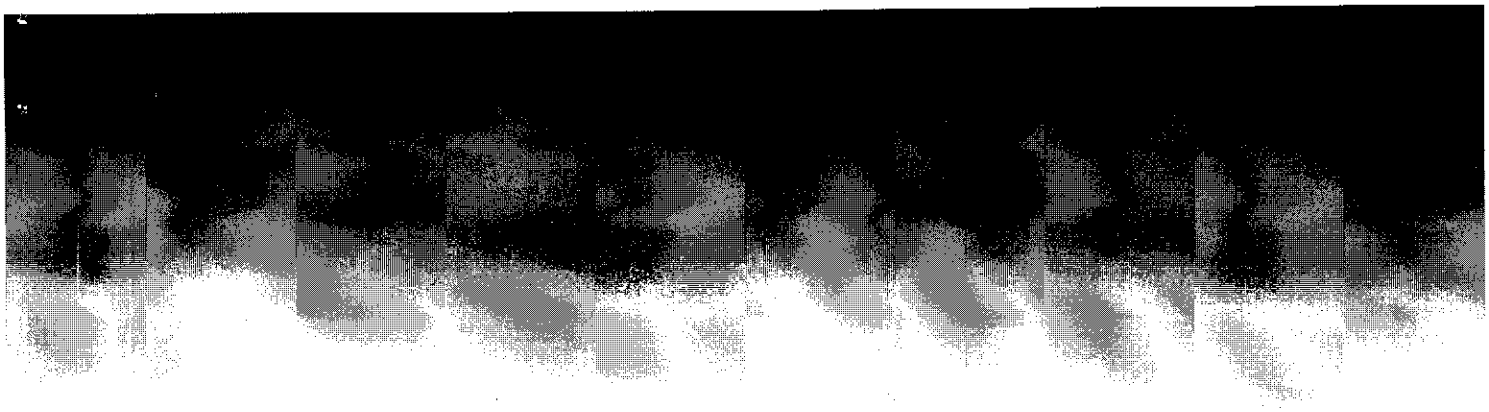

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

ALBANY HILL MINI MART
800 SAN PABLO AVENUE
ALBANY, CALIFORNIA

Prepared for:

Mr. Mohinder S. & Dr. Joginder K. Sikand
1300 Ptarmigan Drive, #1
Walnut Creek, California

November 30, 2000

ADVANCED ASSESSMENT AND REMEDIATION SERVICES

ADVANCED ASSESSMENT & REMEDIATION SERVICES

2380 Salvio Street, Suite 202
Concord, CA 94520
Phone: (925) 363-1999
Fax: (925) 363-1998
e-mail: aars@ccnet.com

ADVANCED ASSESSMENT AND REMEDIATION SERVICES (AARS)

2380 SALVIO STREET, SUITE 202
CONCORD, CALIFORNIA 94520-2137
TEL: (925) 363-1999 FAX: (925) 363-1998
e-mail: aars@ccnet.com

November 30, 2000

Ms. Eva Chu
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Quarterly Groundwater Monitoring and Sampling Report for Albany Hill Mini Mart, 800 San Pablo Avenue, Albany, California**

Dear Ms. Chu:

The enclosed report presents the results and findings of the November 2000, quarterly groundwater monitoring and sampling for the above-referenced facility.

Should you have any questions regarding the report please contact Tridib Guha at (925) 363-1999.

Sincerely,

Advanced Assessment and Remediation Services

Tridib K. Guha, R.G., R.E.A.
Principal

cc: Mr. Mohinder Sikand & Dr. Joginder Sikand, Walnut Creek, CA

AHMMQ5.RPT

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QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

For

Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California

1.0 INTRODUCTION

The fourth quarter (August 2000) groundwater sampling event identified BTEX and MTBE in each on-site groundwater monitoring well. MTBE was not detected in the previous three groundwater sampling events. Upon completing the review of the fourth quarter sampling report, Alameda County Environmental Health Services (ACEHS) directed to continue with quarterly groundwater monitoring to verify the presence of BTEX/MTBE and confirm MTBE and other oxygenates with EPA Method 8260. This report presents the results and findings of the November 2000, quarterly groundwater monitoring and sampling performed at 800 San Pablo Avenue, Albany, California. This report is intended to fulfill quarterly self-monitoring requirements and to establish a groundwater monitoring history for the site. A site vicinity map is shown in Figure 1.

2.0 GROUNDWATER MONITORING WELLS

This section presents the water level monitoring, field observations, sampling and analysis procedures, as well as the analytical results. The location of the monitoring wells is presented in Figure 2. The work and related field sampling activities were conducted in accordance with the guidelines and requirements of the ACEHS and the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

2.1 Groundwater Level Monitoring and Surveying

Groundwater levels in each well were measured to the nearest 0.01 foot from the top of the PVC casing, using an electronic sounder tape. A groundwater surface elevation map, based on interpretation of groundwater level measurements taken on November 8, 2000, and survey data is presented in Figure 3. The survey data and water level measurements are presented in Table 1.

2.2 Field Observations

The purged water from monitoring wells, MW-1, MW-2 and MW-3 were clear initially; however, with continual purging the water turned turbid. Water samples collected at the time of sampling were clear. No floating product was observed in the groundwater samples from all three monitoring wells. Sheen was observed in groundwater samples from monitoring wells MW-1 and MW-3. In addition, a very strong petroleum odor was noticed in the groundwater samples from all three monitoring wells.

2.3 Sampling and Analysis Procedures

Groundwater samples were collected on November 8, 2000, following water level measurements. Samples were analyzed by North State Environmental Laboratory of South San Francisco, California which is certified by the California Department of Health Services (DHS) to perform the specified analyses.

Before purging, water levels were measured in all wells with an electronic sounder tape. Purging preceded sampling in order to ensure collection of non-stagnant water. A minimum of three casing volumes were removed before sampling the wells MW-1, MW-2 and MW-3. The purged water was monitored for temperature, pH, and conductivity. Purging was considered complete when these parameters had stabilized. The wells were sampled after 89 percent recovery or greater. The groundwater monitoring well purge/sampling worksheets are presented Appendix A.

To prevent potential cross-contamination, all measuring, purging and sampling equipments were washed in an Alconox detergent solution, rinsed with tap water, and rinsed finally with distilled water between wells.

The sampling procedure for each monitoring well involved extracting well water with a clean PVC bailer on a clean nylon cord. Groundwater collected for analysis of Total Petroleum Hydrocarbon as gasoline (TPHg) and Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE) and volatile organics was decanted into six 40-milliliter volatile organic analysis vials with Teflon-lined septa. Groundwater collected for analysis of Total Petroleum Hydrocarbon as diesel (TPHd) was decanted into one 1-liter amber glass bottle. Samples to be analyzed for TPHg/BTEX/MTBE and volatile organics were preserved using hydrochloric acid to a pH of 2.0. All samples were labeled and placed in an iced cooler, along with the chain-of-custody document (Appendix B). Samples transported to the laboratory were analyzed within the specified holding time.

Groundwater produced during purging and sampling was contained in 55-gallon steel drums. The drummed water was labelled with the source (i.e. well number) and date.

2.4 Analytical Methods

Samples were analyzed for TPHg by Modified EPA SW-846 Methods 5030/8015 modified, for TPHd by EPA Methods 3510/8015 modified, for BTEX/MTBE by EPA SW-846 Methods 8020 and for volatile organics by EPA Method 8260.

A summary of the analytical results of groundwater sampling for TPHG, BTEX, MTBE and TPHd from the monitoring wells is presented in Table 2. The detected constituents of volatile organic compounds are listed in Table 3. The certified analytical reports and chromatograms for this sampling event are included in Appendix B.

3.0 INTERPRETATION OF RESULTS

The results of water level measurements and groundwater sampling are discussed in the following sections.

3.1 Groundwater Elevations and Gradients

A relative groundwater elevation contours for November 8, 2000, is presented in Figure 3. The flow direction, based on groundwater level data, was toward the southeast with an average hydraulic gradient of 0.02 foot per foot for this monitoring period. The average depth to stabilized groundwater in these wells was approximately 11 feet below ground surface.

3.2 Analytical Results

The analytical results for groundwater samples from monitoring wells, MW-1, MW-2 and MW-3 are presented in Table 2 and Table 3. Table 2, also includes the groundwater sampling results from the previous sampling events. Groundwater samples from all three monitoring wells were found to contain TPHg ranging from 200 to 4200 parts per billion (ppb); benzene ranging from 57 to 990 ppb; toluene concentrations ranging from 0.8 to 200 ppb; ethylbenzene concentrations ranging from 13 to 130 ppb; xylenes concentrations ranging from 9 to 560 ppb; and MTBE concentrations ranging from 840 to 8000 ppb. Also, the detection of MTBE/BTEX was confirmed by analyzing groundwater samples using GC/MS method 8260. TPHd was detected in all three groundwater samples, concentrations ranging from 70 to 230 ppb. However, laboratory reported samples do not match the diesel pattern. Groundwater samples from MW-1 and MW-3 detected isopropylbenzene at 5 and 1 ppb; n-propyl benzene at 14 and 3 ppb; 1,2,4-trimethylbenzene at 100 and 9 ppb; and napthalene at 23 and 2 ppb. 1,3,5-trimethylbenzene was detected at 25 ppb in a groundwater sample from MW-1 only. Figure 4 shows the distribution of dissolved-phase petroleum hydrocarbons at the site.

4.0 SELF-MONITORING PROGRAM SCHEDULE AND RECOMMENDATIONS

The next monitoring event scheduled for the site is February 2001. The report for the next monitoring event will contain tabulated data for all monitoring events for the site.

5.0 CERTIFICATION

The information provided in this report is based on the groundwater sampling activities conducted at the site. All data presented in this report are believed to be factual and accurate, unless proven otherwise. Any conclusions or recommendations provided within are based on our expertise and experience conducting work of a similar nature.

Advanced Assessment and Remediation Services

Tridib K. Guha, R.G. 5836

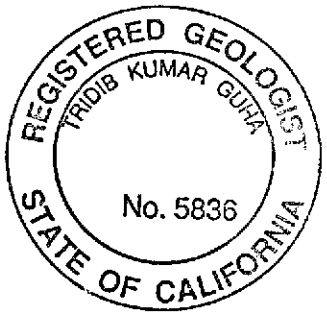


TABLE 1: SURVEY AND WATER LEVEL MONITORING DATA
Albany Hill Mini Mart
800 San Pablo Avenue
Albany, California

Well No.	Date of Measurement	Top of Casing Elevation (Feet - Relative)	Depth to Groundwater (Feet)	Product Thickness (Feet)	Groundwater Elevation (Feet - Relative)
MW-1	08-06-99	101.68	11.95	0.00	89.73
	11-05-99	101.68	12.72	0.00	88.96
	02-07-00	101.68	10.34	0.00	91.34
	05-05-00	101.68	10.59	0.00	91.09
	08-03-00	101.68	11.75	0.00	89.93
	11-08-00	101.68	11.67	0.00	90.01
MW-2	08-06-99	101.57	10.83	0.00	90.74
	11-05-99	101.57	11.66	0.00	89.91
	02-07-00	101.57	9.23	0.00	92.34
	05-05-00	101.57	9.54	0.00	92.03
	08-03-00	101.57	10.69	0.00	90.88
	11-08-00	101.57	10.62	0.00	90.95
MW-3	08-06-99	100.33	10.58	0.00	89.75
	11-05-99	100.33	11.39	0.00	88.94
	02-07-00	100.33	9.05	0.00	91.28
	05-05-00	100.33	9.29	0.00	91.04
	08-03-00	100.33	10.43	0.00	89.90
	11-08-00	100.33	10.33	0.00	90.00

Note: A bench mark, with an assumed elevation of 100.00 feet (Above Mean Sea Level), is located at the corner of Washington Avenue and San Pablo Avenue. The bench mark is the top of the southeast bolt (painted white) in the street signal light base; all well elevations are relative to this. The elevations at each well were taken on the top of the well casing.

TABLE 2: SUMMARY OF ANALYTICAL RESULTS OF GROUNDWATER SAMPLING for TPHg, BTEX, MTBE and TPHd

Albany Hill Mini Mart

800 San Pablo Avenue

Albany, California

Sample ID	Date of Sampling	TPHg (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPHd µg/L
MW-1 GW	08/06/99	1500	ND	4.3	2.9	9.1	28	1200
	08/06/99	Polynuclear Aromatic Hydrocarbon Analyses by EPA method 610 were non-detect with detection limit 1.0 µg/L						
	11/05/99	1800	ND	5.1	3.2	8.9	33	1400
	02/07/00	1100	ND	3.3	1.9	5.6	21	890
	05/07/00	970	ND	2.9	1.7	4.9	18	650
	08/03/00	1200	[illegible]	190	43	41	160	270*
	11/08/00	4200	[illegible]	990	200	130	560	230*
MW-2 GW	08/06/99	ND	ND	ND	ND	ND	ND	340
	11/05/99	ND	ND	ND	ND	ND	0.7	420
	02/07/00	ND	ND	ND	ND	ND	0.6	310
	05/05/00	ND	ND	ND	ND	ND	ND	280
	08/03/00	460	[illegible]	79	3	43	8	70*
	11/08/00	200	[illegible]	57	2	13	9	120
MW-3 GW	08/06/99	ND	ND	ND	ND	ND	ND	ND
	11/05/99	92	ND	ND	ND	0.6	1.7	54
	02/07/00	120	ND	ND	0.6	0.8	2.2	71
	05/05/00	100	ND	ND	ND	0.7	1.9	68
	08/03/00	910	[illegible]	220	9	35	16	300*
	11/08/00	990	[illegible]	320	0.8	18	9	200
RL	11/10-15/00	50	0.5	0.5	0.5	0.5	1.0	50

Notes:

ND- Not Detected RL- Reporting Limit NA- Not Analyzed

µg/L- Microgram per liter (parts per billion)

TPHg- Total petroleum hydrocarbon as gasoline (EPA method modified 8015)

TPHd- Total petroleum hydrocarbon as diesel (EPA method modified 8015)

MTBE- Methyl Tertiary Butyl Ether (EPA method 8020)

BTEX Benzene, toluene, ethylbenzene, and total xylenes (EPA method 8015)

PAH Polynuclear Aromatic Hydrocarbon (EPA method 610)

* Does not match diesel pattern

** Confirmed by GC/MS method 8260

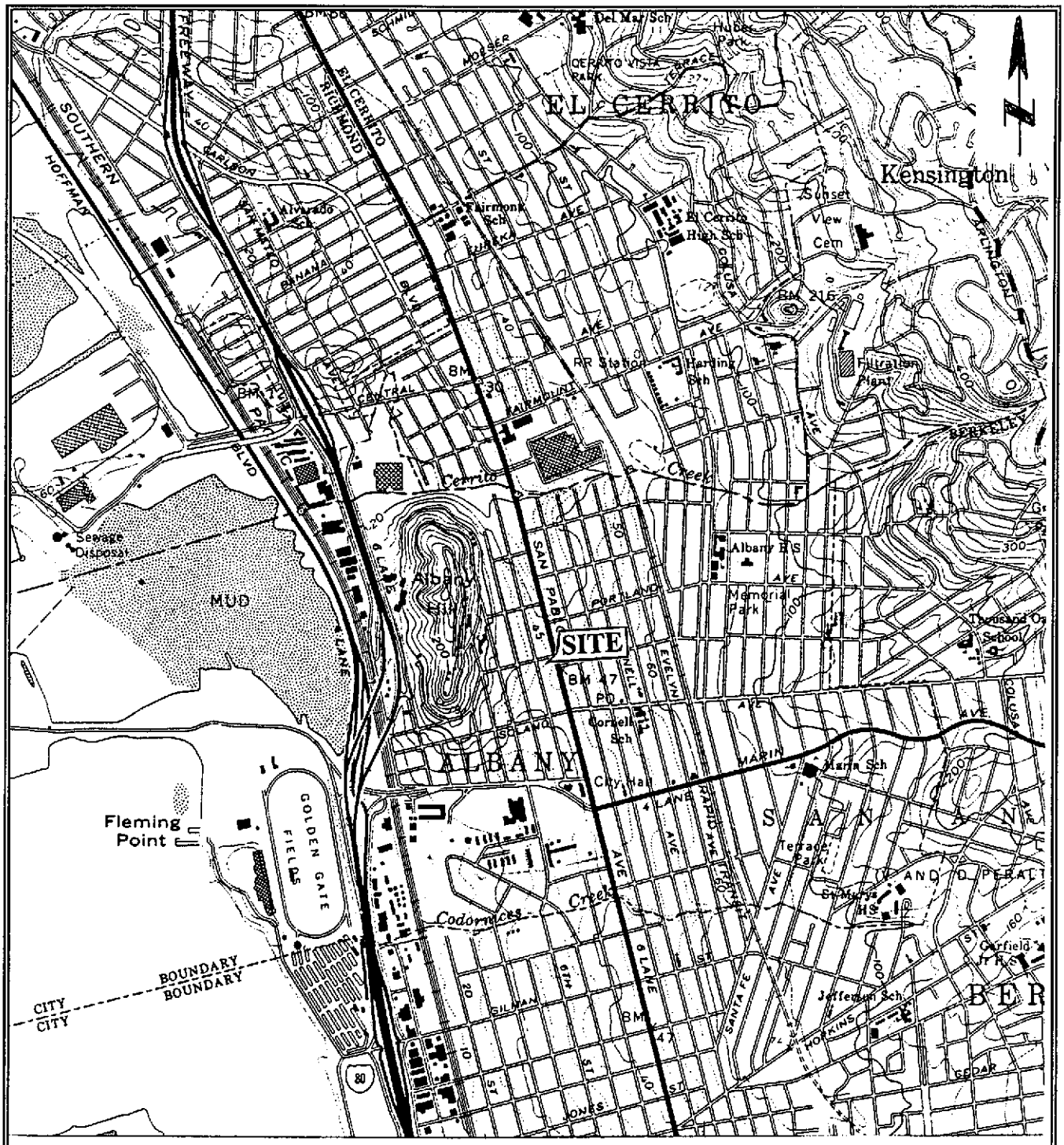
TABLE 3 - SUMMARY OF ANALYTICAL RESULTS OF GROUNDWATER SAMPLING for VOLATILE ORGANIC COMPOUNDS

Albany Hill Mini Mart

800 San Pablo Avenue, Albany, California

CONSTITUENTS	MW-1	MW-2	MW-3	Detection Limit µg/L
Methyl-t-butyl Ether	390	3000	3800	1
Benzene	660	49	280	1
Toluene	52	2	2	1
Ethylbenzene	110	10	15	1
m,p-Xylene	250	4	5	1
o-Xylene	280	2	2	1
Isopropylbenzene	5	ND	1	1
n-Propyl Benzene	14	ND	3	1
1,3,5-Trimethylbenzene	25	ND	ND	1
1,2,4-Trimethylbenzene	100	ND	9	1
Napthalene	23	ND	2	1

Notes: Only detected constituents are listed
µg/L - Microgram per Liter (parts per billion)
ND - Not Detected
EPA Method 8260



Source: U.S.G.S. Map Richmond Quadrangle
7.5 Minute Series (Topographic)
Aerial Photograph taken 1959 Map Edited 1980

SCALE 1:24 000

0 1 MILE

3000 4000 5000 6000 7000 FEET

FIGURE 1: SITE VICINITY MAP
ALBANY HILL MINI MART
800 San Pablo Avenue
Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
2380 Salvio Street, Suite 202
Concord, California

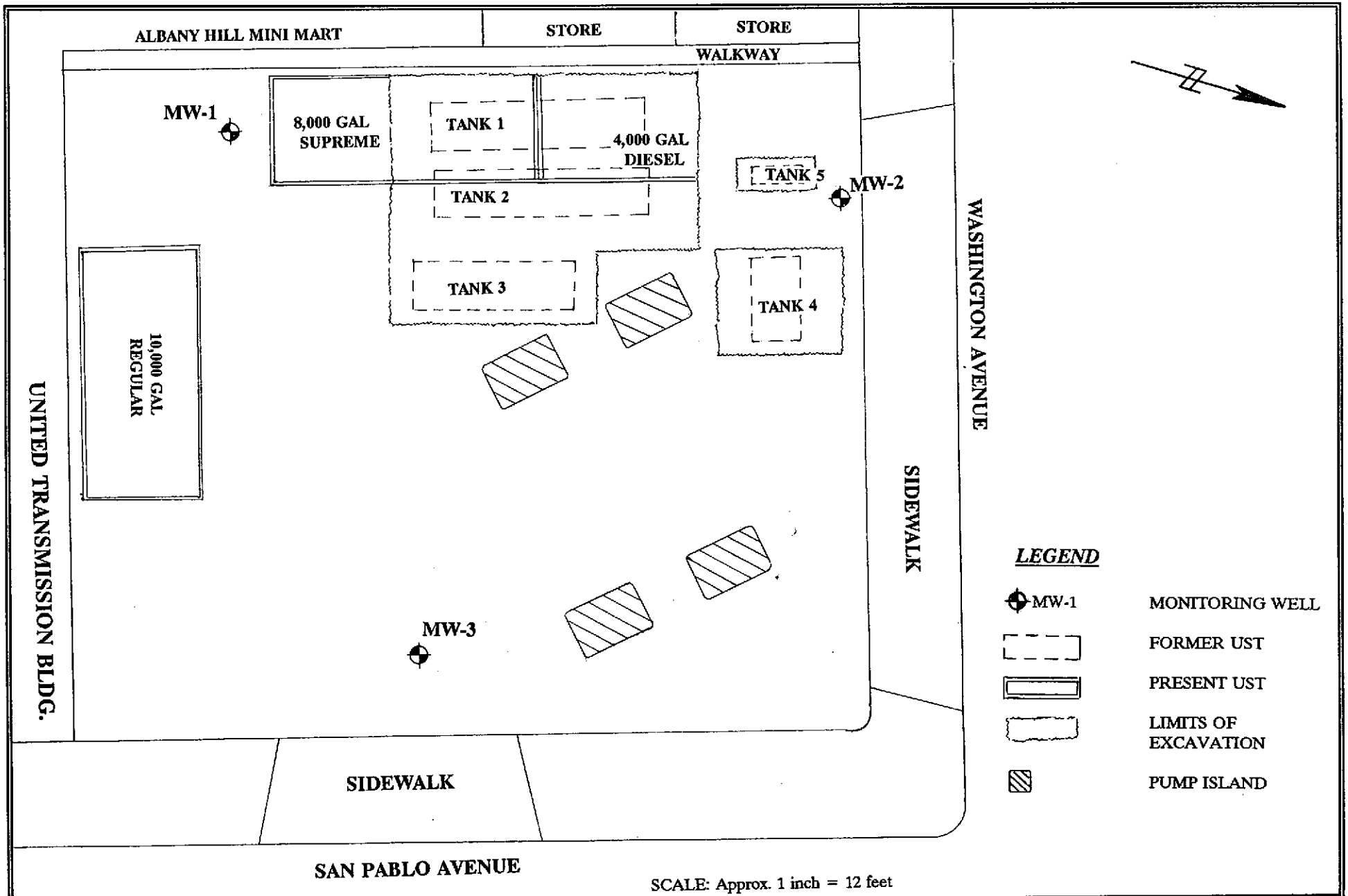
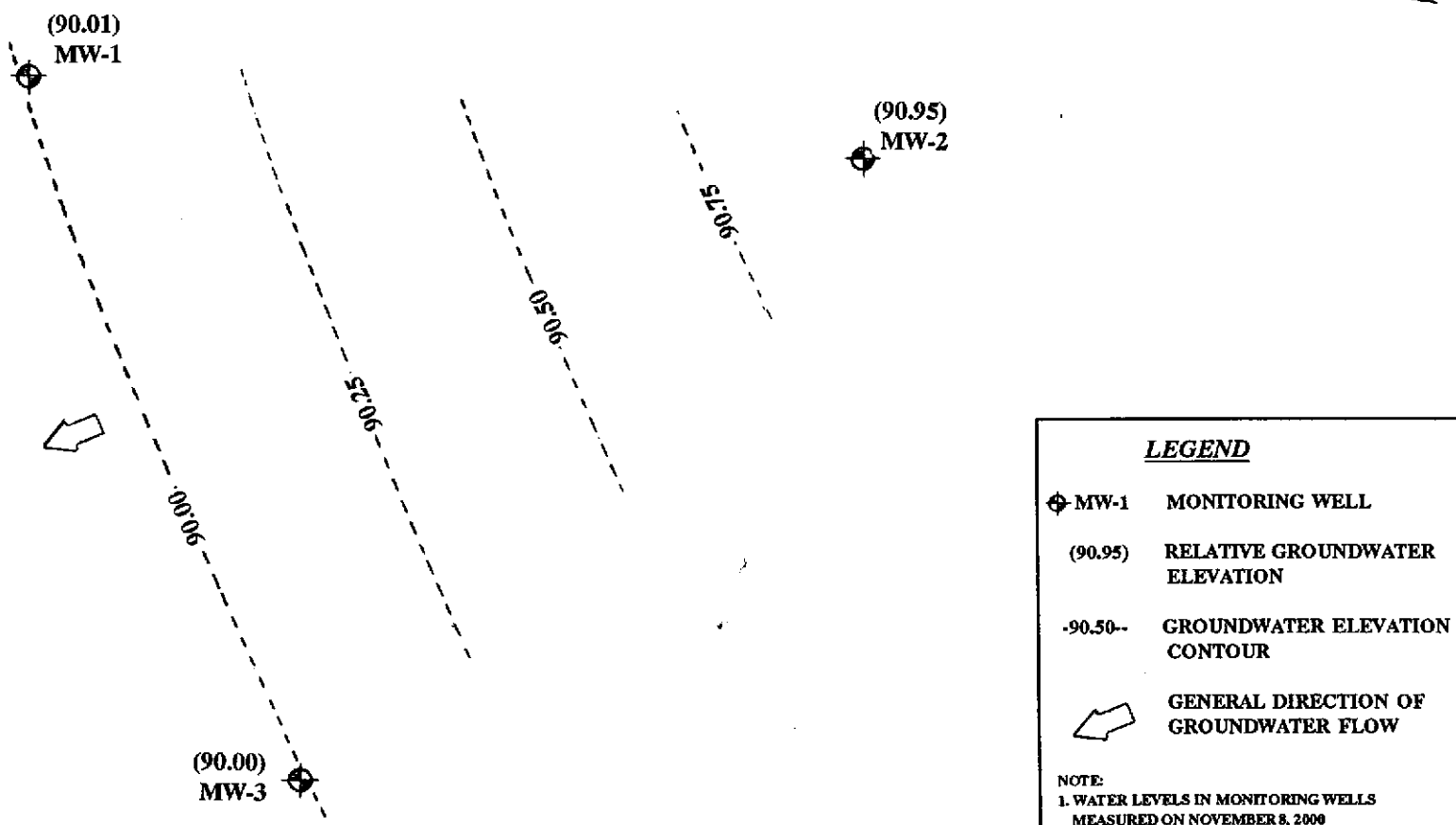


FIGURE 2: SITE PLAN
ALBANY HILL MINI MART
800 San Pablo Avenue
Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
2380 Salvio Street, Suite 202
Concord, California 94520



LEGEND

MW-1	MONITORING WELL
(90.95)	RELATIVE GROUNDWATER ELEVATION
-90.50--	GROUNDWATER ELEVATION CONTOUR
	GENERAL DIRECTION OF GROUNDWATER FLOW

NOTE:
1. WATER LEVELS IN MONITORING WELLS MEASURED ON NOVEMBER 8, 2000
2. CONTOUR INTERVAL = 0.25 FOOT
3. HYDRAULIC GRADIENT = 0.02 FOOT/FOOT

Scale:
Approximately 1 inch = 12 feet

FIGURE 3: GROUNDWATER SURFACE ELEVATIONS (11/08/00)
ALBANY HILL MINI MART
800 San Pablo Avenue
Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
2380 Salvio Street, Suite 202
Concord, California 94520

LEGEND

MW-1 MONITORING WELL

TPHg	TOTAL PETROLEUM HYDROCARBON AS GASOLINE
MTBE	METHYL TERTIARY BUTYL ETHER
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
TPHd	TOTAL PETROLEUM HYDROCARBON AS DIESEL

NOTE:
1. ALL CONCENTRATIONS ARE IN MICROGRAMS PER LITER (PARTS PER BILLION)
2. HYDROCARBON CONSTITUENTS WHICH WERE NOT DETECTED ARE NOT LISTED

SCALE

Approx. 1 inch = 12 feet

FIGURE 4: DISTRIBUTION OF DISSOLVED-PHASE HYDROCARBONS
ALBANY HILL MINI MART
800 San Pablo Avenue
Albany, California

ADVANCED ASSESSMENT AND REMEDIATION SERVICES
2380 Salvio Street, Suite 202
Concord, California 94520

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORKSHEET

PROJECT NAME: Albany Hill Mini Mart PROJECT NUMBER: 99005

SITE ADDRESS: 800 San Pablo Avenue, Albany, CA

WELL NUMBER: MW-1 WELL CASING DIA.: 2" DATE: 11/8/00

Stagnant Volume Calculation

Total Well Depth (ft) - Initial Depth to Water = Water Column Height (ft) - Time: 8:39

24 11.67 12.33

Water column Height (ft) x Gallons/Linear Foot = Stagnant Volume (Gallons)

12.33 0.17 2.1

(Gallons/Linear Foot: 2" dia. = 0.17; 4" dia. = 0.66; 6" dia. = 1.5)

Groundwater Inspection

Floating Product (ft. or in.): NONE Sheen/Iridescence: YES Odor: YES

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity µS	Color/Turbidity/Other
10:10	0	66.6	6.95	2396	CLEAR
10:20	2	66.	7.05	2424	SLIGHTLY TURBID BROWNISH
10:30	5	66.3	7.15	2442	" " "
10:40	7	66.2	7.17	2460	" " "

Purged Water Containment Purge Method Used:

7 gals stored in 1 55 gal (drums); Any previous drums? NONE Capacity ___

Groundwater Sampling Water Level Recovery (Depth to groundwater in feet)

(P) After purging: 12.69 (I) Initially: 11.67 (S) Before sampling: 11.78 Time: 12:13

(P-S)/P-I) x 100 = 100 % Total Recovery: 89 % SAMPLE TIME 12:15

Sample Containers (How many? Preservatives?)

1 liter amber glass: 1 ; 40 ml VOA: 6 ; 500 ml polypropylene: X

REMARKS:

SAMPLER: TRIDIB GUHA **SIGNATURE:** Tridib K.

(Print)

ADVANCED ASSESSMENT AND REMEDIATION SERVICES

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORKSHEET

PROJECT NAME: Albany Hill Mini Mart PROJECT NUMBER: 99005

SITE ADDRESS: 800 San Pablo Avenue, Albany, CA

WELL NUMBER: MW-2 WELL CASING DIA.: 2" DATE: 11/8/00

Stagnant Volume Calculation

Total Well Depth (ft)	-	Initial Depth to Water	=	Water Column Height (ft)	-	Time: 8:35
24		10.62		13.38		

Water column Height (ft)	x	Gallons/Linear Foot	=	Stagnant Volume (Gallons)
13.38		0.17		2.3

(Gallons/Linear Foot: 2" dia. = 0.17; 4" dia. = 0.66; 6" dia. = 1.5)

Groundwater Inspection

Floating Product (ft. or in.): NONE Sheen/Iridescence: Odor: YES

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity µS	Color/Turbidity/Other
8:45	0	66.9	7.03	1184	CLEAR
8:55	2	66.7	7.01	1201	SLIGHTLY TURBID BROWNISH
9:05	5	66.7	6.95	1205	" " "
9:15	7	66.6	6.93	1211	" " "

Purged Water Containment Purge Method Used:

7 gals stored in 1 55 gal (drums); Any previous drums? NONE Capacity ____

Groundwater Sampling Water Level Recovery (Depth to groundwater in feet)

(P) After purging: 11.60 (I) Initially: 10.62 (S) Before sampling: 10.67 Time: 11:43

(P-S)/P-I) x 100 = 100 % Total Recovery: 95 % SAMPLE TIME 11:45

Sample Containers (How many? Preservatives?)

1 liter amber glass: 1 ; 40 ml VOA: 6 ; 500 ml polypropylene: X

REMARKS:

SAMPLER: TRIDIB GUHA **SIGNATURE:**

(Print)

GROUNDWATER MONITORING WELL PURGE/SAMPLING WORKSHEET

PROJECT NAME: Albany Hill Mini Mart PROJECT NUMBER: 99005

SITE ADDRESS: 800 San Pablo Avenue, Albany, CA

WELL NUMBER: MW-3 WELL CASING DIA.: 2" DATE: 11/8/00

Stagnant Volume Calculation

Total Well Depth (ft)	-	Initial Depth to Water	=	Water Column Height (ft)	-	Time: 8:37
24		10.33		13.67		

Water column Height (ft)	x	Gallons/Linear Foot	=	Stagnant Volume (Gallons)
13.67		0.17		2.3

(Gallons/Linear Foot: 2" dia. = 0.17; 4" dia. = 0.66; 6" dia. = 1.5)

Groundwater Inspection

Floating Product (ft. or in.): NONE Sheen/Iridescence: YES Odor: YES

Time	Volume Purged (gal)	Temperature (degrees F)	pH	Conductivity µS	Color/Turbidity/Other
9:30	0	69.5	7.00	1583	CLEAR
9:40	2	69.3	7.00	1657	SLIGHTLY TURBID GRAY
9:50	5	69.3	6.99	1669	" " "
10:00	7	69.2	6.97	1677	" " "

Purged Water Containment Purge Method Used:

7 gals stored in 1 55 gal (drums); Any previous drums? NONE Capacity ___

Groundwater Sampling Water Level Recovery (Depth to groundwater in feet)

(P) After purging: 11.31 (I) Initially: 10.33 (S) Before sampling: _____ Time: 11:58

(P-S)/P-I) x 100 = 100 % Total Recovery: 93 % SAMPLE TIME 12:00

Sample Containers (How many? Preservatives?)

1 liter amber glass: 1 ; 40 ml VOA: 6 ; 500 ml polypropylene: X

REMARKS:

SAMPLER: TRIDIB GUHA **SIGNATURE:** Tridib Guha

(Print)

ADVANCED ASSESSMENT AND REMEDIATION SERVICES

North State Environmental Laboratory
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 00-1690
Client: Advanced Assessment & Remd.
Project:

Date Reported: 11/16/2000

Gasoline,BTEX and MTBE by Methods 8015M and 8020
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 00-1690-01	Client ID: MW-1 GW			11/08/2000	WATER
Gasoline	8015M	4200	ug/L		11/10/2000
Benzene	8020	990	ug/L		
Ethylbenzene	8020	130	ug/L		
MTBE	8020	*840	ug/L		
Toluene	8020	200	ug/L		
Xylenes	8020	560	ug/L		
Diesel	8015M	**0.23	mg/L		11/15/2000
Sample: 00-1690-02	Client ID: MW-2 GW			11/08/2000	WATER
Gasoline	8015M	200	ug/L		11/10/2000
Benzene	8020	57	ug/L		
Ethylbenzene	8020	13	ug/L		
MTBE	8020	3000	ug/L		
Toluene	8020	2	ug/L		
Xylenes	8020	9	ug/L		
Diesel	8015M	0.12	mg/L		11/15/2000
Sample: 00-1690-03	Client ID: MW-3 GW			11/08/2000	WATER
Gasoline	8015M	990	ug/L		11/10/2000
Benzene	8020	320	ug/L		
Ethylbenzene	8020	18	ug/L		
MTBE	8020	8000	ug/L		

*Confirmed by GC/MS method 8260.**Does not match diesel.

North State Environmental Laboratory
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 00-1690
Client: Advanced Assessment & Remd.
Project:

Date Reported: 11/16/2000

Gasoline,BTEX and MTBE by Methods 8015M and 8020
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Result	Unit	Date Sampled	Date Analyzed
Sample: 00-1690-03 Client ID: MW-3 GW				11/08/2000	WATER
Toluene	8020	0.8	ug/L		
Xylenes	8020	9	ug/L		
Diesel	8015M	0.20	mg/L		

*Confirmed by GC/MS method 8260.**Does not match diesel.

North State Environmental Laboratory
CA ELAP# 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • **(650) 266-4563** • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 00-1690
Client: Advanced Assessment & Remd.
Project:

Date Reported: 11/16/2000

Gasoline,BTEX and MTBE by Methods 8015M and 8020
Diesel Range Hydrocarbons by Method 8015M

Analyte	Method	Reporting Limit	Unit	Blank	Avg MS/MSD Recovery	RPD
Gasoline	8015M	50	ug/L	ND	118	2
Benzene	8020	0.5	ug/L	ND	104	4
Toluene	8020	0.5	ug/L	ND	113	8
Ethylbenzene	8020	0.5	ug/L	ND	111	6
Xylenes	8020	1.0	ug/L	ND	117	8
MTBE	8020	0.5	ug/L	ND	98	2
Diesel	8015M	0.05	mg/L	ND	68	1

ELAP Certificate NO:1753
Reviewed and Approved

John A.Murphy,Laboratory Director

North State Environmental Laboratory
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 00-1690
Client : Advanced Assessment & Remd.
Project :

Date Sampled : 11/08/2000
Date Analyzed: 11/13/2000
Date Reported: 11/16/2000

Volatile Organics by GC/MS Method 8260

Laboratory Number	00-1690-01	00-1690-02	00-1690-03
Client ID	MW-1 GW	MW-2 GW	MW-3 GW
Matrix	WATER	WATER	WATER
Analyte	ug/L	ug/L	ug/L
Bromochloromethane	ND<5	ND<5	ND<5
Dichlorodifluoromethane	ND<5	ND<5	ND<5
Chloromethane	ND<5	ND<5	ND<5
Vinyl Chloride	ND<1	ND<1	ND<1
Bromomethane	ND<5	ND<5	ND<5
Chloroethane	ND<5	ND<5	ND<5
Trichlorofluoromethane	ND<1	ND<1	ND<1
1,1-Dichloroethene	ND<1	ND<1	ND<1
Acetone	ND<50	ND<50	ND<50
Trichlorotrifluoroethane	ND<1	ND<1	ND<1
Methylene Chloride	ND<50	ND<50	ND<50
t-1,2-Dichloroethene	ND<1	ND<1	ND<1
Methyl-t-butyl Ether	390	3000	5800
1,1-Dichloroethane	ND<1	ND<1	ND<1
2,2-Dichloropropane	ND<1	ND<1	ND<1
cis-1,2-Dichloroethene	ND<1	ND<1	ND<1
2-Butanone	ND<10	ND<10	ND<10
Chloroform	ND<1	ND<1	ND<1
1,1,1-Trichloroethane	ND<1	ND<1	ND<1
Carbon Tetrachloride	ND<1	ND<1	ND<1
1,1-Dichloropropene	ND<1	ND<1	ND<1
Benzene	660	49	280
1,2-Dichloroethane	ND<1	ND<1	ND<1
Trichloroethene	ND<1	ND<1	ND<1
1,2-Dichloropropane	ND<1	ND<1	ND<1
Dibromomethane	ND<1	ND<1	ND<1
Bromodichloromethane	ND<1	ND<1	ND<1
trans-1,3-Dichloropropene	ND<1	ND<1	ND<1
4-Methyl-2-Pentanone	ND<10	ND<10	ND<10
Toluene	52	2	2
cis-1,3-Dichloropropene	ND<1	ND<1	ND<1
1,1,2-Trichloroethane	ND<1	ND<1	ND<1
Tetrachloroethene	ND<1	ND<1	ND<1
1,3-Dichloropropane	ND<1	ND<1	ND<1
2-Hexanone	ND<10	ND<10	ND<10
Dibromochloromethane	ND<1	ND<1	ND<1

North State Environmental Laboratory
CA ELAP # 1753
90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

C E R T I F I C A T E O F A N A L Y S I S

Job Number: 00-1690
Client : Advanced Assessment & Remd.
Project :

Date Sampled : 11/08/2000
Date Analyzed: 11/13/2000
Date Reported: 11/16/2000

Volatile Organics by GC/MS Method 8260

Laboratory Number	00-1690-01	00-1690-02	00-1690-03
Client ID	MW-1 GW	MW-2 GW	MW-3 GW
Matrix	WATER	WATER	WATER
Analyte	ug/L	ug/L	ug/L
1,2-Dibromoethane	ND<1	ND<1	ND<1
Chlorobenzene	ND<1	ND<1	ND<1
1,1,1,2-Tetrachloroethane	ND<1	ND<1	ND<1
Ethylbenzene	110	10	15
m,p-Xylene	250	4	5
o-Xylene	180	2	2
Styrene	ND<1	ND<1	ND<1
Bromoform	ND<1	ND<1	ND<1
Isopropylbenzene	5	ND<1	1
Bromobenzene	ND<1	ND<1	ND<1
1,1,2,2-Tetrachloroethane	ND<1	ND<1	ND<1
n-Propyl Benzene	14	ND<1	3
2-Chlorotoluene	ND<1	ND<1	ND<1
4-Chlorotoluene	ND<1	ND<1	ND<1
1,3,5-Trimethylbenzene	25	ND<1	ND<1
tert-Butylbenzene	ND<1	ND<1	ND<1
1,2,4-Trimethylbenzene	100	ND<1	9
1,3-Dichlorobenzene	ND<1	ND<1	ND<1
1,4-Dichlorobenzene	ND<1	ND<1	ND<1
sec-Butylbenzene	ND<1	ND<1	ND<1
1,2-Dichlorobenzene	ND<1	ND<1	ND<1
p-Isopropyltoluene	ND<1	ND<1	ND<1
n-Butylbenzene	ND<1	ND<1	ND<1
1,2-Dibromo-3-chloropropa	ND<1	ND<1	ND<1
Naphthalene	23	ND<1	2
1,2,4-Trichlorobenzene	ND<1	ND<1	ND<1
Hexachlorobutadiene	ND<1	ND<1	ND<1
1,2,3-Trichlorobenzene	ND<1	ND<1	ND<1
1,2,3-Trichloropropane	ND<1	ND<1	ND<1
SUR-Dibromofluoromethane	92% Rec	110% Rec	107% Rec
SUR-Toluene d8	106% Rec	106% Rec	106% Rec
SUR-4-Bromofluorobenzene	110% Rec	96% Rec	99% Rec

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 00-1690
Client : Advanced Assessment & Remd.
Project :

Date Sampled : 11/08/2000
Date Analyzed: 11/13/2000
Date Reported: 11/16/2000

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	00-1690	MS/MSD	RPD
Client ID	Blank	Recovery	
Matrix	WATER	WATER	
Analyte	Results ug/L	%Recoveries	
Bromochloromethane	ND<5		
Dichlorodifluoromethane	ND<5		
Chloromethane	ND<5		
Vinyl Chloride	ND<1		
Bromomethane	ND<5		
Chloroethane	ND<5		
Trichlorofluoromethane	ND<1		
1,1-Dichloroethene	ND<1	64	2
Acetone	ND<50		
Trichlorotrifluoroethane	ND<1		
Methylene Chloride	ND<50		
t-1,2-Dichloroethene	ND<1		
Methyl-t-butyl Ether	ND<1		
1,1-Dichloroethane	ND<1		
2,2-Dichloropropane	ND<1		
cis-1,2-Dichloroethene	ND<1		
2-Butanone	ND<10		
Chloroform	ND<1		
1,1,1-Trichloroethane	ND<1		
Carbon Tetrachloride	ND<1		
1,1-Dichloropropene	ND<1		
Benzene	ND<1	112	0
1,2-Dichloroethane	ND<1		
Trichloroethene	ND<1	111	1
1,2-Dichloropropane	ND<1		
Dibromomethane	ND<1		
Bromodichloromethane	ND<1		
trans-1,3-Dichloropropene	ND<1		
4-Methyl-2-Pentanone	ND<10		
Toluene	ND<1	118	1
cis-1,3-Dichloropropene	ND<1		
1,1,2-Trichloroethane	ND<1		
Tetrachloroethene	ND<1		
1,3-Dichloropropane	ND<1		
2-Hexanone	ND<10		
Dibromochloromethane	ND<1		
1,2-Dibromoethane	ND<1		
Chlorobenzene	ND<1	114	1
1,1,1,2-Tetrachloroethane	ND<1		
Ethylbenzene	ND<1		
m,p-Xylene	ND<1		

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C E R T I F I C A T E O F A N A L Y S I S

Job Number: 00-1690
Client : Advanced Assessment & Remd.
Project :

Date Sampled : 11/08/2000
Date Analyzed: 11/13/2000
Date Reported: 11/16/2000

Volatile Organics by GC/MS Method 8260
Quality Control/Quality Assurance Summary

Laboratory Number	00-1690	MS/MSD	RPD
Client ID	Blank	Recovery	
Matrix	WATER	WATER	
Analyte	Results ug/L	%Recoveries	
o-Xylene	ND<1		
Styrene	ND<1		
Bromoform	ND<1		
Isopropylbenzene	ND<1		
Bromobenzene	ND<1		
1,1,2,2-Tetrachloroethane	ND<1		
n-Propyl Benzene	ND<1		
2-Chlorotoluene	ND<1		
4-Chlorotoluene	ND<1		
1,3,5-Trimethylbenzene	ND<1		
tert-Butylbenzene	ND<1		
1,2,4-Trimethylbenzene	ND<1		
1,3-Dichlorobenzene	ND<1		
1,4-Dichlorobenzene	ND<1		
sec-Butylbenzene	ND<1		
1,2-Dichlorobenzene	ND<1		
p-Isopropyltoluene	ND<1		
n-Butylbenzene	ND<1		
1,2-Dibromo-3-chloropropa	ND<1		
Naphthalene	ND<1		
1,2,4-Trichlorobenzene	ND<1		
Hexachlorobutadiene	ND<1		
1,2,3-Trichlorobenzene	ND<1		
1,2,3-Trichloropropane	ND<1		
SUR-Dibromofluoromethane	96% Rec	100/100	0
SUR-Toluene d8	108% Rec	105/107	2
SUR-4-Bromofluorobenzene	115% Rec	108/109	1

Reviewed and Approved

John A. Murphy
Laboratory Director

00-1690

North State Environmental Analytical Laboratory

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080
Phone: (650) 266-4563 Fax: (650) 266-4560

Chain of Custody / Request for Analysis
Lab Job No.:_____ Page 1 of 1

Client: ADVANCED ASSESSMENT &	Report to: TRIDIB GUHA	Phone: 925-363-1999	Turnaround Time: 5 DAYS
Mailing Address: REMEDIATION SERVICES 2380 SALVIO STREET SUITE 202 CONCORD, CA 94520	Billing to: SAME	Fax: 1998	Date: 11-8-00
		PO# / Billing Reference:	Sampler: TRIDIB GUHA

Project / Site Address:

Analysis Requested

Sample ID	Sample Type	Container No. / Type	Pres.	Sampling Date / Time	TPH8260 MTBE	TPHd	Comments / Hazards
MW-1 GW	WATER	6 - VOAs + HCL 1 - AMBR. → NONE		11-8-00/ 12:15	X	X	
MW-2 GW	↓	↓	↓	11-8-00/ 11:45	X	X	
MW-3 GW	↓	↓	↓	11-8-00/ 12.00	X	X	

Relinquished by: Tridib Guha	Date: 11-8-00	Time: 13:00	Received by:	Lab Comments: Samples received in good condition.
Relinquished by:	Date:	Time:	Received by:	
Relinquished by:	Date:	Time:	Received by:	

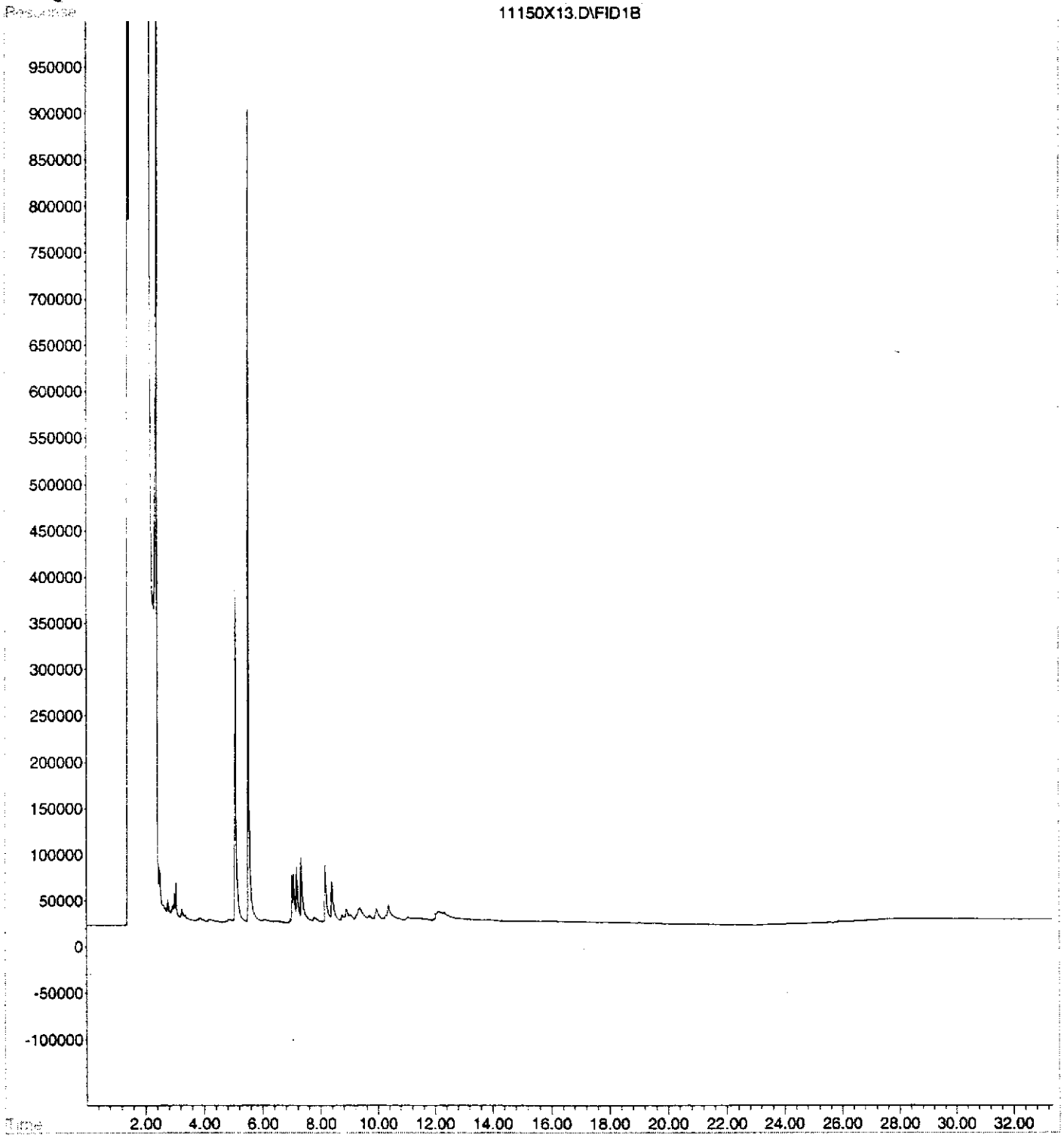
Quantitation Report

Data File : E:\HPCHEM\1\DATA\11150X13.D
Acq On : 11-15-00 11:49:17 PM
Sample : 00-1690-01
Misc : water
IntFile : EVENTS.E
Quant Time: Nov 16 0:21 2000 Quant Results File: TPH.RES

Vial: 13
Operator: my
Inst : GC/MS Ins
Multiplr: 0.01

Quant Method : E:\HPCHEM\1\METHODS\TPH.M (Chemstation Integrator)
Title :
Last Update : Mon Oct 16 12:19:02 2000
Response via : Multiple Level Calibration
DataAcq Meth : TPH.M

Volume Inj. :
Signal Phase :
Signal Info :



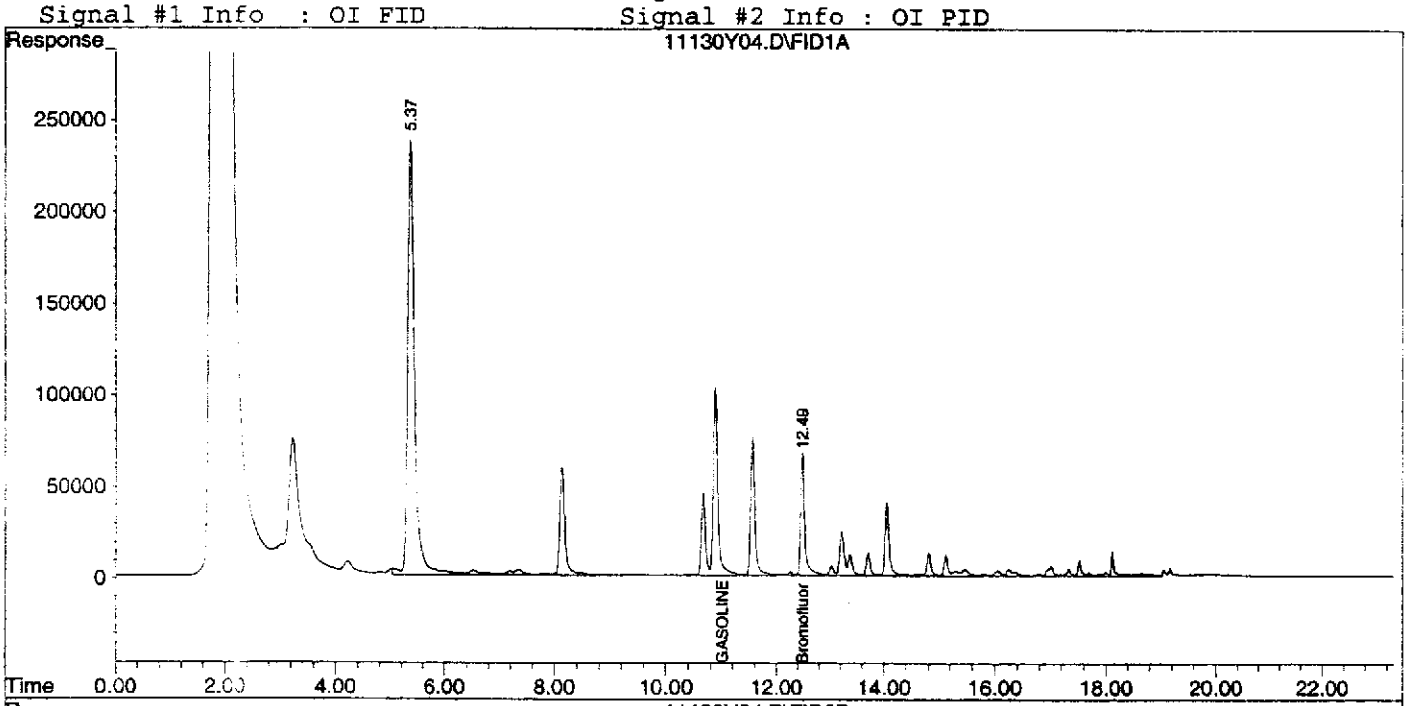
Quantitation Report

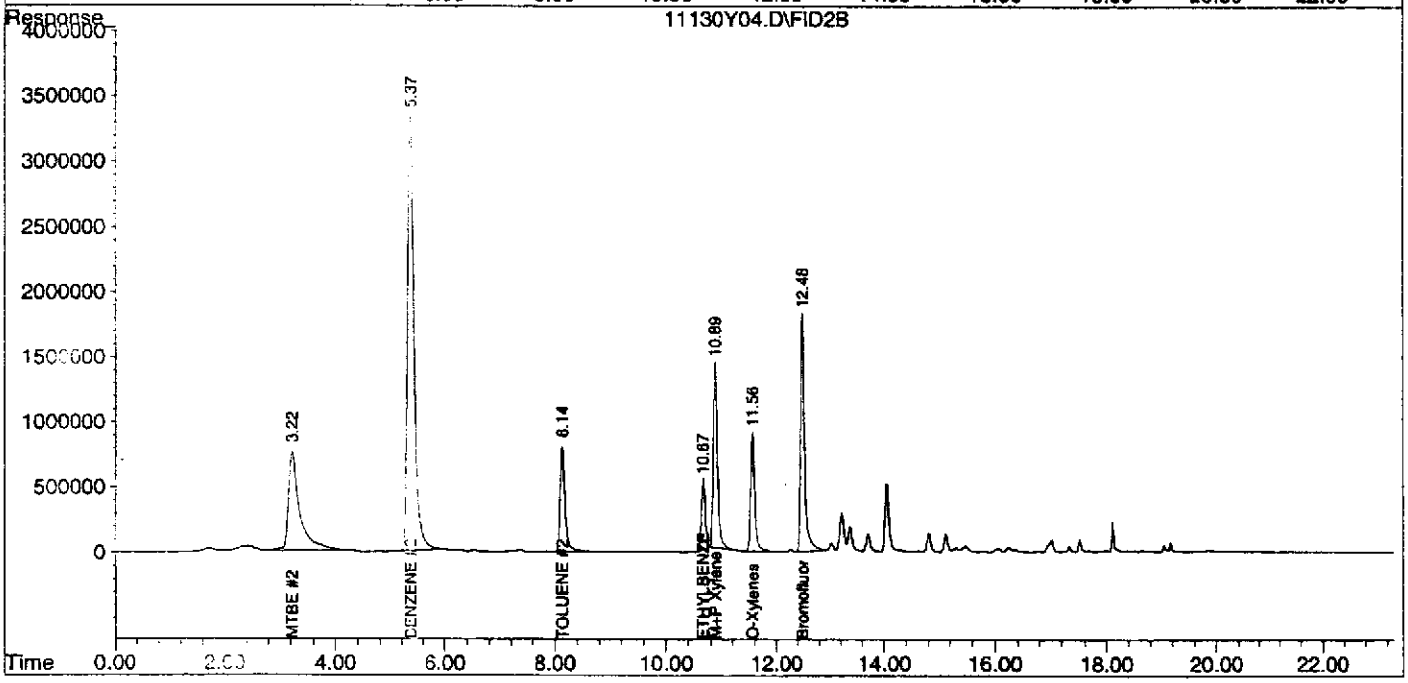
Data File : C:\HPCHEM\1\DATA\11130Y04.D\FID1A.CH Vial: 4
Acq On : 13 Nov 20100 12:17 pm Operator: my
Sample : 00-1690-01r Inst : Gas-BTEX
Misc : water 1ml Multiplr: 5.00
IntFile : events1.e

Data File : C:\HPCHEM\1\DATA\11130Y04.D\FID2B.CH Vial: 4
Acq On : 13 Nov 100 12:17 pm Operator: my
Sample : 00-1690-01r Inst : Gas-BTEX
Misc : water 1ml Multiplr: 5.00
IntFile : AUTOINT1.E
Quant Time: Nov 13 12:41 19100 Quant Results File: GBX.RES

Quant Method : C:\HPCHEM\1\METHODS\GBX.M (Chemstation Integrator)
Title : Gasoline Aromatics (BTEX-MTBE)
Last Update : Tue Nov 07 10:19:19 2000
Response via : Multiple Level Calibration
DataAcq Meth : GBX.M

Volume Inj. : 5 mL Purge volume
Signal #1 Phase : DB-624 30M x 0.53 Signal #2 Phase: DB-624 30M x 0.53mm
Signal #1 Info : OI FID Signal #2 Info : OI PID





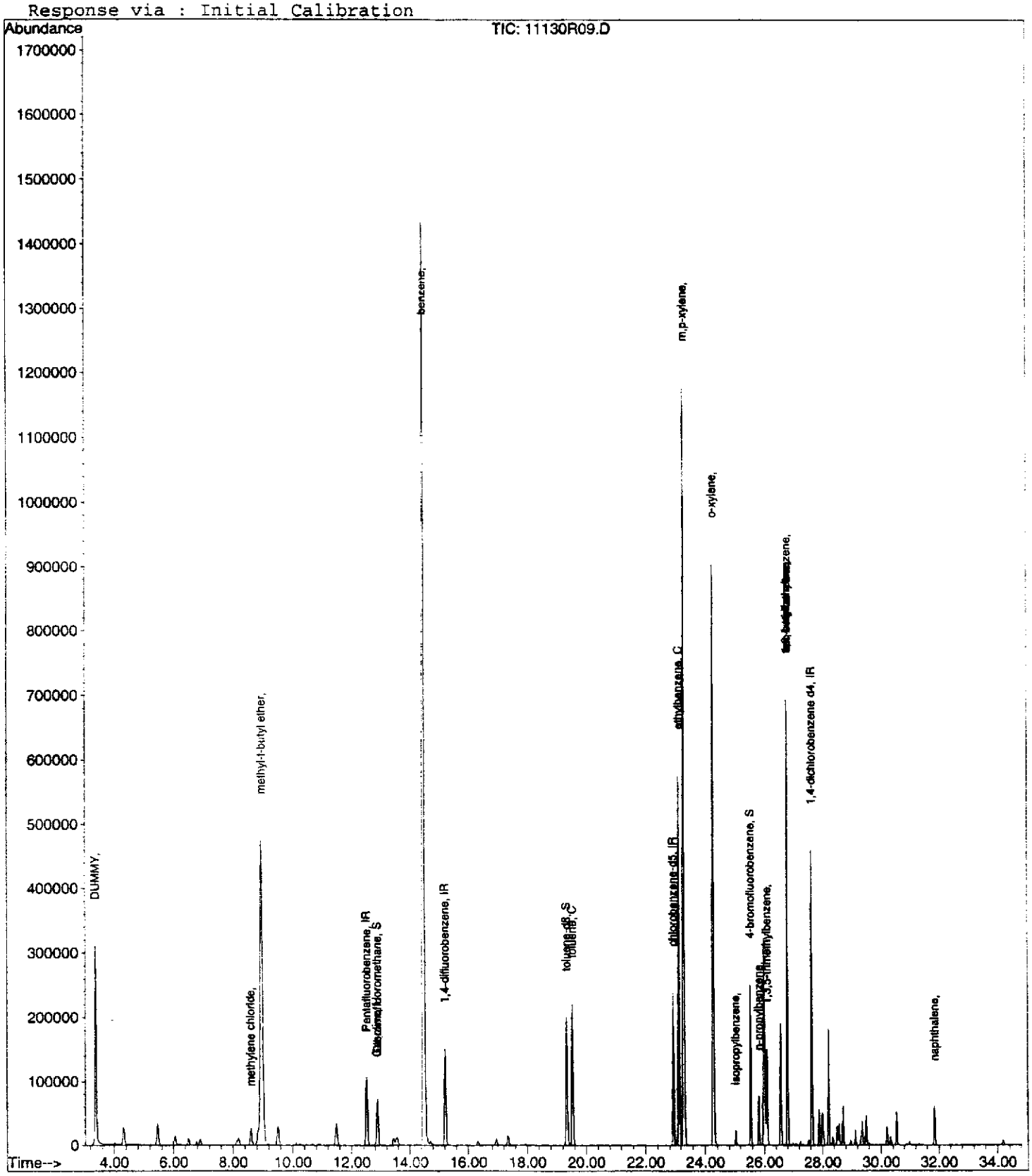
Quantitation Report

Data File : C:\HPCHEM\1\DATA\11130R09.D
Acq On : 13 Nov 2000 3:40 pm
Sample : 00-1690-01r
Misc : water 5ml
MS Integration Params: RTEINT.P
Quant Time: Nov 13 16:15 19100

Vial: 9
Operator: my
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: 8260.RES

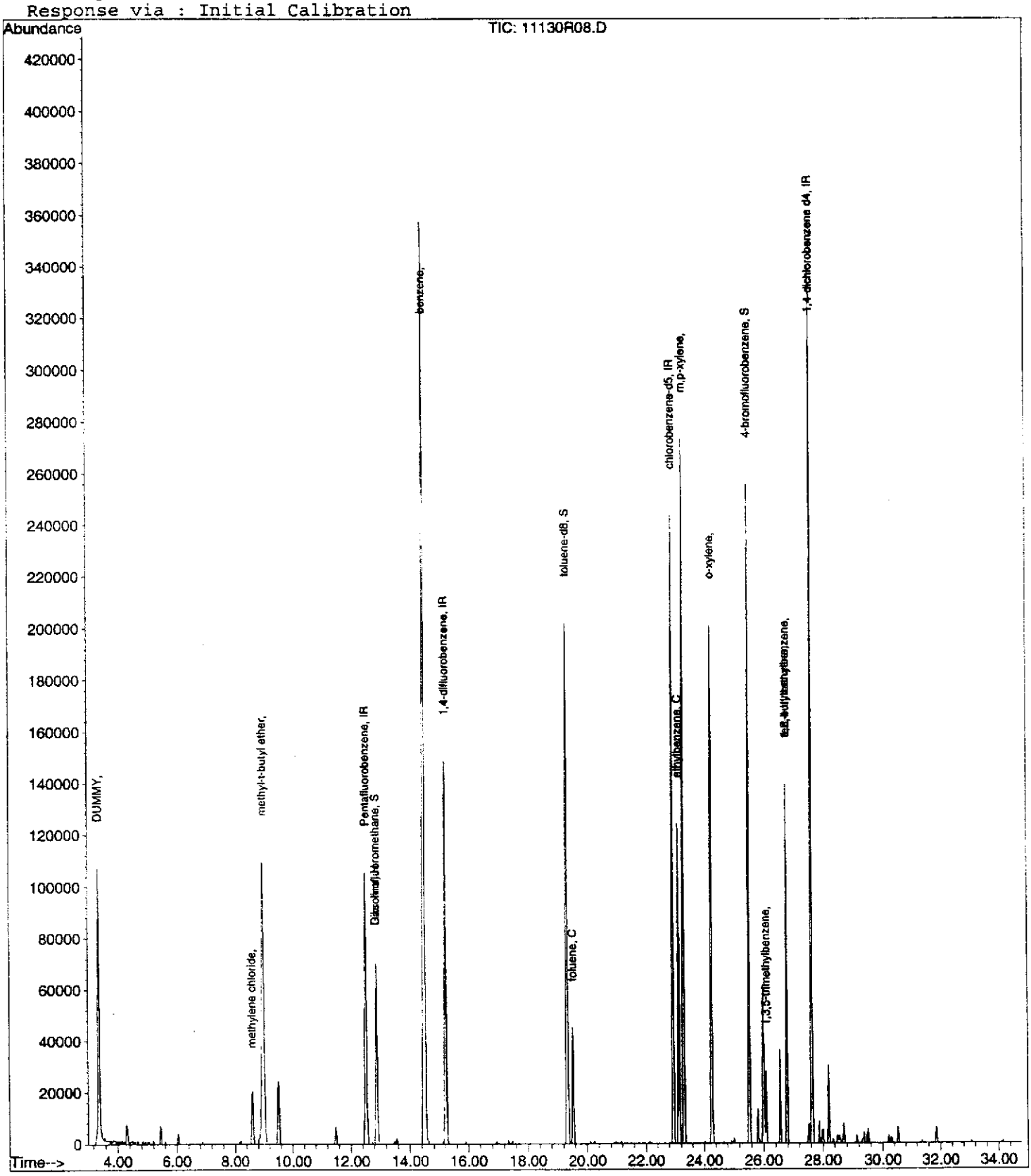
Method : C:\HPCHEM\1\METHODS\8260.M (RTE Integrator)
Title : gasoline
Last Update : Thu Oct 26 12:27:50 2000
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\11130R08.D Vial: 8
Acq On : 13 Nov 2000 2:54 pm Operator: my
Sample : 00-1690-01r Inst : GC/MS Ins
Misc : water 1ml Multiplr: 5.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 15:29 19100 Quant Results File: 8260.RES

Method : C:\HPCHEM\1\METHODS\8260.M (RTE Integrator)
Title : gasoline
Last Update : Thu Oct 26 12:27:50 2000
Response via : Initial Calibration

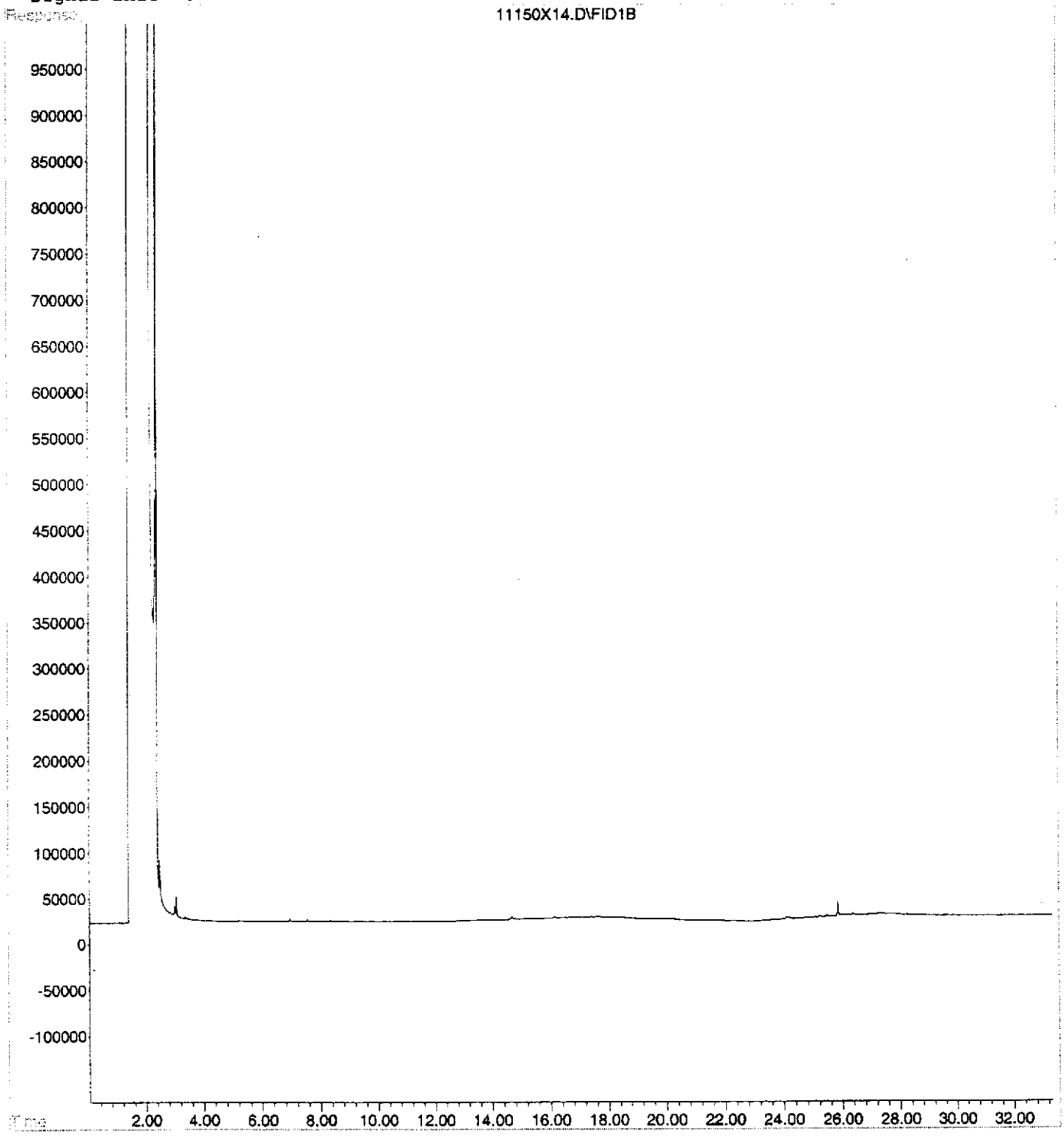


Quantitation Report

Data File : E:\HPCHEM\1\DATA\11150X14.D Vial: 14
Acq On : 11-16-00 12:36:17 AM Operator: my
Sample : 00-1690-02 Inst : GC/MS Ins
Misc : water Multiplr: 0.01
IntFile : EVENTS.E
Quant Time: Nov 16 1:08 2000 Quant Results File: TPH.RES

Quant Method : E:\HPCHEM\1\METHODS\TPH.M (Chemstation Integrator)
Title :
Last Update : Mon Oct 16 12:19:02 2000
Response via : Multiple Level Calibration
DataAcq Meth : TPH.M

Volume Inj. :
Signal Phase :
Signal Info :

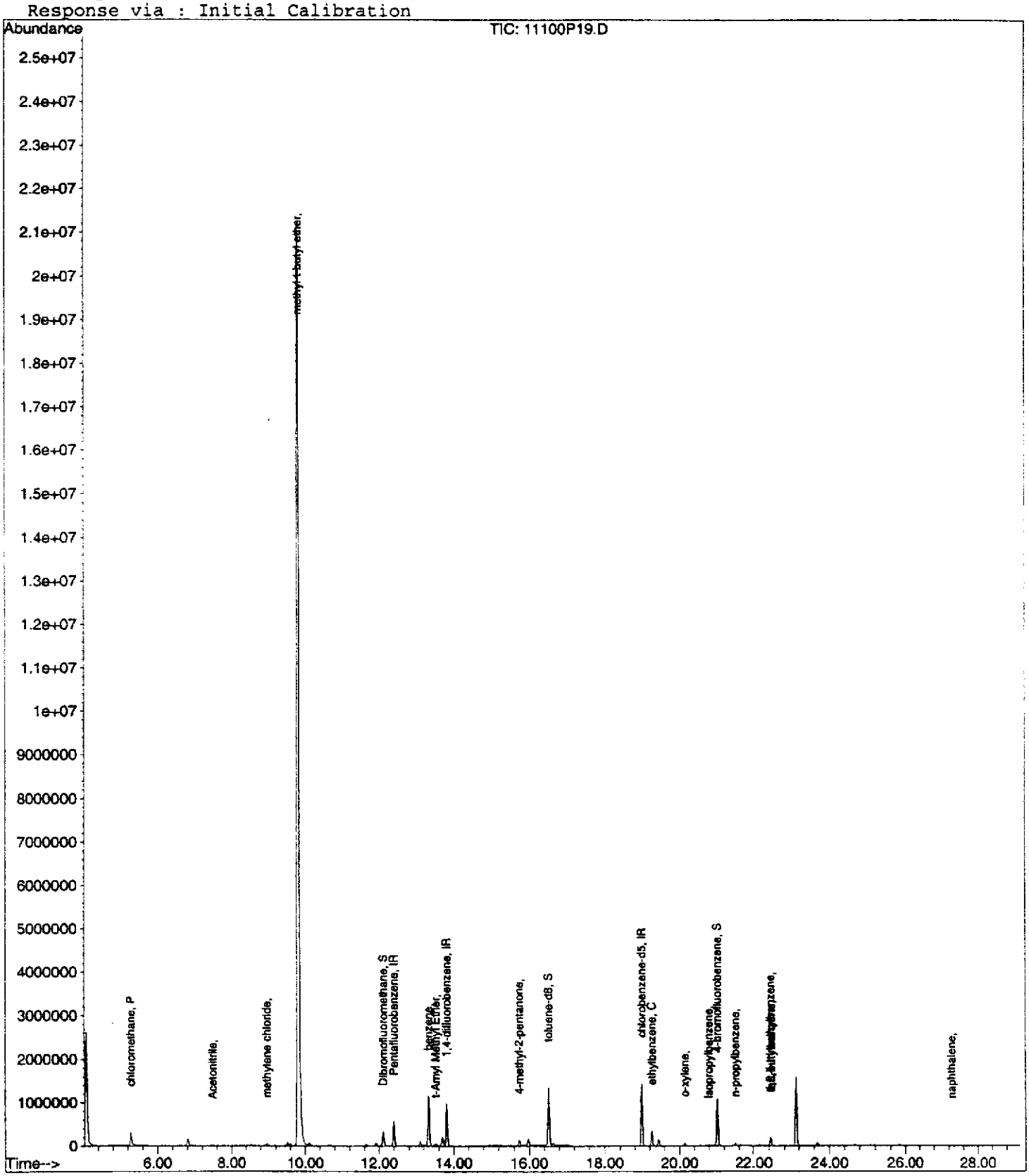


Quantitation Report

Data File : C:\HPCHEM\1\data\11100P19.D
Acq On : 10 Nov 00 11:39 pm
Sample : 00-1690-02
Misc : water 5ml
MS Integration Params: RTEINT.P
Quant Time: Nov 11 0:09 19100

Vial: 3
Operator: my
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 8260.RES

Method : C:\HPCHEM\1\METHODS\8260.M (RTE Integrator)
Title : gasoline
Last Update : Tue Oct 24 15:48:52 2000
Response via : Initial Calibration



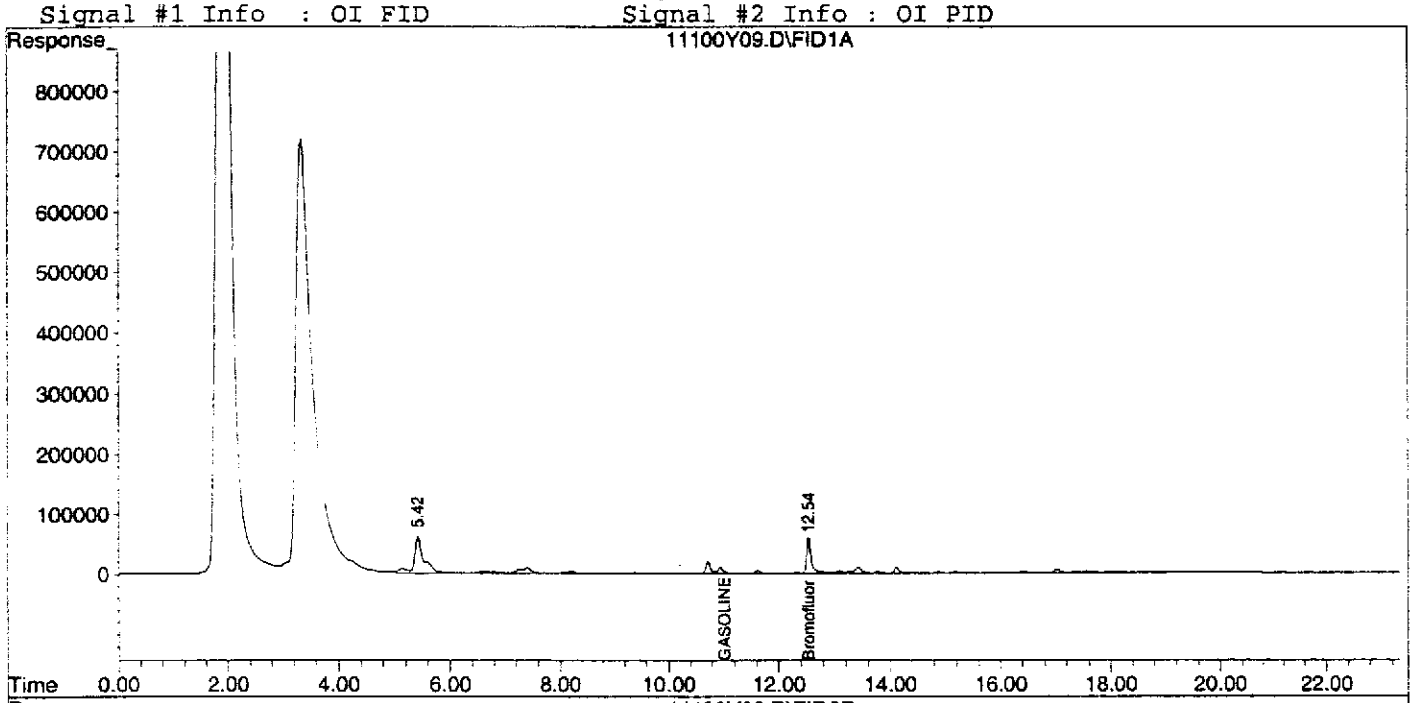
Quantitation Report

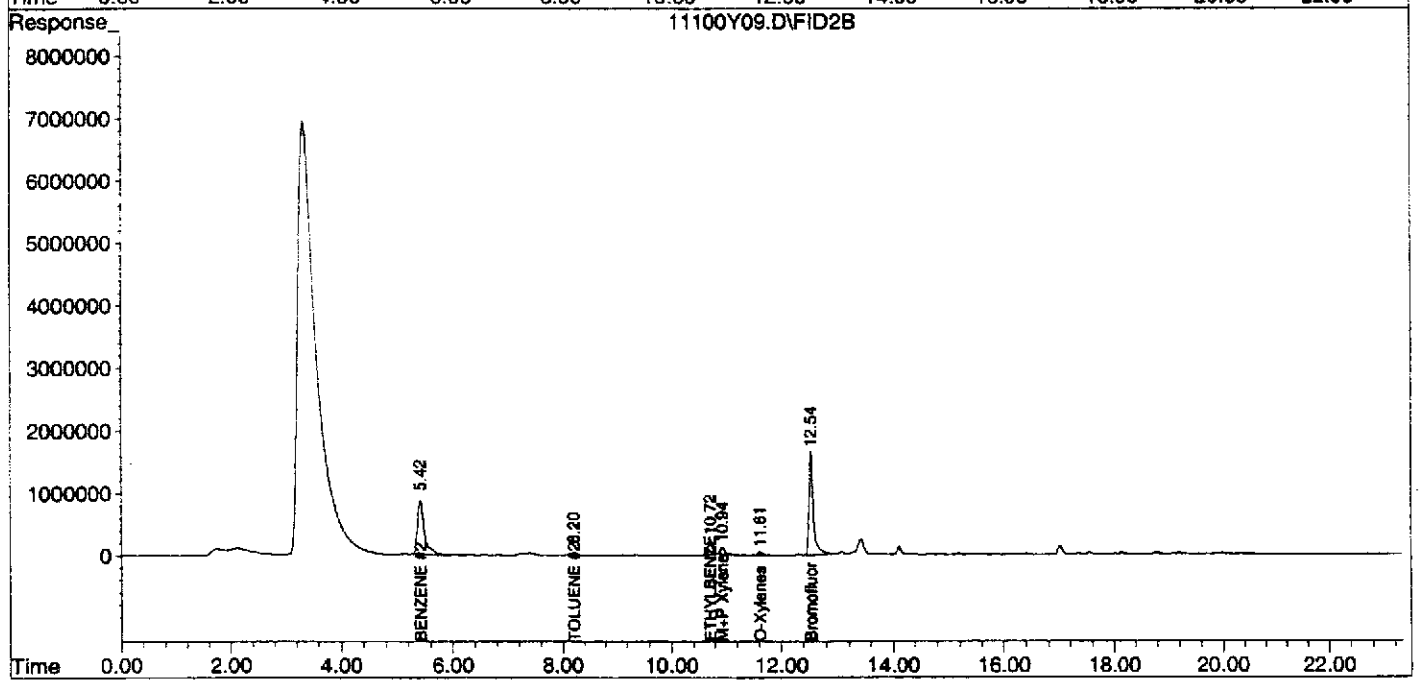
Data File : C:\HPCHEM\1\DATA\11100Y09.D\FID1A.CH Vial: 9
Acq On : 10 Nov 20100 6:41 pm Operator: my
Sample : 00-1690-02 Inst : Gas-BTEX
Misc : water 5ml Multiplr: 1.00
IntFile : events1.e

Data File : C:\HPCHEM\1\DATA\11100Y09.D\FID2B.CH Vial: 9
Acq On : 10 Nov 100 6:41 pm Operator: my
Sample : 00-1690-02 Inst : Gas-BTEX
Misc : water 5ml Multiplr: 1.00
IntFile : AUTOINT1.E
Quant Time: Nov 10 19:05 19100 Quant Results File: GBX.RES

Quant Method : C:\HPCHEM\1\METHODS\GBX.M (Chemstation Integrator)
Title : Gasoline Aromatics (BTEX-MTBE)
Last Update : Tue Nov 07 10:19:19 2000
Response via : Multiple Level Calibration
DataAcq Meth : GBX.M

Volume Inj. : 5 mL Purge volume
Signal #1 Phase : DB-624 30M x 0.53 Signal #2 Phase: DB-624 30M x 0.53mm
Signal #1 Info : OI FID Signal #2 Info : OI PID





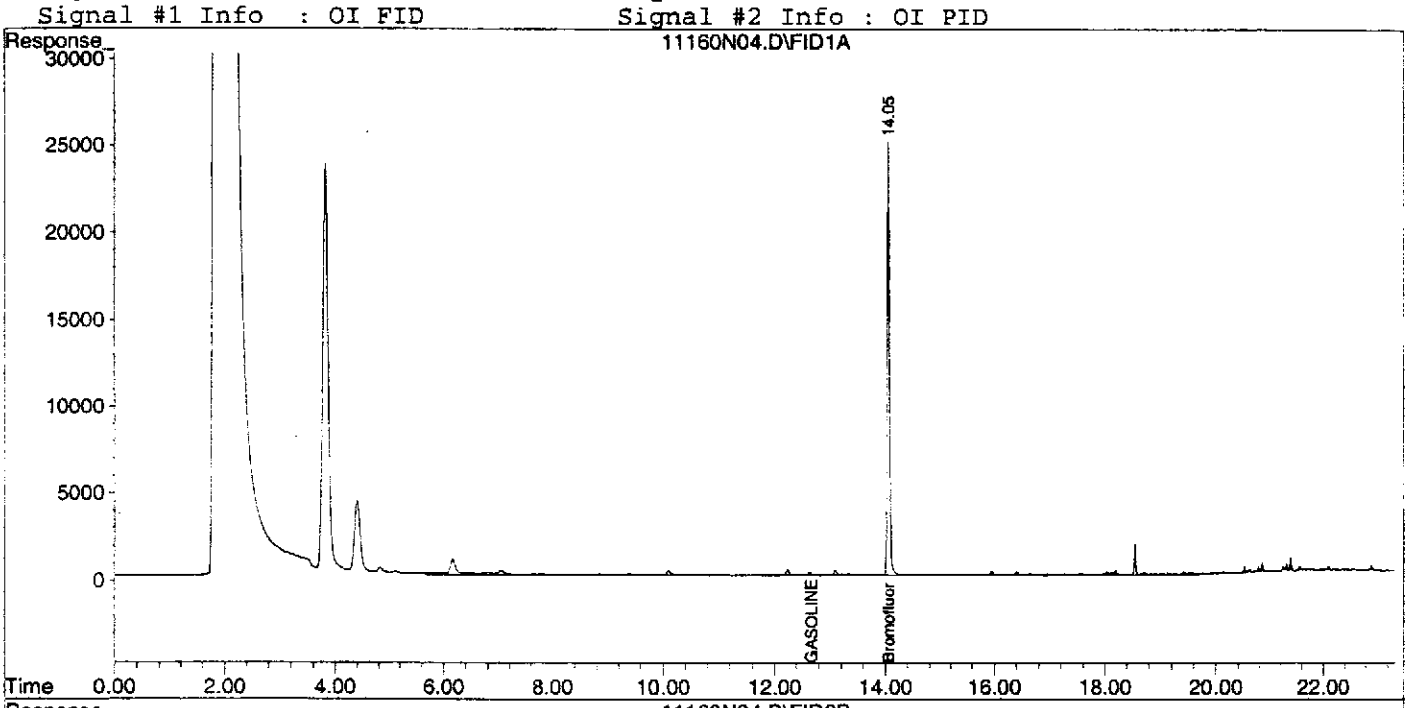
Quantitation Report

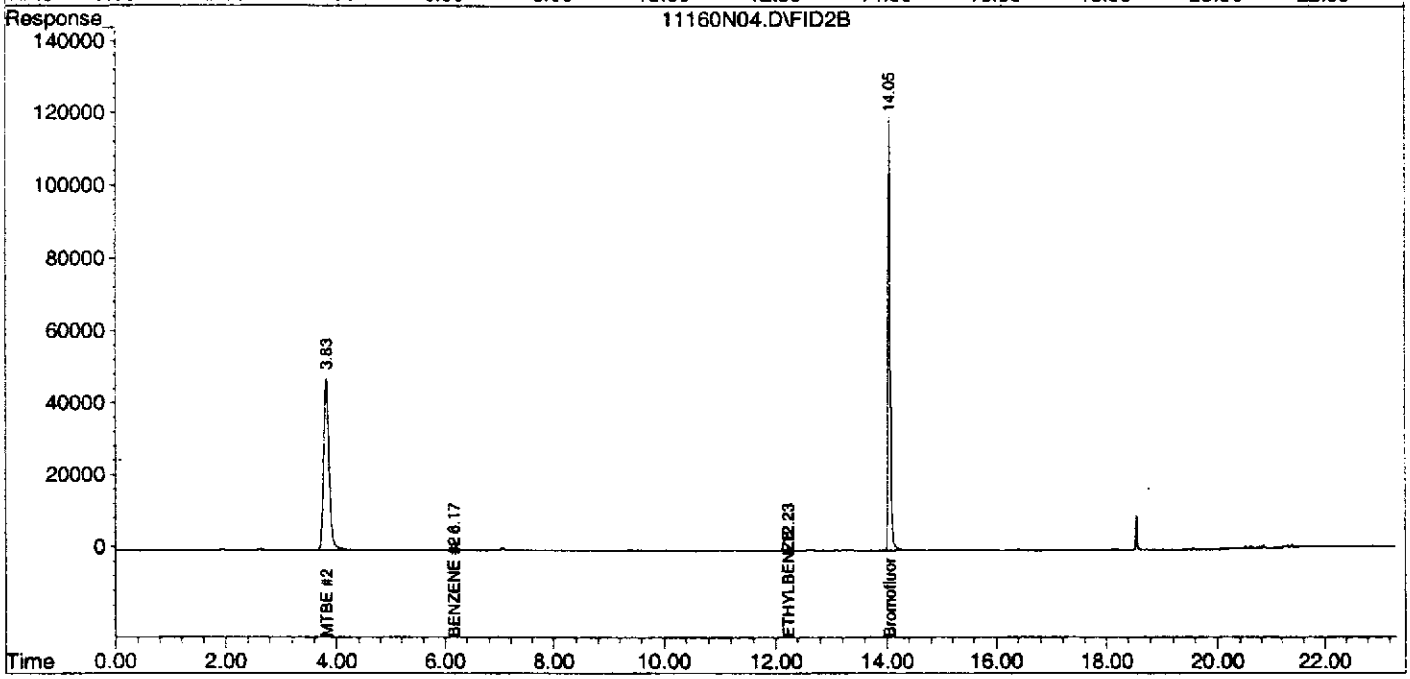
Data File : C:\HPCHEM\2\DATA\11160N04.D\FID1A.CH Vial: 4
Acq On : 16 Nov 20100 12:50 pm Operator: my
Sample : 00-1690-02 Inst : GC/MS Ins
Misc : water 250ul Multiplr: 20.00
IntFile : TRY1.E

Data File : C:\HPCHEM\2\DATA\11160N04.D\FID2B.CH Vial: 4
Acq On : 16 Nov 100 12:50 pm Operator: my
Sample : 00-1690-02 Inst : GC/MS Ins
Misc : water 250ul Multiplr: 20.00
IntFile : AUTOINT1.E
Quant Time: Nov 16 13:13 19100 Quant Results File: GBX.RES

Quant Method : C:\HPCHEM\2\METHODS\GBX.M (Chemstation Integrator)
Title : Gasoline Aromatics (BTEX-MTBE)
Last Update : Wed Nov 01 10:57:08 2000
Response via : Multiple Level Calibration
DataAcq Meth : GBX.M

Volume Inj. : 5 mL Purge volume
Signal #1 Phase : DB-624 30M x 0.53 Signal #2 Phase: DB-624 30M x 0.53mm
Signal #1 Info : OI FID Signal #2 Info : OI PID



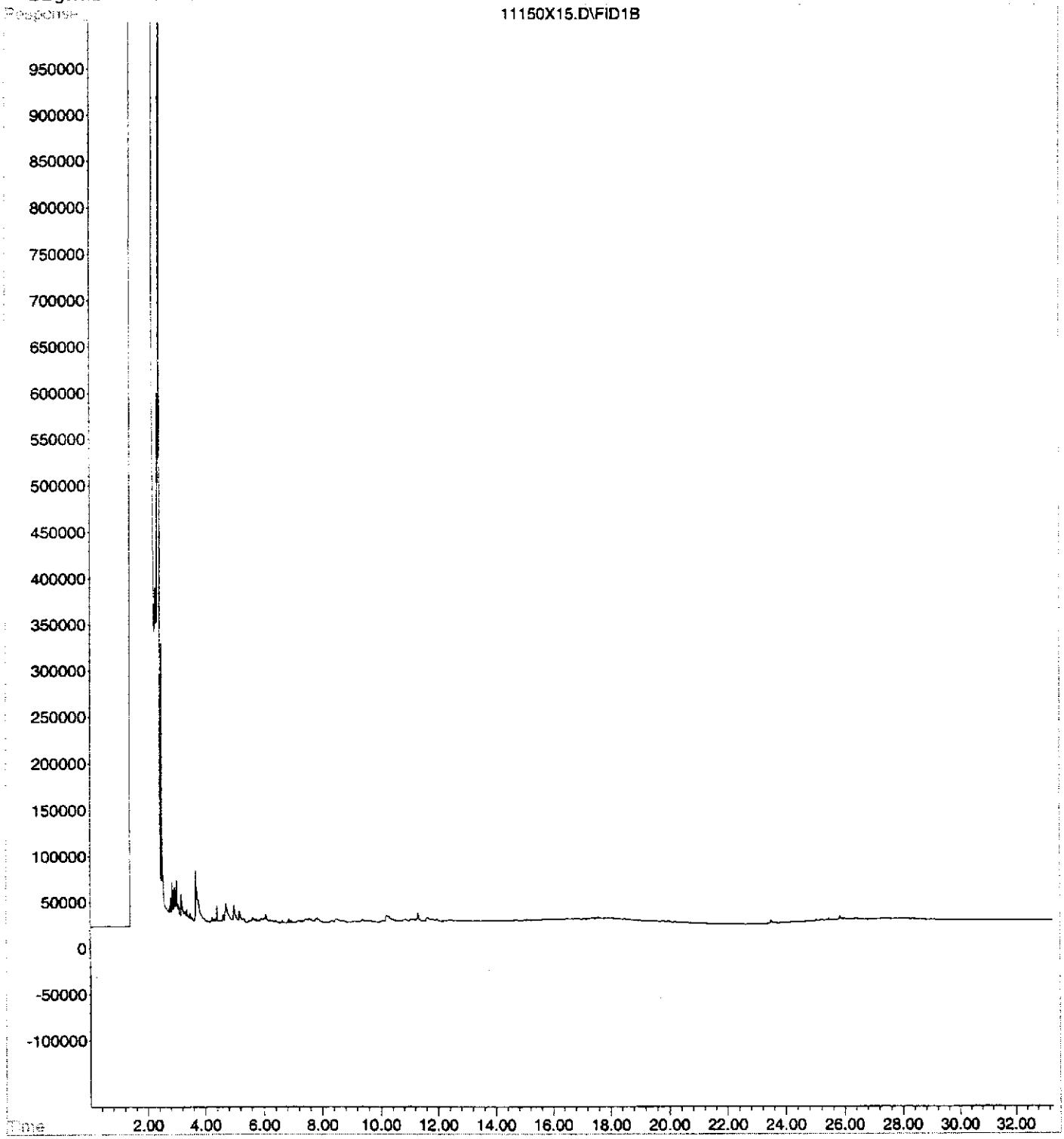


Quantitation Report

Data File : E:\HPCHEM\1\DATA\11150X15.D Vial: 15
Acq On : 11-16-00 1:23:24 AM Operator: my
Sample : 00-1690-03 Inst : GC/MS Ins
Misc : water Multiplr: 0.01
IntFile : EVENTS.E
Quant Time: Nov 16 1:55 2000 Quant Results File: TPH.RES

Quant Method : E:\HPCHEM\1\METHODS\TPH.M (Chemstation Integrator)
Title :
Last Update : Mon Oct 16 12:19:02 2000
Response via : Multiple Level Calibration
DataAcq Meth : TPH.M

Volume Inj. :
Signal Phase :
Signal Info :



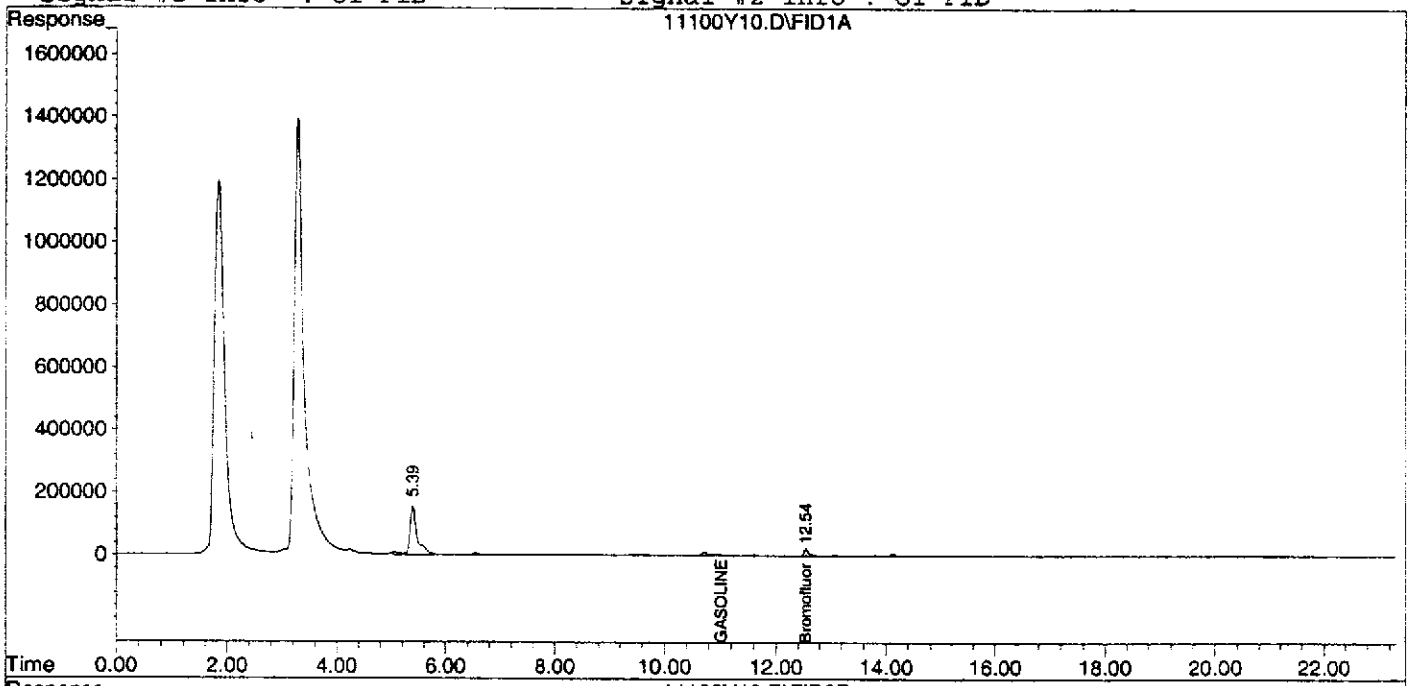
Quantitation Report

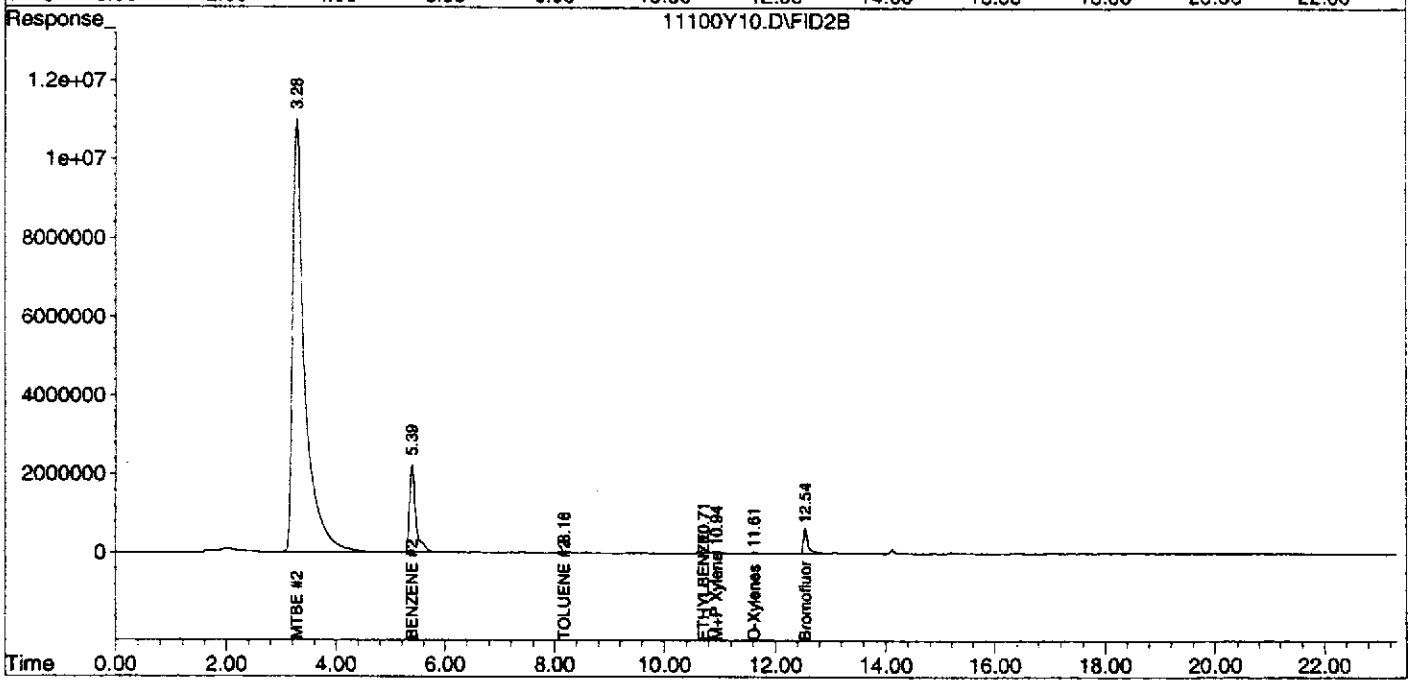
Data File : C:\HPCHEM\1\DATA\11100Y10.D\FID1A.CH Vial: 10
Acq On : 10 Nov 20100 7:20 pm Operator: my
Sample : 00-1690-03 Inst : Gas-BTEX
Misc : water 5ml Multiplr: 1.00
IntFile : events1.e

Data File : C:\HPCHEM\1\DATA\11100Y10.D\FID2B.CH Vial: 10
Acq On : 10 Nov 100 7:20 pm Operator: my
Sample : 00-1690-03 Inst : Gas-BTEX
Misc : water 5ml Multiplr: 1.00
IntFile : AUTOINT1.E
Quant Time: Nov 10 19:43 19100 Quant Results File: GBX.RES

Quant Method : C:\HPCHEM\1\METHODS\GBX.M (Chemstation Integrator)
Title : Gasoline Aromatics (BTEX-MTBE)
Last Update : Tue Nov 07 10:19:19 2000
Response via : Multiple Level Calibration
DataAcq Meth : GBX.M

Volume Inj. : 5 mL Purge volume
Signal #1 Phase : DB-624 30M x 0.53 Signal #2 Phase: DB-624 30M x 0.53mm
Signal #1 Info : OI FID Signal #2 Info : OI PID





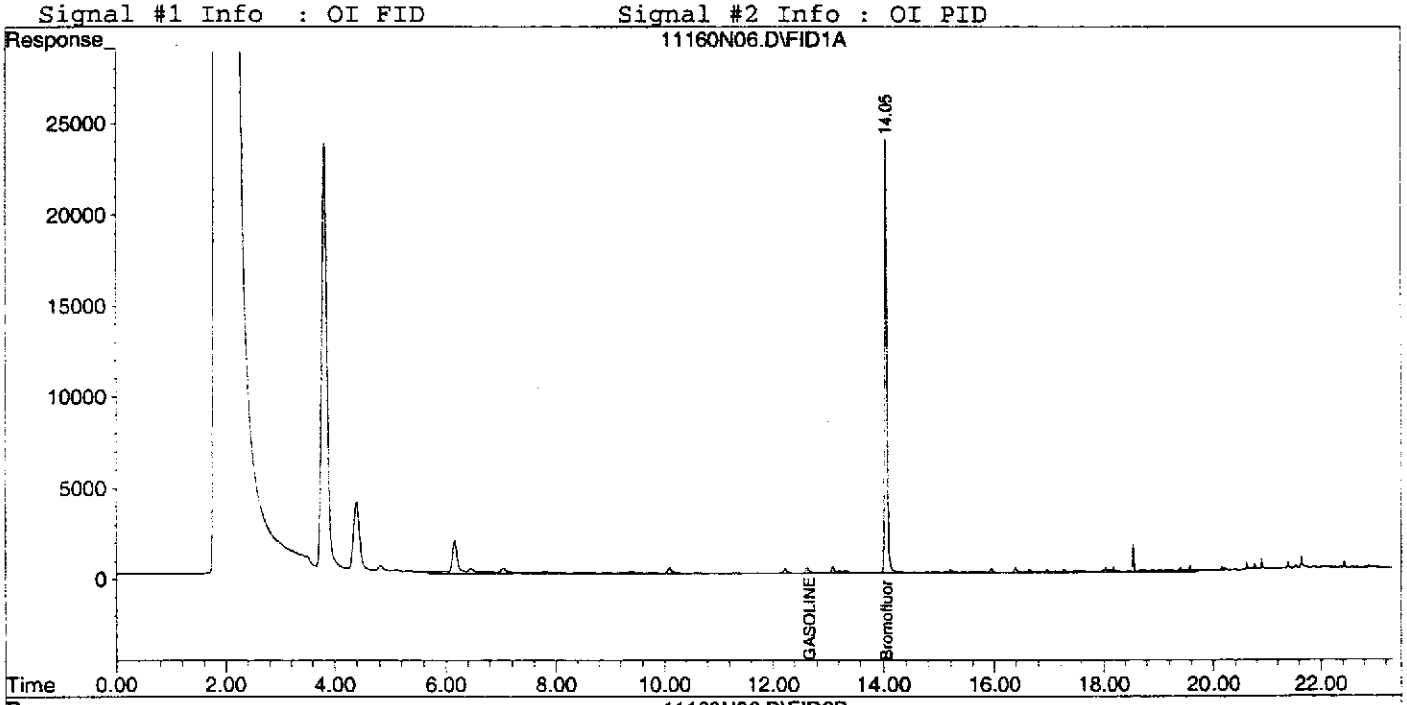
Quantitation Report

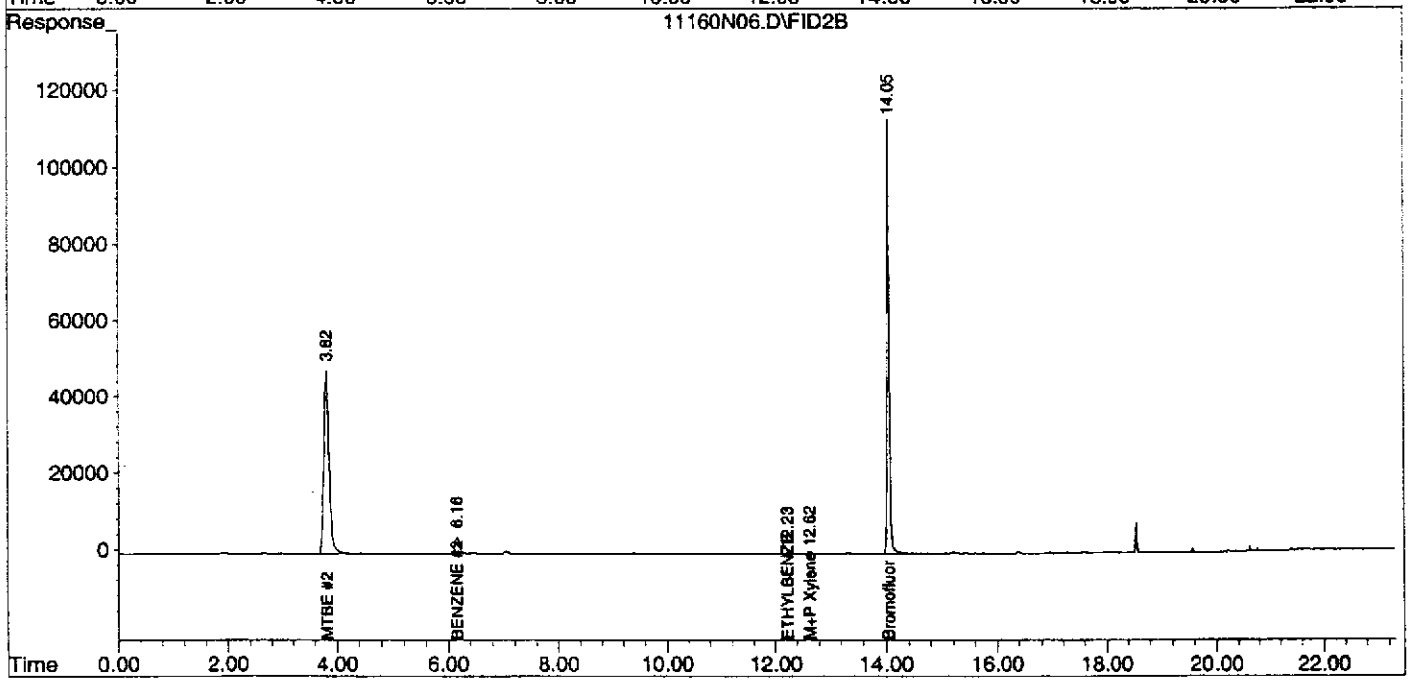
Data File : C:\HPCHEM\2\DATA\11160N06.D\FID1A.CH Vial: 6
Acq On : 16 Nov 20100 2:53 pm Operator: my
Sample : 00-1690-03r Inst : GC/MS Ins
Misc : water 100ul Multiplr: 50.00
IntFile : TRY1.E

Data File : C:\HPCHEM\2\DATA\11160N06.D\FID2B.CH Vial: 6
Acq On : 16 Nov 100 2:53 pm Operator: my
Sample : 00-1690-03r Inst : GC/MS Ins
Misc : water 100ul Multiplr: 50.00
IntFile : AUTOINT1.E
Quant Time: Nov 16 15:16 19100 Quant Results File: GBX.RES

Quant Method : C:\HPCHEM\2\METHODS\GBX.M (Chemstation Integrator)
Title : Gasoline Aromatics (BTEX-MTBE)
Last Update : Wed Nov 01 10:57:08 2000
Response via : Multiple Level Calibration
DataAcq Meth : GBX.M

Volume Inj. : 5 mL Purge volume
Signal #1 Phase : DB-624 30M x 0.53 Signal #2 Phase: DB-624 30M x 0.53mm
Signal #1 Info : OI FID Signal #2 Info : OI PID



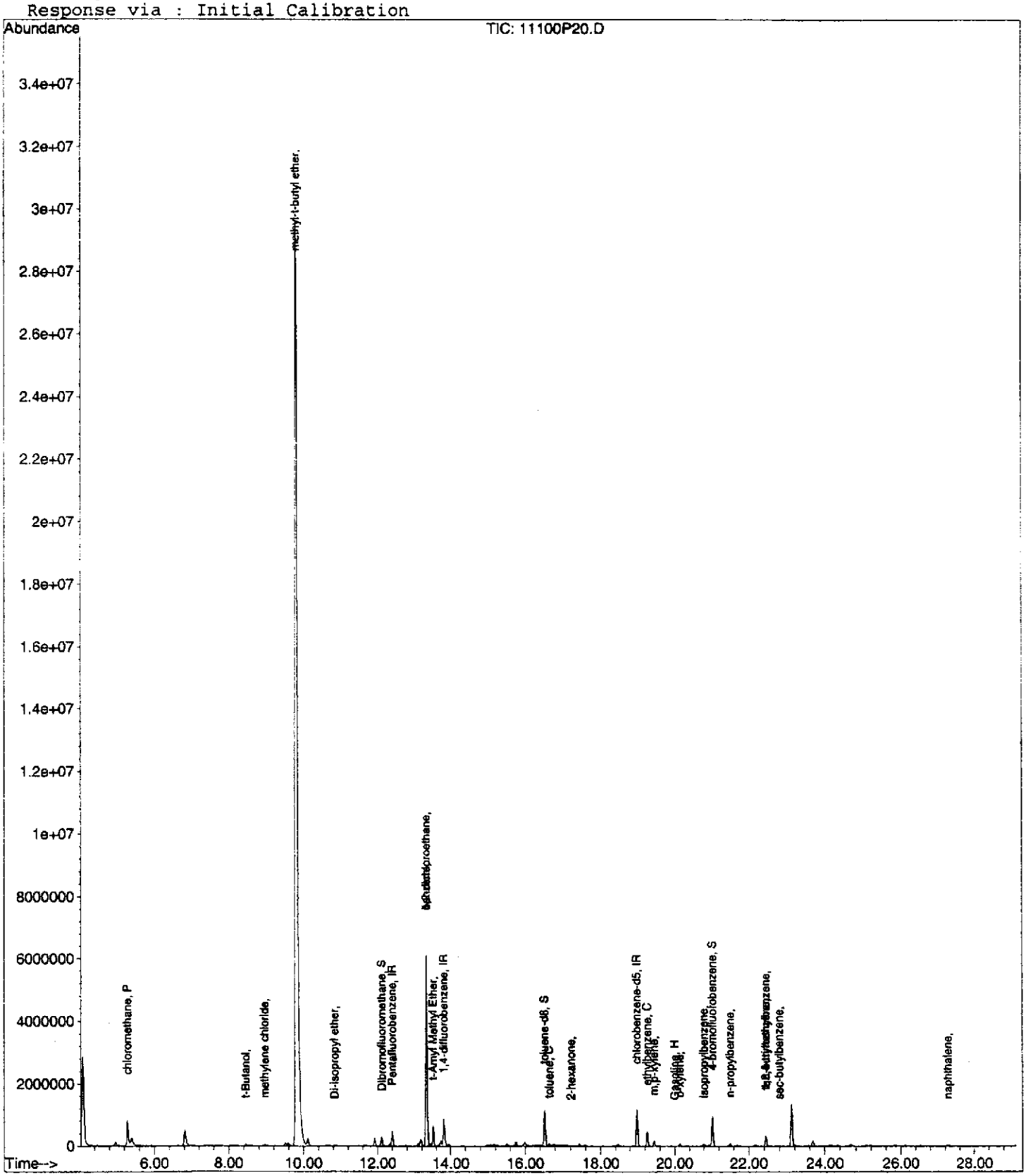


Quantitation Report

Data File : C:\HPCHEM\1\data\11100P20.D
Acq On : 11 Nov 00 12:24 am
Sample : 00-1690-03
Misc : water 5ml
MS Integration Params: RTEINT.P
Quant Time: Nov 11 0:53 19100

Vial: 4
Operator: my
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 8260.RES

Method : C:\HPCHEM\1\METHODS\8260.M (RTE Integrator)
Title : gasoline
Last Update : Tue Oct 24 15:48:52 2000
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\11130R12.D
Acq On : 13 Nov 2000 5:59 pm
Sample : 00-1090-03r
Misc : water 1ml
MS Integration Params: RTEINT.P
Quant Time: Nov 13 18:34 19100

Vial: 12
Operator: my
Inst : GC/MS Ins
Multiplr: 5.00

Quant Results File: 8260.RES

Method : C:\HPCHEM\1\METHODS\8260.M (RTE Integrator)
Title : gasoline
Last Update : Thu Oct 26 12:27:50 2000
Response via : Initial Calibration