04	NR	NR	04/09/91	NR	NR	NR	NR
MW-1	07/10/91	6.00	5.52	0.48	NR	NR	07/10/91	NR	NR	NR	NR
MW-1	10/09/91	6.00	5.70	0.30	NR	NR	10/09/91	NR	NR	NR	NR
MW-1	01/24/92	6.00	5.51	0.49	16.3	ND	01/24/92	7.27	13000	62.8	>200
MW-1	04/23/92	6.00	5.14	0.86	16.3	ND	04/23/92	7.49	12540	66.3	49.5
MW-2	04/09/91	3.29	4.09	-0.80	NR	NR	04/09/91	NR	NR	NR	NR
MW-2	07/10/91	3.29	4.66	-1.37	NR	NR	07/10/91	NR	NR	NR	NR
MW-2	10/09/91	3.29	4.81	-1.52	NR	NR	10/09/91	NR	NR	NR	NR
MW-2	01/24/92	3.29	4.66	-1.37	17.0	ND	01/24/92	6.39	>20000	60.4	>200
MW-2	04/23/92	3.29	4.51	-1.22	17.0	ND	04/23/92	7.31	9490	66.0	12.6
S-1	04/09/91	5.10	4.20	0.90	NR	NR	04/09/91	NR	NR	NR	NR
S-1	07/10/91	5.10	4.42	0.68	NR	NR	07/10/91	NR	NR	NR	NR
S-1	10/09/91	5.10	4.87	0.23	NR	NR	10/09/91	NR	NR	NR	NR
S-1	01/24/92	5.10	4.90	0.20	18.7	ND	01/24/92	8.99	374	62.7	>200
S-1	04/23/92	5.10	4.66	0.44	18.8	ND	04/23/92	8.92	355	68.4	79.8

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = not reported; data not available
ND = none detected

Table 2
 Summary of Analytical Results
 Second Quarter 1992
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 2160 Otis Drive
 Alameda, California
 WIC #: 204-0072-0502

Date: 05/19/92
 Project Number: G67-30.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-d
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-1	04/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-1	07/10/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-1	10/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-1	01/24/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-1	04/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
MW-2	04/09/91	NA	0.021	<0.005	<0.005	<0.005	<0.05
MW-2	07/10/91	0.05+	0.0084	<0.0005	<0.0005	<0.0005	<0.05
MW-2	10/09/91	0.15	0.022	<0.0005	<0.0005	<0.0005	NA
MW-2	01/24/92	<0.05	0.0048	<0.0005	<0.0005	<0.0005	NA
MW-2	04/23/92	<0.05	0.0023	<0.0005	0.0015	<0.0005	NA
S-1	04/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
S-1	07/10/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
S-1	10/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
S-1	01/24/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
S-1	04/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
TB	04/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
TB	07/10/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
TB	10/09/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
TB	01/24/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
TB	04/23/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

NA = not analyzed

+ = compounds detected are not characteristic of the standard gasoline chromatographic pattern

Table 3
 Summary of Analytical Results
 Volatile Organic Compounds by EPA Method 601
 Second Quarter 1992
 milligrams per liter (mg/l) or parts per million (ppm)

Shell Station: 2160 Otis Drive
 Alameda, California
 WIC #: 204-0072-0502

Date: 05/19/92
 Project Number: G67-30.01

Sample Designation	Water Sample Field Date	Benzene	TCE	TCA	PCE	Chloroform	cis-1,2-DCE	trans-1,2-DCE	1,2-DCA	Carbon Disulfide	Vinyl Chloride
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-2	04/09/91	NR	NR	NR	NR	NR	0.064@	0.064@	NR	NR	NR
MW-2	07/10/91	0.0092*	NR	NR	0.0069*	0.043*	NR	NR	NR	0.014*	NR
MW-2	10/09/91	NR	0.0019	NR	0.0128	0.0074	0.054	0.016	NR	NR	0.0017
MW-2	01/24/92	NA	0.0025	<0.0005	0.0070	0.0190	0.0160	0.0043	0.0006	NA	<0.0005
MW-2	04/23/92	NA	<0.003	<0.003	0.003	<0.003	0.084	0.018	<0.003	NA	<0.003

TCE = Trichloroethene
 TCA = 1,1,1-Trichloroethane
 PCE = Tetrachloroethene
 cis-1,2-DCE = cis-1,2-Dichloroethene
 trans-1,2-DCE = trans-1,2-Dichloroethene
 1,2-DCA = 1,2-Dichloroethane
 NR = not reported; data not available
 @ = reported as total 1,2-DCE to include both cis-1,2-DCE and trans-1,2-DCE
 * = analyzed by EPA method 8240
 NA = not analyzed

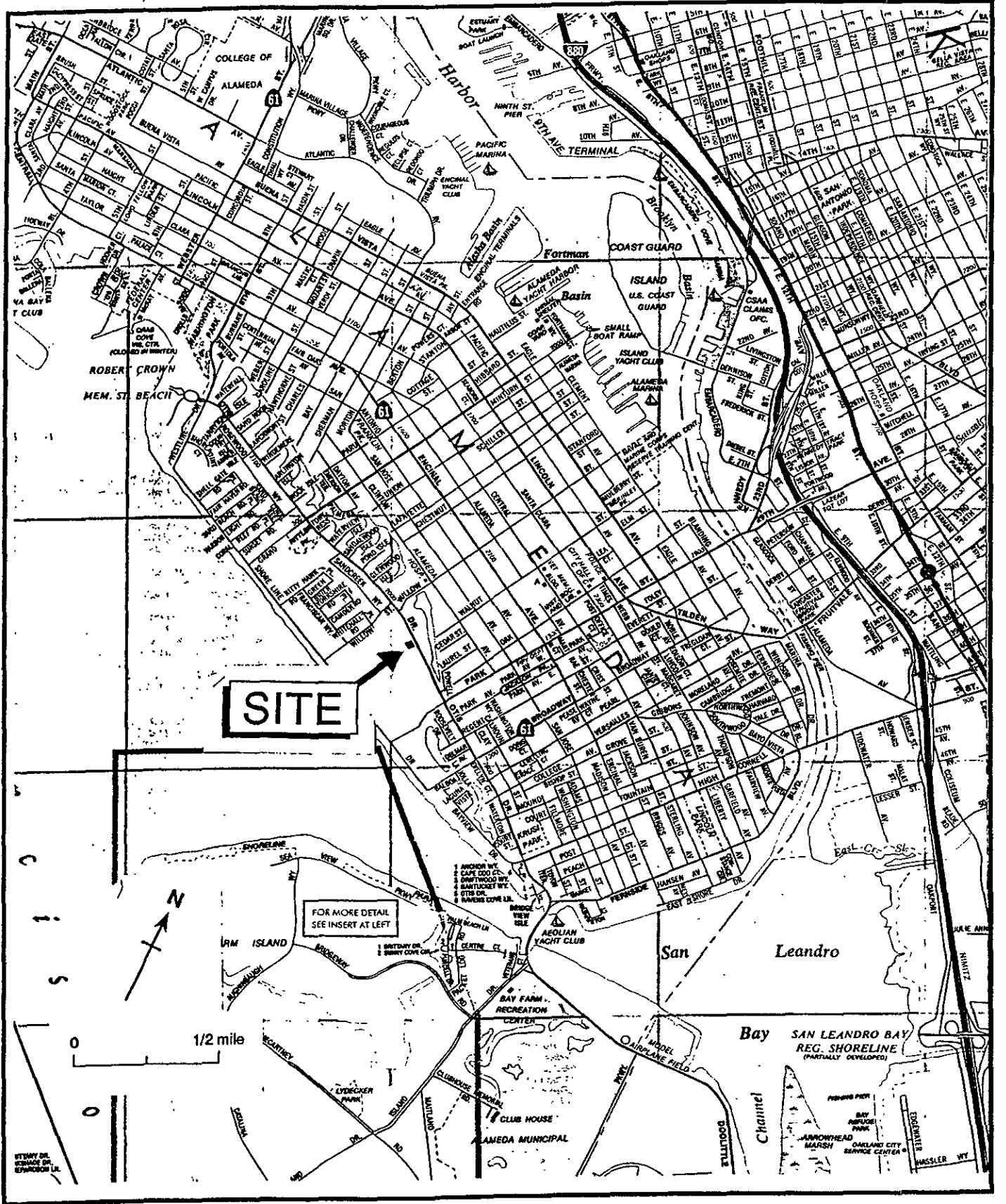
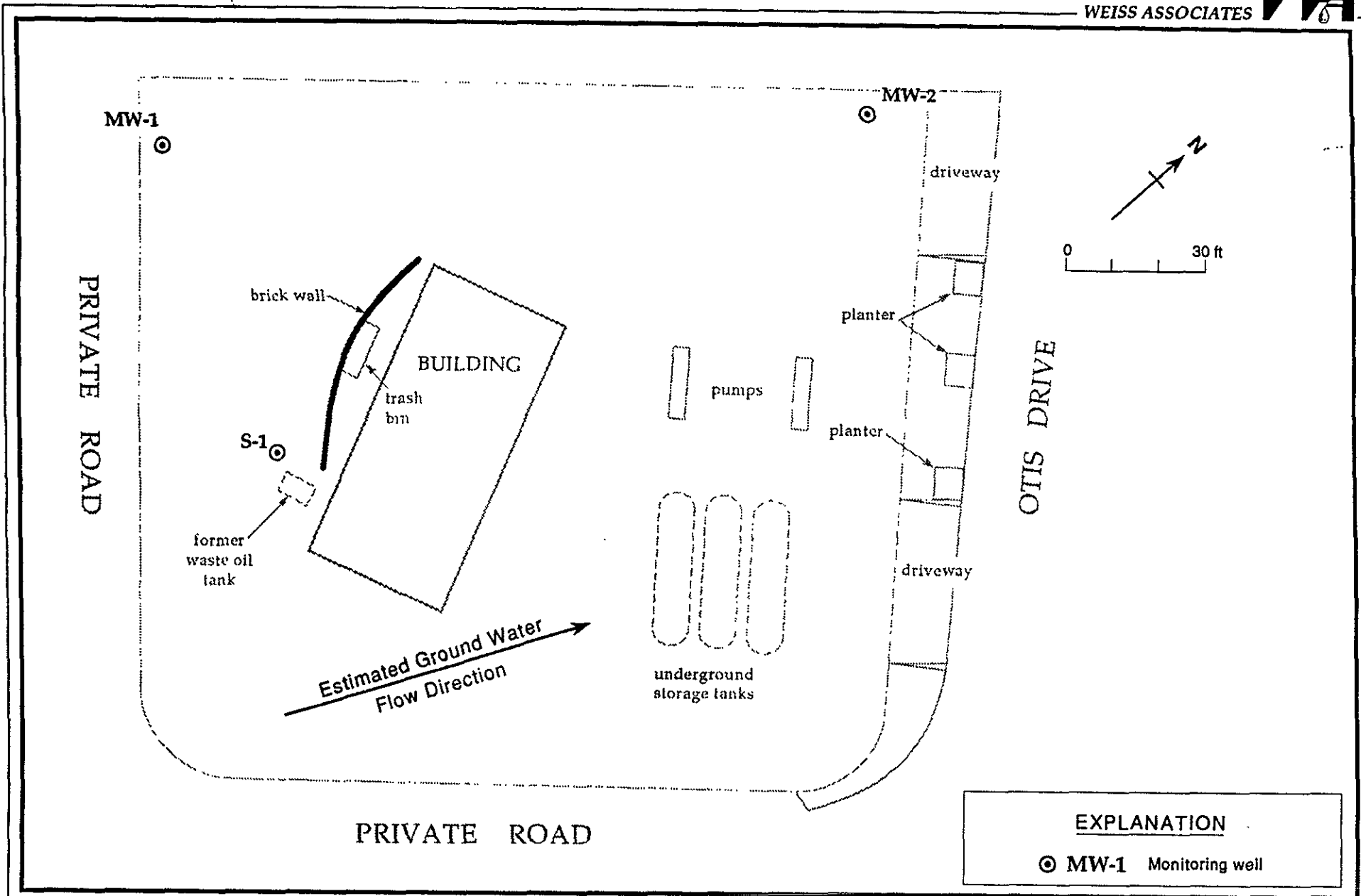


Figure 1. Site Location Map
 Shell Service Station WIC #204-0072-0502
 2160 Otis Drive, Alameda, California



EXPLANATION	
⊙ MW-1	Monitoring well

Figure 2. Monitoring Well Locations
Shell Service Station WIC #204-0072-0502
2160 Otis Drive, Alameda, California



ITAS Cerritos W.O.#: C2-04-212

Shell Site: 2160 Otis Drive, Alameda
WIC No.: 204-0072-0502
Shell Engineer: Kurt Miller
Shell Consultant: EMCON Associates / David Larsen

ANALYTICAL SUMMARY

Sample: MW-1

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Sample: S-1

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Sample: MW-2

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	0.0023	0.0005
Toluene	ND	0.0005
Ethylbenzene	0.0015	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

EMCON ASSOCIATES

Sample: Trip Blank

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

**MAY 08 1992
RECEIVED**

Regional Office

17605 Fabrica Way • Cerritos, California 90701 • 213-921-9831 or 714-523-9200

QC SUMMARY

Analyte	Matrix Spike (%Rec)	Matrix Spike Dup (%Rec)
Benzene	113	114
Toluene	95	97
Ethylbenzene	102	104
Xylenes (total)	103	104
Gasoline	142	132

Method Blank 1 5/1/92

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Method Blank 2 5/2/92

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

Method Blank 3 5/2/92

Analyte	Result (MG/L)	Detection Limit (MG/L)
Benzene	ND	0.0005
Toluene	ND	0.0005
Ethylbenzene	ND	0.0005
Xylenes (total)	ND	0.0005
Gasoline	ND	0.05

EMCON ASSOCIATES

MAY 08 1992

RECEIVED



INTERNATIONAL
TECHNOLOGY
CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

EMCON ASSOCIATES
1938 JUNCTION AVE
SAN JOSE CA 95131
DAVID LARSEN

Date: 05/07/92

Work Order: C2-04-212

Project/P.O.#: 204-0072-0502
SHELL NORTH

This is the Certificate of Analysis for the following samples:
Client Work ID: 2160 OTIS DRIVE, ALAMEDA
Date Received: 04/25/92
Number of Samples: 9
Sample Type: LIQUID

275000

Shell Site: 2160 Otis Drive, Alameda
WIC No.: 204-0072-0502
Shell Engineer: Kurt Miller
Shell Consultant: EMCON Associates / David Larsen
Work Description: Quarterly Monitoring
Class Type: 5461

Samples were labeled as follows:

<u>SAMPLE IDENTIFICATION</u>	<u>LABORATORY #</u>
MW-1	C2-04-212-01
S-1	C2-04-212-02
MW-2	C2-04-212-03
TRIP BLANK	C2-04-212-04
MATRIX SPIKE	C2-04-212-05
MATRIX SPIKE DUP	C2-04-212-06
METHOD BLANK 1	C2-04-212-07

Reviewed and Approved:


Marla Miller
Project Manager

EMCON ASSOCIATES

MAY 08 1992

RECEIVED

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories
American Association for Laboratory Accreditation

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA . . . 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

Samples, continued from above:

<u>SAMPLE IDENTIFICATION</u>	<u>LABORATORY #</u>
METHOD BLANK 2	C2-04-212-08
METHOD BLANK 3	C2-04-212-09

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MW-1

LAB SAMPLE ID: C204212-01A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 05/01/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	94

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MW-1

LAB SAMPLE ID: C204212-01A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 04/28/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	99	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA . 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: S-1

LAB SAMPLE ID: C204212-02A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 05/01/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

	Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE		94

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: S-1

LAB SAMPLE ID: C204212-02A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 04/28/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		99	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MW-2

LAB SAMPLE ID: C204212-03A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 05/02/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	93

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '**' surrogate recovery is outside QC limit.
 'D' surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MW-2

LAB SAMPLE ID: C204212-03A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 04/28/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		0.0023	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		0.0015	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits	
A,A,A-TRIFLUOROTOLUENE		105	75	- 125
1-CHLORO-2-FLUOROBENZENE				-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '**' surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: TRIP BLANK

LAB SAMPLE ID: C204212-04A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 05/02/92

EXTRACTION DATE:

Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE	ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	95

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: TRIP BLANK

LAB SAMPLE ID: C204212-04A

SAMPLE DATE: 04/23/92

ANALYSIS DATE: 04/28/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	98	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: HALOGENATED VOL. ORGANICS

SAMPLE ID: MATRIX SPIKE

LAB SAMPLE ID: C204212-05A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/02/92

CONFIRMATION DATE:

UNITS: %REC

INSTRUMENT ID: GC23

Compounds	Results	Detection Limit	Compounds	Results	Detection Limit
Chloromethane	-	-	Bromodichloromethane	-	-
Vinyl chloride	-	-	2-Chloroethylvinyl ether	-	-
Bromomethane	-	-	trans-1,3-Dichloropropene	-	-
Chloroethane	-	-	cis-1,3-Dichloropropene	-	-
Trichlorofluoromethane	-	-	1,1,2-Trichloroethane	-	-
1,1-Dichloroethene	-	-	Tetrachloroethene	128	-
Methylene chloride	-	-	Dibromochloromethane	-	-
trans-1,2-Dichloroethene	-	-	Chlorobenzene	-	-
1,1-Dichloroethane	-	-	Bromoform	-	-
Chloroform	118	-	1,1,2,2-Tetrachloroethane	-	-
1,1,1-Trichloroethane	120	-	1,3-Dichlorobenzene	-	-
Carbon tetrachloride	120	-	1,4-Dichlorobenzene	-	-
1,2-Dichloroethane	-	-	1,2-Dichlorobenzene	-	-
Trichloroethene	117	-	Dichlorodifluoromethane	-	-
1,2-Dichloropropane	-	-	cis-1,2-Dichloroethene	-	-

Surrogate	% Recovery
1-Chloro-2-Fluorobenzene	118

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MATRIX SPIKE
LAB SAMPLE ID: C204212-05A
SAMPLE DATE: not spec
ANALYSIS DATE: 05/02/92
EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS UNLEADED GASOLINE		142	-

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	96

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MATRIX SPIKE

LAB SAMPLE ID: C204212-05A

SAMPLE DATE: not spec

ANALYSIS DATE: 04/30/92

CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		113	-
TOLUENE		95	-
ETHYLBENZENE		102	-
XYLENES (TOTAL)		103	-

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	102	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

Work Order: C2-04-212

TEST NAME: HALOGENATED VOL. ORGANICS

SAMPLE ID: MATRIX SPIKE DUP

LAB SAMPLE ID: C204212-06A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/02/92

CONFIRMATION DATE:

UNITS: %REC

INSTRUMENT ID: GC23

Compounds	Results	Detection Limit	Compounds	Results	Detection Limit
Chloromethane	-	-	Bromodichloromethane	-	-
Vinyl chloride	-	-	2-Chloroethylvinyl ether	-	-
Bromomethane	-	-	trans-1,3-Dichloropropene	-	-
Chloroethane	-	-	cis-1,3-Dichloropropene	-	-
Trichlorofluoromethane	-	-	1,1,2-Trichloroethane	-	-
1,1-Dichloroethene	-	-	Tetrachloroethene	124	-
Methylene chloride	-	-	Dibromochloromethane	-	-
trans-1,2-Dichloroethene	-	-	Chlorobenzene	-	-
1,1-Dichloroethane	-	-	Bromoform	-	-
Chloroform	115	-	1,1,2,2-Tetrachloroethane	-	-
1,1,1-Trichloroethane	117	-	1,3-Dichlorobenzene	-	-
Carbon tetrachloride	119	-	1,4-Dichlorobenzene	-	-
1,2-Dichloroethane	-	-	1,2-Dichlorobenzene	-	-
Trichloroethene	113	-	Dichlorodifluoromethane	-	-
1,2-Dichloropropane	-	-	cis-1,2-Dichloroethene	-	-

Surrogate	% Recovery
1-Chloro-2-Fluorobenzene	102

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: MATRIX SPIKE DUP

LAB SAMPLE ID: C204212-06A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/02/92

EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS UNLEADED GASOLINE		132	-

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	95

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: MATRIX SPIKE DUP

LAB SAMPLE ID: C204212-06A

SAMPLE DATE: not spec

ANALYSIS DATE: 04/30/92

CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		114	-
TOLUENE		97	-
ETHYLBENZENE		104	-
KYLENES (TOTAL)		104	-

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	103	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: HALOGENATED VOL. ORGANICS

SAMPLE ID: METHOD BLANK 1

LAB SAMPLE ID: C204212-07A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/04/92

CONFIRMATION DATE:

UNITS: MG/L

INSTRUMENT ID: GC23

Compounds	Results	Detection Limit	Compounds	Results	Detection Limit
Chloromethane	ND	0.0005	Bromodichloromethane	ND	0.0005
vinyl chloride	ND	0.0005	2-Chloroethylvinyl ether	ND	0.0005
Bromomethane	ND	0.0005	trans-1,3-Dichloropropene	ND	0.0005
Chloroethane	ND	0.0005	cis-1,3-Dichloropropene	ND	0.0005
Trichlorofluoromethane	ND	0.0005	1,1,2-Trichloroethane	ND	0.0005
1,1-Dichloroethene	ND	0.0005	Tetrachloroethene	ND	0.0005
Methylene chloride	ND	0.015	Dibromochloromethane	ND	0.0005
trans-1,2-Dichloroethene	ND	0.0005	Chlorobenzene	ND	0.0005
1,1-Dichloroethane	ND	0.0005	Bromoform	ND	0.0005
Chloroform	ND	0.0005	1,1,2,2-Tetrachloroethane	ND	0.0005
1,1,1-Trichloroethane	ND	0.0005	1,3-Dichlorobenzene	ND	0.0005
Carbon tetrachloride	ND	0.0005	1,4-Dichlorobenzene	ND	0.0005
1,2-Dichloroethane	ND	0.0005	1,2-Dichlorobenzene	ND	0.0005
Trichloroethene	ND	0.0005	Dichlorodifluoromethane	ND	0.0005
1,2-Dichloropropane	ND	0.0005	cis-1,2-Dichloroethene	ND	0.0005

Surrogate % Recovery
1-Chloro-2-Fluorobenzene 90

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA . 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK 1

LAB SAMPLE ID: C204212-07A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/01/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	95

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK 1

LAB SAMPLE ID: C204212-07A

SAMPLE DATE: not spec

ANALYSIS DATE: 04/28/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		99	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK 2

LAB SAMPLE ID: C204212-08A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/02/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE	94

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK 2
 LAB SAMPLE ID: C204212-08A
 SAMPLE DATE: not spec
 ANALYSIS DATE: 04/30/92
 CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE	102	75 - 125
1-CHLORO-2-FLUOROBENZENE		-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK 3

LAB SAMPLE ID: C204212-09A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/02/92

EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
TPHC AS UNLEADED GASOLINE		ND	0.05

	Surrogate	% Recovery
A,A,A-TRIFLUOROTOLUENE		94

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA

275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK 3

LAB SAMPLE ID: C204212-09A

SAMPLE DATE: not spec

ANALYSIS DATE: 05/02/92

CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

	Surrogate	% Recovery	Limits
A,A,A-TRIFLUOROTOLUENE		99	75 - 125
1-CHLORO-2-FLUOROBENZENE			-

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
 'NA' indicates not applicable
 '*' Surrogate recovery is outside QC limit.
 'D' Surrogate is diluted out.
 'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES

Date: 05/07/92

Client Work ID: 2160 OTIS DRIVE, ALAMEDA 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-04-212

TEST NAME HALOGENATED VOL. ORGANICS TEST CODE 601

Each sample was analyzed for halogenated organic compounds according to USEPA Method 601. An aliquot of the sample is purged with helium and the volatile organic compounds are transferred to the vapor phase. The vapor is swept through a sorbent column where the halogenated compounds are adsorbed. Upon completion, the sorbent column is heated and backflushed onto a GC column. The trapped compounds are separated by a megabore column and detected by an electrolytic conductivity detector (ELCD or Hall).

TEST NAME VOLATILE FUEL HYDROCARBONS TEST CODE 8015U

Low boiling fuel hydrocarbons are analyzed by methods established by the California DHS' LUFT manual. An aliquot of the sample is purged with helium and the volatile fuel hydrocarbons are transferred to the vapor phase. The vapor is swept through a sorbent column where the hydrocarbons are adsorbed. Upon completion, the sorbent column is heated and backflushed onto a gas chromatograph equipped with a 30 meter capillary column. Detection and quantitation is made by a flame ionization detector. Unleaded gasoline is used as the calibration standard.

TEST NAME BTEX BY METHOD 8020

TEST CODE BTEX_W

The sample was analyzed for benzene, toluene, ethylbenzene and total xylenes according to USEPA Methods 8020 and 5030. An aliquot of the sample is purged with helium and the volatile compounds are transferred to the vapor phase. The vapor is swept through a sorbent column where the aromatics are adsorbed. Upon completion the sorbent column is heated and backflushed onto a GC column. The trapped compounds are separated by the megabore column and detected by a photoionization detector.



Site Address: 2160 OTIS Drive
 Alameda, CA

Analysis Required

LAB: IT Analytical - ~~San Jose~~ ^{Cerritos}

WIC#: 204-0072-0502

Shell Engineer: Kurt Miller
 Phone No. (510) _____
 Fax #: 685-3853

Consultant Name & Address: EMCON Assoc. 1938 Junction Ave. San Jose, CA 95131

Consultant Contact: David Larsen
 Phone No. (408) _____
 Fax #: 453-2269

Comments: 3-VOAs for BTEX
 3-VOAs for 601
 2-VOAs for TB

Sampled By: Mark Knuttel
 Printed Name: MARK KNUTTTEL

Sample ID	Date	Soil	Water	Air	No. of conts.
MW-1	4.23.92		X		3
S-1	4.23.92				3
MW-2	4.23.92				6
TB	4.23.92		✓		2

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	EPA 601
-------------------------	----------------------------	---------------------	------------------------------	-------------------	---------

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/> 5461		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 5441		48 hours <input type="checkbox"/>
Soil for disposal <input type="checkbox"/> 5442		15 days <input checked="" type="checkbox"/> (Normal)
Water for disposal <input type="checkbox"/> 5443		Other <input type="checkbox"/>
Air Sample- Sys O&M <input type="checkbox"/> 5452		NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M <input type="checkbox"/> 5453		
Other <input type="checkbox"/>		

Relinquished By (signature): <i>Mark Knuttel</i>	Printed name: Mark Knuttel	Date: 4/23/92	Received (signature): <i>David Solewski</i>	Printed name: DAVID SOLEWSKI	Date: 4/23/92
Relinquished By (signature): <i>[Signature]</i>	Printed name: DAVID SOLEWSKI	Date: 4/24/92	Received (signature): <i>J. Martin</i>	Printed name: J. MARTIN	Date: 4/25/92
Relinquished By (signature): <i>[Signature]</i>	Printed name:	Date:	Received (signature):	Printed name:	Date:

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