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ICF KAISER ENGINEERS

October 13, 1993

ICF KAISER ENGINEERS, INC.
10 UNIVERSAL CITY PLAZA, SUITE 2400
UNIVERSAL CITY, CA 91608-1097
818/509-3100

Mr. Greg Gilroy, District Manager
The RREEF Funds
1630 South Sunkist Street, Suite A
Anaheim, California 92806

Subject: **SUMMARY OF FINDINGS FOR THE SOIL GAS SURVEY CONDUCTED AT 17475 GALE AVENUE, CITY OF INDUSTRY, CALIFORNIA**

Dear Kim:

ICF Kaiser Engineers is pleased to submit to you the attached Summary of Findings report pertaining to the soil gas survey conducted at the former Graham Printing & Lithograph facility.

This investigation was conducted in accordance with ICF KE's revised work plan dated September 1, 1993, which complies with the requirements for soil gas investigations established by the California Regional Water Quality Control Board. Our Summary of Findings is presented in Attachment 1 and the report of the soil gas subcontractor, Optimal Technology, is included as Attachment 2.

We will forward three copies of this summary of findings, together with copies of our revised work plan and of the ATEC draft report dated April 15, 1993, to the RWQCB. A copy of these documents will also be sent to the Los Angeles County Fire Department. Per your request, the ATEC report has been stamped "CONFIDENTIAL."

If you have any questions concerning this report or require additional information, please contact me at (818) 509-3106 or Tom Watson at (818) 509-3145.

Sincerely,

ICF Kaiser Engineers
Alejandro Fernández
Alejandro Fernández
Senior Environmental Engineer

Attachments 1 & 2

cc: Kim Richards - Latham & Watkins
Samuel Yu - RWQCB
Shahin Nourishad, L.A. County Fire Dept. - Health Hazardous Materials Div.
Angelo Bellomo - ICF KE
Tom Watson - ICF KE

1720-FINAL.RPT/10.13.93
41428-002-00

ATTACHMENT 1

SUMMARY OF FINDINGS
SOIL GAS SURVEY
FORMER GRAHAM PRINTING & LITHOGRAPH FACILITY
17475 GALE AVENUE, CITY OF INDUSTRY, CALIFORNIA

October 13, 1993

ATTACHMENT 1

SUMMARY OF FINDINGS
SOIL GAS SURVEY
FORMER GRAHAM PRINTING & LITHOGRAPH FACILITY
17475 GALE AVENUE, CITY OF INDUSTRY, CALIFORNIA

October 13, 1993

OBJECTIVES

ICF Kaiser Engineers, Inc. (ICF KE) has been retained by Latham & Watkins to conduct a site investigation for The RREEF Funds (RREEF) to evaluate the potential presence of contamination at the former Graham Printing & Lithograph facility located at 17475 Gale Avenue in the City of Industry, California. The property is owned by RREEF. The project initially involved a soil gas survey that was conducted in accordance with the Soil Gas Survey Work Plan and Historical Chemical Use Audit and Assessment Plan (ICF KE, September 1, 1993). The work plan was developed in accordance with the guidelines established by the Los Angeles Region of the California Regional Water Quality Control Board (RWQCB) for soil gas investigations and incorporates comments from the RWQCB on an earlier version of the work plan. The findings from the Historical Chemical Use Audit and Assessment will be presented under separate cover.

The focus of this soil gas survey was assessing the presence of volatile organic compounds (VOCs) and ketones in soil gas. Previous investigations conducted by other consultants at the site revealed the presence of a halogenated VOC (1,1,1-trichloroethane) and ketones (i.e., acetone, methyl ethyl ketone (MEK), and 4-methyl-2-pentanone (MIBK)) in soil samples at low concentrations. The objectives of this investigation were the following: 1) assess the presence of VOCs and ketones in soil gas at the site; 2) delineate potential source area(s) for soil gas contaminants detected; and 3) recommend an appropriate course of action for further investigation or soil remediation, if necessary.

METHODOLOGY

The soil gas survey was conducted on September 7, 8, and 9, 1993 by Optimal Technology, Inc. under the direction and supervision of ICF KE.

Proposed soil gas sampling locations were marked and standard utility clearance procedures were utilized. All sampling locations are shown on Figure 1. A magnetometer was utilized to try to locate piping under the building concrete slab pursuant to the request of the RWQCB. The results of this magnetometer survey were not conclusive, probably as a result of the close spacing between the steel reinforcement bars in the slab. Scoring in the floor slab and other indicators were used to approximately locate utility piping. The sampling locations identified inside the building were placed in close proximity to visible staining and also near site features of concern such as floor drains and sinks, as well as along utility trenches within

the building. In particular, sampling location SG-21 was placed along a utility trench that was detected based on the scoring of the concrete surface. Outdoor sampling locations were placed near the former drum storage area and the compressor pad. Supplemental sampling locations, including three near the storm drains outside the building, were chosen pursuant to the protocol and requirements of the RWQCB and subsequent direction by on-site RWQCB personnel.

A full report from the soil gas subcontractor is presented in Attachment 2. This report contains a detailed description of the method of soil gas sample collection. All the soil gas samples were analyzed for the VOCs included in the EPA Method 8010/8020 compound list, as well as for the ketones that, according to previous investigations, had been detected in the soil at the site (i.e., acetone, MEK, and MIBK). The soil samples were analyzed on-site in a mobile lab using a laboratory grade Hewlett Packard Model 5890 Series II gas chromatograph equipped with an electron capture detector and a photo-ionization detector. All chemical analysis and reporting of results was conducted in accordance with the protocol and requirements of the RWQCB. A RWQCB representative who visited the site during the soil gas investigation and conducted an interview with the soil gas contractor indicated that the quality assurance and quality control (QA/QC) procedures used were satisfactory.

FINDINGS

A total of 45 soil gas samples (excluding duplicates) were collected from various depths at 34 soil gas sampling locations. Soil conditions encountered during the investigation ranged from a very low permeability clay in areas outside the building to a high permeability fill material in the sampling locations inside the building. Soil gas flow conditions were lowest, although sufficient for sample collection, in the outdoor clay materials and highest in the fill material beneath the floor of the building. The presence of the clay layer appeared to be continuous throughout the back yard in the north portion of the site.

The results of the chromatographic analysis of the soil gas samples is tabulated in Attachment 2. All QA/QC and required RWQCB documentation is also included in Attachment 2. Results of the soil gas investigation indicate the presence of low concentrations of 1,1,1-trichloroethane (TCA) and 1,1-dichloroethene (DCE), tetrachloroethene (PCE), and trichloroethene (TCE) in soil gas samples. Ketones were not detected in any of the soil gas samples collected. TCA, DCE, PCE, and TCE were detected above their reporting limits in 27, 11, 7, and 3 samples, respectively. Sixteen of the 45 samples collected did not contain any of the target compounds above the reporting limits. The maximum concentrations detected outside the building were 198 µg/L for TCA, 95.8 µg/L for DCE, 2.5 µg/L for PCE, and 0.6 µg/L for TCE. The maximum concentrations detected inside the building were 164 µg/L for TCA, 1.1 µg/L for DCE, and 2.4 µg/L for PCE. TCE was not detected above the reporting limit in any of the samples collected inside the building.

Figures 2 and 3 depict estimated iso-concentration contours for TCA and DCE, respectively, at shallow depths. Figures 4 and 5 depict estimated iso-concentration contours for TCA and DCE, respectively, from deeper samples. The approximate contours representing the shallow depth are based on data obtained from soil gas samples collected at an approximate depth

of 5 feet below the floor of the building, which corresponds approximately to grade level outdoors. The approximate contours representing the deeper samples are based on data obtained from soil gas samples collected at an approximate depth of 12 feet below the floor of the building, which corresponds approximately to a depth of 7 feet outdoors, and at an approximate depth of 7 feet in the outdoor area sampling locations.

Two potential source areas are apparent from the results of the soil gas investigation, one located near sampling location SG-1, east of the former drum storage area, and the other located indoors around sampling location SG-15, near the northwestern corner of the middle printing pad inside the building. In both of these areas, TCA and DCE were detected at low concentrations (<200 µg/L). The soil gas concentrations detected for both compounds appear to decrease as sampling depth increases. Limitations of the sample collection apparatus prevented the collection of deeper samples at SG-15. Analytical results from samples collected outdoors near the compressor pad and storm drains, and indoors near the sinks, fume hood, and floor drains indicate that the target compounds were either detected at very low concentrations or they did not exceed the respective reporting limits.

CONCLUSIONS

The concentrations of TCA and DCE detected in soil gas samples collected near the waste storage area and the former printing equipment pads are at very low levels (<200 µg/L). The lateral extent of the soil gas contaminants in these areas appears highly localized and appears to indicate a low likelihood of the contaminants migrating off-site. The depth to groundwater beneath the site was reported at approximately 36 feet below grade during a previous investigation. The probability of the soil gas contaminants migrating to the groundwater is presumed to be very low because of the low levels of contamination and the apparent low permeability of the clayey soil beneath the site.

The existing groundwater monitoring well is located in the former drum storage area, adjacent to sampling point SG-4, as shown in Figure 1. A groundwater sample collected by Geo Audit in 1988, when this monitoring well was installed, did not contain any VOCs (detection limits <1 µg/L). In 1992, ATEC collected a groundwater sample from the onsite monitoring well and detected the presence of TCA and DCE at concentrations of 6 µg/L and 21 µg/L, respectively, in that sample. ATEC reported that the groundwater level was 35 feet below the ground surface during this most recent sampling event.

Ketones were not detected in any of the soil gas samples collected during this investigation. Data obtained during previous investigations may possibly have been subject to the effects of laboratory contamination of analytical equipment or possibly cross contamination during analysis with samples collected from another investigation at a separate, unrelated site. Acetone, MEK, and MIBK are commonly used in surrogate recovery tests during laboratory QA/QC procedures.

Based on the results of this soil gas investigation, the soil gas contaminants present at the site at low level concentrations do not appear to warrant remedial efforts.

RECOMMENDATIONS

For the purposes of documenting baseline conditions at the site, ICF KE recommends that a focused supplemental soil investigation be conducted at the site. The objectives of the supplemental investigation would include: 1) determine the presence of any soil contaminants in the two areas identified in the soil gas survey, 2) investigate the vertical extent of potential contamination in the vicinity of sampling location SG-15, 3) verify the presence of low permeability clays that could potentially act as barriers to contaminant migration by conducting a cone penetrometer survey (CPT), and 4) collect a groundwater sample from the existing monitoring well to verify the results from the most recent sampling event.

DISCLAIMER

While ICF KE has exercised reasonable care in the performance of its services to avoid reliance upon data that is inaccurate, ICF KE is not able to verify the accuracy or completeness of all data and information available to us during our assessment of the subject property, located at 17475 Gale Avenue, City of Industry, California. This evaluation represents a good faith effort using generally accepted professional industry standards regarding soil gas investigations. The conclusions and recommendations presented herein are based on information reasonably available to ICF KE within the context of the Scope of the Services performed by ICF KE. Some of the conclusions set forth herein could be different if the information upon which ICF KE has based its evaluation is subsequently determined to be false, inaccurate, or incomplete. Further, ICF KE reserves the right to modify, in writing, its findings, conclusions and recommendations should additional information become available. ICF KE makes no legal representations whatsoever concerning any matter, including, but not limited to, ownership of any property or the interpretation of any law.

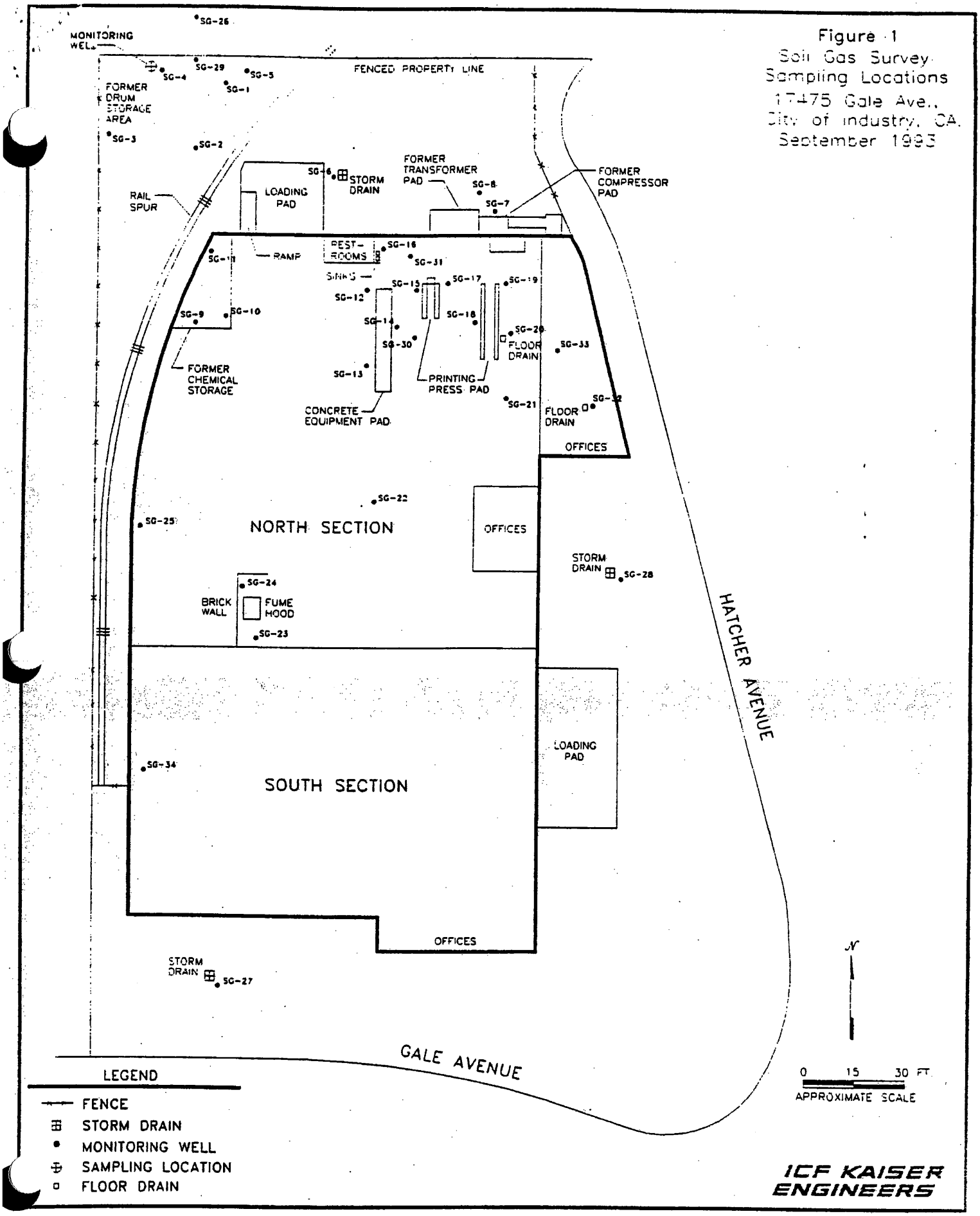


Figure 1
Soil Gas Survey
Sampling Locations
17475 Gale Ave.,
City of Industry, CA.
September 1993
MONITORING WELL
SG-26
SG-29
SG-4
SG-5
SG-1
FENCED PROPERTY LINE
FORMER DRUM STORAGE AREA
SG-3
SG-2
RAIL SPUR
LOADING PAD
SG-6
STORM DRAIN
FORMER TRANSFORMER PAD
SG-8
SG-7
FORMER COMPRESSOR PAD
SG-11
RAMP
REST-ROOMS
SG-16
SG-31
SINKS
SG-15
SG-17
SG-19
SG-12
SG-9
SG-10
SG-14
SG-18
SG-20
SG-30
FLOOR DRAIN
SG-33
FORMER CHEMICAL STORAGE
SG-13
PRINTING PRESS PAD
SG-21
SG-32
CONCRETE EQUIPMENT PAD
FLOOR DRAIN
OFFICES
SG-22
SG-25
NORTH SECTION
OFFICES
STORM DRAIN
SG-28
SG-24
BRICK WALL
FUME HOOD
SG-23
HATCHER AVENUE
LOADING PAD
SG-34
SOUTH SECTION
OFFICES
STORM DRAIN
SG-27
N
GALE AVENUE
0 15 30 FT.
APPROXIMATE SCALE
LEGEND
FENCE
STORM DRAIN
MONITORING WELL
SAMPLING LOCATION
FLOOR DRAIN
ICF KAISER ENGINEERS

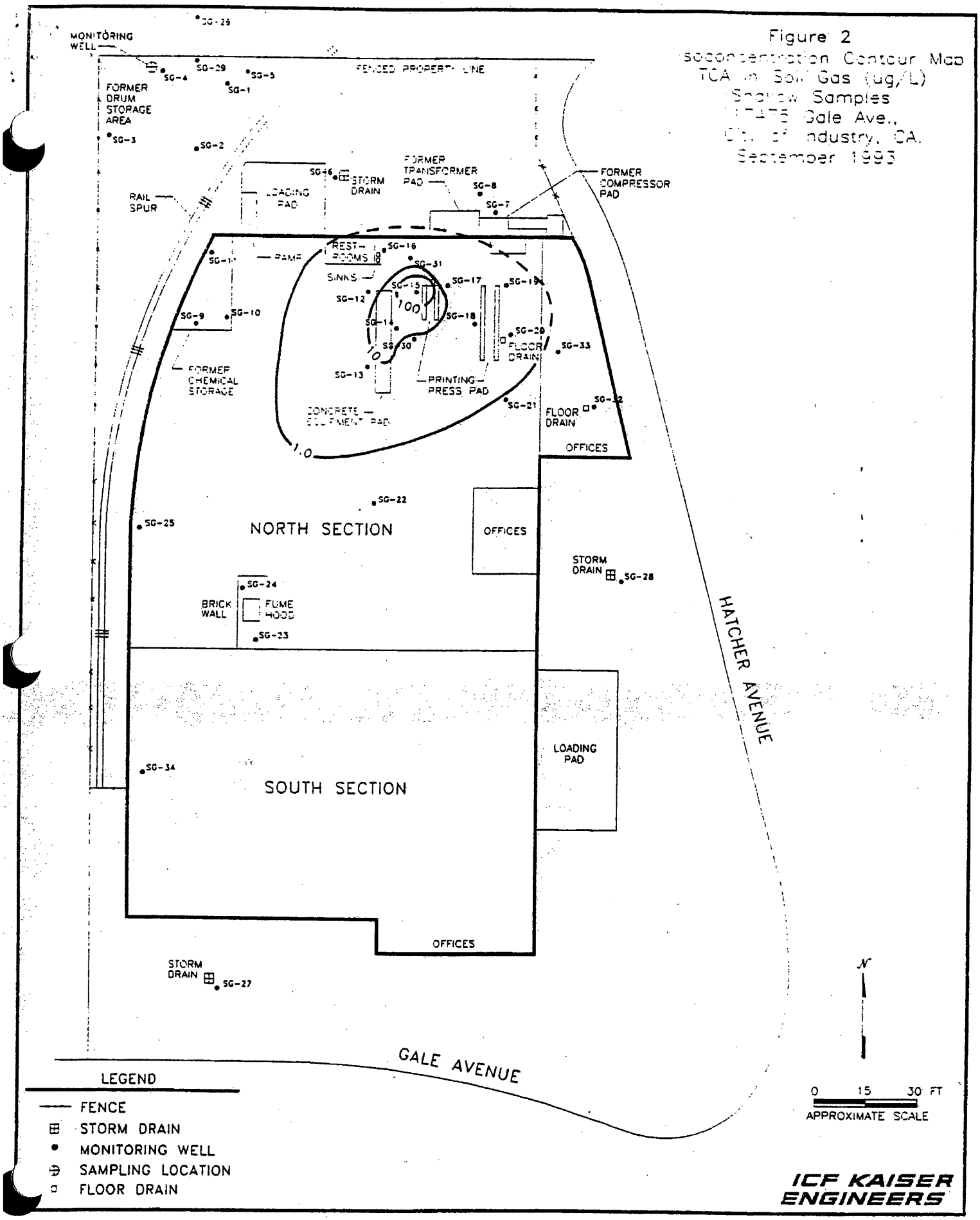
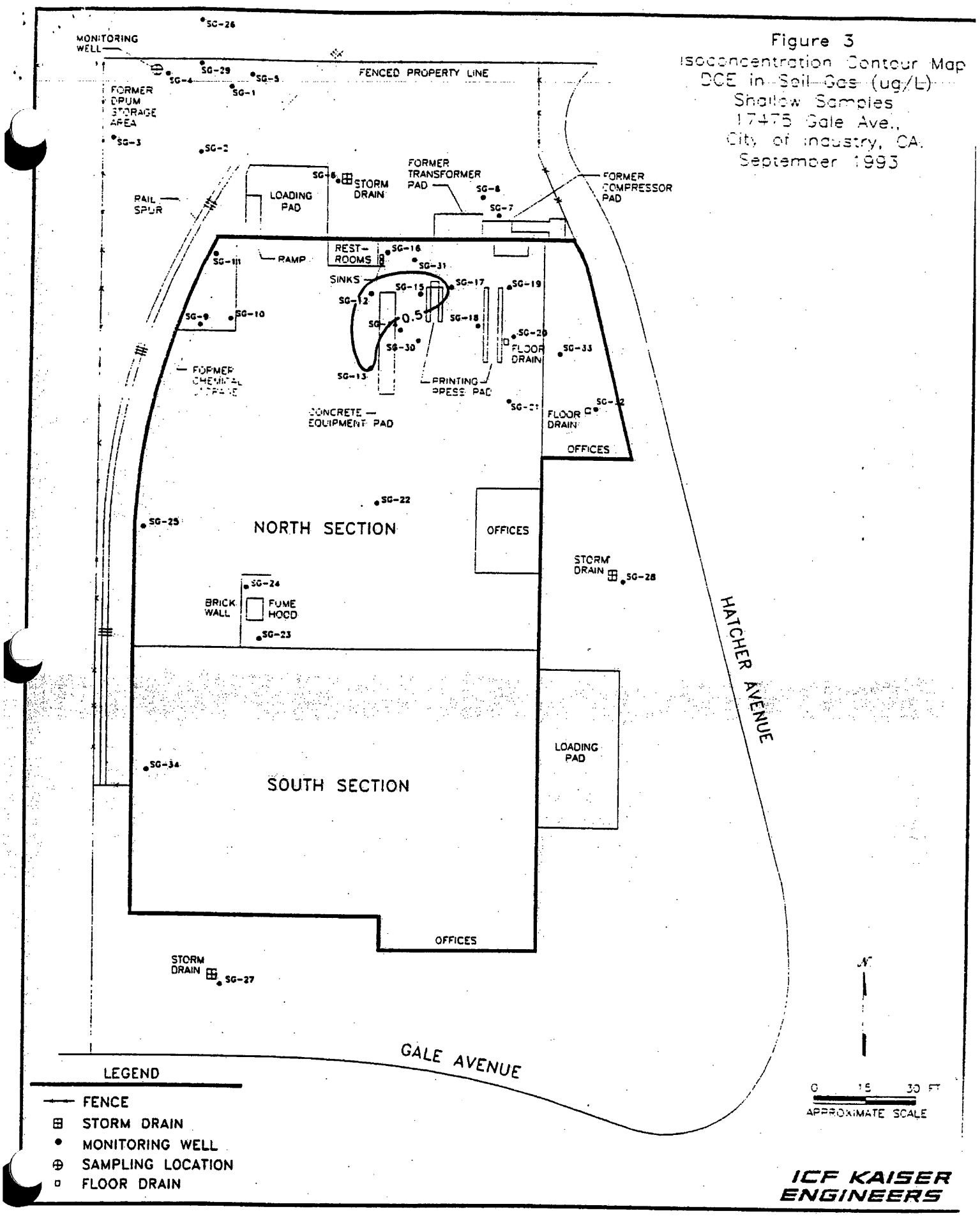


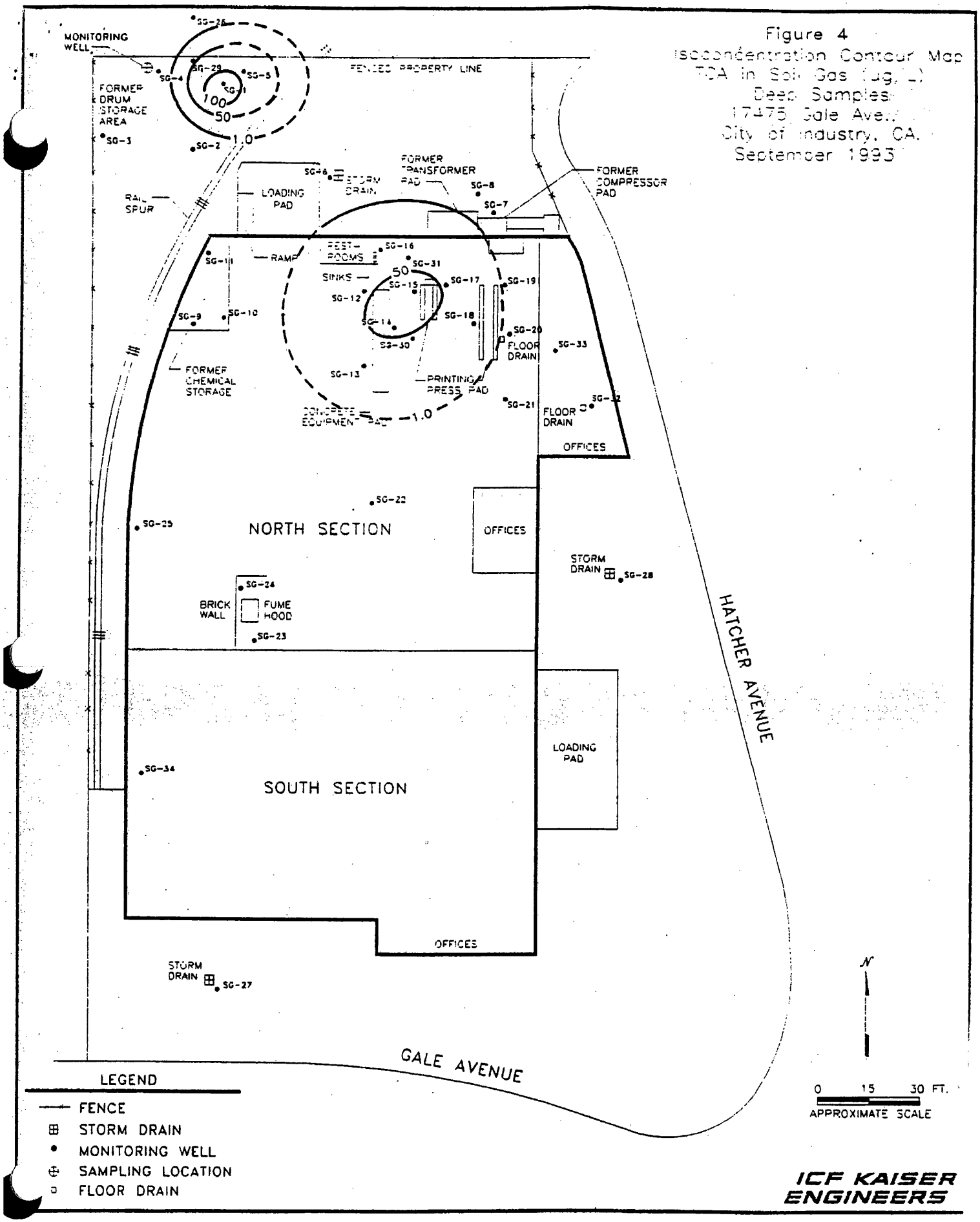
Figure 2
Isoconcentration Contour Map
TCA in Soil Gas (ug/L)
Shallow Samples
17475 Gale Ave.,
City of Industry, CA.
September 1993
MONITORING WELL
FENCED PROPERTY LINE
FORMER DRUM STORAGE AREA
RAIL SPUR
LOADING PAD
STORM DRAIN
FORMER TRANSFORMER PAD
FORMER COMPRESSOR PAD
RAMP
REST ROOMS
SINKS
FLOOR DRAIN
FORMER CHEMICAL STORAGE
PRINTING PRESS PAD
CONCRETE EQUIPMENT PAD
OFFICES
NORTH SECTION
BRICK WALL
FUME HOOD
SOUTH SECTION
HATCHER AVENUE
GALE AVENUE
100
10
1.0
LEGEND
FENCE
STORM DRAIN
MONITORING WELL
SAMPLING LOCATION
FLOOR DRAIN
0 15 30 FT
APPROXIMATE SCALE
ICF KAISER ENGINEERS

Figure 3
Isoconcentration Contour Map
DCE in Soil Gas (ug/L)
Shallow Samples
17475 Gale Ave.,
City of Industry, CA.
September 1993



ICF KAISER ENGINEERS

Figure 4
Isoconcentration Contour Map
TCA in Soil Gas (ug/L)
Deep Samples
17475 Gale Ave.,
City of Industry, CA.
September 1993



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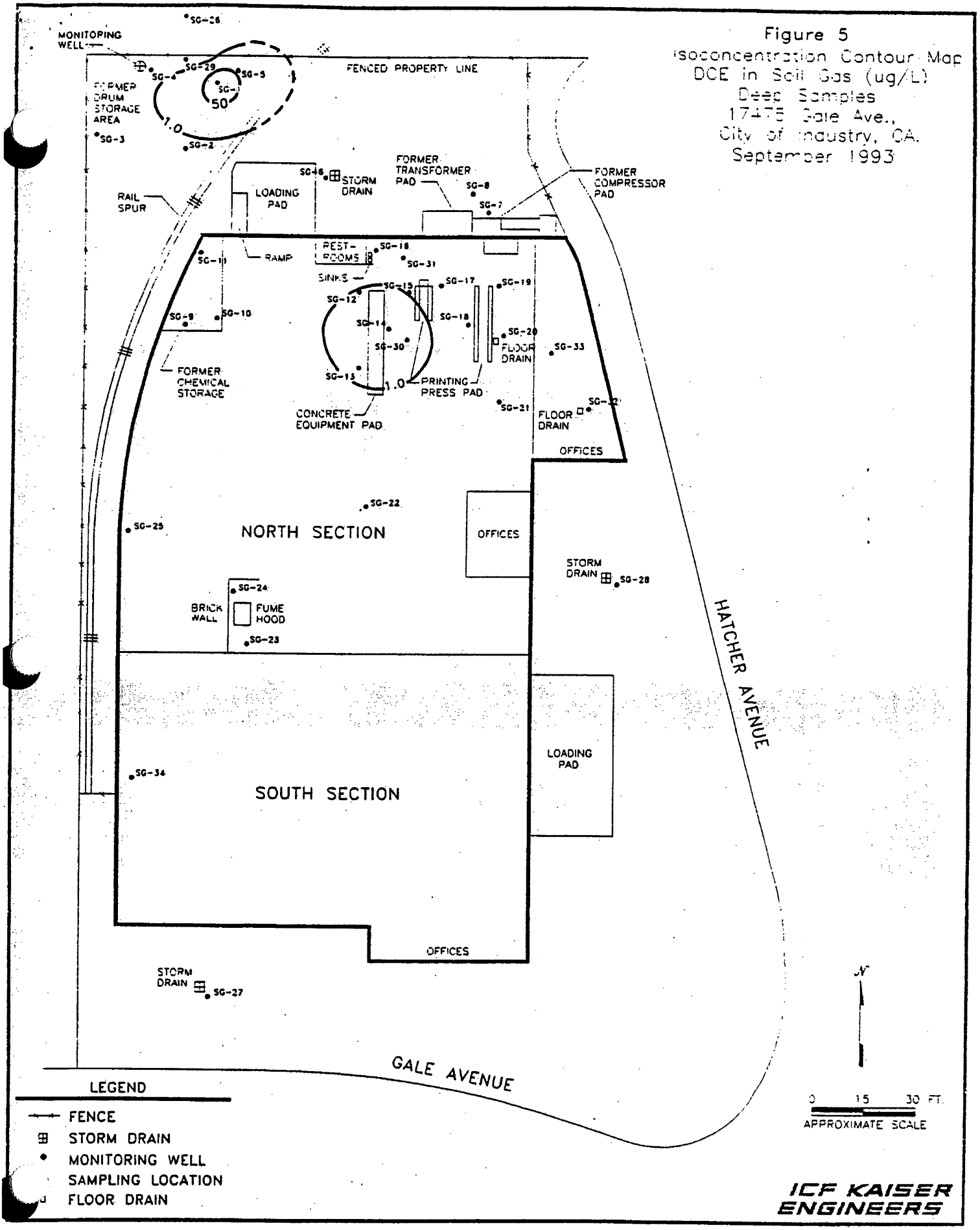


Figure 5
Isoconcentration Contour Map
DCE in Soil Gas (ug/L)
Deep Samples
17475 Gale Ave.,
City of Industry, CA.
September 1993
MONITORING WELL
FENCED PROPERTY LINE
FORMER DRUM STORAGE AREA
50
1.0
RAIL SPUR
LOADING PAD
STORM DRAIN
FORMER TRANSFORMER PAD
FORMER COMPRESSOR PAD
RAMP
REST-ROOMS
SINKS
FORMER CHEMICAL STORAGE
CONCRETE EQUIPMENT PAD
PRINTING PRESS PAD
FLOOR DRAIN
OFFICES
NORTH SECTION
BRICK WALL
FUME HOOD
SOUTH SECTION
HATCHER AVENUE
GALE AVENUE
N
0 15 30 FT.
APPROXIMATE SCALE
LEGEND
FENCE
STORM DRAIN
MONITORING WELL
SAMPLING LOCATION
FLOOR DRAIN
ICF KAISER ENGINEERS

ATTACHMENT 2

SOIL VAPOR STUDY RESULTS
CITY OF INDUSTRY, CALIFORNIA

Prepared by

OPTIMAL TECHNOLOGY,INC.

1720-FINAL.RPT/10.13.93
41428-002-00

SOIL VAPOR STUDY RESULTS

City of Industry, California

Project #: OTI-090193

Submitted By:

Optimal Technology Inc.

Sept. 14, 1993

OPTIMAL TECHNOLOGY INC.

Sept. 14, 1993
OTI-090193

Mr. Alejandro Fernandez
ICF Kaiser Engineers
10 Universal City Plaza, Suite 2400
Universal City, CA 91608-1097

Dear Mr. Fernandez:

This letter presents the results of the soil vapor investigations conducted by Optimal Technology Inc. (OTI), for ICF Kaiser on September 6th, 7th and 8th, 1993. The study was performed at the former Graham Printing & Lithograph facility located at 17475 Gale Avenue, City of Industry, California.

OTI was contracted to perform a soil vapor survey at this site to screen for possible chlorinated solvents, aromatic hydrocarbons, ketones and acetone. The primary function of this soil vapor survey was to determine if soil vapor contamination is present in the subsurface soil, and if possible, determine the source(s).

Sampling Method

Sampling was performed by hydraulically pushing 1/2" galvanized steel soil gas probes to depths ranging between 4.5 and 20 feet bgs. Bentonite clay was placed at the probe surface interface to insure the sample was not influenced by ambient air. An electric rotary hammer drill was used to drill a 1.0 inch hole through the overlying concrete/asphalt to allow probe placement when required. The same electric hammer drill was used to push probes in areas of resistance during placement.

At each sampling location an electric vacuum pump (set to draw 2 liters/min of soil vapor at a maximum vacuum of 100" of water) was attached to the probe and purged prior to sample collection. A 3-point purge vs concentration study was performed at the first sampling location to determine the optimal purge volume at this site. Purge volumes tested were 1 probe volume, 2 probe volumes and 3 probe volumes. It was determined from this study that both 2 and 3 purge volumes gave equal concentrations. Subsequent samples were collected after 2 purge volumes. Samples were obtained in Hamilton gas-tight syringes by puncturing silicone tubing that connects the sampling probe and the vacuum pump. New silicone tubing was used at each sampling point to prevent cross contamination. Samples were immediately injected into the gas chromatograph after collection. New sampling probes were used after each sample with positive results and blanked prior to placement by collecting a sample through the entire sampling system (using ambient air). If contamination was detected in these blanks, corrective actions were taken to identify and eliminate the source, if possible.

All analyses were performed on a laboratory grade Hewlett Packard model 5890 Series II gas chromatograph equipped with a Photo Ionization Detector (PID) and an Electron Capture Detector (ECD). Restec wide bore capillary columns using hydrogen as the carrier gases were used to perform all analysis. All results were collected on a 80386 based personal computer utilizing Hewlett Packard's PC based chromatographic data collection and handling system.

Quality Assurance

Calibrations

An initial calibrated was performed at the beginning of the first work day (Sept. 7th) by preparing a calibration solution from a pre-mixed standard supplied by Supelco, Inc. The standard contained 16 common halogenated solvents and BTEX (see Table 1). In addition to this standard, 4 additional compounds were calibrated for on the first day and included: chloroform, MEK, MIBK and acetone. The individual compound concentrations in the standards ranged between 0.025 ng/ul and 0.25 ng/ul.

The initial three point calibration consisted of 20, 50 and 100 ul injections of the calibration solutions. An average response factor (RF) was calculated for each analyte and used to determine concentrations. In addition, the percent relative standard deviation (%RSD) between the three calibration levels was determined to assure the instrument was operating properly. The %RSD must be less than 15% or an additional calibration is performed. An additional 3-point calibration was performed on the ECD detector on the second day (Sept. 8th) due to adjustments made to the equipment that morning. Subsequent compounds quantified with this detector used this new 3-point calibration.

A 1-point calibration check was run on subsequent days and must agree within 15% of the most recent 3-point calibration or an additional 3-point calibration is performed. Method detection limits were calculated to be between 0.1 ug/L and 1.0 ug/L for the solvents and 1.0 ug/L for BTEX, MEK, MIBK and acetone. Actual detection limits ranged between 0.2 and 2.0 ug/L due to the dilution's required on some samples (detection limits on each sample are listed on the results sheets).

TABLE 1

Dichlorofluoromethane	Carbon Tetrachloride	Benzene
Trichlorofluoromethane	1,2-Dichloroethane	Toluene
1,1-Dichloroethene	Trichloroethene	Ethylbenzene
Methylene Chloride	1,1,2-Trichloroethane	Xylenes
trans-1,2-Dichloroethene	Tetrachloroethene	Chlorobenzene
1,1-Dichloroethane	Dibromochloromethane	Vinyl Chloride
cis-1,2-Dichloroethene	1,1,1,2-Tetrachloroethane	Acetone
1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	MIBK & MEK
Chloroform		

Continuing Calibrations

A 1-point continuing calibration was run after each 10 samples analyzed and compared to the most recent 3-point calibration. This assured that the instrument response was consistent throughout the day. These continuing calibrations must agree within 15% of the most recent 3-point calibration or an additional 3-point calibration would be performed and the new calibration factor used for subsequent samples.

Laboratory Check Sample

An independent laboratory check sample containing 11 compounds from the initial calibration was run twice per day (first and last samples). The sample was prepared from neat solutions independent of the standard used in the calibration or calibration check. This assured that the standard used during the initial calibration had not degraded. These laboratory check samples must agree within 20% of the true concentration injected. The following compounds were used in the check sample in the same concentrations used in the initial calibration solution: Acetone, 1,1-Dichloroethene, Methylene Chloride, MEK, Benzene, Chloroform, 1,1,1-Trichloroethane, Trichloroethene, MIBK, Tetrachloroethene, and 1,1,2,2-Tetrachloroethane.

Sample Replicates

A replicate analyses (duplicate) was run a minimum of once every 10 samples collected to evaluate the reproducibility of both the sampling system and the instrument. If the difference between samples collected varied more than 20%, the entire system was evaluated and the cause of the inconsistency was determined and corrected, if possible.

Equipment Blanks

Blanks were run on each new probe prior to installation. New probes were used following each sample with results above the reported detection limit or when probes were damaged during installation. The blanks were collected by hooking up the entire sampling system above ground and collecting an ambient air sample. These blanks checked the probes, fittings, septum, syringe, GC column, GC detector and the ambient air. If contamination was found to exist, the procedure was repeated until the source was determined and corrected, if possible. Blank results are given along with the sample results.

Subsurface Conditions

Subsurface soil conditions at this site varied both horizontally and vertically. Conditions ranged from a very low permeability clay to a high permeability fill material. Vapor sampling flows varied between <0.5 and 2.0 L/min. with sample vacuum ranging between 0 and 95" of water. Vacuum readings are given for each sample on the results sheets included. Depth to first groundwater was not known at the time of this study.

Scope of Work

To achieve the objective of this investigation a total of 45 soil vapor samples were collected and analyzed from 34 locations at the site. Of the 45 samples collected, 34 were collected between 4 and 7 feet bgs, 9 between 10 and 15 feet bgs and 2 between 16 and 20 feet bgs. Sampling locations and depths were determined by an ICF Kaiser representative present at the site. Multi-level samples were collected at locations SG-1, SG-4, SG-5, SG-13, SG-15, SG-24, SG-26, SG-27 and SG-28. The vapor samples were analyzed on-site using an Electron Capture Detector (ECD) and a Photo Ionization Detector (PID). With the exception of locations SG-27 and SG-28 which were located outside the building near storm drains, the approximate sampling locations at the site are presented on Figure 1.

Sample identification, sampling depths, vacuum pressures, purge volumes and injection amounts are presented on the results table enclosed.

Results

During this vapor investigation a total of 4 detectable halogenated compounds were identified at the site. These compounds were 1,1-Dichloroethene, 1,1,1-Trichloroethane, Trichloroethene and Tetrachloroethene with 1,1,1-Trichloroethane comprising greater than 75% of the vapor contamination present. 1,1,1-Trichloroethane concentrations ranged from <0.2 ug/L in 18 of the samples collected to a high of 197 ug/L in sample SG-1-7. Detectable levels of 1,1-Dichloroethene ranged from 0.5 ug/L to 93.6 ug/L. Only trace levels of Trichloroethene and Tetrachloroethene (<3.0 ug/L) were detected in a few samples at the site.

No aromatic hydrocarbons, ketones or acetone were detected during this investigation. A complete table of analytical results are presented with this letter.

Conclusions

Based on the analytical results of the soil vapor survey conducted at this site, slightly elevated levels of 1,1-Dichloroethene and 1,1,1-Trichloroethane are present at two locations within the study area These two locations (vicinity of SG-1 and vicinity of SG-15) appear to be very localized with minimal horizontal or vertical vapor migration. Multi-depth sampling within these areas show a decrease in concentration with depth indicating the likely source was at or near the surface. Concentration contour maps were not constructed due to the limited area influenced by the vapor contamination.

Disclaimer

All conclusions presented in this letter are based solely on the information collected by the soil vapor survey conducted by OTI. Soil vapor testing is only a subsurface screening tool and does not represent actual contaminant concentrations in either the soil and/or groundwater.

We enjoyed working with you on this project and look forward to future projects. If you have any questions please contact me at (805) 684-6226.

Sincerely
Optimal Technology Inc.

Timothy L. Theisen

Timothy L. Theisen
Project Manager

Site Name and Location: 17475 Gale Ave. - Industry, CA

Sampling Date: Sept. 7-9, 1993

Sample Collected By: Scott Mainardy

Sample Analyzed By: Tim Theisen

ple	Dpth ft	Pur V ml	Vacm in Hg	Inj ECD V ul	Inj PID V ul	Acetone Area	Acetone µg/L	1,1-Dichloroethene Area	1,1-Dichloroethene µg/L	1,1,1-TCA Area	1,1,1-TCA µg/L	MEK Area	MEK µg/L	Trichloroethene Area	Trichloroethene µg/L	Tetrachloroethene Area	Tetrachloroethene µg/L
)1-7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
)1-7A	7	500	0	500	500		<1.0	483145	84.7	19955708	189		<1.0		<0.2		<0.2
)1-7B	7	1000	0	500	500		<1.0	533783	93.6	20733102	197		<1.0		<0.2		<0.2
)1-7C	7	1500	0	500	500		<1.0	546308	95.8	20959630	199		<1.0		<0.2		<0.2
1-13	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
)1-13	13	2000	60	250	500		<1.0		<1.0		<0.4		<1.0		<0.4		<0.4
2-7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
2-7	7	1000	55	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
3-7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
3-7	7	1000	65	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
1-7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
4-7	7	1000	10	500	500		<1.0	3359	0.6	63422	0.6		<1.0		<0.2		<0.2
1-11	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
1-11	11	2000	20	500	500		<1.0	121004	21.2	927626	8.8		<1.0		<0.2		<0.2
-17	0	3000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
-17	17	3000	95	500	500		<1.0		<0.5		<0.2		<1.0	24252	0.4	311093	0.8
	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
7	7	1000	0	500	500		<1.0	140910	24.7	8262457	78.4		<1.0		<0.2		<0.2
2	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
2	12	2000	95	500	500		<1.0	8442	1.5	270334	2.6		<1.0	36283	0.6	963572	2.5
	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
	6.5	1000	90	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
	6	1000	20	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
le	6	1000	20	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2

EB = Equipment Blanks
SG = Soil Gas Samples

Site Name and Location: 17475 Gale Ave. - Industry, CA

Sample Collected By: Scott Mainardy

Sampling Date: Sept. 7-9, 1993

Sample Analyzed By: Tim Theisen

ple	Dpth	Pur	Vacm	Inj ECD	Inj PID	Acetone		1,1-Dichloroethene		1,1,1-TCA		MEK		Trichloroethene		Tetrachloroethene	
	ft	V ml	in Hg	V ul	V ul	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L
-08-7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
-08-7	7	1000	95	500	500		<1.0		<0.5	108407	1.0		<1.0	30490	0.5	655198	1.7
09-6	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
-09-6	5.5	1000	50	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
10-6	6	1000	90	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
11-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
11-5	5	1000	0	500	500		<1.0		<0.5	75736	0.5		<1.0		<0.2		<0.2
12-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
12-5	5	1000	30	500	500		<1.0	9472	0.8	809770	4.9		<1.0		<0.2		<0.2
13-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
13-5	5	1000	35	500	500		<1.0	5748	0.5	1511274	9.2		<1.0		<0.2		<0.2
13-12	12	2000	25	500	500		<1.0	12864	1.1	2479745	15.1		<1.0		<0.2		<0.2
14-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
14-5	5	1000	10	500	500		<1.0		<0.5	1940391	11.8		<1.0		<0.2		<0.2
15-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
15-5	5	1000	10	500	500		<1.0	7763	0.7	26972114	164		<1.0		<0.2	82805	0.2
6-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
6-5	5	1000	50	250	500		<1.0		<1.0	289966	3.5		<1.0		<0.4		<0.4
7-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
7-5	5	1000	25	250	500		<1.0		<1.0		<0.4		<1.0		<0.4		<0.4
8-5	5	1000	20	500	500		<1.0		<0.5	160344	1.0		<1.0		<0.2		<0.2
cate	5	1000	20	500	500		<1.0		<0.5	180880	1.1		<1.0		<0.2		<0.2
9-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
9-5	5	1000	0	500	500		<1.0		<0.5	589625	3.6		<1.0		<0.2		<0.2
5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2

EB = Equipment Blanks
SG = Soil Gas Samples

Site Name and Location: 17475 Gale Ave. - Industry, CA

Sample Collected By: Scott Mainardy

Sampling Date: Sept. 7-9, 1993

Sample Analyzed By: Tim Thelsen

	Dpth	Pur	Vacm	Inj ECD	Inj PID	Acetone		1,1-Dichloroethene		1,1,1-TCA		MEK		Trichloroethene		Tetrachloroethene	
	ft	V ml	in Hg	V ul	V ul	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L
5	5	1000	0	500	500		<1.0		<0.5	242487	1.5		<1.0		<0.2		<0.2
5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	5	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	5	1000	30	500	500		<1.0		<0.5	37786	0.2		<1.0		<0.2	1275412	2.4
5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	5	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	4.5	1000	55	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
12	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
12	12	2000	0	500	500		<1.0		<0.5	55529	0.3		<1.0		<0.2		<0.2
5	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5	5	1000	0	500	500		<1.0		<0.5	55036	0.3		<1.0		<0.2	222898	0.4
12	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
12	12	1000	0	200	500		<1.0	4660	1.0	5009105	76.2		<1.0		<0.5		<0.5
te	12	1000	0	200	500		<1.0	4965	1.0	5314481	80.9		<1.0		<0.5		<0.5
7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
7	7	1000	0	500	500		<1.0		<0.5	101201	0.6		<1.0		<0.2		<0.2
12	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
12	12	2000	70	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
7	7	1000	30	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
11	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
11	11	2000	50	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
7	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2

EB = Equipment Blanks
SG = Soil Gas Samples

Site Name and Location: 17475 Gale Ave. - Industry, CA

Sampling Date: Sept. 7-9, 1993

Sample Collected By: Scott Mainardy

Sample Analyzed By: Tim Theisen

le	Dpth	Pur	Vacm	Inj ECD	Inj PID	Acetone		1,1-Dichloroethene		1,1,1-TCA		MEK		Trichloroethene		Tetrachloroethene	
	ft	V ml	in Hg	V ul	V ul	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L	Area	µg/L
8-7	7	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
8-12	0	2000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
8-12	12	2000	90	500	500		<1.0		<0.5	27107	0.2		<1.0		<0.2		<0.2
9-6	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
9-6	6.5	1000	0	250	500		<1.0		<1.0	116233	1.4		<1.0		<0.4		<0.4
5-20	0	3000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
5-20	20	3000	15	250	500		<1.0	5069	0.9	4573580	55.7		<1.0		<0.4		<0.4
6	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
6	6	1000	10	500	500		<1.0		<0.5	805662	4.9		<1.0		<0.2		<0.2
-5	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
1-5	5	1000	50	500	500		<1.0		<0.5	637268	3.9		<1.0		<0.2		<0.2
ate	5	1000	50	500	500		<1.0		<0.5	596854	3.6		<1.0		<0.2		<0.2
-6	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
1-6	6	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
-6	6	1000	80	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
-6	0	1000	0	500	500		<1.0		<0.5		<0.2		<1.0		<0.2		<0.2
-6	6	1000	0	500	500		<1.0		<0.5	406938	2.5		<1.0		<0.2	262998	0.5

EB = Equipment Blanks
SG = Soil Gas Samples

SOIL GAS INITIAL CAL ION STANDARD REPORT

Date: Sept. 7th, 1993 Analyst: T. Theisen Std Source: Supelco Machine ID: HP5890-2

COMPOUND	DET	1st CONC				2nd CONC				3rd CONC				RF AVE	SD	%RSD
		RT	MASS	AREA	RF	RT	MASS	AREA	RF	RT	MASS	AREA	RF			
cetone	PID	2.783	2.5	48756	19502	2.783	6.25	125968	20155	2.783	12.5	278436	22275	20644	1450	7.02%
EK	PID	3.966	2.5	67422	26969	3.966	6.25	170841	27335	3.966	12.5	347827	27826	27377	430	1.57%
IBK	PID	6.167	2.5	39888	15955	6.167	6.25	107999	17280	6.167	12.5	225478	18038	17091	1054	6.17%
romomethane																
arbon Tetrachloride	ECD	4.601	0.5	207112	414224	4.502	1.25	516827	413462	4.601	2.5	1263261	505304	444330	52807	11.88%
loroethane																
loroform	ECD	3.927	0.5	68745	137490	3.927	1.25	156170	124936	3.927	2.5	324876	129950	130792	6319	4.83%
loromethane	ECD	2.913	2.5	8256	3302	2.913	6.25	20191	3231	2.913	12.5	50563	4045	3626	451	12.79%
bromochloromethane	ECD	7.442	0.5	89256	178512	7.205	1.25	205932	164746	7.442	2.5	345078	138031	160430	20583	12.83%
bromomethane																
chloromethane																
1-Dichloroethane	ECD	3.524	5	4825	965	3.524	12.5	10249	820	3.524	25	27609	1104	963	142	14.77%
2-Dichloroethane	ECD	4.827	2.5	11168	4467	4.622	6.25	30287	4846	4.827	12.5	71351	5708	5007	636	12.70%
1-Dichloroethene	ECD	2.380	2.5	26322	10529	2.38	6.25	73136	11702	2.38	12.5	149897	11992	11407	775	6.79%
-1,2-Dichloroethene	PID	4.138	2.5	37160	14864	4.138	6.25	85664	13706	4.138	12.5	179117	14329	14300	579	4.05%
ns-1,2-Dichloroethene	PID	3.427	2.5	71400	28560	3.427	6.25	163167	26107	3.427	12.5	322160	25773	26813	1522	5.68%
2-Dichloropropane																
-1,3-Dichloropropene																
ns-1,3-Dichloropropene																
1,1,2-Tetrachloroethane	ECD	8.162	2.5	684527	273811	8.162	6.25	2014879	322381	8.162	12.5	3691524	295322	297171	24338	8.19%
1,2,2-Tetrachloroethane	ECD	9.493	2.5	111852	44741	9.493	6.25	314576	50332	9.493	12.5	664017	53121	49398	4268	8.64%
trachloroethane	ECD	7.214	0.5	368045	736090	7.214	1.25	969403	775522	7.214	2.5	2046675	818670	776761	41304	5.32%
,1-Trichloroethane	ECD	4.496	0.5	103976	207952	4.496	1.25	276029	220823	4.496	2.5	508345	203338	210704	9062	4.30%
,2-Trichloroethane	ECD	7.055	2.5	32728	13091	7.055	6.25	82791	13247	7.055	12.5	186210	14897	13745	1001	7.28%
chloroethene	ECD	5.427	0.5	60846	121692	5.427	1.25	157762	126210	5.427	2.5	335063	134025	127309	6240	4.90%
,3-Trichloropropane																
chlorofluoromethane	ECD	2.090	0.5	623967	1247934	2.09	1.25	1960250	1568200	2.09	2.5	3738249	1495300	1437145	167866	11.68%
yl Chloride	PID	2.136	2.5	66608	26643	2.136	6.25	144567	23131	2.136	12.5	259253	20740	23505	2969	12.63%
zene	PID	4.959	2.5	70465	28186	4.959	6.25	166758	26681	4.959	12.5	343748	27500	27456	753	2.74%
orobenzene	PID	8.149	2.5	34932	13973	8.149	6.25	104801	16768	8.149	12.5	221733	17739	16160	1955	12.10%
Dichlorobenzene																
Dichlorobenzene																
Dichlorobenzene																
ylbenzene	PID	8.244	2.5	30324	12130	8.244	6.25	87935	14070	8.244	12.5	192805	15424	13875	1656	11.94%
ene	PID	6.683	2.5	51545	20618	6.683	6.25	125804	20129	6.683	12.5	281880	22550	21099	1281	6.07%
Xylene	PID	8.334	5	70833	14167	8.334	12.5	217109	17369	8.334	25	464657	18586	16707	2283	13.66%
ylene	PID	8.786	2.5	31081	12432	8.786	6.25	82799	13248	8.786	12.5	199232	15939	13873	1835	13.23%

...ION STANDARD REPORT

Sept. 8th, 1993 | Analyst: T. Theisen | Std Source: Supelco | Machine ID: HP5890-2

COMPOUND	DET	1st CONC				2nd CONC				3rd CONC				RF AVE	SD	%RSD
		RT	MASS	AREA	RF	RT	MASS	AREA	RF	RT	MASS	AREA	RF			
etone	PID	2.783	2.5	48756	19502	2.783	6.25	125968	20155	2.783	12.5	278436	22275	20644	1450	7.02%
K	PID	3.966	2.5	67422	26969	3.966	6.25	170841	27335	3.966	12.5	347827	27826	27377	430	1.57%
BK	PID	6.167	2.5	39888	15955	6.167	6.25	107999	17280	6.167	12.5	225478	18038	17091	1054	6.17%
omomethane																
bon Tetrachloride	ECD	4.601	0.5	284089	568178	4.502	1.25	700631	560505	4.601	2.5	1531485	612594	580426	28122	4.84%
oroethane																
oroform	ECD	4.170	0.5	86574	173148	4.17	1.25	244103	195282	4.17	2.5	473125	189250	185893	11443	6.16%
romomethane	ECD	2.913	2.5	17925	7170	2.913	6.25	41276	6604	2.913	12.5	85319	6826	6867	285	4.15%
omochloromethane	ECD	7.442	0.5	56941	113882	7.205	1.25	123153	98522	7.442	2.5	268774	107510	106638	7717	7.24%
omomethane																
loromethane																
Dichloroethane	ECD	3.524	5	4849	970	3.524	12.5	13724	1098	3.524	25	25939	1038	1035	64	6.19%
Dichloroethane	ECD	4.827	2.5	18148	7259	4.622	6.25	41956	6713	4.827	12.5	90210	7217	7063	304	4.30%
Dichloroethene	ECD	2.380	2.5	59496	23798	2.38	6.25	137820	22051	2.38	12.5	319375	25550	23800	1749	7.35%
,2-Dichloroethene	PID	4.138	2.5	37160	14864	4.138	6.25	85664	13706	4.138	12.5	179117	14329	14300	579	4.05%
-1,2-Dichloroethene	PID	3.427	2.5	71400	28560	3.427	6.25	163167	26107	3.427	12.5	322160	25773	26813	1522	5.68%
Dichloropropane																
,3-Dichloropropene																
-1,3-Dichloropropene																
,2-Tetrachloroethane	ECD	8.162	2.5	576045	230418	8.162	6.25	1319320	211091	8.162	12.5	3156948	252556	231356	20748	8.97%
,2-Tetrachloroethane	ECD	9.493	2.5	250896	100358	9.493	6.25	626781	100285	9.493	12.5	1052431	84194	94946	9311	9.81%
chloroethane	ECD	7.214	0.5	528710	1057420	7.214	1.25	1204120	963296	7.214	2.5	2760042	1104017	1041578	71686	6.88%
-Trichloroethane	ECD	4.496	0.5	168199	336398	4.496	1.25	359717	287774	4.496	2.5	903873	361549	328574	37505	11.41%
-Trichloroethane	ECD	7.055	2.5	61309	24524	7.055	6.25	156410	25026	7.055	12.5	357371	28590	26046	2217	8.51%
oroethene	ECD	5.427	0.5	129930	259860	5.427	1.25	280337	224270	5.427	2.5	732098	292839	258990	34293	13.24%
-Trichloropropane																
orofluoromethane	ECD	2.090	0.5	1367095	2734190	2.09	1.25	3279078	2623262	2.09	2.5	8060336	3224134	2860529	319739	11.18%
Chloride	PID	2.136	2.5	66608	26643	2.136	6.25	144567	23131	2.136	12.5	259253	20740	23505	2969	12.63%
ne	PID	4.959	2.5	70465	28186	4.959	6.25	166758	26681	4.959	12.5	343748	27500	27456	753	2.74%
benzene	PID	8.149	2.5	34932	13973	8.149	6.25	104801	16768	8.149	12.5	221733	17739	16160	1955	12.10%
chlorobenzene																
chlorobenzene																
chlorobenzene																
nzene	PID	8.244	2.5	30324	12130	8.244	6.25	87935	14070	8.244	12.5	192805	15424	13875	1656	11.94%
e	PID	6.683	2.5	51545	20618	6.683	6.25	125804	20129	6.683	12.5	281880	22550	21099	1281	6.07%
lene	PID	8.334	5	70833	14167	8.334	12.5	217109	17369	8.334	25	464657	18586	16707	2283	13.66%
ne	PID	8.786	2.5	31081	12432	8.786	6.25	82799	13248	8.786	12.5	199232	15939	13873	1835	13.23%

SOIL GAS DAILY CALIBRATION STANDARD REPORT

DATE:	Sept. 7th, 1993 (Cont. Calib.)	Sept. 8th, 1993 (Daily Cal. Check PID Only)
SUPPLY SOURCE:	Supelco	Supelco
MACHINE ID:	HP5890-2 File: E/PGPL-15	HP5890-2 File: E/PGPL-35

COMPOUND	MASS	RT	RF	%DIFF*	MASS	RT	RF	%DIFF*
Acetone								
MEK								
MIBK								
Bromomethane								
Carbon Tetrachloride	1.25	4.33	464591	-4.56%				
Chloroethane								
Chloroform								
Chloromethane	6.25	2.686	4064	-15.25%				
Dibromochloromethane	1.25	7.147	151831	5.36%				
Dibromomethane								
Dichloromethane								
1,1-Dichloroethane	6.25	3.26	1090	-13.15%				
1,2-Dichloroethane	6.25	4.537	5255	-4.96%				
,1-Dichloroethene	6.25	2.303	13090	-14.75%				
cis-1,2-Dichloroethene	6.25	4.132	15398	-7.66%	6.25	4.265	15963	-11.63%
trans-1,2-Dichloroethene	6.25	3.423	27933	-4.18%	6.25	3.541	28379	-5.84%
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
trans-1,3-Dichloropropene								
1,1,1,2-Tetrachloroethane	6.25	7.868	298407	-0.42%				
1,1,2,2-Tetrachloroethane	6.25	9.206	49612	-0.43%				
Tetrachloroethane	1.25	6.89	837659	-7.84%				
1,1,1-Trichloroethane	1.25	4.183	231438	-9.84%				
1,1,2-Trichloroethane	6.25	6.752	15401	-12.05%				
Trichloroethane	1.25	5.106	139632	-9.68%				
1,2,3-Trichloropropane								
Trichlorofluoromethane	1.25	1.902	1560164	-8.56%				
Vinyl Chloride	6.25	2.129	22136	5.82%	6.25	2.206	21553	8.30
Benzene	6.25	4.952	28326	-3.17%	6.25	5.098	29749	-8.35
Chlorobenzene	6.25	8.134	18102	-12.02%	6.25	8.301	17698	-9.52
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Ethylbenzene	6.25	8.228	15455	-11.39%	6.25	8.394	15477	-11.5
Toluene	6.25	6.871	23057	-9.28%	6.25	6.831	23955	-13.5
m,p-Xylene	12.5	8.318	18258	-9.28%	12.5	8.484	17532	-4.9
o-Xylene	6.25	8.769	14290	-3.01%	6.25	8.937	15515	-11.5

* Response Factor from latest initial calibration

SOIL GAS DAILY CALIBRATION STANDARD REPORT

DATE:	Sept. 8th, 1993 (Cont. Calib.)	Sept. 9th, 1993 (Daily Cal. Check)
SUPPLY SOURCE:	Supelco	Supelco
MACHINE ID:	HP5890-2 File: E/PGPL-59	HP5890-2 File: E/PGPL-80

COMPOUND	MASS	RT	RF	%DIFF*	MASS	RT	RF	%DIFF*
Bromobenzene								
Bromodichloromethane								
Bromoform								
Bromomethane								
Carbon Tetrachloride	1.25	4.524	507988	12.48%	1.25	4.601	571139	1.60%
Chloroethane								
Chloroform								
Chloromethane	6.25	2.846	6260	8.83%	6.25	2.909	6178	10.03%
Dibromochloromethane	1.25	7.359	98704	7.44%	1.25	7.437	111159	-4.24%
Dibromomethane								
Dichloromethane								
1,1-Dichloroethane	6.25	3.435	1003	3.12%	6.25	3.505	974	5.89%
1,2-Dichloroethane	6.25	4.732	6645	5.92%	6.25	4.809	6903	2.27%
,1-Dichloroethene	6.25	2.451	22113	7.09%	6.25	2.509	24009	-0.88%
cis-1,2-Dichloroethene	6.25	4.23	13597	4.91%	6.25	4.381	13545	5.28%
trans-1,2-Dichloroethene	6.25	3.509	26693	0.45%	6.25	3.649	24947	6.96%
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
trans-1,3-Dichloropropene								
1,1,1,2-Tetrachloroethane	6.25	8.081	231466	-0.05%	6.25	8.158	249641	-7.90
1,1,2,2-Tetrachloroethane	6.25	9.419	107145	-12.85%	6.25	9.491	104501	-10.06
Tetrachloroethane	1.25	7.102	936587	10.08%	1.25	7.181	1082407	-3.92
1,1,1-Trichloroethane	1.25	4.375	359854	-9.52%	1.25	4.451	354859	-8.00
1,1,2-Trichloroethane	6.25	6.959	29468	-13.14%	6.25	7.038	29114	-11.78
Trichloroethene	1.25	5.308	271214	-4.72%	1.25	5.387	286753	-10.72
1,2,3-Trichloropropane								
Trichlorofluoromethane	1.25	2.035	2418863	15.44%	1.25	2.085	2826203	1.20
Vinyl Chloride	6.25	2.186	24118	-2.61%	6.25	2.281	21090	10.27
Benzene	6.25	5.063	25536	6.99%	6.25	5.221	25975	5.39
Chlorobenzene	6.25	8.265	14513	10.19%	6.25	8.52	14857	8.0
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Ethylbenzene	6.25	8.358	12460	10.19%	6.25	8.428	14993	-8.0
Toluene	6.25	6.796	19161	9.18%	6.25	6.957	21045	0.2
m,p-Xylene	12.5	8.448	15431	7.64%	12.5	8.609	17251	-3.2
o-Xylene	6.25	8.901	12905	6.98%	6.25	9.063	13718	1.1

Response Factor from latest initial calibration

SOIL GAS DAILY CALIBRATION STANDARD REPORT

DATE: Sept. 9th, 1993 (Cont. Calib.)

SUPPLY SOURCE: Supelco

MACHINE ID: HP5890-2 File: E/PGPL-102

COMPOUND	MASS	RT	RF	%DIFF*	MASS	RT	RF	%DIFF
Bromobenzene								
Bromodichloromethane								
Bromoform								
Bromomethane								
Carbon Tetrachloride	1.25	4.707	620359	-6.88%				
Chloroethane								
Chloroform								
Chloromethane	6.25	3.006	7252	-5.62%				
Dibromochloromethane	1.25	7.552	113207	-6.16%				
Dibromomethane								
Dichloromethane								
1,1-Dichloroethane	6.25	3.606	1152	-11.33%				
1,2-Dichloroethane	6.25	4.914	7707	-9.12%				
1,1-Dichloroethene	6.25	2.602	25460	-6.98%				
cis-1,2-Dichloroethene	6.25	4.318	13883	2.91%				
trans-1,2-Dichloroethene	6.25	3.595	24861	7.28%				
2-Dichloropropane								
cis-1,3-Dichloropropene								
trans-1,3-Dichloropropene								
1,1,1,2-Tetrachloroethane	6.25	8.278	258673	-11.81%				
1,1,2,2-Tetrachloroethane	6.25	9.617	109499	-15.33%				
Tetrachloroethane	1.25	7.296	1080741	-3.76%				
1,1,1-Trichloroethane	1.25	4.557	335408	-2.08%				
1,1,2-Trichloroethane	6.25	7.149	28513	-9.47%				
Trichloroethene	1.25	5.493	242207	6.48%				
1,2,3-Trichloropropane								
Trichlorofluoromethane	1.25	2.172	3029872	-5.92%				
Vinyl Chloride	6.25	2.254	21290	9.42%				
Benzene	6.25	5.15	28371	3.95%				
Chlorobenzene	6.25	8.447	15894	1.65%				
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Ethylbenzene	6.25	8.354	13695	1.30%				
Toluene	6.25	6.882	22264	-5.52%				
m,p-Xylene	12.5	8.537	17684	-5.85%				
[illegible]	6.25	8.992	15908	-14.67%				

* %DIFF percentage difference with average Response Factor from latest initial calibration

SOIL GAS LABORATORY QUALITY CONTROL CHECK SAMPLES

DATE:	Sept. 7th, 1993		Sept. 7th, 1993		
SUPPLY SOURCE:	In-house (from Neat)		In-house (from Neat)		
MACHINE ID:	HP5890-2 Start		HP5890-2 Finish		
COMPOUND	TRUE CONC	DET CONC	%DIFF	TRUE CONC	DET CONC	%DIFF
Acetone	6.25	6.83	-9.28%	6.25	6.57	-5.12%
1,1-Dichloroethene	6.25	6.72	-7.52%	6.25	6.77	-8.32%
Methylene Chloride	6.25	6.48	-3.68%	6.25	6.19	0.96%
MEK	6.25	6.92	-10.72%	6.25	7.03	-12.48%
1,1,1-Trichloroethane	1.25	1.47	-17.60%	1.25	1.38	-10.40%
Benzene	6.25	6.61	-5.71%	6.25	6.29	-0.64%
Trichloroethene	1.25	1.42	-13.60%	1.25	1.40	-12.08%
MIBK	6.25	6.66	-6.56%	6.25	6.99	-11.84%
Tetrachloroethene	1.25	1.33	-6.40%	1.25	1.32	-5.60%
1,1,2,2-Tetrachloroethane	6.25	6.54	-4.64%	6.25	6.89	-10.24%
Chloroform	1.25	1.36	-8.80%	1.25	1.09	12.80%

DATE:	Sept. 8th, 1993		Sept. 8th, 1993		
SUPPLY SOURCE:	In-house (from Neat)		In-house (from Neat)		
MACHINE ID:	HP5890-2 Start		HP5890-2 Finish		
COMPOUND	TRUE CONC	DET CONC	%DIFF	TRUE CONC	DET CONC	%DIFF
Acetone	6.25	6.08	2.72%	6.25	6.54	-4.64%
1,1-Dichloroethene	6.25	7.02	-12.32%	6.25	7.08	-13.28%
Methylene Chloride	6.25	6.88	-10.08%	6.25	6.02	3.68%
MEK	6.25	6.10	2.40%	6.25	5.89	5.76%
1,1,1-Trichloroethane	1.25	1.36	-8.80%	1.25	1.09	12.80%
Benzene	6.25	6.58	-5.28%	6.25	5.92	5.28%
Trichloroethene	1.25	1.39	-11.20%	1.25	1.11	11.20%
MIBK	6.25	5.98	4.32%	6.25	6.11	2.24%
Tetrachloroethene	1.25	1.33	-6.40%	1.25	1.17	6.40%
1,1,2,2-Tetrachloroethane	6.25	5.76	7.84%	6.25	5.68	9.12%
Chloroform	1.25	1.42	-13.60%	1.25	1.36	-8.80%

%DIFF = percentage difference between True and Detected concentrations

SOIL GAS LABORATORY QUALITY CONTROL CHECK SAMPLES

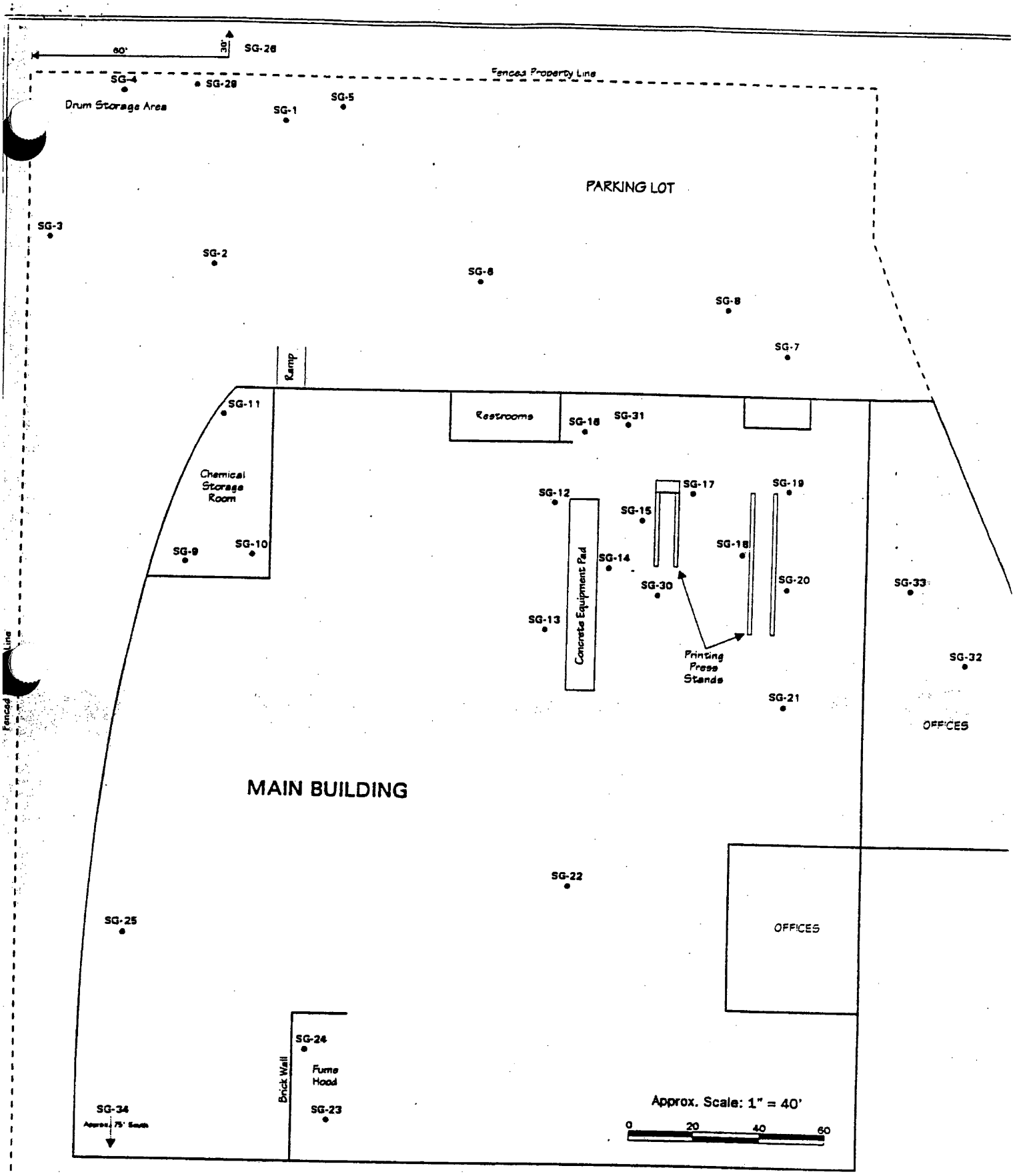
DATE:	Sept. 9th, 1993	Sept. 9th, 1993
SUPPLY SOURCE:	In-house (from Neat)	In-house (from Neat)
MACHINE ID:	HP5890-2 Start	HP5890-2 Finish

COMPOUND	TRUE CONC	DET CONC	%DIFF	TRUE CONC	DET CONC	%DIFF
Acetone	6.25	6.30	-0.80%	6.25	6.88	-10.08%
1,1-Dichloroethene	6.25	6.43	-2.85%	6.25	7.21	-15.36%
Methylene Chloride	6.25	6.53	-4.51%	6.25	7.08	-13.28%
MEK	6.25	6.57	-5.14%	6.25	6.69	-7.04%
1,1,1-Trichloroethane	1.25	1.27	-1.52%	1.25	1.42	-13.60%
Benzene	6.25	6.24	0.22%	6.25	6.66	-6.56%
Trichloroethene	1.25	1.24	0.80%	1.25	1.48	-18.40%
MIBK	6.25	6.38	-2.13%	6.25	6.85	-9.60%
Tetrachloroethene	1.25	1.30	-3.92%	1.25	1.34	-7.20%
1,1,2,2-Tetrachloroethane	6.25	6.99	-11.78%	6.25	7.33	-17.28%
Chloroform	1.25	1.26	-0.80%	1.25	1.37	-9.60%

DATE:		
SUPPLY SOURCE:		
MACHINE ID:		

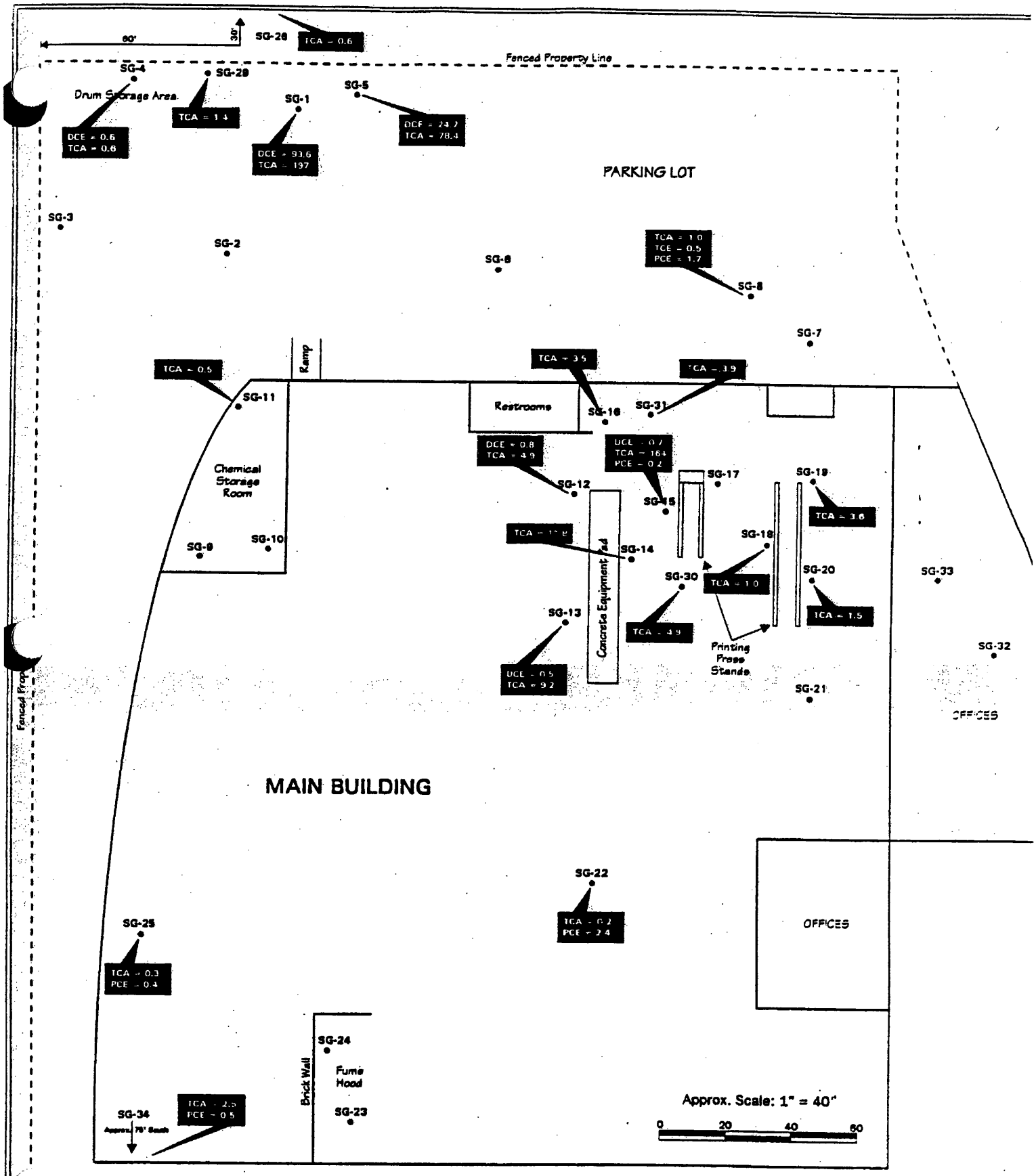
COMPOUND	TRUE CONC	DET CONC	%DIFF	TRUE CONC	DET CONC	%DIFF
Acetone	6.25			6.25		
1,1-Dichloroethene	6.25			6.25		
Methylene Chloride	6.25			6.25		
MEK	6.25			6.25		
1,1,1-Trichloroethane	1.25			1.25		
Benzene	6.25			6.25		
Trichloroethene	1.25			1.25		
MIBK	6.25			6.25		
Tetrachloroethene	1.25			1.25		
1,1,2,2-Tetrachloroethane	6.25			6.25		
Chloroform	1.25			1.25		

%DIFF = percentage difference between True and Detected concentrations



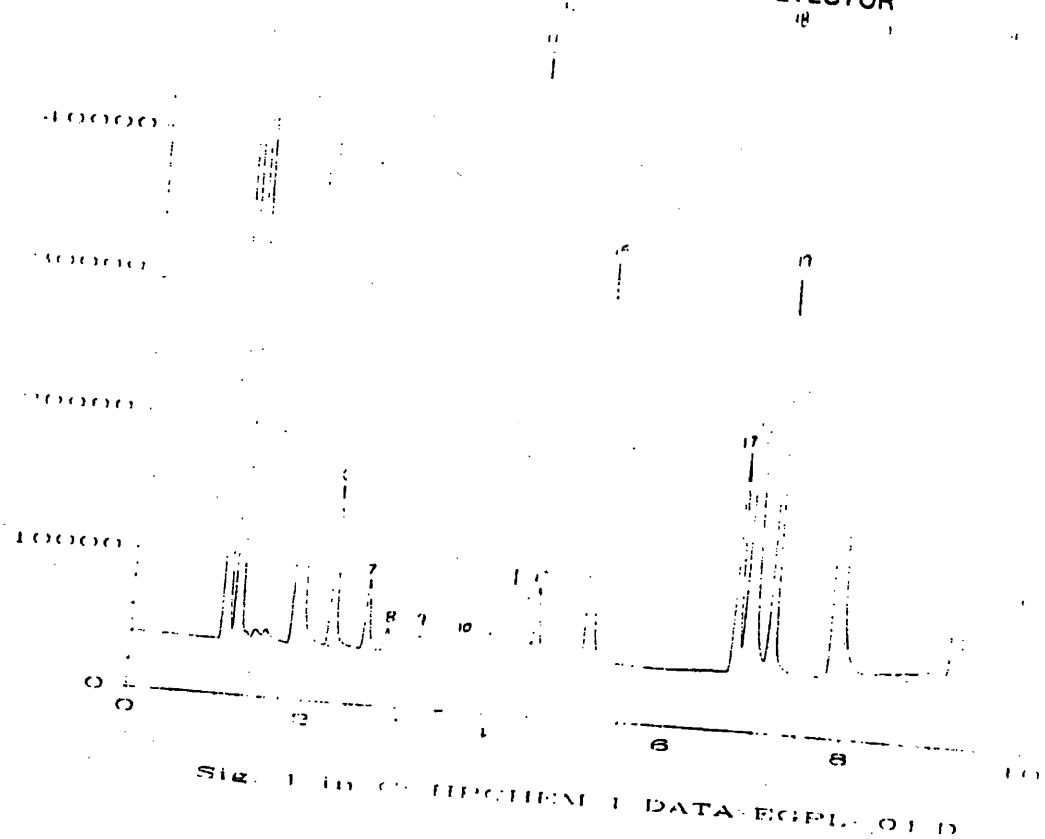
imal Technology Inc.
6430 Via Real, Suite 6
Carpinteria, CA
el: (805) 684-6226 * Fax: (805) 684-1061

DATE: Sept. 10, 1993	PROJECT NO: OTI-090193	APPROVED BY: TLT	FIGURE
COMPANY: ICF Kaiser	TITLE: SOIL GAS SAMPLING LOCATIONS		1

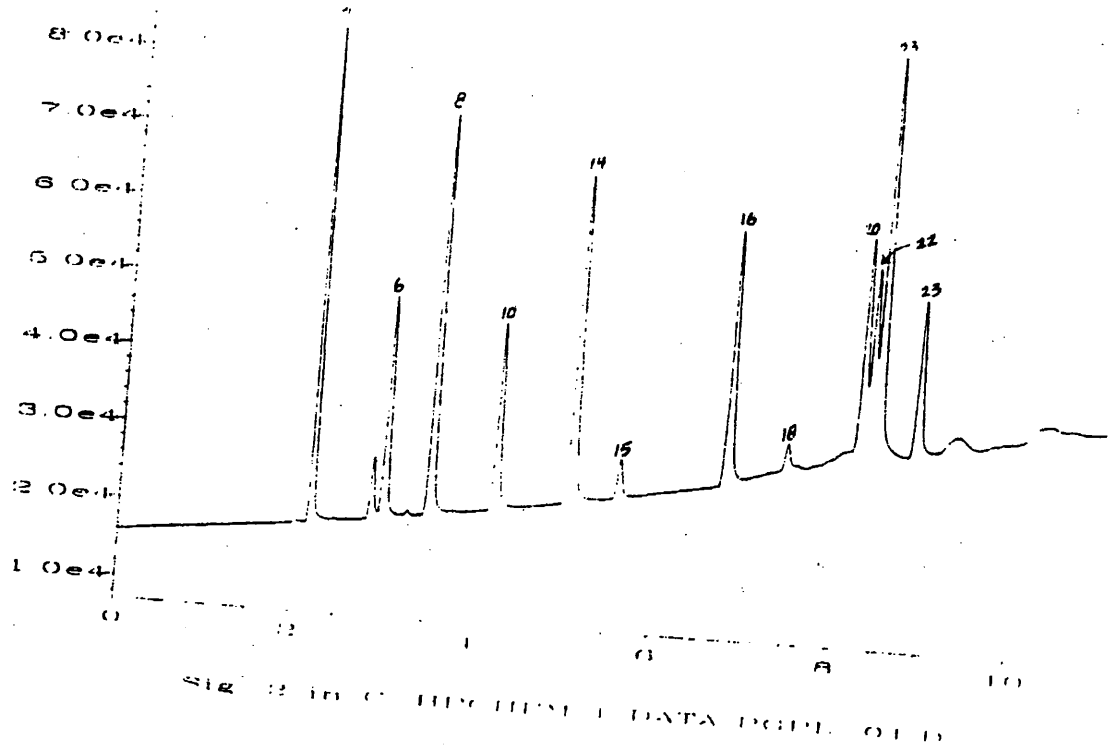


Optimal Technology Inc. 6430 Via Real, Suite 6 Carpinteria, CA	**DATE:** Sept. 10, 1993	**PROJECT NO:** OTI-090193	**APPROVED BY:** TLT
	COMPANY:	**TITLE:** SOIL VAPOR CONCENTRATIONS (ug/L)	FIGU 2

STANDARD ON ECD DETECTOR

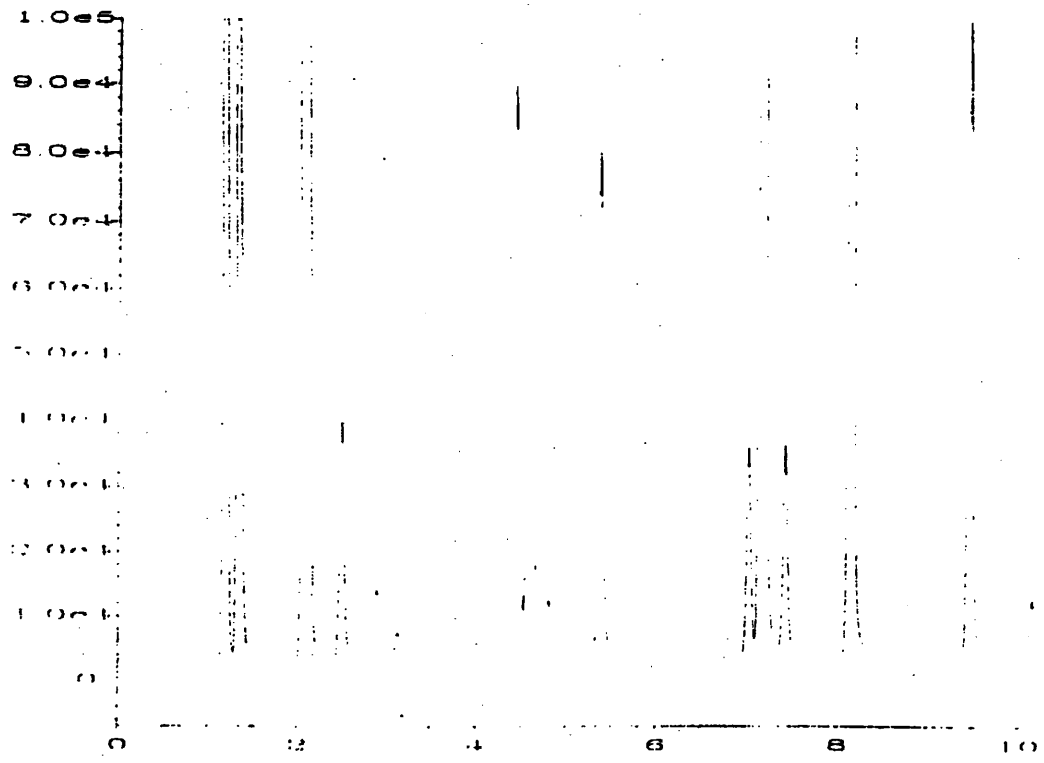


STANDARD ON PID DETECTOR



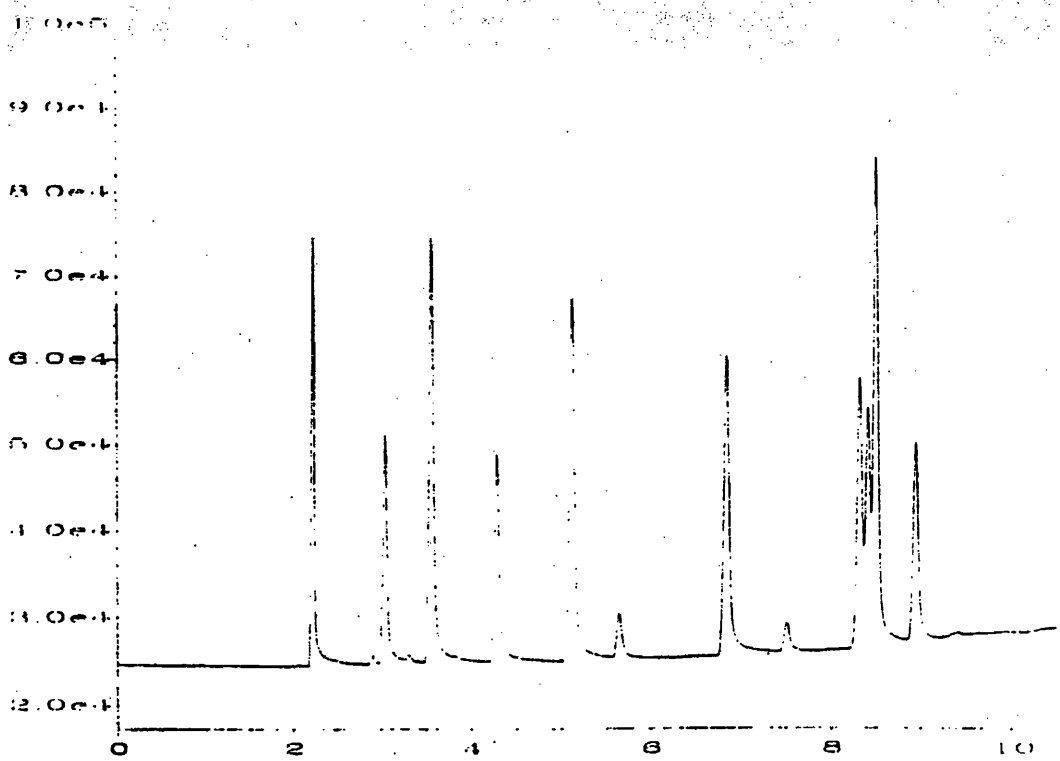
1. Air
2. Vinyl Chloride
3. Dichlorofluoromethane
4. Chloroethane
5. Trichlorofluoromethane
6. 1,1-Dichloroethene
7. Methylene Chloride
8. trans-1,2-Dichloroethene
9. 1,1-Dichloroethane
10. cis-1,2-Dichloroethene
11. 1,1,1-Trichloroethane
12. Carbon Tetrachloride
13. 1,2-Dichloroethane
14. Benzene
15. Trichloroethene
16. Toluene
17. 1,1,2-Trichloroethane
18. Tetrachloroethene
19. Dibromochloromethane
20. Chlorobenzene
21. 1,1,1,2-Tetrachloroethane
22. Ethylbenzene
23. Total Xylenes
24. 1,1,2,2-Tetrachloroethane

DAILY CALIBRATION CHECK ON ECD DETECTOR (Sept. 8)



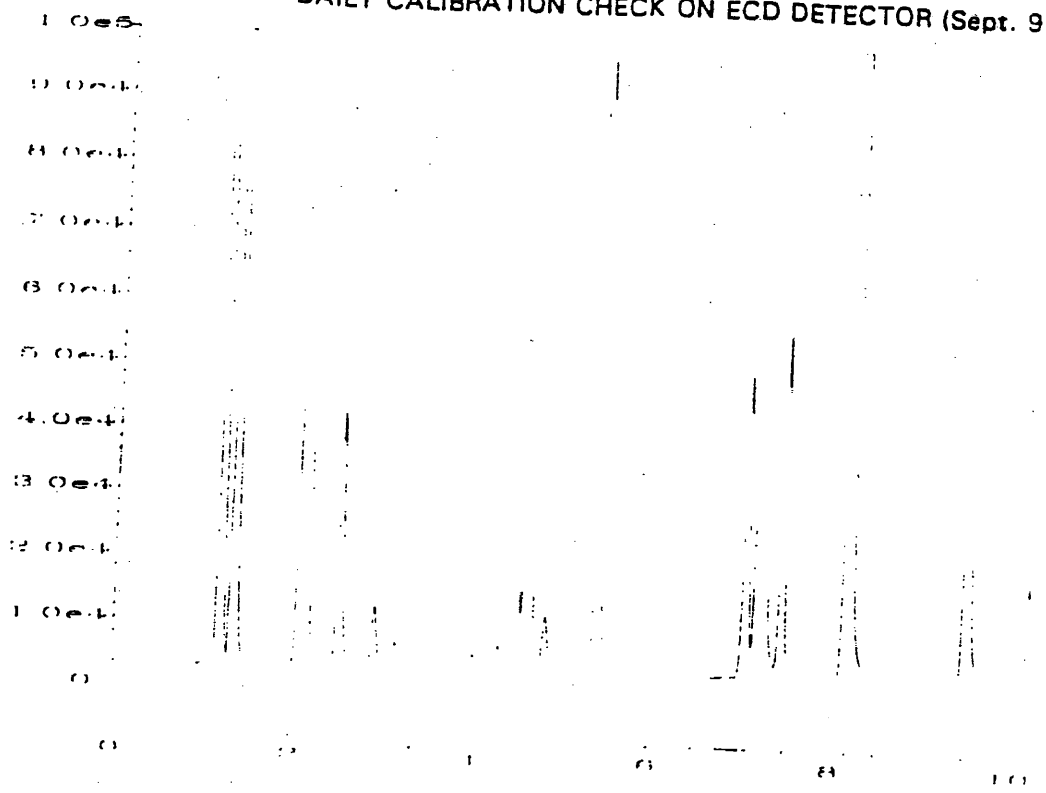
Sig. 1 in C: HPCHEM 1\DATA\ECPL-35.D

DAILY CALIBRATION CHECK ON PID DETECTOR (Sept. 8)



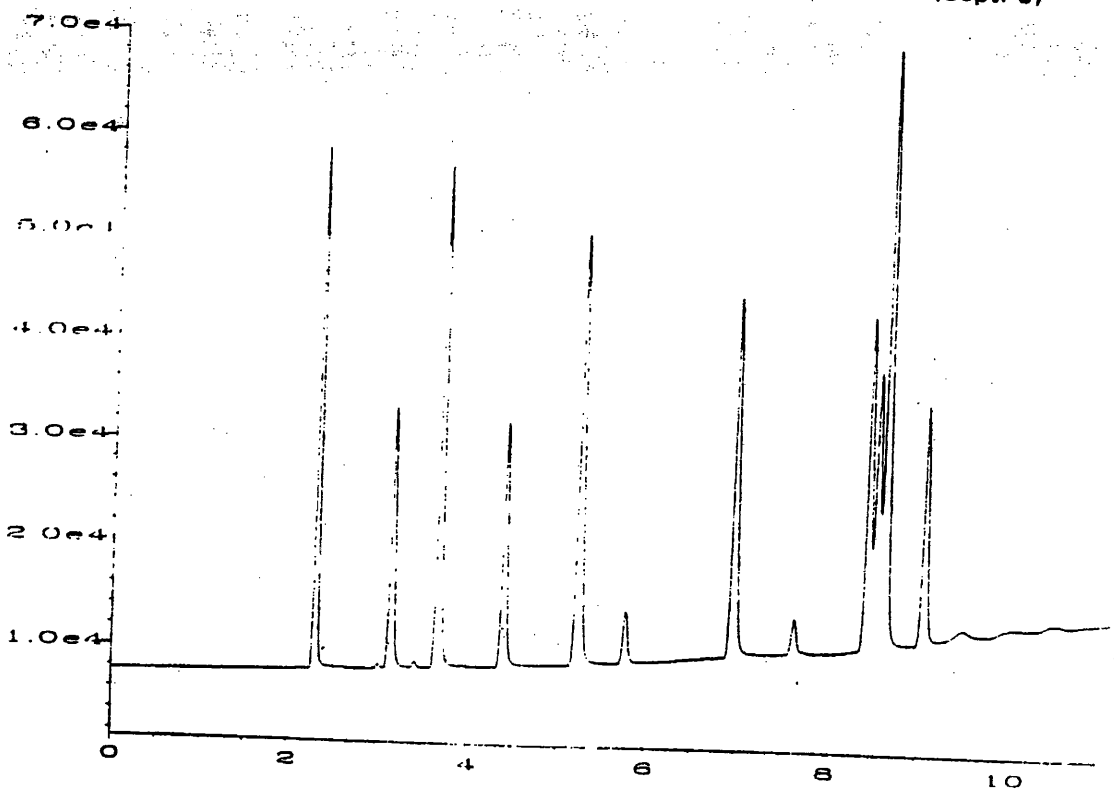
Sig. 2 in C: HPCHEM 1\DATA\PCPL-38.D

DAILY CALIBRATION CHECK ON ECD DETECTOR (Sept. 9)



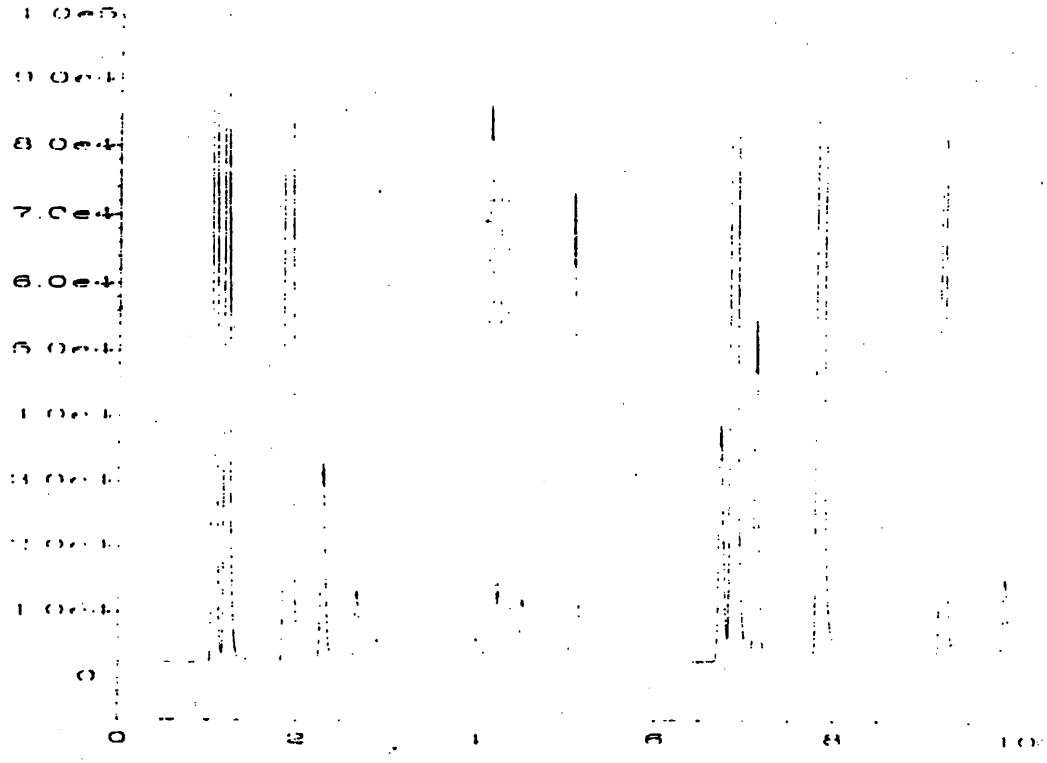
Sig. 1 in C: HPCHEM 1 DATA PGPL 79.D

DAILY CALIBRATION CHECK ON PID DETECTOR (Sept. 9)



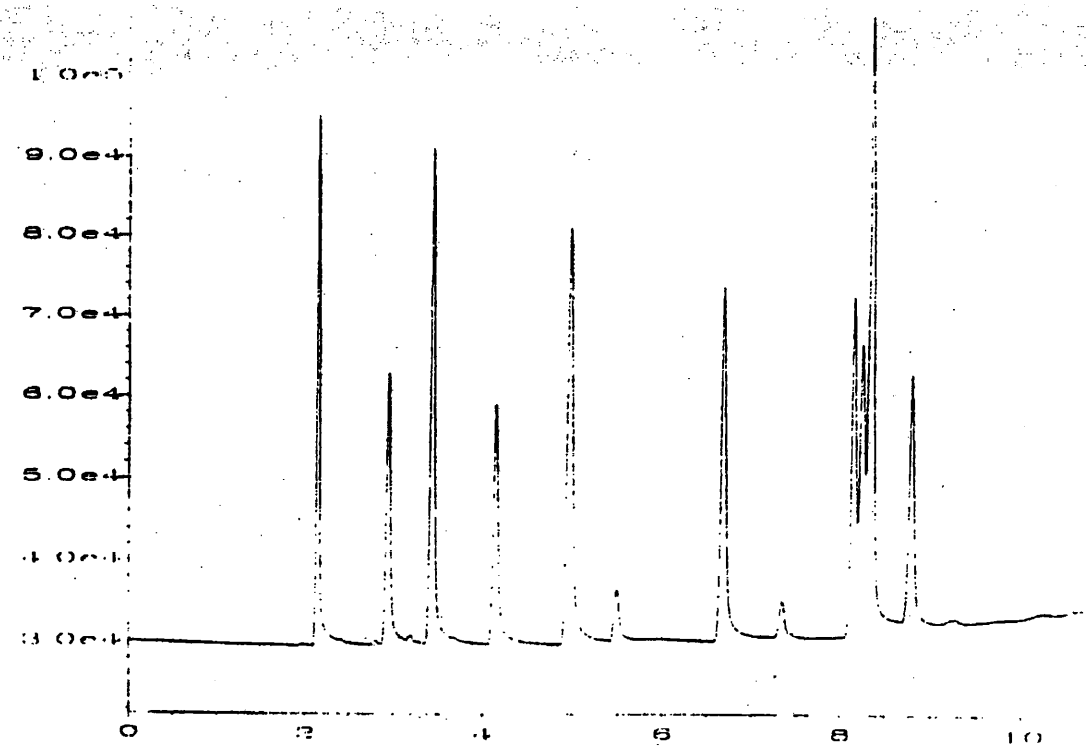
Sig. 2 in C: HPCHEM 1 DATA\PGPL-79.D

CONTINUING CALIBRATION ON ECD DETECTOR (Sept. 7)



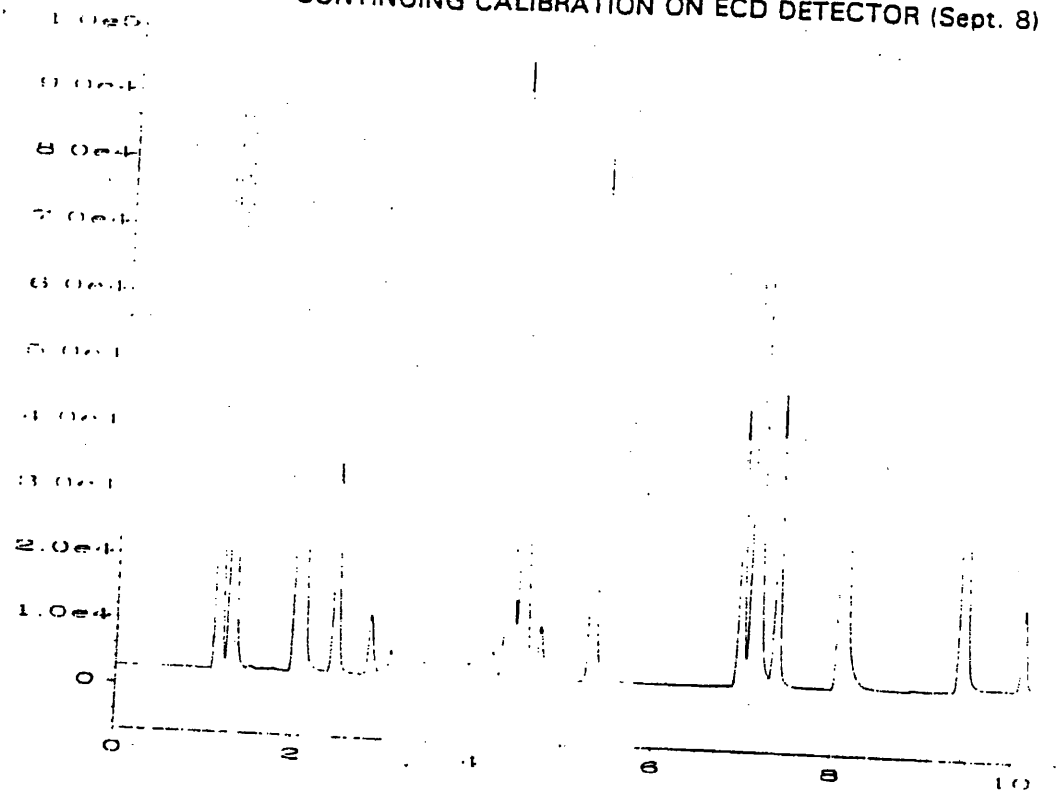
Sig. 1 in C: HPCHEM 1 DATA PGPL - 15 D

CONTINUING CALIBRATION ON PID DETECTOR (Sept. 7)



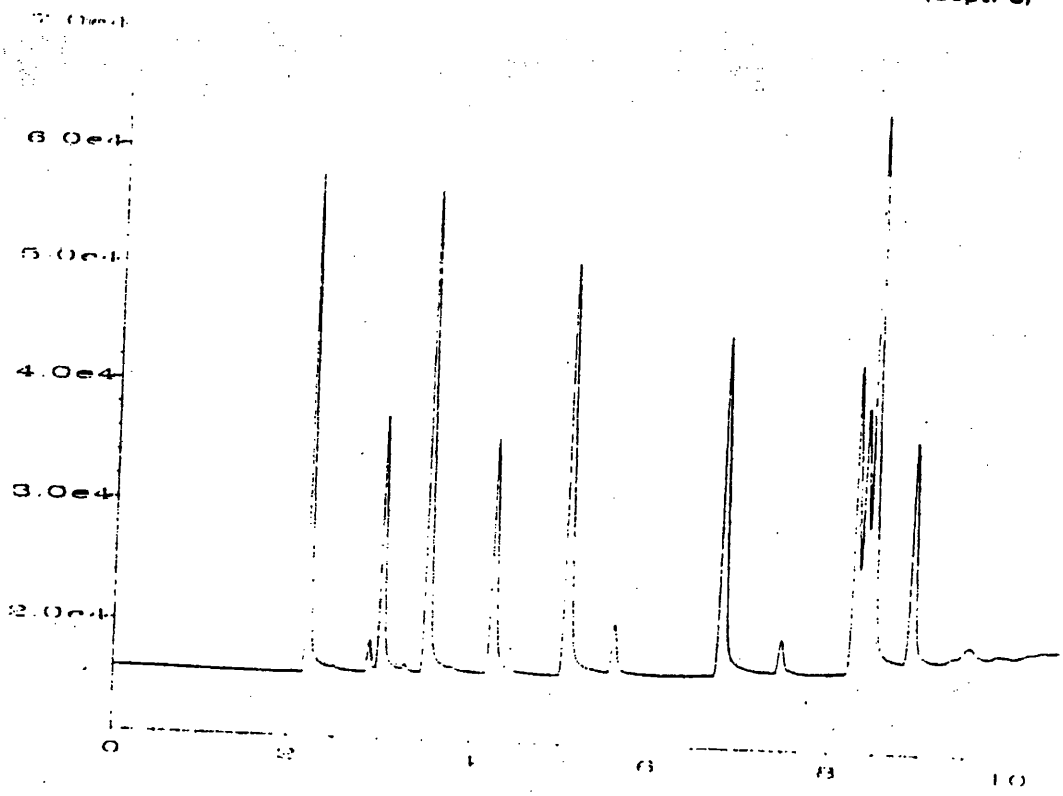
Sig. 2 in C: HPCHEM 1 DATA PGPL - 15 D

CONTINUING CALIBRATION ON ECD DETECTOR (Sept. 8)



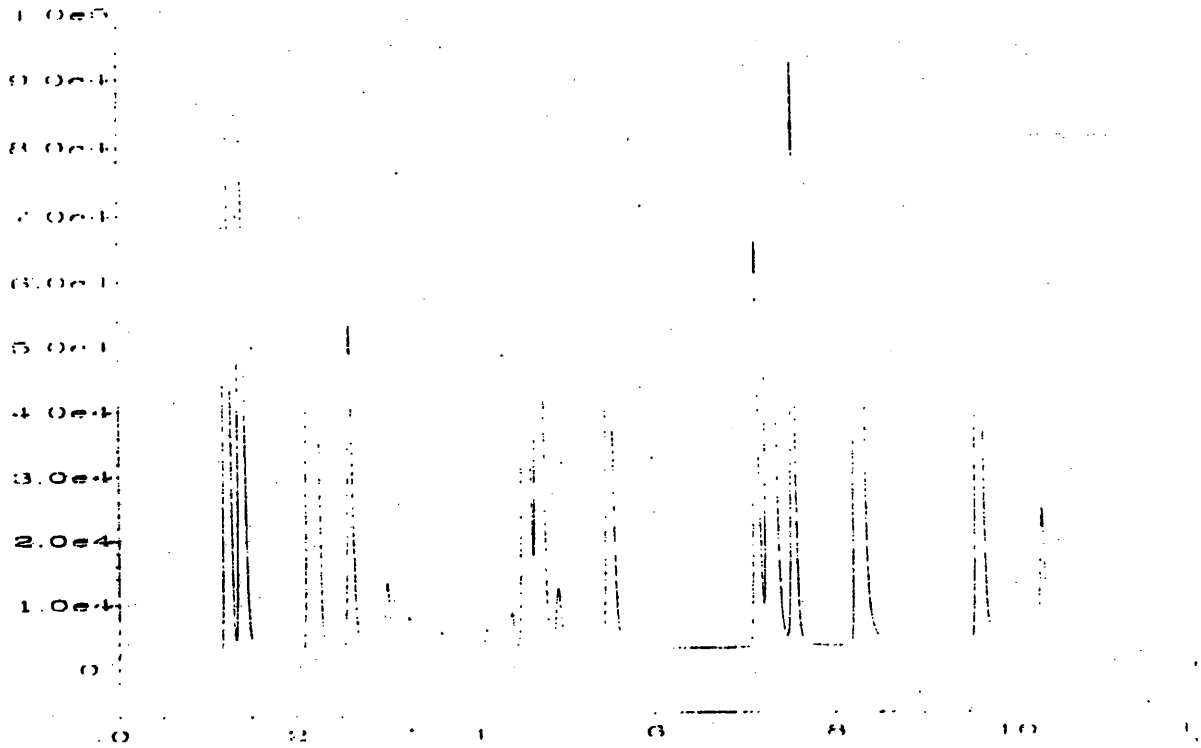
Sig. 1 in C:\HPCHEM\1\DATA\EGPL-59.D

CONTINUING CALIBRATION ON PID DETECTOR (Sept. 8)



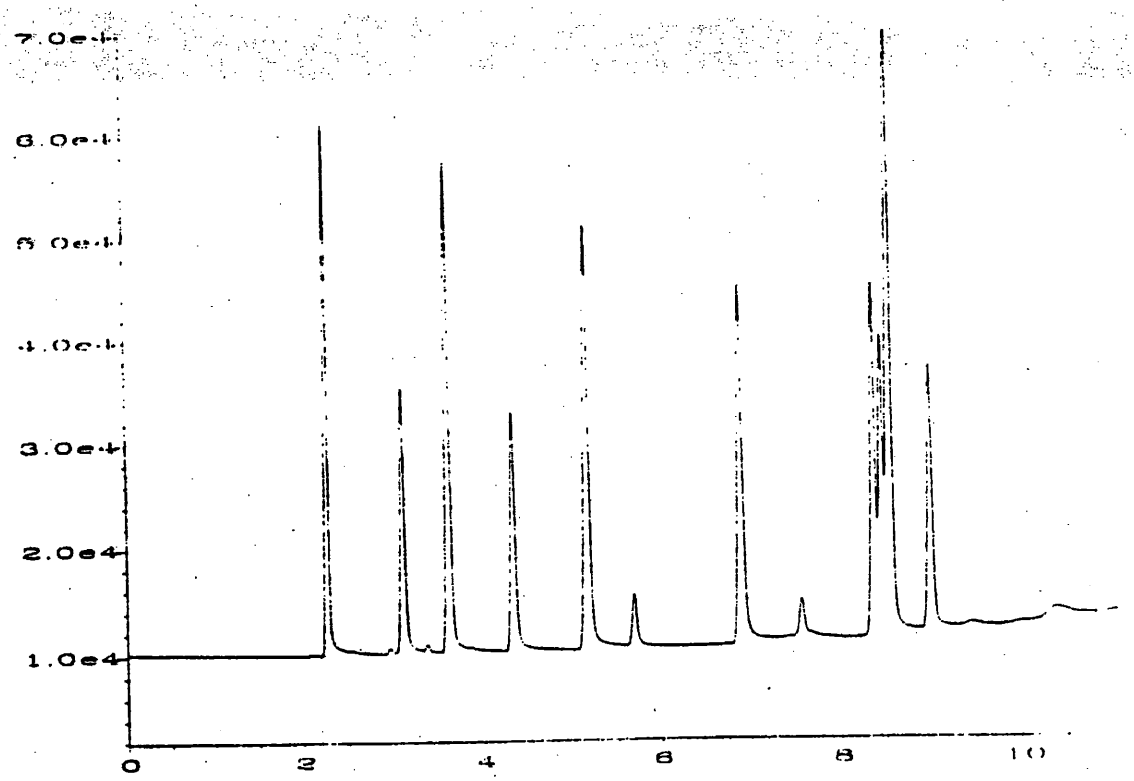
Sig. 2 in C:\HPCHEM\1\DATA\EGPL-59.D

CONTINUING CALIBRATION ON ECD DETECTOR (Sept. 9)



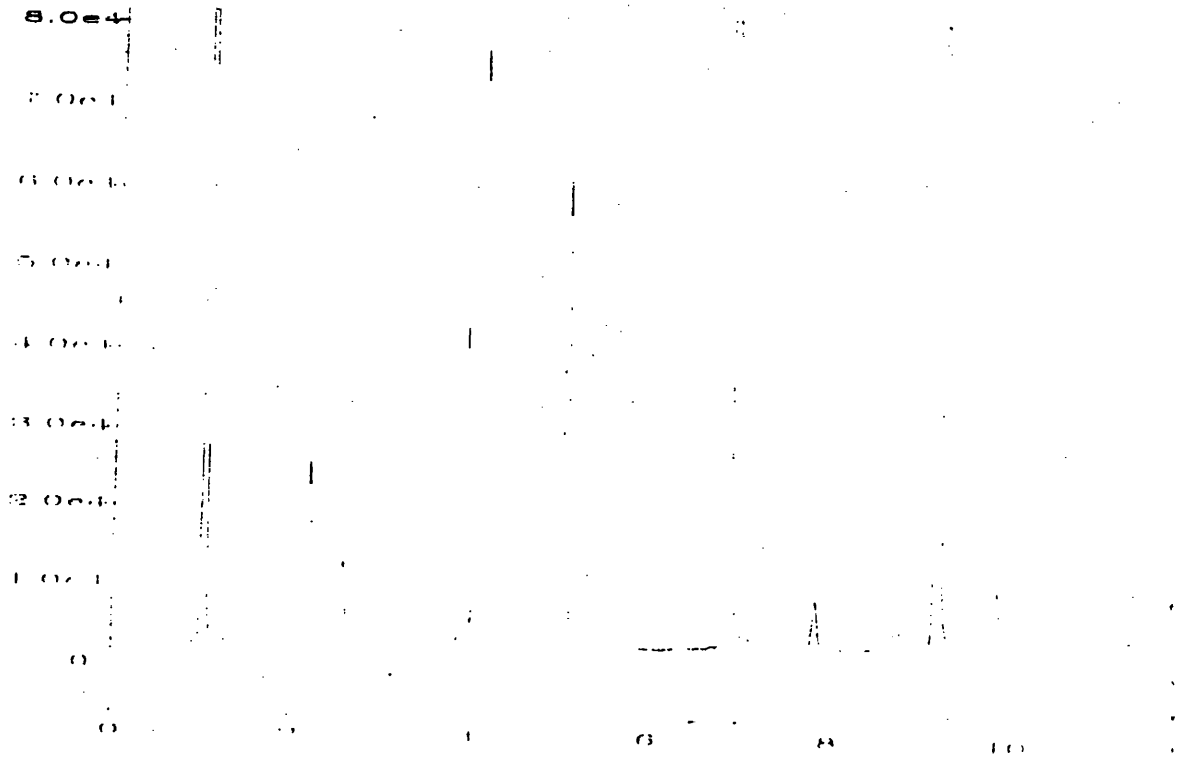
Sig. 1 in C:\HPCHEM\1\DATA\EGPL.102\D

CONTINUING CALIBRATION ON PID DETECTOR (Sept. 9)



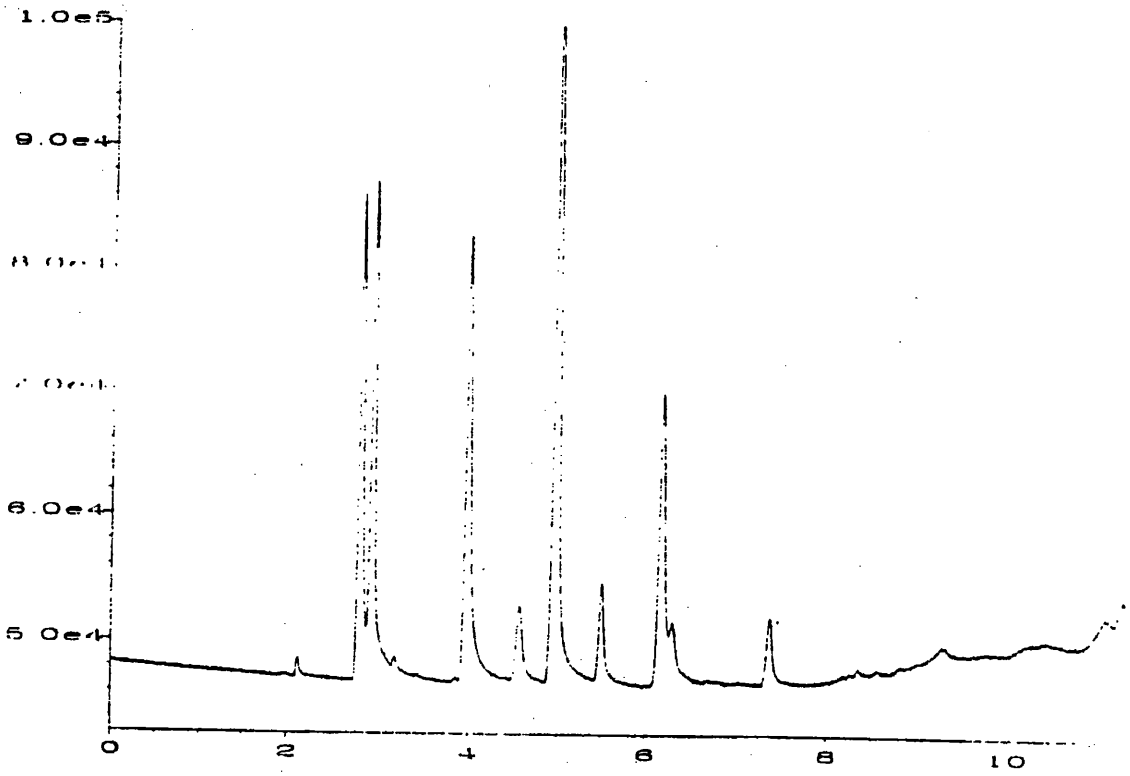
Sig. 2 in C:\HPCHEM\1\DATA\EGPL.102\D

CHECK SAMPLE ON ECD DETECTOR (Sept. 7)



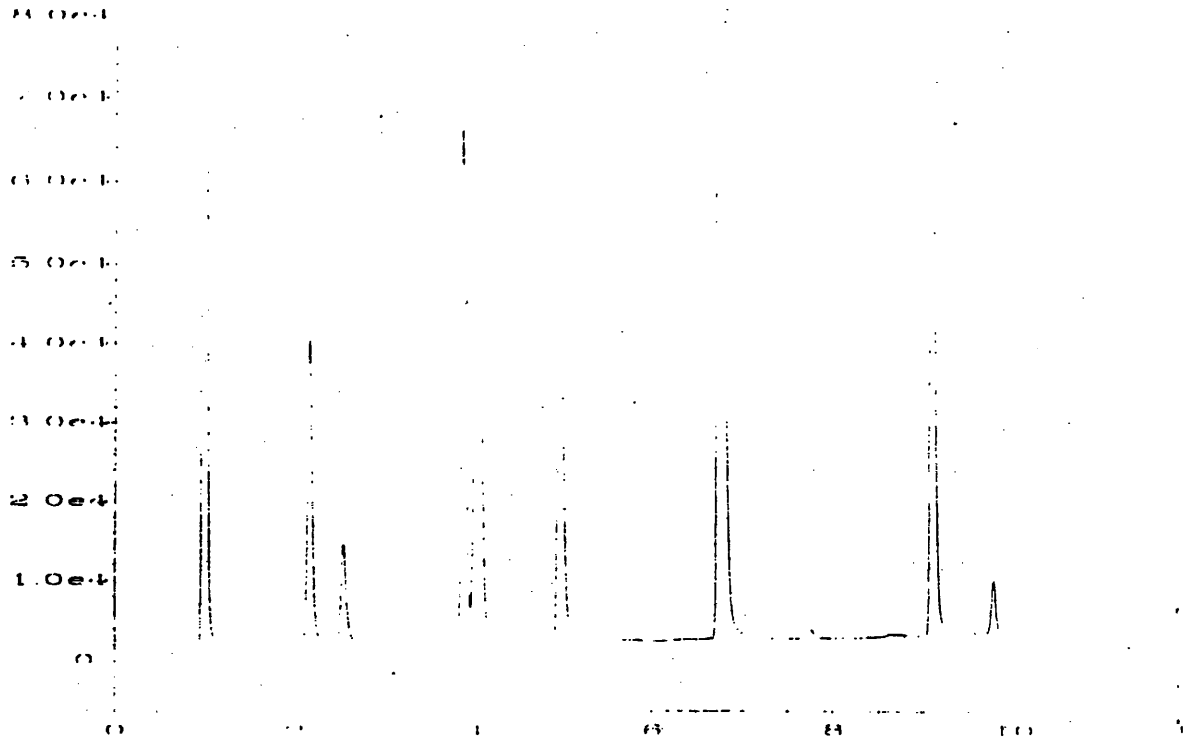
Sig. 1 in C: HPCHEM 1 DATA PGPL-04 D

CHECK SAMPLE ON PID DETECTOR (Sept. 7)



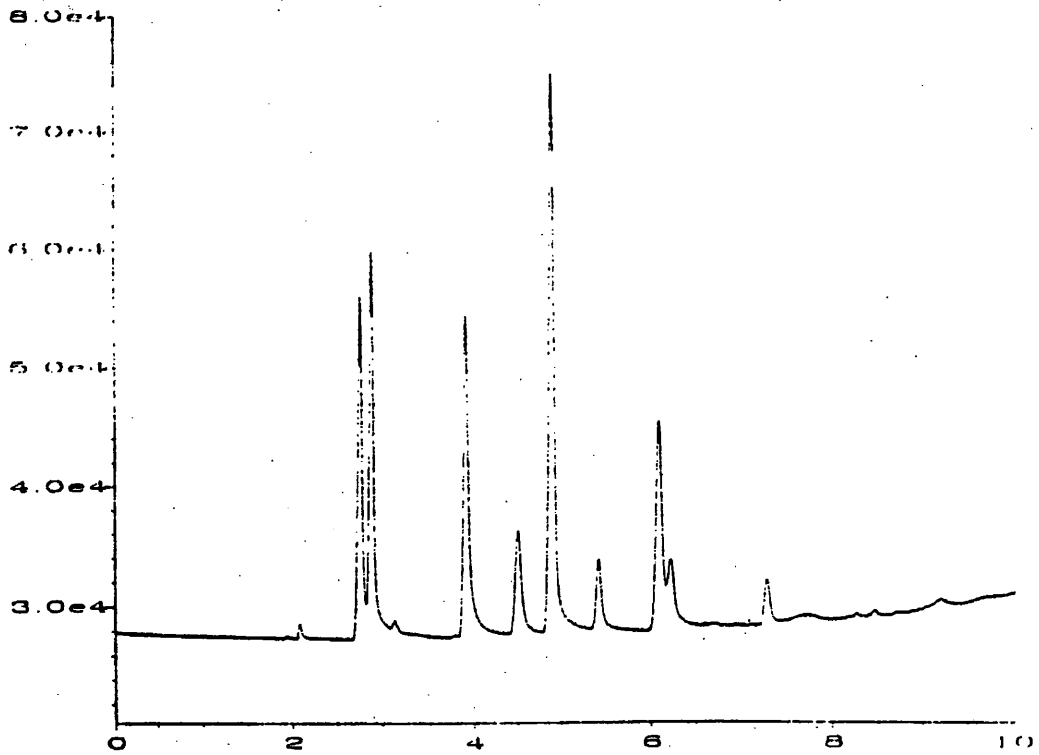
Sig. 2 in C: HPCHEM 1 DATA PGPL-04 D

CHECK SAMPLE ON ECD DETECTOR (Sept. 7)



Sig 1 in C HPCHEM 1 DATA PGPL-34 D

CHECK SAMPLE ON PID DETECTOR (Sept. 7)

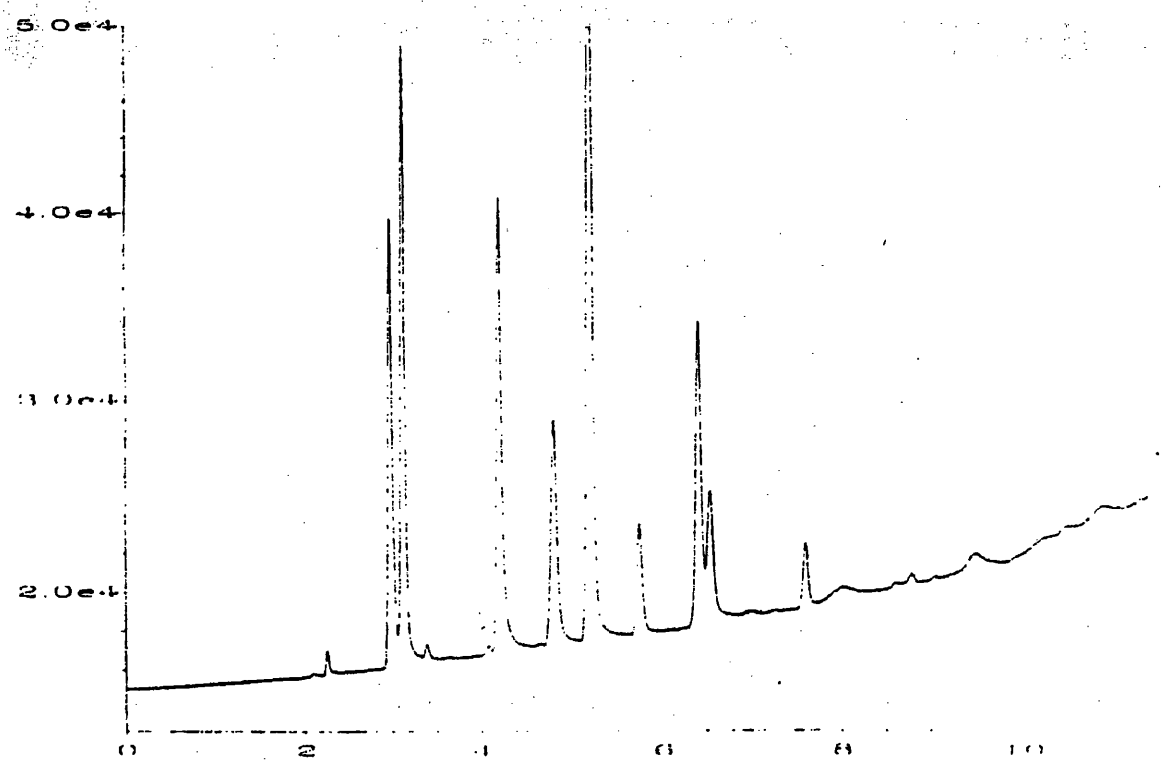


Sig 2 in C HPCHEM 1 DATA PGPL-34 D

CHECK SAMPLE ON ECD DETECTOR (Sept. 8)

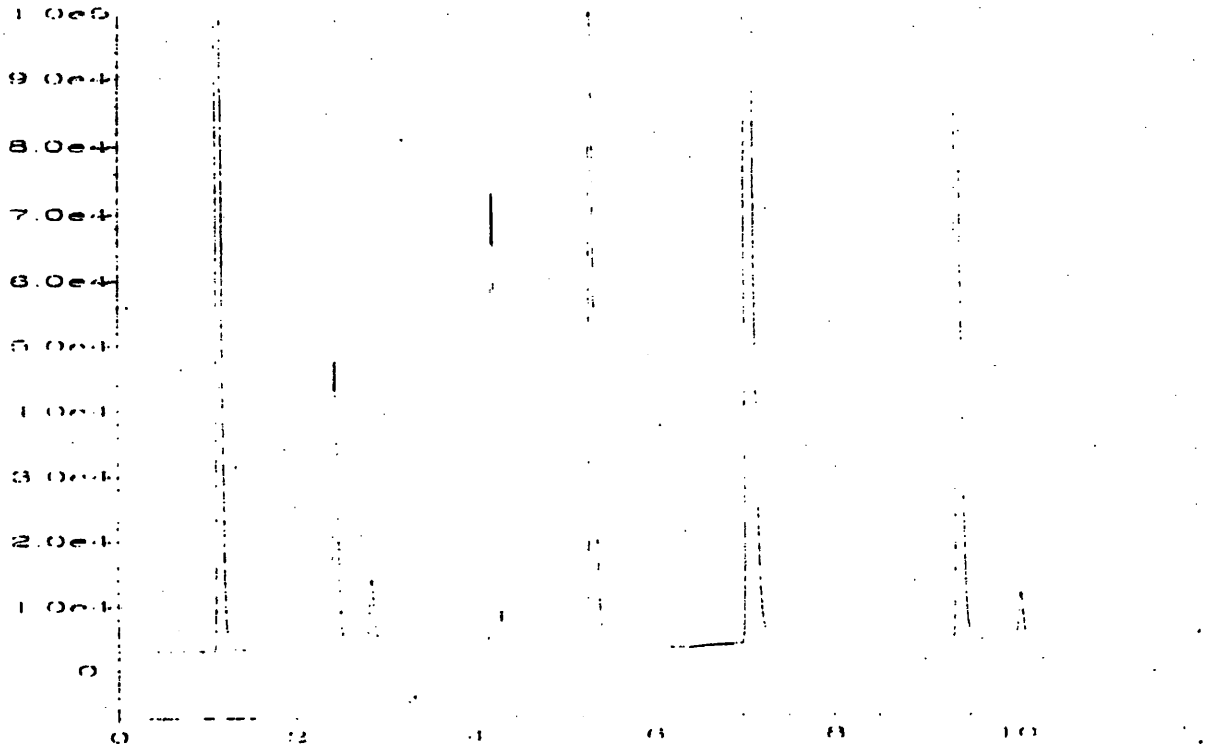
Sig. 1 in C:\HPCHEM\1\DATA\ECPL-38.D

CHECK SAMPLE ON PID DETECTOR (Sept. 8)



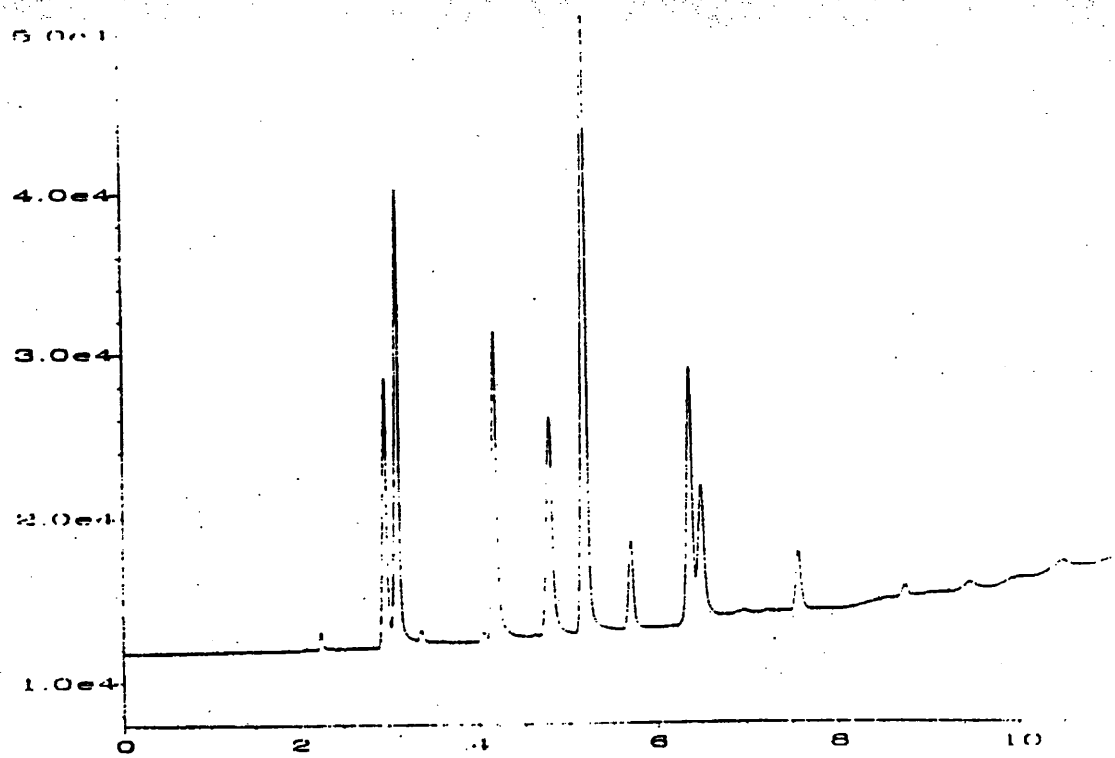
Sig. 2 in C:\HPCHEM\1\DATA\PCPL-35.D

CHECK SAMPLE ON ECD DETECTOR (Sept. 9)



Sig. 1 in C: HPCHEM 1 DATA PCBPL-80 D

CHECK SAMPLE ON PID DETECTOR (Sept. 9)



Sig. 2 in C: HPCHEM 1 DATA PCBPL-80 D