R0116

BASELINE

ENVIRONMENTAL CONSULTING

24 September 2001
98381-B0

Ms. Ann E. Johnston
COBLENTZ, PATCH, DUFFY, & BASS, LLP
222 Kearny Street, 7th Floor
San Francisco, CA 94108-4510

Subject: Report on Passive Gas Sampling and Work Plan for Additional Investigation, 6623 San Pablo Avenue, Oakland, California

Dear Ann:

This letter documents recent subsurface investigation activities at 6623 San Pablo Avenue in Oakland (Figure 1). In accordance with a BASELINE work plan dated 31 May 2001, approved by the Alameda County Health Agency (County) in a letter 6 June 2001, BASELINE conducted a passive soil gas survey at the project site.

A passive soil gas survey can be an effective method for identification of source areas of chemical releases and delineation of plumes of volatile and semi-volatile compounds in soil and groundwater. In comparison with active soil gas surveys (where soil gas is actively pumped from the subsurface), passive soil gas surveys are effective in low permeability environments. The conditions at the project site, including low permeability surface soils, promoted the selection of a passive soil gas survey over an active soil gas survey.

Field Activities

On 25 June 2001, a geologist from BASELINE installed 31 GORE-SORBER$^{\text{SM}}$ modules in a grid pattern at the project site (Figure 2). The modules contain a chemically inert expanded polytetrafluoroethylene membrane (GORE-TEX). The membrane is microporous and hydrophobic, which facilitates the efficient absorption of soil gas. One-inch borings were made with an electrically-powered hammer drill to depths ranging from 2.5 to 3.0 feet. Upon completion of each boring, the GORE-SORBER$^{\text{SM}}$ module and attached retrieval cord were set into the boring with a stainless steel insertion rod. The rod was removed from the boring. A one and one half-inch cork (to which the retrieval cord was attached) was placed in the top of the boring to minimize the potential for surface runoff entering the boring. In addition, each boring was temporarily sealed with a small amount of hydraulic cement (placed over the cork) to minimize the potential for tampering. Following use at each probe location, the drill bit and insertion rod were cleaned with a solution of trisodium phosphate and water and then rinsed with deionized water. The boring at each probe location was backfilled with cement grout after probe retrieval.

As recommended by the manufacturer, the modules were retrieved by a BASELINE geologist on 9 July 2001, 14 days after installation. Immediately upon retrieval, the modules were placed in labeled glass jars. The sealed jars were placed in a cooled container along with three travel blanks. The modules were shipped under chain-of-custody to W.L. Gore & Associates, Inc. (Gore) laboratory in Elkton, Maryland.

At the Gore laboratory, each module (including travel blanks) was treated with thermal desorption to liberate volatile and semi-volatile compounds and analyzed using gas chromatography. The analyses provide a measure of the total mass of each analyte that was collected on and desorbed from each of the modules. A report presenting a description of the testing methodology and the results of the analysis of the modules is enclosed as Attachment A. The report includes a color graphical presentation of the distribution (contouring) of the total mass of benzene, total BTEX, and gasoline-range petroleum hydrocarbons adsorbed to the modules. It should be noted that the colors presented in the contouring represent a standardized number of contour intervals between the highest and lowest detected values for the individual compounds. Therefore, the intervals (and corresponding colors) are not consistent for each compound.

Results and Conclusions

The results of the passive soil gas sampling survey are shown on Figures A-1 through A-3 in Attachment A (and the raw data are tabulated in Attachment A). The mapped spatial patterns showed fairly well defined soil gas plumes for benzene (Figure A-1), total BTEX (Figure A-2), and gasoline-range petroleum hydrocarbons (Figure A-3). MTBE was identified at only two locations (362835 and 362839), and therefore was not contoured for graphical presentation. It should be noted that the positive results for MTBE coincided with benzene and total BTEX soil gas "hotspots."

The results provide empirical data regarding the on-site locations where soil gas containing elevated levels of volatile organic hydrocarbons reach the surface. These data are useful when evaluating the potential exposure pathway of volatilization of VOCs to indoor air (which has been identified as a potential route of exposure at the site). In addition, it provides information on the potential extent of contaminants in the underlying soil and groundwater.

In general, there appears to be a correlation between VOCs identified in soil and groundwater as part of past sampling activities and the results of the soil gas survey. The soil sample collected from KB-1 (Table 1) in 1996 represents the highest benzene level identified in soils at the site to date (13 mg/kg) and is near the location of a "hotspot" identified by the passive soil gas sampling survey (located approximately 100 feet north of the restaurant building, as shown on Figure A-1). However, it does not appear that a precise correlation exists. For example, past sampling at location MW-3A indicates that benzene is present at elevated levels in soil (0.66 mg/kg in January 1999; Table 1) and groundwater (0.26 mg/L in January 2001; Table 2), but appears to be non-detect (<0.030 µg) for soil gas.

MTBE is also issue.

however soil gas the results are not conclusive

preferential conduits not accounted for

The color contour image representing the distribution of benzene soil gas (which is expected to be the primary contaminant of concern in the risk assessment analysis that will be completed at a later date) defines the extent of near-surface benzene soil gas in the northwestern, northern, and eastern portions of the site (Figure A-1). In addition, the relative mass of benzene in near-surface soil gas appears to decrease significantly to the south and southwest (Figure A-1).

Figure A-1 indicates that the area of highest volatilization of benzene soil gas to the surface occurs at a "hotspot" approximately 50 feet north of the existing restaurant building. None of the past soil borings or monitoring wells has been installed at this location, and therefore data regarding the potential worst-case location (for volatilization of benzene to the surface) may not have been identified by collection of soil or groundwater samples. In addition, Figure A-3 indicates that a previously unexplored "hotspot" of gasoline-range hydrocarbons may be present near the southwest property boundary.

Recommendations (Work Plan)

- **Install two monitoring wells in the approximate locations shown on Figure 2.** Proposed well MW-4A would be installed to characterize soil and groundwater quality in the vicinity of the benzene soil gas hotspot (Figure A-1). Proposed monitoring well MW-5A would be installed to investigate soil and groundwater quality conditions near the western property boundary where the soil gas survey indicated elevated levels of gasoline-range hydrocarbons (Figure A-3) and slightly elevated benzene levels. The purpose of installation and sampling of these wells is to characterize the potential worst-case conditions for benzene and gasoline-range petroleum hydrocarbons in soil and groundwater at the site.

  The borings would be advanced using a direct-push rig and 2.5-inch casing. Each boring would be logged (continuous) in accordance with the Unified Soil Classification system. Up to three soil samples would be collected for analysis at each location, depending on field conditions encountered. All sample-driving equipment would be decontaminated between borings by steam-cleaning or washing with trisodium phosphate and rinsed with deionized water.

  Each soil sample would be labeled, sealed with teflon film, plastic caps, and silicone tape. All samples would be stored in a cooled container and transported under chain-of-custody procedures to a state-certified analytical laboratory. Each sample would be analyzed for TPH as gasoline, BTEX, and MTBE. In addition, select soil samples would be analyzed for total organic carbon, moisture content, and bulk density to support analysis of potential residual health risks using the Risk-Based Corrective Action (RBCA) protocol.

Other dual wells also 0.75".

The wells would be constructed with 3/4-inch PVC casing and screen (0.010 slot). The screen would be wrapped with a pre-fabricated filter pack. The location of the screened interval would depend on field conditions, but would be installed to account for shallow groundwater fluctuations, and would not exceed ten feet in length. The upper five feet of the boring would be hand-augered (six inches in diameter) to allow for utility clearance and installation of a sanitary seal. All work associated with the well installation would be supervised by a Registered Geologist. The top of casing of the new monitoring wells would be surveyed by a licensed surveyor to determine elevations to within 0.01 foot. Not sooner than 48 hours after completion, the wells would be developed by surging and pumping until relatively clear water was produced.

have not agreed to semi-annual monitoring

- The **newly installed wells would be sampled on a semi-annual basis, similar to the current approved sampling schedule for the existing wells at the site.** Prior to sampling, groundwater levels would be measured (and the presence or absence of floating product determined, and, if present, the thickness measured) in each of the new wells using a dual-interface probe. To the extent practicable, the wells would be purged until physical parameters measured in the field (pH, EC, and temperature) had stabilized. Samples would then be collected directly from the flowing purge water[1] in glassware provided by the laboratory. Experience with the existing wells at the site indicates that the upper water-bearing zone in some locations is extremely low-yield, rendering traditional "purge until stabilized" methods infeasible.

- All excess soil cores and wastewater (decontamination, development, and purge water) would be disposed of off-site at an approved facility.

- Prior to initiation of well installation, appropriate permits would be acquired from the Alameda County Public Works Agency. All on-site activities would be conducted under a site-specific health and safety plan.

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[1] BASELINE uses a peristaltic pump and new disposable tubing on each well. Purge water never comes into contact with the components of the pumping system, only with the disposable tubing, minimizing the potential for cross-contamination between wells.

- A report would be prepared for submittal to the County that summarizes field activities and analytical results and provides recommendations for additional activities, as appropriate.

One copy of this report should be submitted to Mr. Barney Chan of the Alameda County Health Care Services Agency. Should you have any questions, or require additional clarification, please contact us at your convenience.

Sincerely,

Bruce Abelli-Amen
Bruce Abelli-Amen
Project Manager

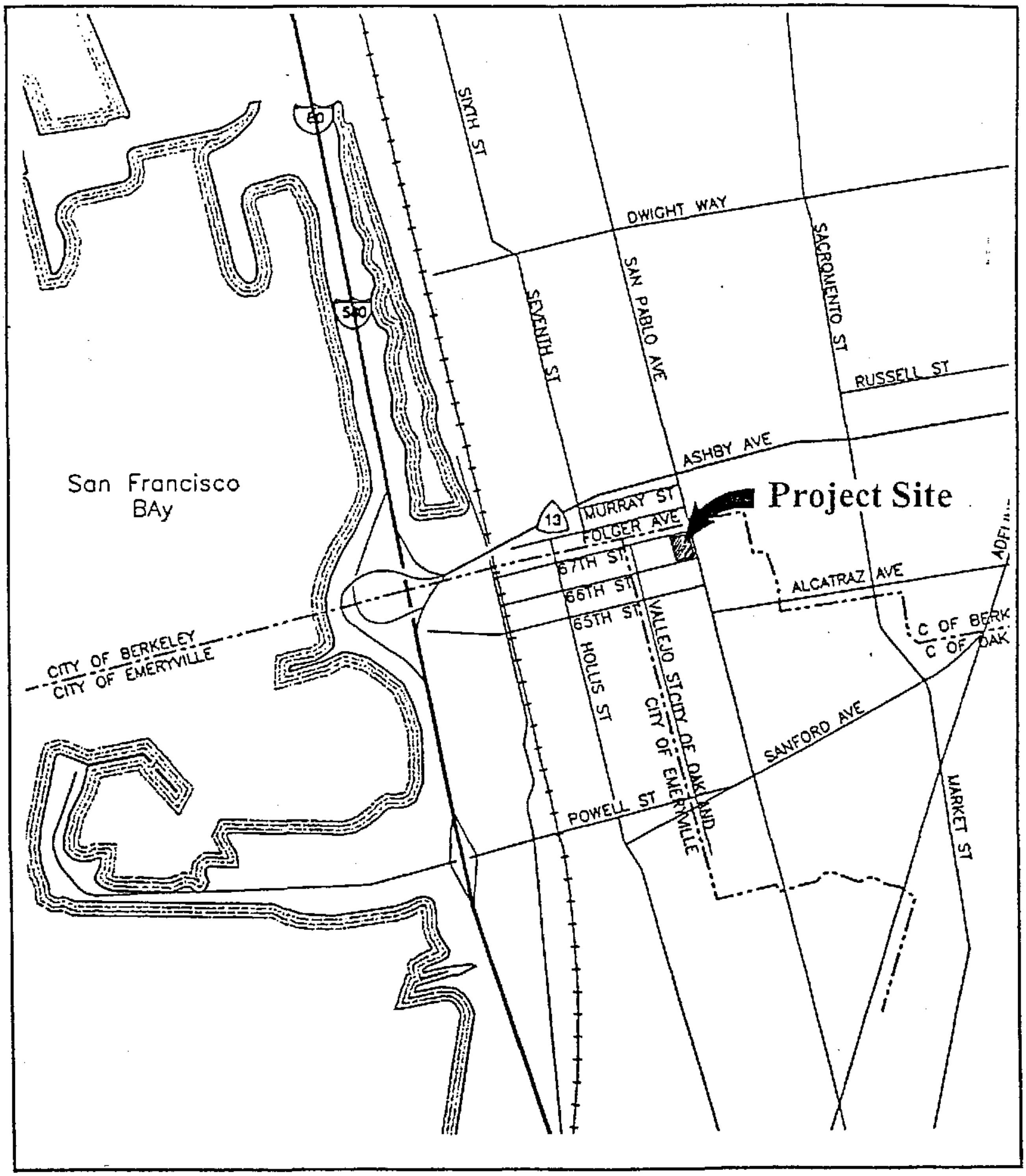
Yane Nordhav
Principal
Reg. Geologist No. 4009

BAA:YN:cr
Enclosure

cc: Ms. Helen Loreto, McDonald's Corporation

REGIONAL LOCATION

Figure 1



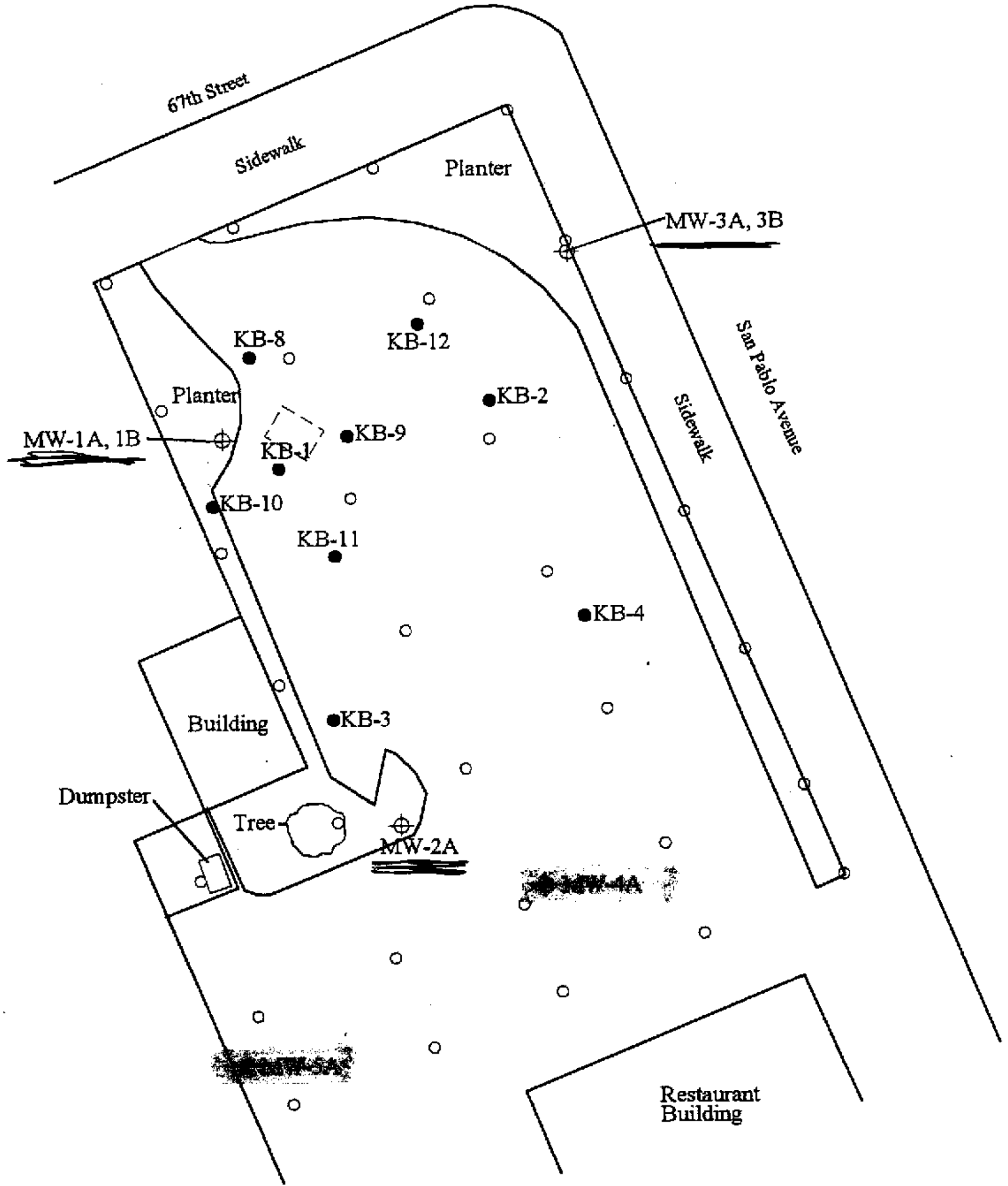
6623 San Pablo Avenue
Oakland, California

0 2000 Feet

BASELINE

SITE PLAN

Figure 2



Legend

┌╌╌┐		Location of Geophysical Anomaly (two borings installed within the bounds of mapped anomaly to confirm that no UST is present)
B-1	●	Soil Boring Location (Kleinfelder)
MW-2A	⊕	Monitoring Well Location (BASELINE)
	○	Approximate Passive Soil Gas Sampling Location
MW-4A	⊕	Proposed Monitoring Well Location

0 30 Feet

6623 San Pablo Avenue
Oakland, California

BASELINE

D:\Graphics\98381\fig-3 PSL .dwg 9/11/01

ATTACHMENT A

Result of Passive Soil Gas Survey

GORE
Creative Technologies
Worldwide

W. L. GORE & ASSOCIATES, INC.

100 CHESAPEAKE BLVD., P.O. BOX 10 • ELKTON, MARYLAND 21922-0010 • PHONE: 410/392-7600
FAX: 410/506-4780

GORE-SORBER® EXPLORATION SURVEY
GORE-SORBER® SCREENING SURVEY

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GORE-SORBER® Screening Survey Final Report

6623 San Pablo Ave.
Oakland, CA

July 25, 2001

Prepared For:
Baseline Environmental Service
101 H Street, Suite L
Petaluma, CA 94952

W.L. Gore & Associates, Inc.

Written/Submitted by:
Jim Whetzel, Project Manager

Jim Whetzel

Reviewed/Approved by:
Ray Fenstermacher Project Manager

Analytical Data Reviewed by:
Jim E. Whetzel, Chemist

Jim Whetzel

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GORE-SORBER® Screening Survey
Final Report

REPORT DATE: July 25, 2001 **AUTHOR:** JW

SITE INFORMATION

Site Reference: 6623 San Pablo Ave., Oakland, CA
Customer Purchase Order Number: 98381-80
Gore Production Order Number: 10732467 **Gore Site Code:** BVN

FIELD PROCEDURES

 # Modules shipped: 34
Installation Date(s): 6/25/01 **# Modules Installed:** 31
Field work performed by: Baseline Environmental Service

Retrieval date(s): 7/9/01 **Exposure Time:** 14 **[days]**
 # Modules Retrieved: 31 **# Trip Blanks Returned:** 3
 # Modules Lost in Field: 0 **# Unused Modules Returned:** 0

Date/Time Received by Gore: 7/11/01 @ 7:30 AM **By:** MM
Chain of Custody Form attached: √
Chain of Custody discrepancies: None
Comments:
Modules 362857, 362858, 362859 were identified as trip blanks.

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GORE-SORBER® Screening Survey
Final Report

ANALYTICAL PROCEDURES

W.L. Gore & Associates' Screening Module Laboratory operates under the guidelines of its Quality Assurance Manual, Operating Procedures and Methods. The quality assurance program is consistent with Good Laboratory Practices (GLP) and ISO Guide 25, "General Requirements for the Competence of Calibration and Testing Laboratories", third edition, 1990.

Instrumentation consists of state of the art gas chromatographs equipped with mass selective detectors, coupled with automated thermal desorption units. Sample preparation simply involves cutting the tip off the bottom of the sample module and transferring one or more exposed sorbent containers (sorbers, each containing 40mg of a suitable granular adsorbent) to a thermal desorption tube for analysis. Sorbers remain clean and protected from dirt, soil, and ground water by the insertion/retrieval cord, and require no further sample preparation.

Analytical Method Quality Assurance:
The analytical method employed is a modified EPA method 8260/8270. Before each run sequence, two instrument blanks, a sorber containing 5μg BFB (Bromofluorobenzene), and a method blank are analyzed. The BFB mass spectra must meet the criteria set forth in the method before samples can be analyzed. A method blank and a sorber containing BFB is also analyzed after every 30 samples and/or trip blanks. Standards containing the selected target compounds at three calibration levels of 5, 20, and 50μg are analyzed at the beginning of each run. The criterion for each target compound is less than 35% RSD (relative standard deviation). If this criterion is not met for any target compound, the analyst has the option of generating second- or third-order standard curves, as appropriate. A second-source reference standard, at a level of 10μg per target compound, is analyzed after every ten samples and/or trip blanks, and at the end of the run sequence. Positive identification of target compounds is determined by 1) the presence of the target ion and at least two secondary ions; 2) retention time versus reference standard; and, 3) the analyst's judgment.

NOTE: All data have been archived. Any replicate sorbers not used in the initial analysis will be discarded fifteen (15) days from the date of analysis.

Laboratory analysis: thermal desorption, gas chromatography, mass selective detection
Instrument ID: # 3 **Chemist:** JW/WW
Compounds/mixtures requested: Gore Fuel Hydrocarbons (A2)
Deviations from Standard Method: None
Comments: Soil vapor analytes and abbreviations are tabulated in the Data Table Key (page 6).

GORE-SORBER® Screening Survey
Final Report

DATA TABULATION

 # CONTOUR MAPS ENCLOSED: Three (3) B-sized color contour maps
LIST OF MAPS ENCLOSED:

- Benzene, Toluene, Ethyl benzene, and total Xylenes (BTEX)
- Gasoline Range Petroleum Hydrocarbons (GRPH)
- Benzene (BENZ)

NOTE: All data values presented in Appendix A represent masses of compound(s) desorbed from the GORE-SORBER Screening Modules received and analyzed by W.L. Gore & Associates, Inc., as identified in the Chain of Custody (Appendix A). The measurement traceability and instrument performance are reproducible and accurate for the measurement process documented. Semi-quantitation of the compound mass is based on either a single-level (QA Level 1) or three-level (QA Level 2) standard calibration.

General Comments:

- This survey reports soil gas mass levels present in the vapor phase. Vapors are subject to a variety of attenuation factors during migration away from the source concentration to the module. Thus, mass levels reported from the module will often be less than concentrations reported in soil and groundwater matrix data. In most instances, the soil gas masses reported on the modules compare favorably with concentrations reported in the soil or groundwater (e.g., where soil gas levels are reported at greater levels relative to other sampled locations on the site, matrix data should reveal the same pattern, and vice versa). However, due to a variety of factors, a perfect comparison between matrix data and soil gas levels can rarely be achieved.
- Soil gas signals reported by this method cannot be identified specifically to soil adsorbed, groundwater, and/or free-product contamination. The soil gas signal reported from each module can evolve from all of these sources. Differentiation between soil and groundwater contamination can only be achieved with prior knowledge of the site history (i.e., the site is known to have groundwater contamination only).
- QA/QC trip blank modules were provided to document potential exposures that were not part of the soil gas signal of interest (i.e., impact during module shipment, installation and retrieval, and storage). The trip blanks are identically manufactured and packaged soil gas modules to those modules placed in the subsurface. However, the trip blanks remain unopened during all phases of the soil gas survey. Levels reported on the trip blanks may indicate potential impact to modules other than the contaminant source of interest.

- Unresolved peak envelopes (UPEs) are represented as a series of compound peaks clustered together around a central gas chromatograph elution time in the total ion chromatogram. Typically, UPEs are indicative of complex fluid mixtures that are present in the subsurface. UPEs observed early in the chromatogram are considered to indicate the presence of more volatile fluids, while UPEs observed later in the chromatogram may indicate the presence of less volatile fluids. Multiple UPEs may indicate the presence of multiple complex fluids.

Project Specific Comments:

- The minimum (gray) contour level, for each mapped analyte or group of analytes, was set at the maximum blank level observed or the method detection limit, whichever was greater. When target compounds are summed together (i.e., BTEX), the contour minimum is arbitrarily set at 0.02 µg or the maximum blank level, whichever is greater. The maximum contour level was set at the maximum value observed.
- Stacked total ion chromatograms (TIC's) are included in Appendix A. The six-digit serial number of each module is incorporated into the TIC identification (e.g.: 123456S.D represents module #123456).
- No target compounds were detected on the trip blanks and/or the method blanks. Thus, target analyte levels reported for the field-installed modules that exceed trip and method blank levels, and the analyte method detection limit, have a high probability of originating from on-site sources.
- The mapped spatial patterns showed fairly well defined soil gas plumes.
- If the objective of the soil gas survey was to delineate the nature and extent of the contamination, then additional soil gas sampling is recommended in those areas where the color contours appear to extend into unsampled areas. Subsequent sampling events can be combined with the data from this event and mapped together to provide greater coverage.

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GORE-SORBER® Screening Survey
Final Report

KEY TO DATA TABLE
6623 San Pablo Ave., Oakland, CA

UNITS	
µg	micrograms (per sorber), reported for compounds
MDL	method detection limit
bdl	below detection limit
nd	non-detect

ANALYTES	
GRPH	gasoline range petroleum hydrocarbons
DRPH	diesel range petroleum hydrocarbons
BTEX	combined masses of benzene, toluene, ethylbenzene and total xylenes (Gasoline Range Aromatics)
BENZ	benzene
TOL	toluene
EtBENZ	ethylbenzene
mpXYL	m-, p-xylene
oXYL	o-xylene
C11,C13&C15	combined masses of undecane, tridecane, and pentadecane (C11+C13+C15) (Diesel Range Alkanes)
UNDEC	undecane
TRIDEC	tridecane
PENTADEC	pentadecane
TMBs	combined masses of 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene
135TMB	1,3,5-trimethylbenzene
124TMB	1,2,4-trimethylbenzene
NAPH&2-MN	combined masses of naphthalene and 2-methyl naphthalene
NAPH	naphthalene
2MeNAPH	2-methyl naphthalene
MTBE	methyl t-butyl ether
OCT	octane

BLANKS	
TBn	unexposed trip blanks, travels with the exposed modules
method blank	QA/QC module, documents analytical conditions during analysis

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APPENDIX A:

1. CHAIN OF CUSTODY
2. DATA TABLE
3. STACKED TOTAL ION CHROMATOGRAMS
4. COLOR CONTOUR MAPS

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GORE-SORBER® Screening Survey Chain of Custody

For W.L. Gore & Associates use only
Production Order # 10732467

W. L. Gore & Associates, Inc., Survey Products Group
100 Chesapeake Boulevard • Elkton, Maryland 21921 • Tel: (410) 392-7600 • Fax (410) 506-4780

Instructions: Customer must complete ALL shaded cells

Customer Name: BASELINE ENVIRONMENTAL SERVICES
Address: 101 H STREET SUITE L
PETALUMA CA 94952
U.S.A.
Phone: 510-420-8686
FAX: 510-420-1707

Site Name: SAN PABLO PROJECT
Site Address: OAKLAND,CALIFORNIA
Project Manager: BRUCE ABELLI-AMEN
Customer Project No.: 98381-BO
Customer P.O. #: 98381-~~80~~ BO Quote #: 209605

Serial # of Modules Shipped

# 362820	- # 362828	#	- #
# 362835	- # 362859	#	- #
#	- #	#	- #
#	- #	#	- #
#	- #	#	- #
#	- #	#	- #
#	- #	#	- #
#	- #	#	- #
#	- #	#	- #
#	- #	#	- #

# of Modules for Installation 31 # of Trip Blanks 3
Total Modules Shipped: 34 Pieces
Total Modules Received: 34 Pieces
Total Modules Installed: 31 Pieces

Serial # of Trip Blanks (*Client Decides*)		#
# 362857	#	#
# 362858	#	#
# 362859	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#

Prepared By: C. W
Verified By: Mary Ann

Installation Performed By
Name (*please print*): Bill Scott
Company/Affiliation: BASELINE

Installation Method(s) (*circle those that apply*):
Slide Hammer [✓ Hammer Drill] Auger
Other:

Installation Start Date and Time: 6/25/01 / 8:15 / : [✓ AM] PM
Installation Complete Date and Time: 6/25/01 / 13:05 / : AM PM

Retrieval Performed By:
Name (*please print*): Bill Scott
Company/Affiliation:1 BASELINE

Total Modules Retrieved: 31 Pieces
Total Modules Lost in Field: 0 Pieces
Total Unused Modules Returned: 34 Pieces

Retrieval Start Date and Time: 07 / 09 / 01 7 : 13 [✓ AM] PM
Retrieval Complete Date and Time: 07 / 09 / 01 9 : 06 [✓ AM] PM

	Date	Time		Date	Time
Relinquished By Affiliation: W.L. Gore & Associates, Inc.	6-20-01	12:50	Received By: William K Scott Affiliation: BASELINE	6/21/01	10:00
Relinquished By Affiliation:	7/9/01	10:05	Received By: Affiliation:		
Relinquished By Affiliation			Received By: Mary Ann Affiliation: W.L. Gore & Associates, Inc.	7-11-01	7:30

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FORM 8R.8
1/08/01

GORE-SORBER® Screening Survey Installation and Retrieval Log

Page 1 of 1

SITE NAME & LOCATION
6623 San Pablo Ave
Oakland CA

LINE #	MODULE #	INSTALLATION DATE/TIME	RETRIEVAL DATE/TIME	EVIDENCE OF LIQUID HYDROCARBONS (LPH) or HYDROCARBON ODOR (Check as appropriate)			MODULE IN WATER (check one) AT Time of instal		COMMENTS		
			2	LPH	ODOR	NONE	YES	NO	Y	N	
1.	362820	06/25/01 8:15	7:13			✓		✓	✓		
2.	362821	8:21	7:15			✓		✓	✓		
3.	362822	8:26	7:20			✓		✓	✓		
4.	362823	8:30	7:22			✓	✓		✓		
5.	362824	9:18 ~~8:40~~	7:36			✓	~~✓~~	✓	✓		
6.	362825	9:09	7:33			✓		✓		✓	
7.	362826	8:53	7:28			✓		✓	✓		
8.	362827	8:40	7:25			✓	✓		✓		
9.	362828	9:25	7:46			✓	✓		✓		
10.	362835	9:34	7:48			✓		✓		✓	
11.	362836	9:47	7:51			✓		✓		✓	
12.	362837	10:00	7:54			✓		✓	✓		
13.	362838	10:04	7:56			✓		✓	✓		
14.	362839	10:10	8:00			✓		✓		✓	
15.	362840	10:18	8:04			✓		✓	✓		
16.	362841	10:26	8:06			✓		✓	✓		
17.	362842	10:47	8:10			✓		✓	✓		
18.	362843	10:50	8:18		✓		✓		✓		
19.	362844	10:56	8:22		✓			✓	✓		
20.	362845	11:02	8:25			✓		✓		✓	
21.	362846	11:08	8:28			✓		✓		✓	
22.	362847	11:15	8:32			✓		✓	✓		Orange Stain
23.	362848	11:19	8:35		✓			✓	✓		
24.	362849	12:15	8:38		✓			✓	✓		
25.	362850	12:23	8:42			✓		✓	✓		
26.	362851	12:29	8:46			✓		✓		✓	
27.	362852	12:37	8:50			✓		✓	✓		
28.	362853	12:42	8:53			✓		✓		✓	
29.	362854	12:48	8:57			✓		✓		✓	
30.	362855	12:59	9:02			✓		✓		✓	
31.	362856	13:05	9:06			✓		✓	✓		
32.	362857										
33.	362858										
34.	362859										
35.											
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38.											
39.											
40.											
41.											
42.											

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FORM 29R.1
6/13/01

GORE SORBER SCREENING SURVEY ANALYTICAL RESULTS
BASELINE ENVIRONMENTAL SERVICES, PETALUMA, CA
GORE TARGET FUEL HYDROCARBONS (A2)
6623 SAN PABLO AVE., OAKLAND, CA
SITE BVN - PRODUCTION ORDER #10732467

DATE ANALYZED	SAMPLE NAME	GRPH, ug	DRPH, ug	BTEX, ug	BENZ, ug	TOL, ug	EtBENZ, ug	mpXYL, ug	oXYL, ug	C11, C13, &C15, ug	UNDEC, ug	TRIDEC, ug
	MDL=				0.03	0.03	0.02	0.02	0.02		0.03	0.02
07/19/01	362820	1.92	1.12	0.00	nd	nd	nd	nd	nd	0.00	bdl	bdl
07/19/01	362821	0.01	0.03	0.00	nd	nd	nd	nd	nd	0.00	bdl	bdl
07/19/01	362822	0.03	0.02	0.04	nd	nd	nd	0.02	0.02	0.00	nd	nd
07/19/01	362823	0.00	0.03	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	362824	0.02	0.01	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	362825	1200.83	28.81	9.85	2.27	2.38	2.71	1.52	0.97	0.35	0.23	0.10
07/19/01	362826	101.04	3.02	1.07	0.67	0.13	0.04	0.13	0.10	0.06	0.06	bdl
07/19/01	362827	7.27	0.04	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	362828	0.01	0.01	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	362835	618.09	8.67	98.64	83.47	2.84	5.79	5.82	0.72	0.16	0.16	bdl
07/19/01	362836	356.83	1.52	0.28	0.15	0.06	bdl	0.04	0.03	0.00	bdl	nd
07/19/01	362837	0.06	0.01	0.00	nd	nd	nd	nd	bdl	0.00	nd	nd
07/19/01	362838	nd	0.02	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	362839	345.93	12.29	94.20	85.39	2.29	2.91	3.19	0.42	0.50	0.33	0.08
07/19/01	362840	3.85	0.07	0.30	0.08	0.06	nd	0.09	0.07	0.00	nd	nd
07/20/01	362841	1.87	0.01	0.04	nd	nd	nd	0.02	0.02	0.00	nd	nd
07/20/01	362842	385.02	2.11	0.35	0.10	0.09	0.02	0.09	0.05	0.03	0.03	nd
07/20/01	362843	0.02	0.02	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/20/01	362844	702.53	2.16	249.63	228.00	4.58	12.03	4.75	0.27	0.08	0.08	nd
07/20/01	362845	106.47	0.42	0.83	0.40	0.16	0.04	0.14	0.09	0.00	nd	nd
07/20/01	362846	nd	0.02	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/20/01	362847	214.91	1.43	3.21	2.58	0.26	0.08	0.22	0.07	0.06	0.06	nd
07/20/01	362848	118.40	2.06	3.93	3.51	0.09	0.20	0.10	0.03	0.16	0.13	0.03
07/20/01	362849	450.59	1.69	236.16	221.36	1.78	10.96	1.90	0.16	0.07	0.07	nd
07/20/01	362850	290.84	1.83	1.22	0.71	0.22	0.06	0.16	0.07	0.04	0.04	bdl
07/20/01	362851	0.27	0.09	0.02	nd	nd	nd	nd	0.02	0.00	nd	nd
07/20/01	362852	563.06	19.05	0.34	0.03	0.03	0.04	0.14	0.10	0.12	0.07	0.02
07/20/01	362853	45.00	2.64	0.47	0.20	0.10	0.03	0.08	0.06	0.04	0.04	nd
07/20/01	362854	22.67	5.36	0.15	0.08	0.04	nd	0.03	bdl	0.04	0.04	bdl
07/20/01	362855	10.55	19.90	0.25	0.10	0.06	nd	0.05	0.04	0.57	0.10	0.14
07/20/01	362856	0.02	0.02	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	362857	0.06	0.02	0.00	nd	nd	nd	nd	nd	0.00	nd	nd

odor

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE SORBER SCREENING SURVEY ANALYTICAL RESULTS
BASELINE ENVIRONMENTAL SERVICES, PETALUMA, CA
GORE TARGET FUEL HYDROCARBONS (A2)
6623 SAN PABLO AVE., OAKLAND, CA
SITE BVN - PRODUCTION ORDER #10732467

DATE ANALYZED	SAMPLE NAME	GRPH, ug	DRPH, ug	BTEX, ug	BENZ, ug	TOL, ug	EtBENZ, ug	mpXYL, ug	oXYL, ug	C11, C13, &C15, ug	UNDEC, ug	TRIDEC, ug
	MDL=				0.03	0.03	0.02	0.02	0.02		0.03	0.02
07/20/01	362858	0.05	0.01	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/20/01	362859	0.04	0.01	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/19/01	method blank	nd	0.00	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
07/20/01	method blank	nd	nd	0.00	nd	nd	nd	nd	nd	0.00	nd	nd
	Maximum	1200.83	28.81	249.63	228.00	4.58	12.03	5.82	0.97	0.57	0.33	0.14
	Standard Dev.	283.37	6.98	63.50	58.45	1.09	3.03	1.43	0.22	0.14	0.08	0.03
	Mean	178.97	3.69	22.61	20.29	0.49	1.13	0.60	0.11	0.07	0.05	0.01

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE SORBER SCREENING SURVEY ANALYTICAL RESULTS
BASELINE ENVIRONMENTAL SERVICES, PETALUMA, CA
GORE TARGET FUEL HYDROCARBONS (A2)
6623 SAN PABLO AVE., OAKLAND, CA
SITE BVN - PRODUCTION ORDER #10732467

SAMPLE NAME	PENTADEC, ug	TMBs, ug	124TMB, ug	135TMB, ug	NAPH&2-MN, ug	NAPH, ug	2MeNAPH, ug	MTBE, ug	OCT, ug
MDL=	0.02		0.02	0.02		0.02	0.02	0.48	0.10
362820	bdl	0.00	bdl	nd	0.00	nd	nd	bdl	nd
362821	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362822	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362823	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362824	nd	0.00	nd	nd	0.00	nd	nd	bdl	nd
362825	0.02	5.22	2.81	2.41	3.55	1.12	2.43	bdl	5.38
362826	bdl	0.06	0.03	0.03	0.03	0.03	bdl	nd	0.21
362827	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362828	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362835	nd	5.87	3.75	2.12	0.29	0.29	bdl	40.55	1.24
362836	nd	0.00	nd	nd	0.00	nd	nd	bdl	0.40
362837	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362838	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362839	0.09	7.14	4.57	2.57	0.49	0.46	0.03	2.74	0.70
362840	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362841	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362842	nd	0.00	bdl	bdl	0.00	nd	nd	bdl	0.65
362843	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362844	nd	2.70	1.21	1.49	0.22	0.22	bdl	bdl	2.20
362845	nd	0.04	0.02	0.02	0.00	nd	nd	bdl	0.17
362846	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362847	nd	0.22	0.10	0.12	0.00	nd	nd	bdl	0.37
362848	bdl	0.65	0.14	0.51	0.15	0.15	bdl	bdl	0.20
362849	nd	3.35	2.27	1.08	0.07	0.07	nd	bdl	0.62
362850	bdl	0.15	0.10	0.05	0.00	nd	nd	bdl	0.39
362851	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362852	0.03	0.05	0.03	0.02	0.02	0.02	bdl	nd	0.50
362853	nd	0.13	0.08	0.05	0.00	bdl	nd	nd	0.11
362854	bdl	0.15	0.04	0.11	0.00	nd	nd	bdl	nd
362855	0.33	0.10	0.07	0.03	0.08	0.02	0.06	bdl	nd
362856	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362857	nd	0.00	nd	nd	0.00	nd	nd	nd	nd

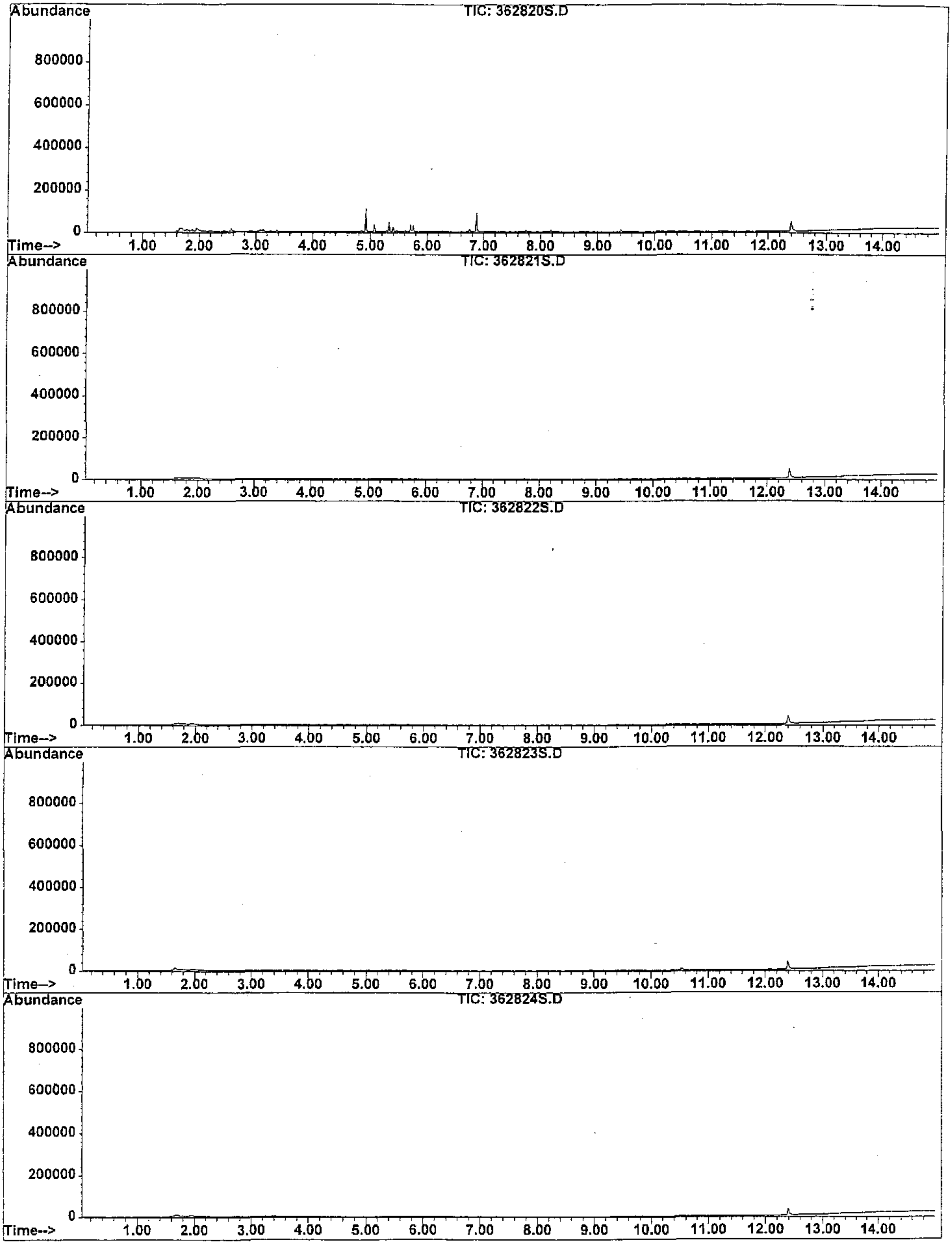
No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

GORE SORBER SCREENING SURVEY ANALYTICAL RESULTS
BASELINE ENVIRONMENTAL SERVICES, PETALUMA, CA
GORE TARGET FUEL HYDROCARBONS (A2)
6623 SAN PABLO AVE., OAKLAND, CA
SITE BVN - PRODUCTION ORDER #10732467

SAMPLE NAME	PENTADEC, ug	TMBs, ug	124TMB, ug	135TMB, ug	NAPH&2-MN, ug	NAPH, ug	2MeNAPH, ug	MTBE, ug	OCT, ug
MDL=	0.02		0.02	0.02		0.02	0.02	0.48	0.10
362858	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
362859	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
method blank	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
method blank	nd	0.00	nd	nd	0.00	nd	nd	nd	nd
Maximum	0.33	7.14	4.57	2.57	3.55	1.12	2.43	40.55	5.38
Standard Dev.	0.06	1.92	1.18	0.75	0.64	0.22	0.44	7.28	1.03
Mean	0.02	0.83	0.49	0.34	0.16	0.08	0.08	1.41	0.42

No mdl is available for summed combinations of analytes. In summed columns (eg., BTEX), the reported values should be considered ESTIMATED if any of the individual compounds were reported as bdl.

TIC - SITE BVN - PRODUCTION ORDER #10732467



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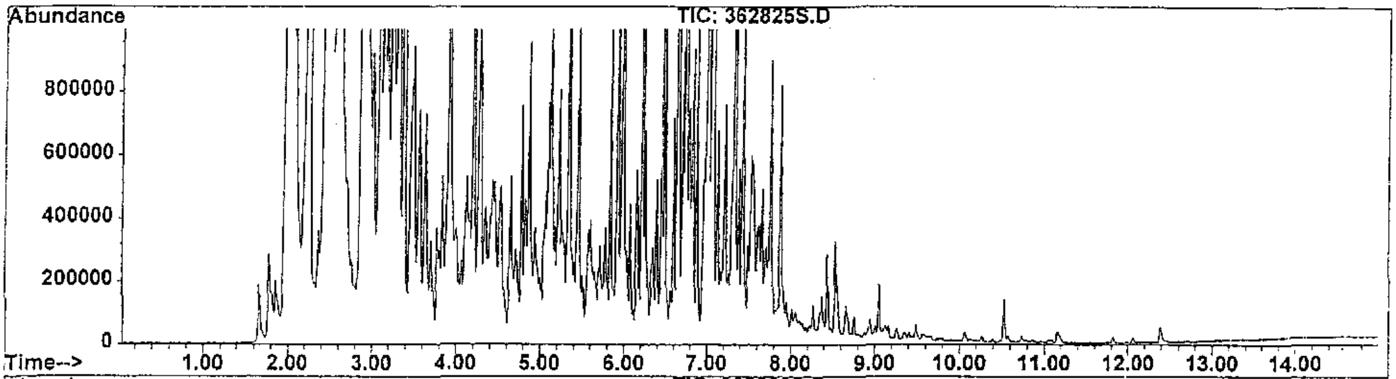

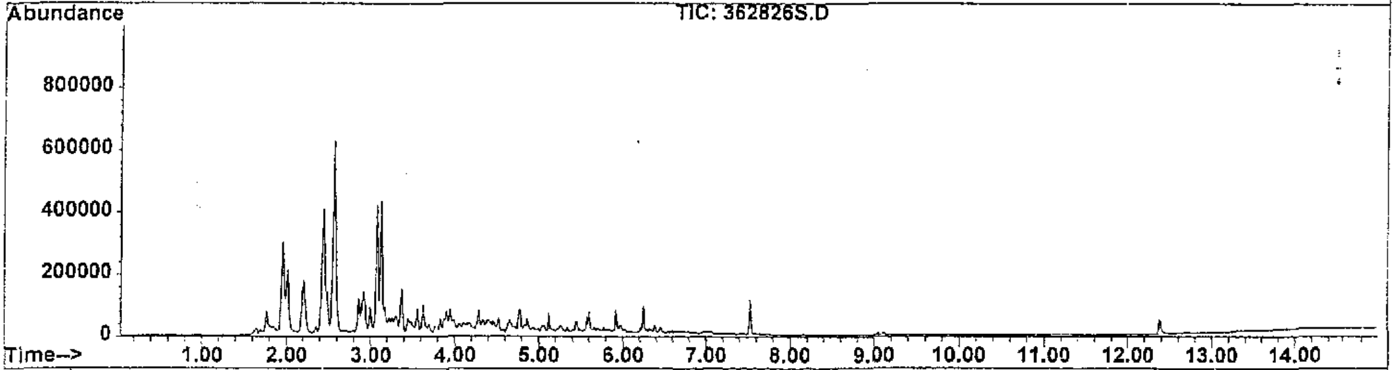

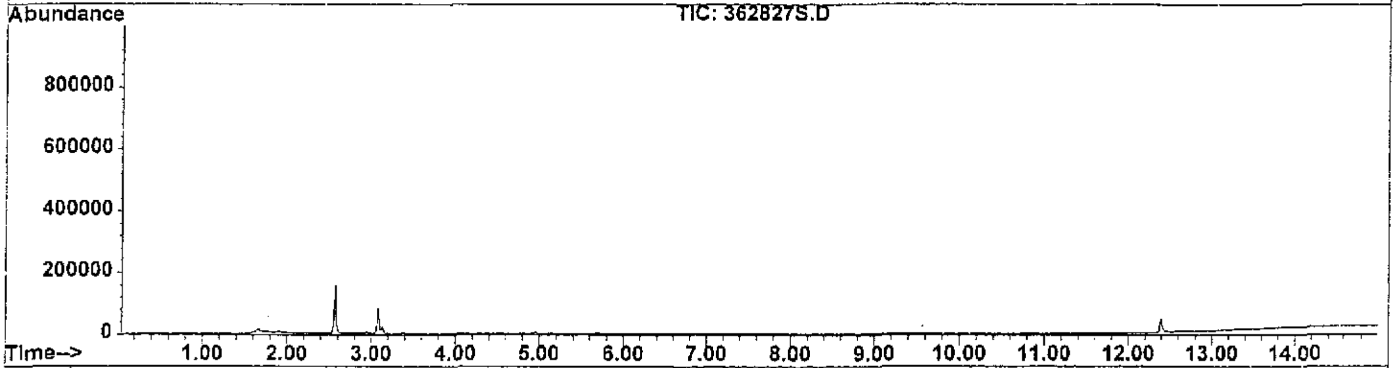

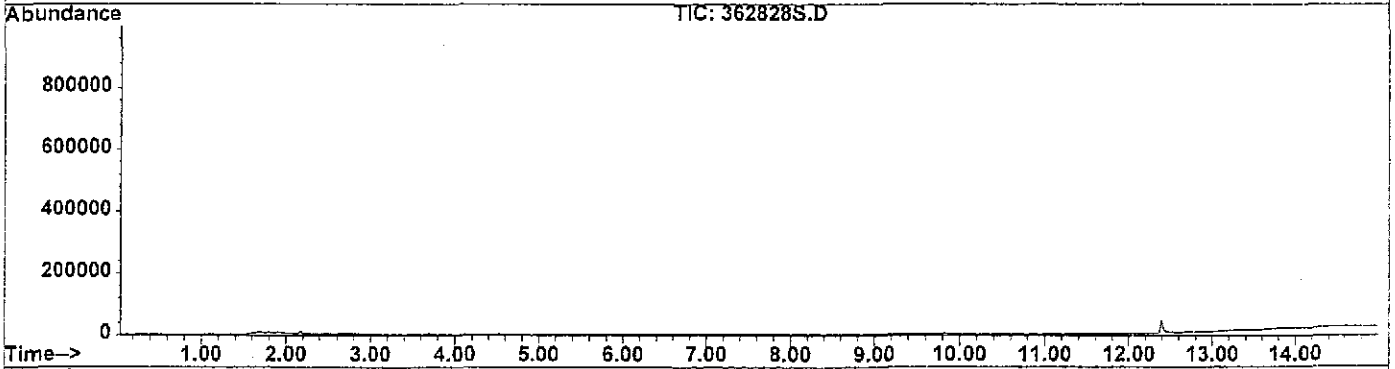

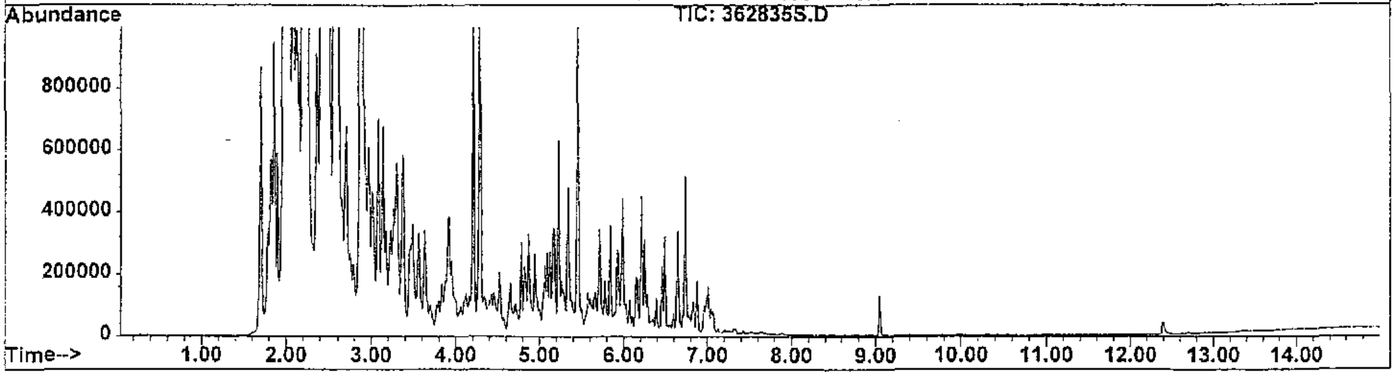

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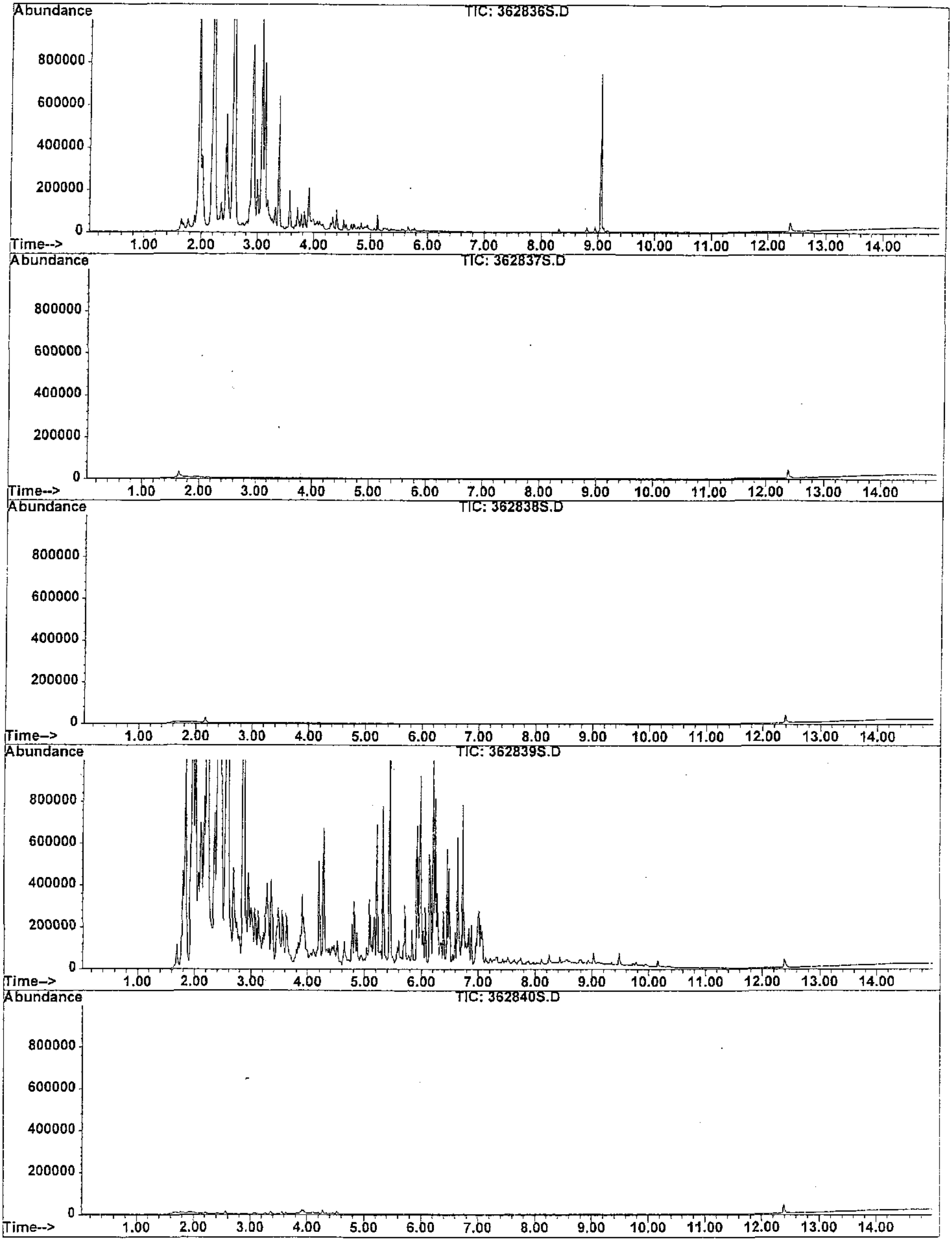

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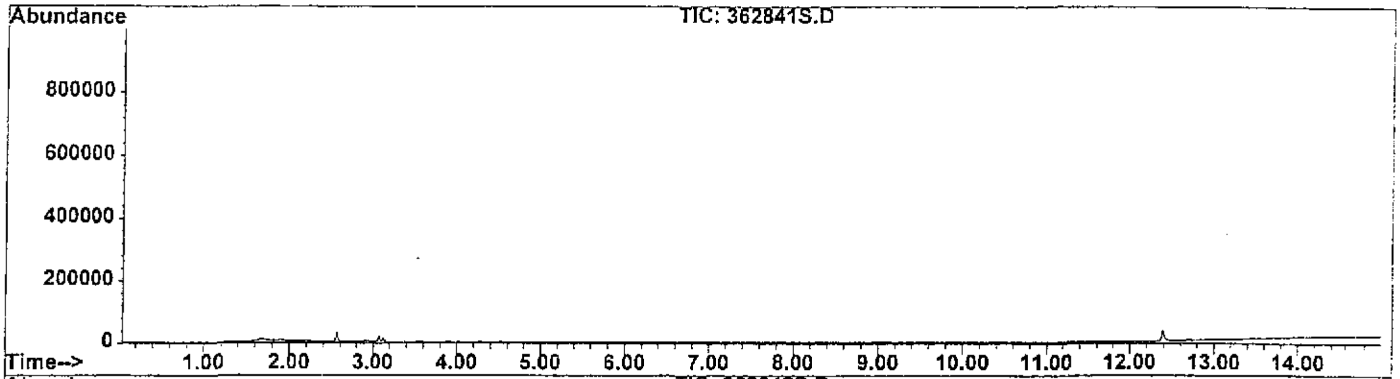

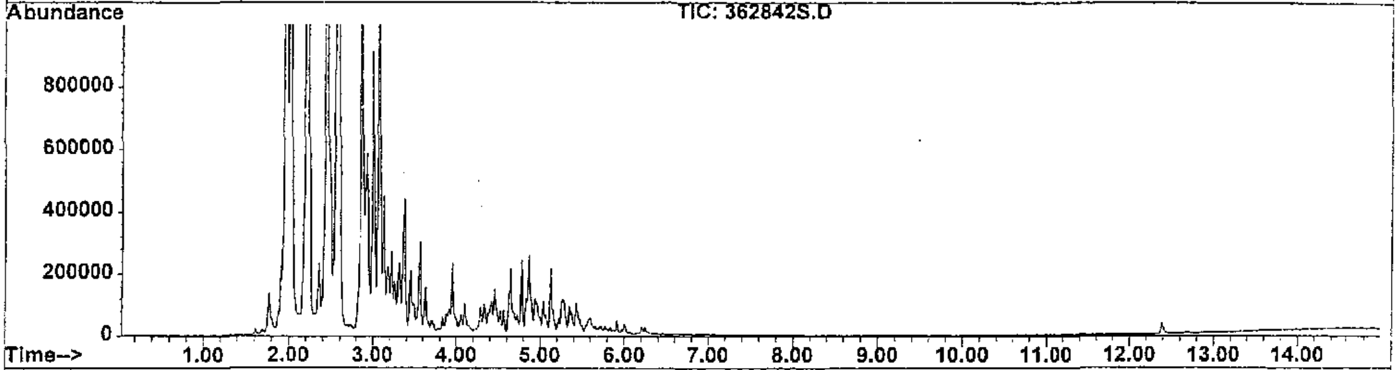

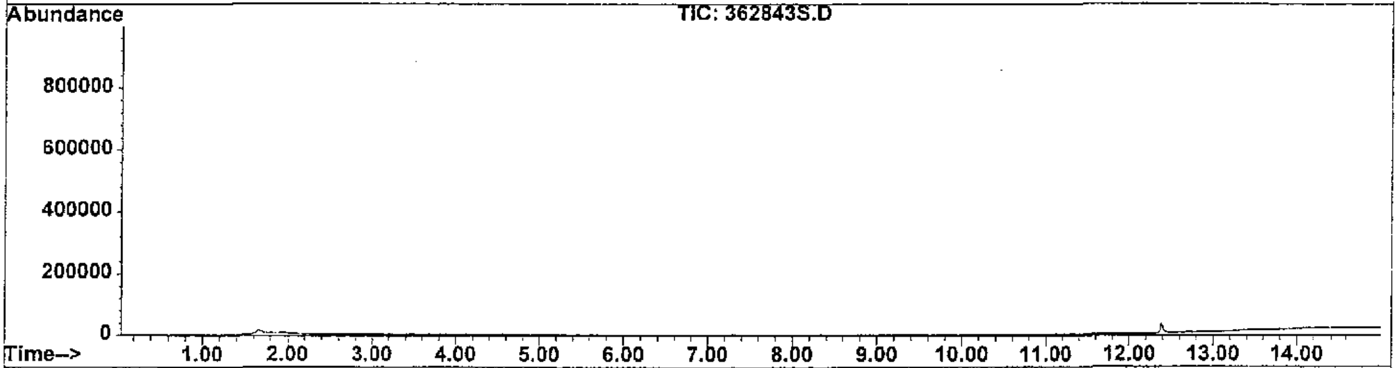

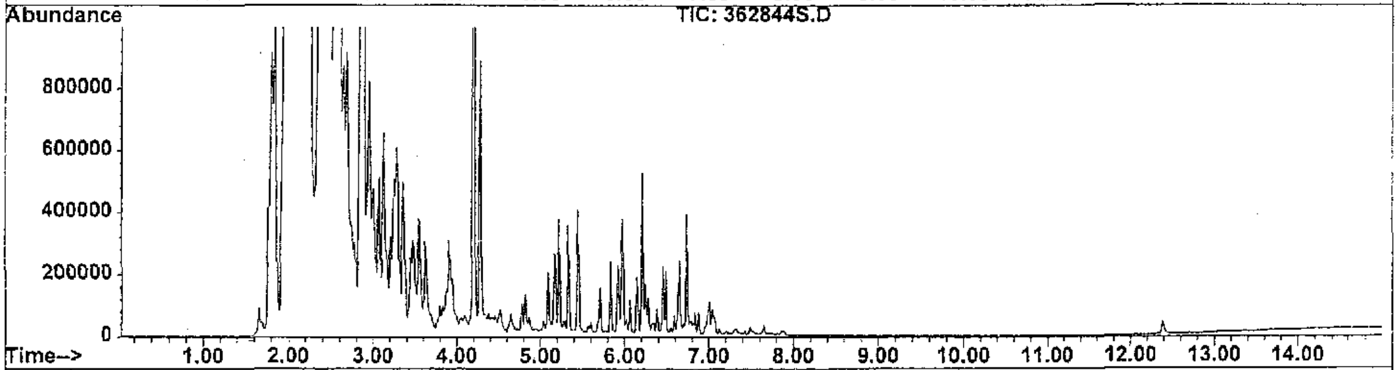

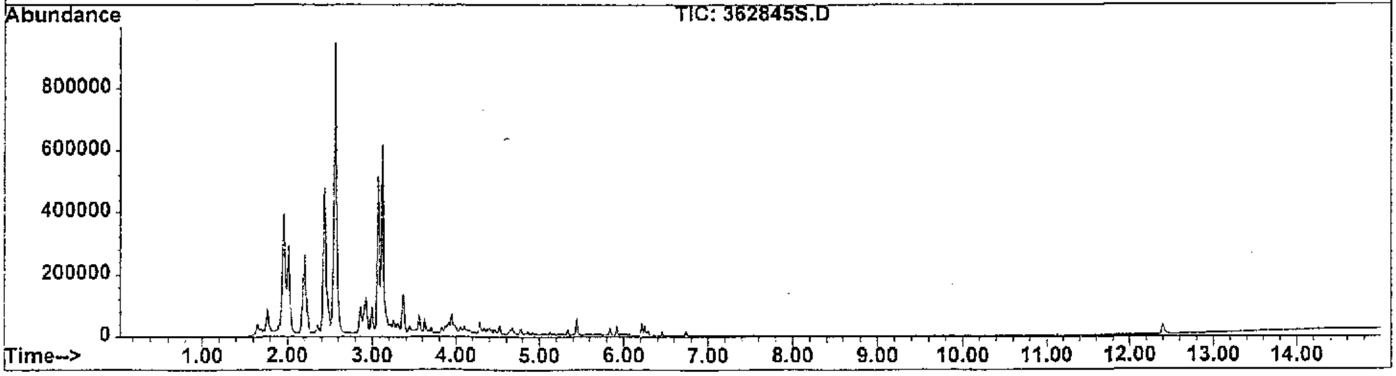

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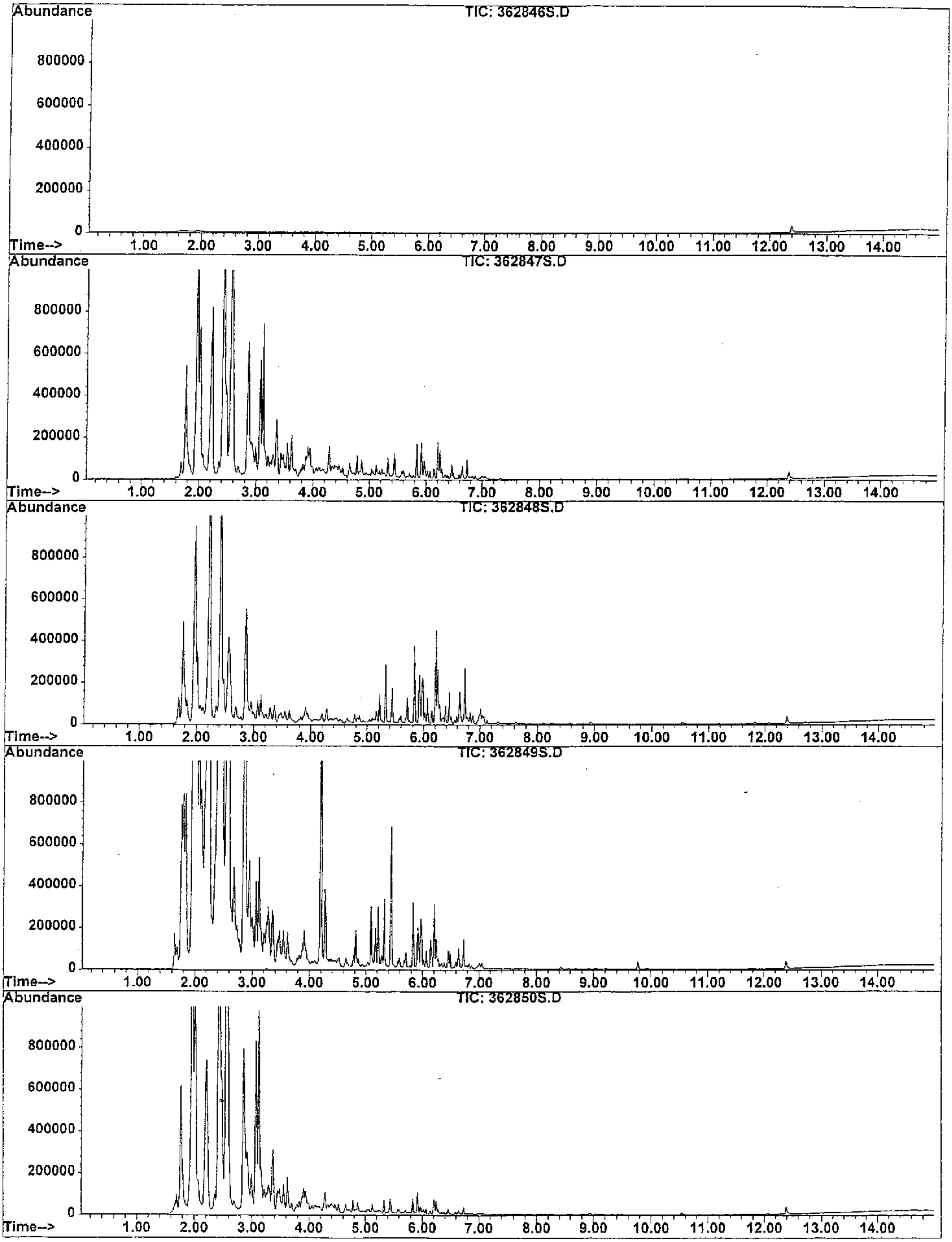

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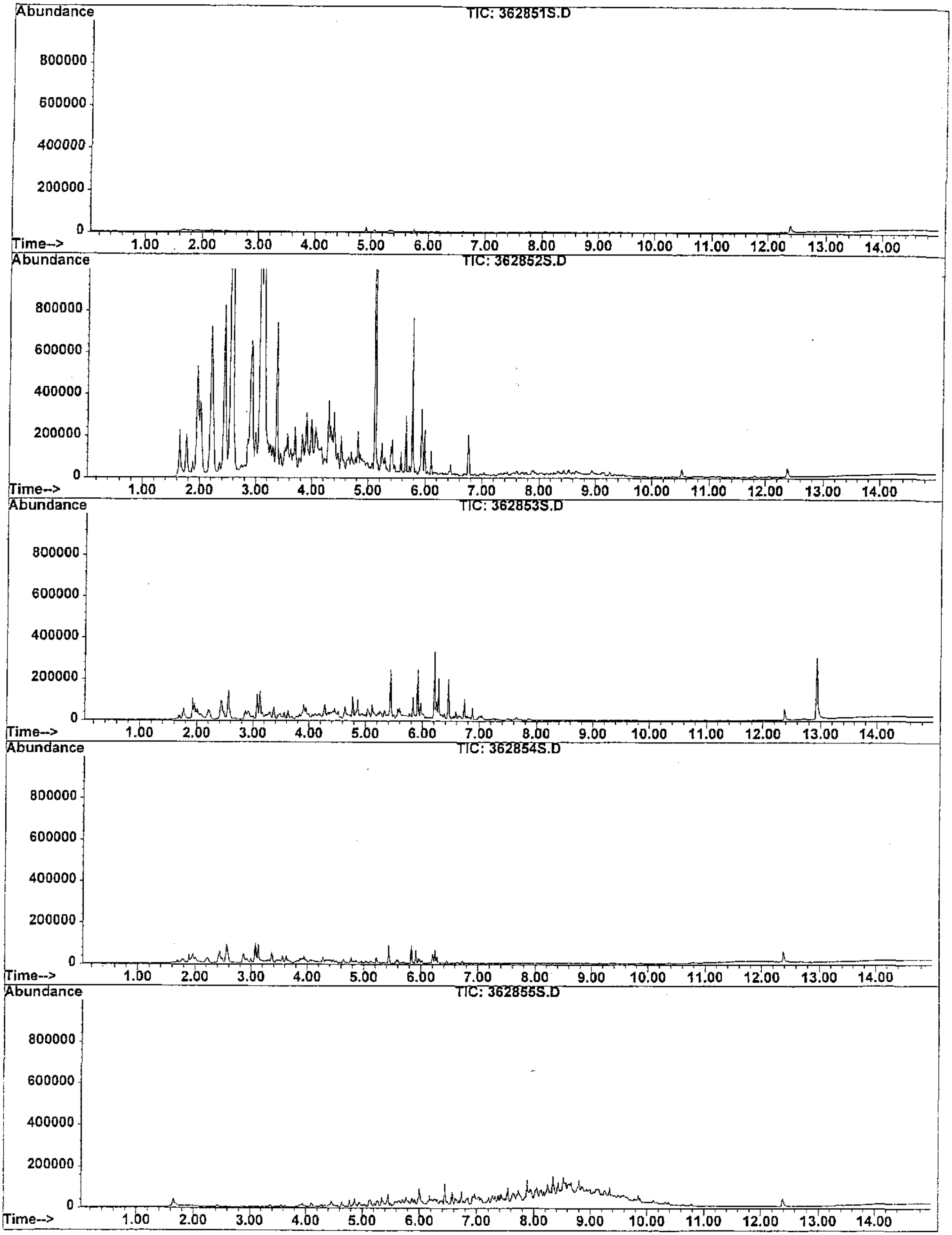

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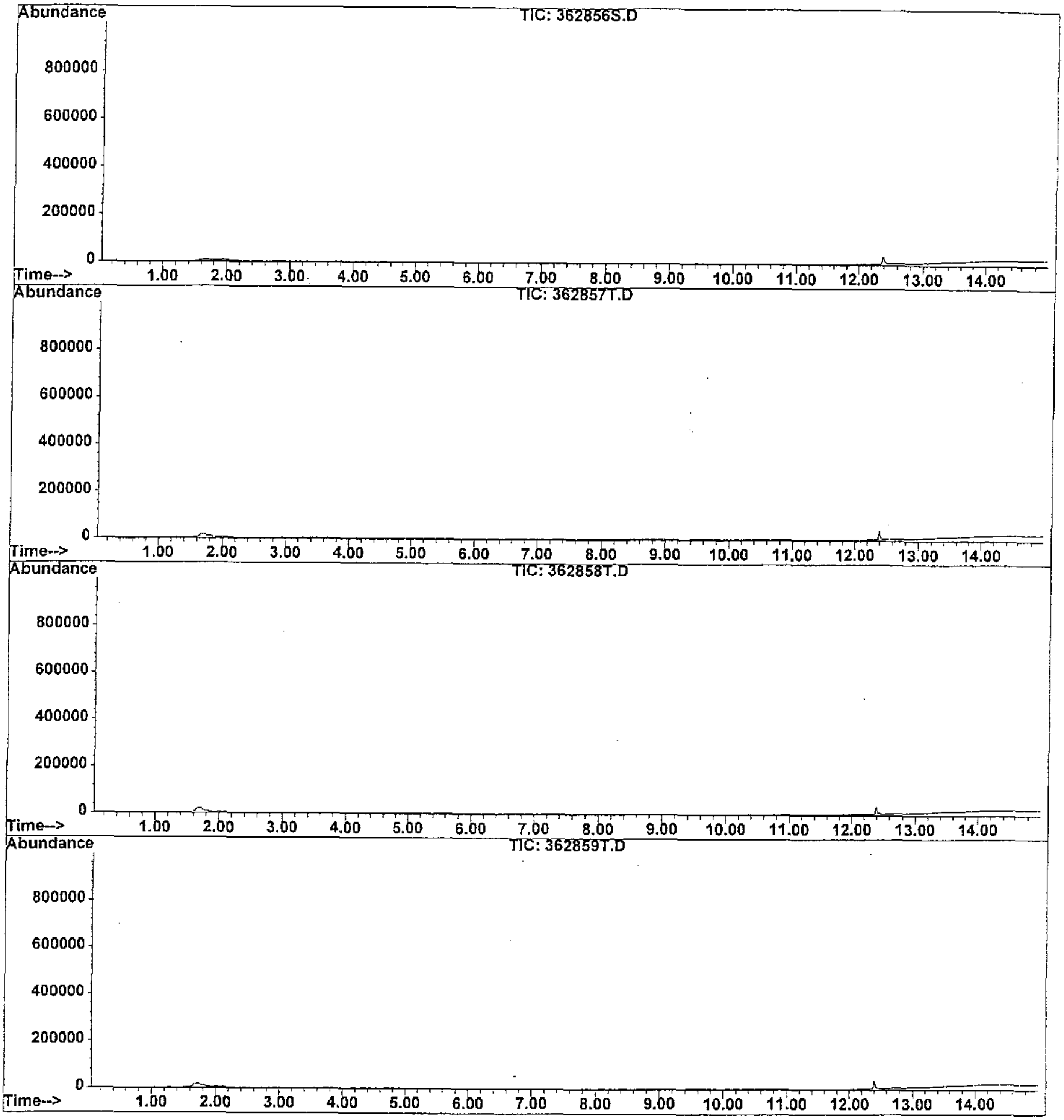

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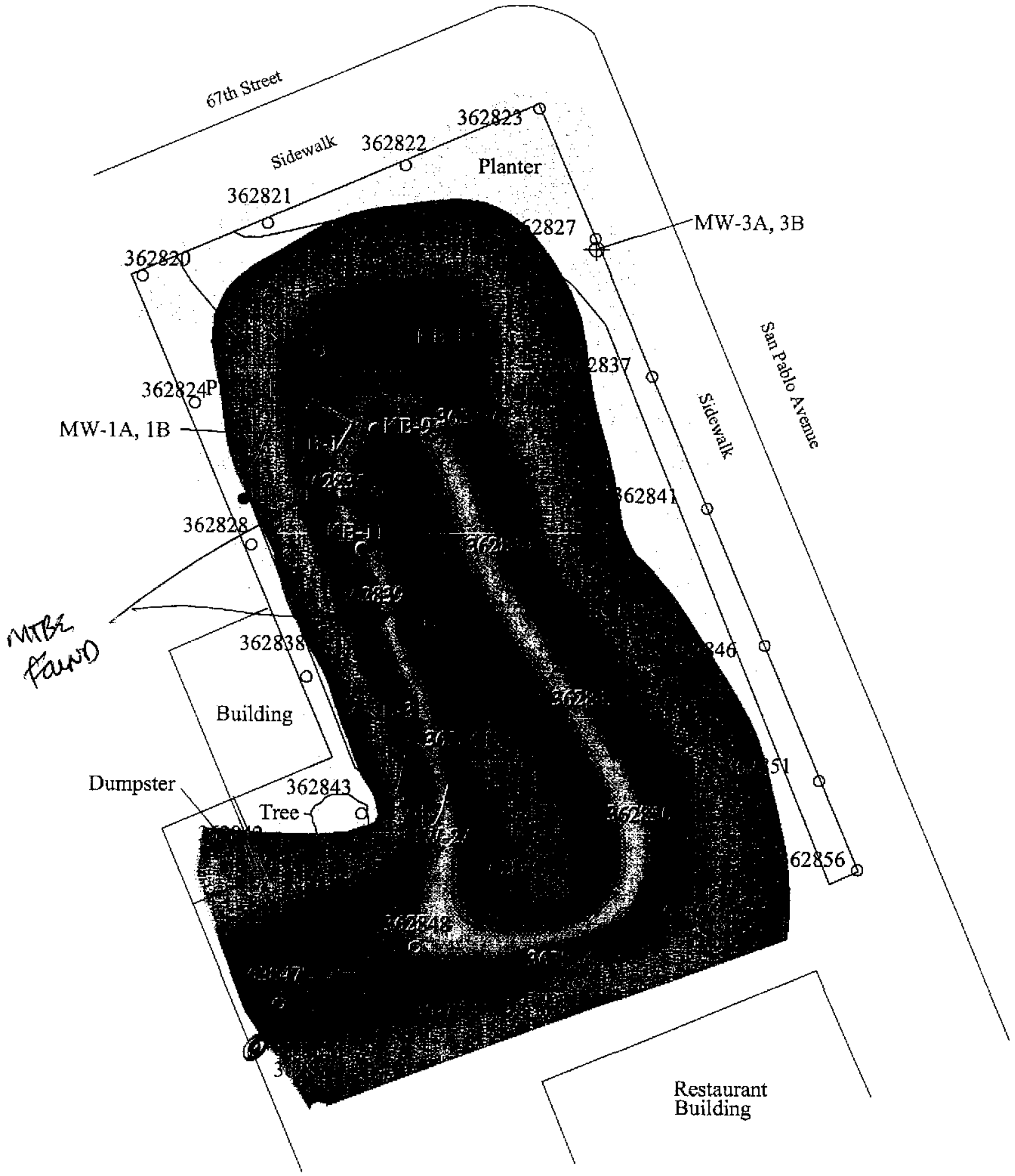
Figure A-1



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1.070
0.684
0.438
0.280
0.179
0.115
0.073
0.047
0.030

Benzene
[µg]

Scale 1:360
25 0 25 50
feet

GORE-SORBER® Screening Survey

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Creative Technologies Worldwide

W.L. GORE & ASSOCIATES, INC.
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Baseline Environmental Service, Petaluma, CA
6623 San Pablo Ave., Oakland, CA
Benzene

DATE DRAWN: 25 JULY 2001	DRAWN BY: JW	ORIG. CAD: Fig-3 PSLwks.DWG	SITE CODE: BVN
REV. DATE:	REV. #:	PROJECT NUMBER: 10732467	

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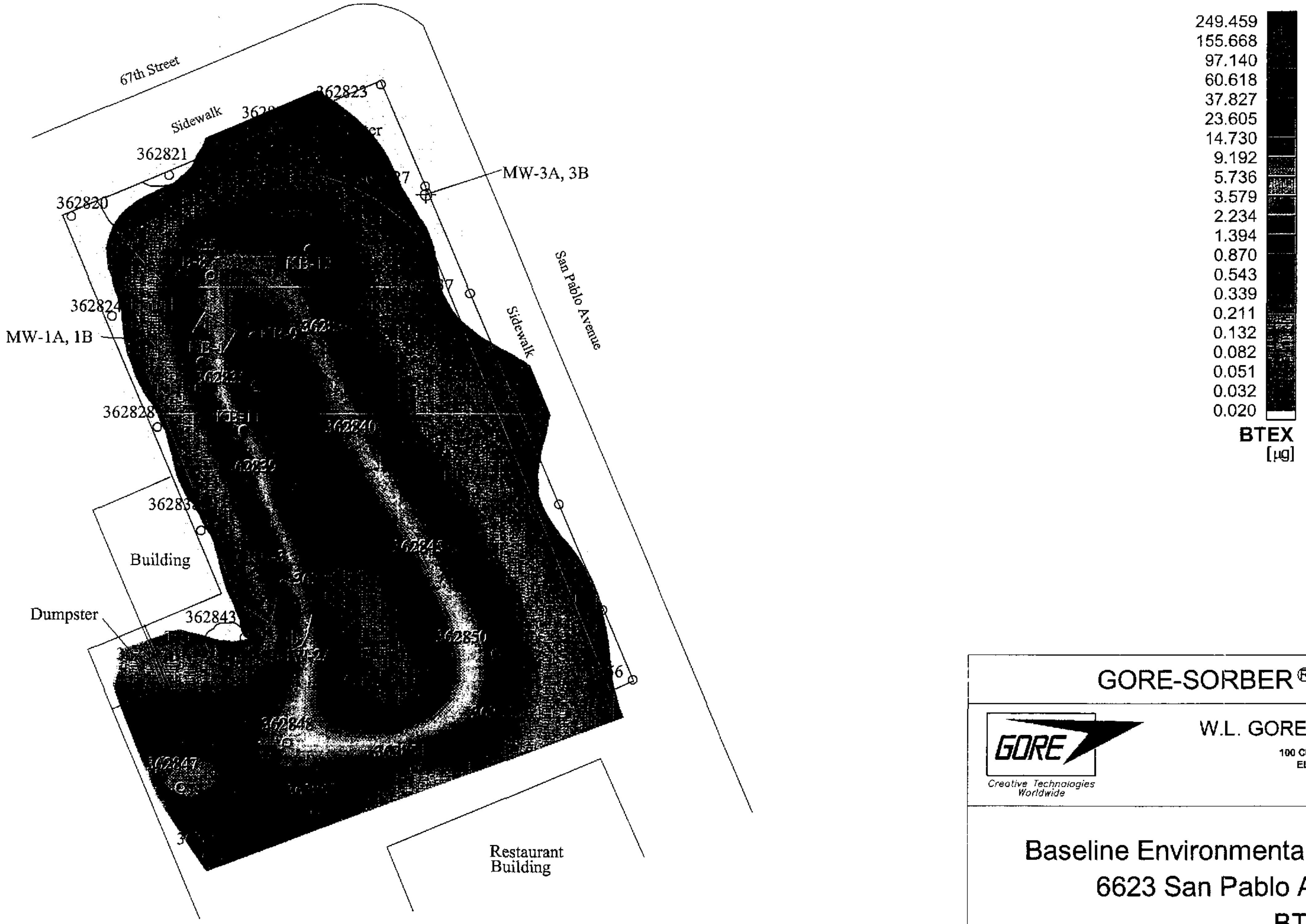
Figure A-2



Scale 1:360

25 0 25 50

feet

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6623 San Pablo Ave., Oakland, CA
BTEX

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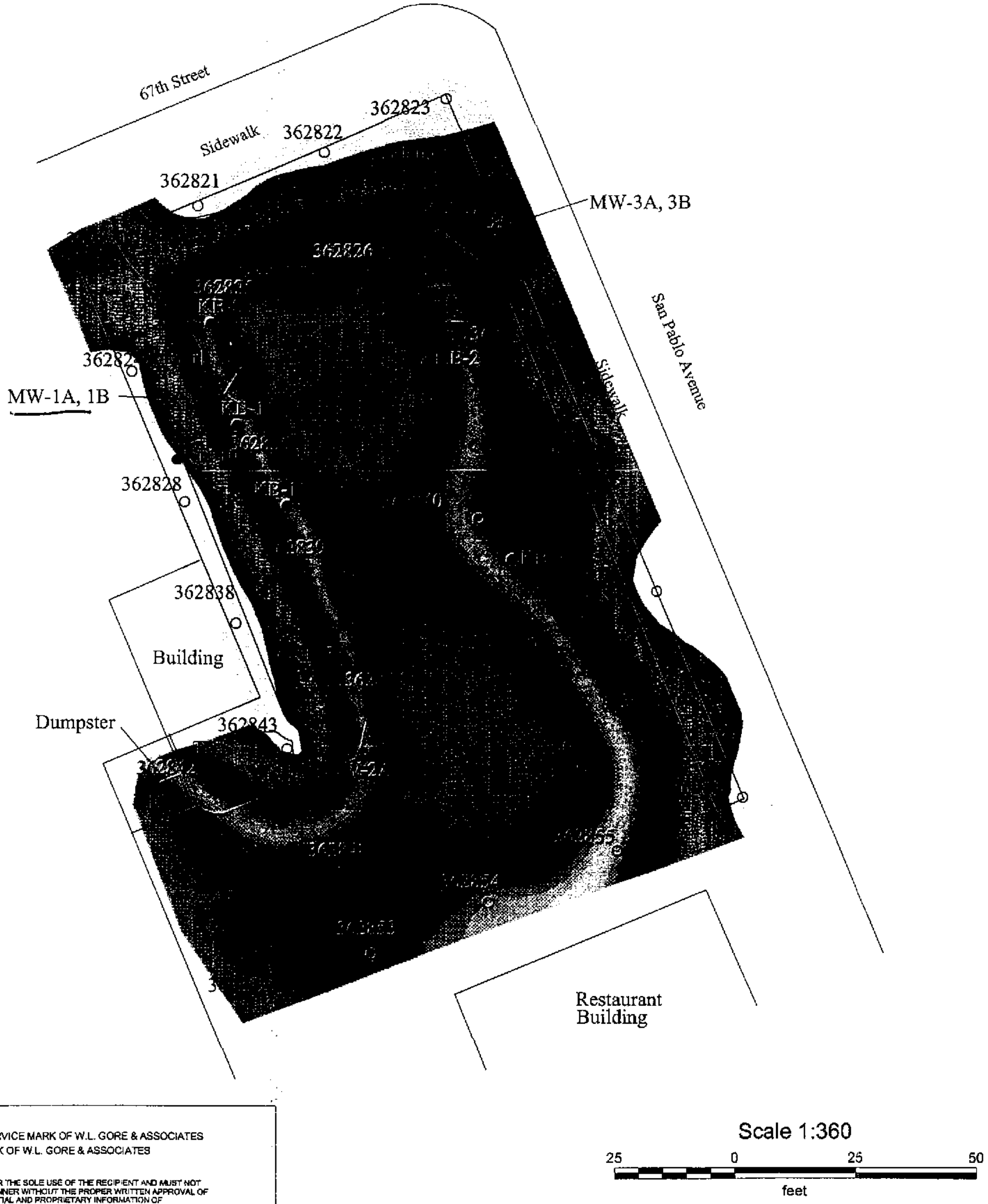
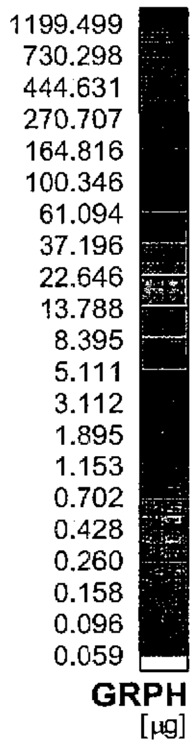
Figure A-3





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Baseline Environmental Service, Petaluma, CA
6623 San Pablo Ave., Oakland, CA
Gasoline-Range Petroleum Hydrocarbons

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REV. DATE:	REV. #:	PROJECT NUMBER: 10732467	

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