

NOV 15 2001

**FUEL DISPENSER AND LINE REMOVAL  
REPORT**

**BERNARD'S  
1051 AIRWAY BOULEVARD  
LIVERMORE, CALIFORNIA**

Grayland No. 022-280  
August 10, 2001

*How many yards of contaminated soil?  
what is planned for its disposal / reuse?*

***GRAYLAND ENVIRONMENTAL***

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*Need ULR, PSA, NOK*

FUEL DISPENSER AND LINE REMOVAL  
REPORT

BERNARD'S  
1051 AIRWAY BOULEVARD  
LIVERMORE, CALIFORNIA

Grayland No. 022-280  
August 10, 2001

Prepared For:

Mr. Michael Walton  
Walton Engineering, Inc.  
P.O. Box 1025  
West Sacramento, California 95691

Prepared By:

*GRAYLAND ENVIRONMENTAL*  
2731 Quail Street  
Davis, California 95616-5723

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August 10, 2001  
022-280

Mr. Michael Walton  
Walton Engineering, Inc.  
P.O. Box 1025  
West Sacramento, California 95691

Subject: Fuel Dispenser and Line Removal Report  
Bernard's, 1051 Airway Boulevard, Livermore, California 94550

Dear Mr. Walton:

At your request, a registered geologist from Grayland Environmental (*Grayland*) arrived at Bernard's (site) located at 1051 Airway Boulevard in Livermore, California, on ~~June~~ 19, 2001, to assist with the removal of six fuel dispensers and the associated underground product lines (Figure 1). The objective of our work was to collect soil samples from beneath each of the former fuel dispensers and from selected locations beneath the former underground piping following their removal and to collect a soil sample composite from each of the two soil stockpiles generated during the dispenser and line removal work. The soil sample collection work was supervised by a Hazardous Materials Coordinator from the Livermore - Pleasanton Fire Department.

#### **SITE DESCRIPTION**

The site is located along the east side of Airway Boulevard, approximately 600 feet north of California Interstate 580. At the time of our soil investigation, the site was occupied by Bernard's, a retail fueling station and convenience market. The site contained four underground gasoline and diesel fuel storage tanks, which were partially uncovered to expose the pipelines at the time of our investigative work (Figure 2). The site building was used for retail sales and administrative offices and included a lube bay and car wash. The surface of the site surrounding the former fuel dispensers was covered mainly with concrete and with asphaltic-concrete.

#### **FUEL DISPENSER AND LINE REMOVAL**

Six fuel dispensers were dismantled and the associated underground product lines were unearthed and removed by Walton Engineering, Inc., of West Sacramento, California. Soil material exposed by the trenching consisted of medium brown to grey clayey silt. Some water was present in the trenches as a result of a water line that was broken during the demolition work.

## SOIL SAMPLE COLLECTION WORK

Following the removal of the fuel dispensers and underground product lines, a soil sample was collected from beneath each former fuel dispenser and one soil sample was collected from beneath the former underground product lines for every approximate 20 lineal feet of line. Immediately prior to sample collection, approximately 12 inches of loose soil and/or trench backfill material were removed from beneath each former dispenser and line sample location to expose native soil (at depths of approximately 1 to 5 feet below ground surface). Each soil sample was collected by driving a clean stainless steel sample sleeve through the freshly exposed surface of the native soil using a hand-operated percussion core sampler. Immediately after collecting a soil sample, the sample sleeve was sealed with plastic end caps, labeled with the project and sample identification numbers and date, and placed in iced storage. The soil samples were listed on a chain of custody record and transported directly to the environmental laboratory for chemical testing (Appendix A).

Field evidence for soil contamination (i.e., stained soil, odor of fuel hydrocarbons, etc.) was observed mainly beneath the southwestern most former fuel dispenser (FD5), the two northern most former fuel dispensers (FD1 and FD2) and beneath the former underground product line couplings that supplied the northern most and middle rows of former fuel dispensers (sample locations PL5 and PL7 on Figure 2).

Soil generated during the fuel system renovation work was stockpiled in the open space to the east of the site building and parking area (Figure 3). Soil material removed from the area of excavation that appeared to be impacted with fuel hydrocarbons was stockpiled separately from the apparently clean overburden material (SP1 on Figure 3). The two soil stockpiles were characterized separately for disposition. Four individual soil samples were collected from each soil stockpile at random locations (a through d on Figure 3). Each sample was collected by first removing approximately 1 foot of soil from the surface of the pile and then driving a clean stainless steel sleeve into the freshly exposed surface using the percussion core sampler. Each set of four discreet stockpile soil samples were composited by the laboratory into one soil sample for chemical analysis.

## LABORATORY ANALYSES AND RESULTS

The soil samples collected from beneath the former fuel dispensers and product lines at the site were analyzed by Kiff Analytical, LLC, of Davis, California, for total petroleum hydrocarbons in the range of gasoline (TPHg); the associated volatile organic compounds benzene, toluene, ethylbenzene and total xylenes (BTEX); and the fuel oxygenate methyl t-butyl ether (MtBE) using Environmental Protection Agency (EPA) method 8260B with purge and trap EPA method 5030. Additionally, the soil samples collected from beneath the two northern most former fuel dispensers (FD1 and FD2) and the associated underground diesel fuel product line (PL1, PL4 and PL5) were analyzed for total petroleum hydrocarbons in the range of diesel fuel (TPHd) using EPA method 8015 modified. The two soil sample composites collected from the soil stockpiles were analyzed for the aforementioned hazardous substances and for total lead using EPA method 6010. Lead analyses were performed by California Laboratory Services, Inc., (CLS) of Rancho Cordova, California.

Mr. Michael Walton  
 Walton Engineering, Inc.  
 August 10, 2001

Laboratory results of the soil sample analyses indicated that elevated concentrations of TPHg, TPHd and BTEX compounds were present in the soil samples collected from the site (Table 1). The fuel oxygenate MtBE was detected in all of the soil samples except for one (S-5-PL5), which was reported at a significantly higher minimum reporting limit (0.25 parts per million) than the standard reporting limit of 0.005 parts per million (Table 1). The highest concentrations of TPHd were found in soil samples collected beneath the northeastern most former fuel dispenser (FD2) and the associated product line coupling (PL5) at the site (Table 1). The highest concentrations of TPHg were found in soil samples collected beneath the southwestern most former fuel dispenser (FD5) and the product line coupling (PL7) that supplied the middle row of former fuel dispensers at the site (Table 1). The laboratory report for these soil sample analyses is presented in Appendix A of this report.

**TABLE 1  
 LABORATORY RESULTS OF SOIL SAMPLE ANALYSES  
 FUEL DISPENSER AND PRODUCT LINE REMOVAL  
 1051 AIRWAY BOULEVARD, LIVERMORE, CALIFORNIA**

Sample Number	TPHg	B	T	E	X	TPHd	MtBE	Total Lead
<b>Soil Samples</b>								
S-3-FD1	760	0.13	<0.10	3.9	28	830	5.6	na
S-4-FD2	890	<0.25	<0.25	2.9	4.0	6,800	1.8	na
S-3-FD3	28	<0.050	0.36	0.24	2.7	na	0.97	na
S-3-FD4	3.5	0.0061	<0.005	0.032	0.11	na	0.81	na
S-1-FD5	2,800	0.59	29	32	190	na	3.6	na
S-2-FD6	29	<0.010	<0.010	0.11	0.021	na	0.066	na
S-4-PL1	<5.0	<0.050	<0.050	<0.050	<0.10	10	7.5	na
S-3-PL2	2.9	<0.050	0.052	0.036	0.40	na	2.7	na
S-3-PL3	<1.0	<0.005	0.016	0.014	0.10	na	0.092	na
S-5-PL4	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	0.0076	na
S-5-PL5	270	<0.25	0.31	0.80	4.1	9,500	<0.25	na
S-4-PL6	<1.0	<0.005	<0.005	<0.005	0.024	na	0.14	na
S-4-PL7	1,100	<0.10	<0.10	7.8	44	na	1.4	na
S-3-PL8	<1.0	<0.005	<0.005	<0.005	<0.005	na	0.017	na
S-3-PL9	<1.0	<0.005	<0.005	<0.005	0.0083	na	0.39	na
SP1a-d	70	<0.005	<0.005	0.0061	1.0	320	1.4	<2.5
SP2a-d	<1.0	<0.005	<0.005	<0.005	0.011	na	0.068	<2.5

Laboratory results of soil samples are reported in milligrams/kilogram (parts per million)  
 TPHg = Total Petroleum Hydrocarbons in the range of gasoline  
 B = Benzene T = Toluene E = Ethylbenzene X = Total Xylenes  
 TPHd = Total Petroleum Hydrocarbons in the range of diesel fuel  
 MtBE = Methyl t-Butyl Ether  
 < = Less than the laboratory method reporting limits  
 na = not analyzed

Mr. Michael Walton  
Walton Engineering, Inc.  
August 10, 2001

Soil sample composite SP1a-d contained elevated concentrations of TPHg, TPHd, ethylbenzene, total xylenes and the fuel oxygenate MtBE, while soil sample composite SP2a-d contained only slightly elevated concentrations of total xylenes and the fuel oxygenate MtBE. Neither of the soil sample composites collected at the site contained total lead at a concentration greater than 2.5 parts per million (Table 1).

## CONCLUSION AND RECOMMENDATIONS

Based on field evidence and laboratory analytical data of soil samples collected from beneath the former fuel dispensers and underground product lines at the site, it appears that subsurface soil has been impacted with fuel hydrocarbons in the ranges of gasoline and diesel fuel as a result of the operation of the former underground fueling system at the site. *Grayland* recommends, therefore, that the spatial extent of the subsurface soil contamination at the site be investigated and that groundwater beneath the site be evaluated for potential hydrocarbon contamination. *Grayland* further recommends that procedures to comply with regulatory requirements be presented to Contra Costa County Environmental Health in a Site Contamination Work Plan prior to initiating the subsurface environmental investigative work at the site.

If you have any questions regarding this fuel dispenser and line removal report, please do not hesitate to contact our office. Thank you for the opportunity to provide our environmental consulting services.

Sincerely,  
*Grayland Environmental*

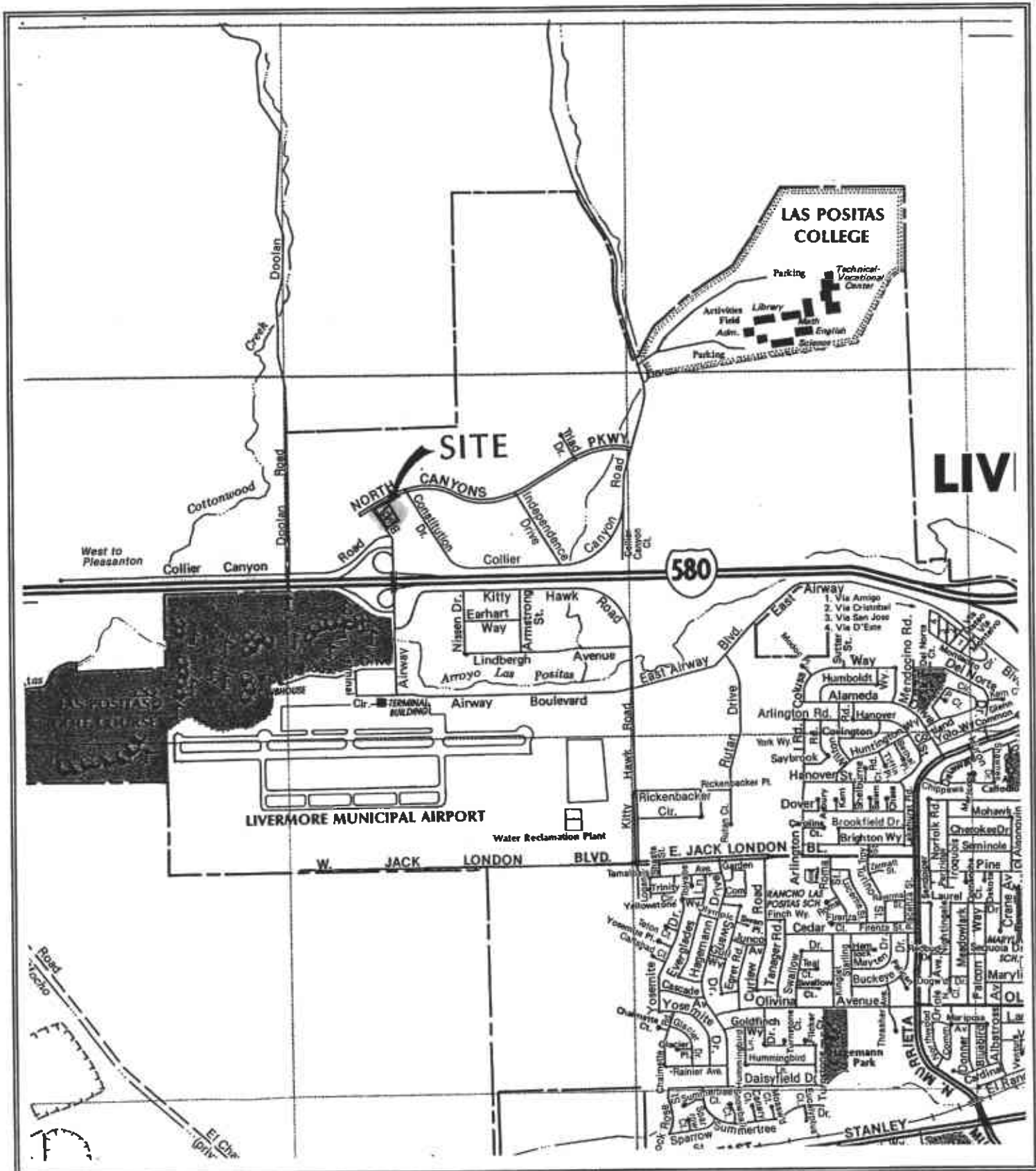


Jeffrey A. Clayton, R.G., REA  
Principal Geologist



JAC:jbc

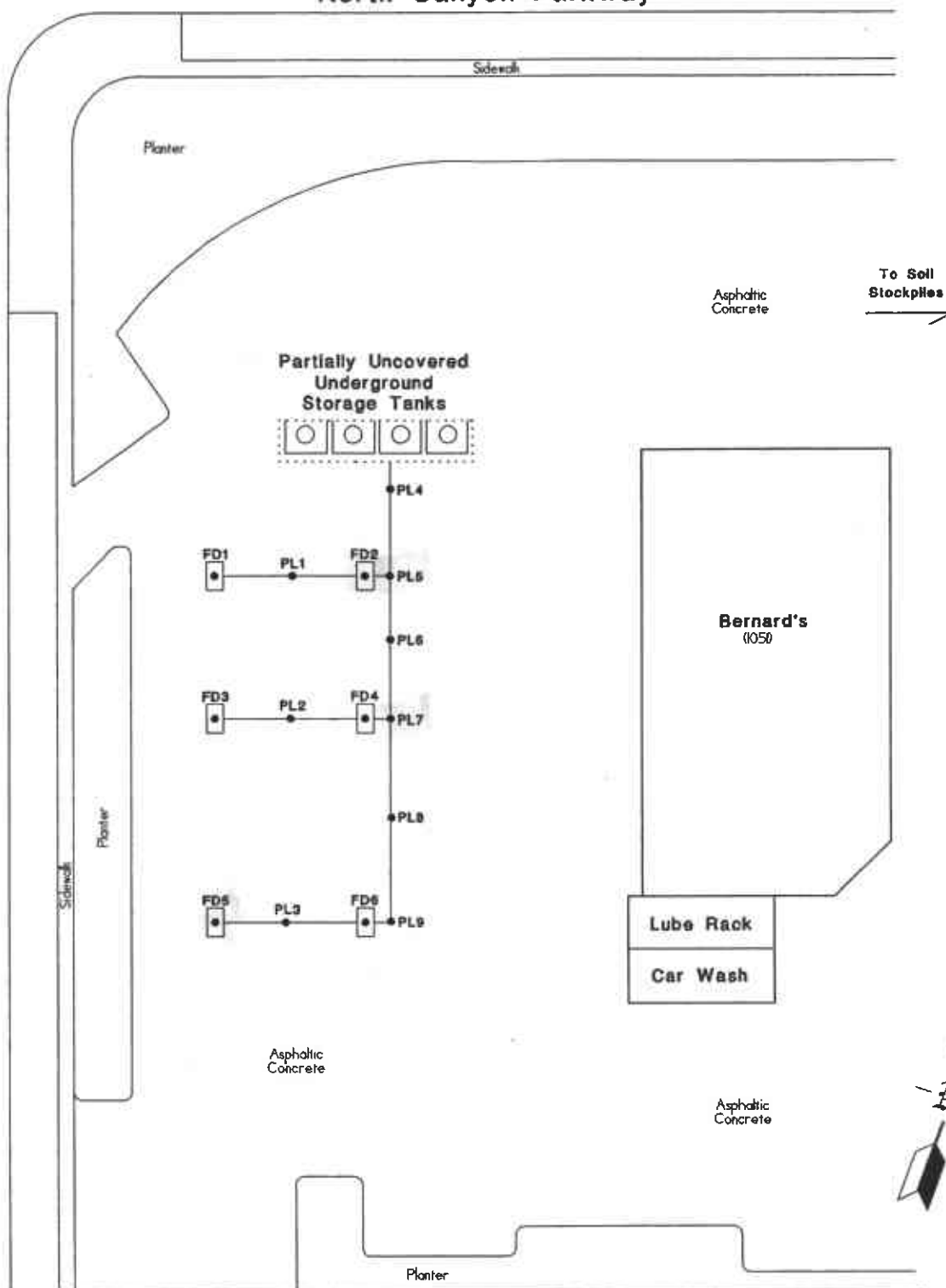
cc: Ms. Danielle Stefani (Livermore - Pleasanton Fire Department)



DRAFTED BY: JAC	CHECKED BY: JAC	PROJECT NO. 022-280	SCALE: 1:24,000	<b>GRAYLAND ENVIRONMENTAL</b>
DWG. DATE: 1982	REV. DATE: 1993	<b>BERNARD'S GAS</b>	<b>FIGURE 1</b>	
MAP SOURCE: Compass Maps, Inc. Livermore Pleasanton		<b>1051 AIRWAY BOULEVARD LIVERMORE, CALIFORNIA</b>	<b>SITE LOCATION MAP</b>	2731 Quail Street Davis, CA 95616

North Canyon Parkway

Airway Boulevard



**EXPLANATION**

- Soil Sample Location
- FD - Fuel Dispenser
- PL - Product Line



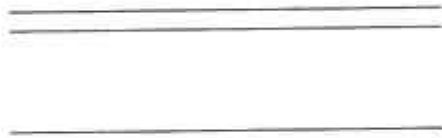
1 inch = 40 feet



DRAFTED BY: JAC	CHECKED BY: JAC	PROJECT NO. 022-280	SCALE: 1:480	<b>GRAYLAND ENVIRONMENTAL</b>  2731 Quail Street Davis, CA 95616
DWG DATE: 06-20-01	REV. DATE:	<b>BERNARD'S GAS</b>	<b>FIGURE 2</b>	
MAP SOURCE: Site Visit Sketch		<b>1051 AIRWAY BOULEVARD LIVERMORE, CALIFORNIA</b>	<b>GENERALIZED SITE PLAN</b>	



# North Canyon Parkway



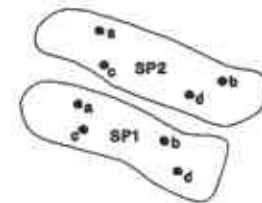
Asphaltic  
Concrete

To Soil  
Stockpiles  
→

Bare  
Soil



Some  
Gravel



Edge of Pavement

Vacant  
Lot

Asphaltic  
Concrete



1 inch = 40 feet



## EXPLANATION

- Soil Sample Location
- SP = Soil Stockpile

DRAFTED BY: <b>JAC</b>	CHECKED BY: <b>JAC</b>	PROJECT NO. 022-280	SCALE: 1:480	<b>GRAYLAND ENVIRONMENTAL</b>
DWG. DATE: 06-20-01	REV. DATE:	<b>BERNARD'S GAS</b>	<b>FIGURE 3</b>	
MAP SOURCE: Site Visit Sketch		<b>1051 AIRWAY BOULEVARD LIVERMORE, CALIFORNIA</b>	<b>SOIL STOCKPILE LOCATION MAP</b>	2731 Quail Street Davis, CA 95616

**APPENDIX A**  
**LABORATORY REPORT**



Report Number : 20888

Date : 7/10/2001

Jeff Clayton  
Grayland Environmental  
2731 Quail Street  
Davis, CA 95616

Subject : 17 Soil Samples  
Project Name :  
Project Number : 022-280

Dear Mr. Clayton,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff". The signature is written in a cursive style with a large initial "J".

Joel Kiff

Project Manager:  
*Grayland Environmental*

Phone No.:

## Chain-of-Custody Record and Analysis Request

Company/Address:

FAX No.:

### Analysis Request

TAT For Lab Use Only

Project Number:  
022-280

P.O. No.:

Email Address:  
 .pdf  .xls  .doc  other

Project Name/Location:

Sampler Signature:  
*[Signature]*

Sample Designation	Sampling		Container (Type/Amount)		Method Preserved				Matrix	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/MB015)	TPH as Diesel (MB015)	TPH as Motor Oil (MB015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1.2 DCA & 1.2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2) TOTAL (X) W.E.T. (X)	TAT	For Lab Use Only
	Date	Time	40 ml VOA SLEEVE		HCl	HNO <sub>3</sub>	ICE	NONE																
S-3-FD1	6-19-01		1				X		S			X		X								1	-01	
S-4-FD2			1				X		S			X		X								1	-02	
S-3-FD3			1				X		S					X								1	-03	
S-3-FD4			1				X		S					X								1	-04	
S-1-FD5			1				X		S					X								1	-05	
S-2-FD6			1				X		S					X								1	-06	
S-4-PL1			1				X		S			X		X								1	-07	
S-3-PL2			1				X		S					X								1	-08	
S-3-PL3			1				X		S					X								1	-09	
S-5-PL4			1				X		S			X		X								1	-10	

Relinquished by:  
*[Signature]*

Date: 6-19-01 Time: 15:00 Received by: \_\_\_\_\_

Remarks:

Relinquished by: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Date: 06/19/01 Time: 15:00 Received by Laboratory: Michele Woodmont

Bill to: Kiff Analytical, LLC

Project Manager: Grayland Environmental Phone No.: \_\_\_\_\_  
 Company Address: \_\_\_\_\_ FAX No.: \_\_\_\_\_  
 Project Number: 022-280 P.O. No.: \_\_\_\_\_ Email Address: \_\_\_\_\_  
 .pdf  .xls  .doc  other  
 Project Name/Location: \_\_\_\_\_ Sampler Signature: [Signature]

## Chain-of-Custody Record and Analysis Request

Sample Designation	Sampling		Container (Type/Amount)		Method Preserved				Matrix	Analysis Request										TAT	For Lab Use Only					
	Date	Time	40 ml VOA	SLEEVE	HCl	HNO <sub>3</sub>	ICE	NONE	WATER/SOIL	BTEX (8021B)	BTEX/TPH Gas/MTBE (8021B/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	TPH Gas/BTEX/MTBE (8260B)	5 Oxygenates/TPH Gas/BTEX (8260B)	7 Oxygenates/TPH Gas/BTEX (8260B)	5 Oxygenates (8260B)	7 Oxygenates (8260B)	Lead Scav. (1,2 DCA & 1,2 EDB - 8260B)	EPA 8260B (Full List)	Volatile Halocarbons (EPA 8260B)	Lead (7421/239.2)	TOTAL (X) W.T. (X)	12 hr/24 hr/48 hr/72 hr/1 wk		
S-5-PL5	6-19-01		1				X		S			X		X											1	-11
S-4-PL6			1				X		S					X											1	-12
S-4-PL7			1				X		S					X											1	-13
S-3-PL8			1				X		S					X											1	-14
S-3-PL9			1				X		S					X											1	-15
SP1 a-d (comp)			4				X		S		X			X								X			1	-16
SP2 a-d (comp)			4				X		S					X								X			1	-17

Relinquished by: [Signature] Date: 6-19-01 Time: 15:00 Received by: \_\_\_\_\_ Remarks: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: 06/19/01 Time: 1500 Received by Laboratory: Michelle Woodworth / Kiff Analytical LLC Bill to: \_\_\_\_\_



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-FD1

Matrix : Soil

Lab Number : 20888-01

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	0.13	0.10	mg/Kg	EPA 8260B	6/24/2001
Toluene	< 0.10	0.10	mg/Kg	EPA 8260B	6/24/2001
Ethylbenzene	3.9	0.10	mg/Kg	EPA 8260B	6/24/2001
Total Xylenes	28	0.25	mg/Kg	EPA 8260B	6/24/2001
Methyl-t-butyl ether (MTBE)	5.6	0.10	mg/Kg	EPA 8260B	6/24/2001
TPH as Gasoline	760	50	mg/Kg	EPA 8260B	6/27/2001
Toluene - d8 (Surr)	98.5		% Recovery	EPA 8260B	6/24/2001
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	6/24/2001
TPH as Diesel	830	1.0	mg/Kg	M EPA 8015	7/3/2001
1-Chlorooctadecane (Diesel Surrogate)	173		% Recovery	M EPA 8015	7/3/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : **022-280**

Sample : **S-4-FD2**

Matrix : Soil

Lab Number : 20888-02

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.25	0.25	mg/Kg	EPA 8260B	6/27/2001
Toluene	< 0.25	0.25	mg/Kg	EPA 8260B	6/27/2001
Ethylbenzene	2.9	0.25	mg/Kg	EPA 8260B	6/27/2001
Total Xylenes	4.0	0.50	mg/Kg	EPA 8260B	6/27/2001
Methyl-t-butyl ether (MTBE)	1.8	0.25	mg/Kg	EPA 8260B	6/27/2001
TPH as Gasoline	890	20	mg/Kg	EPA 8260B	6/27/2001
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	6/27/2001
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	6/27/2001
TPH as Diesel	6800	20	mg/Kg	M EPA 8015	7/5/2001
1-Chlorooctadecane (Diesel Surrogate)	Diluted Out		% Recovery	M EPA 8015	7/5/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-FD3

Matrix : Soil

Lab Number : 20888-03

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.050	0.050	mg/Kg	EPA 8260B	7/3/2001
Toluene	0.36	0.050	mg/Kg	EPA 8260B	7/3/2001
Ethylbenzene	0.24	0.050	mg/Kg	EPA 8260B	7/3/2001
Total Xylenes	2.7	0.10	mg/Kg	EPA 8260B	7/3/2001
Methyl-t-butyl ether (MTBE)	0.97	0.050	mg/Kg	EPA 8260B	7/3/2001
TPH as Gasoline	28	5.0	mg/Kg	EPA 8260B	7/3/2001
Toluene - d8 (Surr)	96.0		% Recovery	EPA 8260B	7/3/2001
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	7/3/2001

Approved By:  Joel Kiff





Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-FD4

Matrix : Soil

Lab Number : 20888-04

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	0.0061	0.0050	mg/Kg	EPA 8260B	7/2/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	7/2/2001
Ethylbenzene	0.032	0.0050	mg/Kg	EPA 8260B	7/2/2001
Total Xylenes	0.11	0.010	mg/Kg	EPA 8260B	7/2/2001
Methyl-t-butyl ether (MTBE)	0.81	0.0050	mg/Kg	EPA 8260B	7/2/2001
TPH as Gasoline	3.5	1.0	mg/Kg	EPA 8260B	7/2/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/2/2001
4-Bromofluorobenzene (Surr)	99.6		% Recovery	EPA 8260B	7/2/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-1-FD5

Matrix : Soil

Lab Number : 20888-05

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	0.59	0.25	mg/Kg	EPA 8260B	6/28/2001
Toluene	29	0.25	mg/Kg	EPA 8260B	6/28/2001
Ethylbenzene	32	0.25	mg/Kg	EPA 8260B	6/28/2001
Total Xylenes	190	0.50	mg/Kg	EPA 8260B	6/28/2001
Methyl-t-butyl ether (MTBE)	3.6	0.25	mg/Kg	EPA 8260B	6/28/2001
TPH as Gasoline	2800	20	mg/Kg	EPA 8260B	6/28/2001
Toluene - d8 (Surr)	95.0		% Recovery	EPA 8260B	6/28/2001
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	6/28/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-2-FD6

Matrix : Soil

Lab Number : 20888-06

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.010	0.010	mg/Kg	EPA 8260B	6/30/2001
Toluene	< 0.010	0.010	mg/Kg	EPA 8260B	6/30/2001
Ethylbenzene	0.11	0.010	mg/Kg	EPA 8260B	6/30/2001
Total Xylenes	0.021	0.010	mg/Kg	EPA 8260B	6/30/2001
Methyl-t-butyl ether (MTBE)	0.066	0.010	mg/Kg	EPA 8260B	6/30/2001
TPH as Gasoline	29	1.0	mg/Kg	EPA 8260B	6/30/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/30/2001
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	6/30/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-4-PL1

Matrix : Soil

Lab Number : 20888-07

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.050	0.050	mg/Kg	EPA 8260B	6/27/2001
Toluene	< 0.050	0.050	mg/Kg	EPA 8260B	6/27/2001
Ethylbenzene	< 0.050	0.050	mg/Kg	EPA 8260B	6/27/2001
Total Xylenes	< 0.10	0.10	mg/Kg	EPA 8260B	6/27/2001
Methyl-t-butyl ether (MTBE)	7.5	0.050	mg/Kg	EPA 8260B	6/27/2001
TPH as Gasoline	< 5.0	5.0	mg/Kg	EPA 8260B	6/27/2001
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	6/27/2001
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	6/27/2001
TPH as Diesel	10	1.0	mg/Kg	M EPA 8015	7/5/2001
1-Chlorooctadecane (Diesel Surrogate)	96.9		% Recovery	M EPA 8015	7/5/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-PL2

Matrix : Soil

Lab Number : 20888-08

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/29/2001
Toluene	0.052	0.0050	mg/Kg	EPA 8260B	6/29/2001
Ethylbenzene	0.036	0.0050	mg/Kg	EPA 8260B	6/29/2001
Total Xylenes	0.40	0.010	mg/Kg	EPA 8260B	6/29/2001
Methyl-t-butyl ether (MTBE)	2.7	0.0050	mg/Kg	EPA 8260B	6/29/2001
TPH as Gasoline	2.9	1.0	mg/Kg	EPA 8260B	6/29/2001
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	6/29/2001
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/29/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-PL3

Matrix : Soil

Lab Number : 20888-09

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/28/2001
Toluene	0.016	0.0050	mg/Kg	EPA 8260B	6/28/2001
Ethylbenzene	0.014	0.0050	mg/Kg	EPA 8260B	6/28/2001
Total Xylenes	0.10	0.0050	mg/Kg	EPA 8260B	6/28/2001
Methyl-t-butyl ether (MTBE)	0.092	0.0050	mg/Kg	EPA 8260B	6/28/2001
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/28/2001
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	6/28/2001
4-Bromofluorobenzene (Surr)	99.0		% Recovery	EPA 8260B	6/28/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-5-PL4

Matrix : Soil

Lab Number : 20888-10

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/24/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/24/2001
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/24/2001
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/24/2001
Methyl-t-butyl ether (MTBE)	0.0076	0.0050	mg/Kg	EPA 8260B	6/24/2001
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/24/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/24/2001
4-Bromofluorobenzene (Surr)	121		% Recovery	EPA 8260B	6/24/2001
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	7/3/2001
1-Chlorooctadecane (Diesel Surrogate)	108		% Recovery	M EPA 8015	7/3/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-5-PL5

Matrix : Soil

Lab Number : 20888-11

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.25	0.25	mg/Kg	EPA 8260B	6/24/2001
Toluene	0.31	0.25	mg/Kg	EPA 8260B	6/24/2001
Ethylbenzene	0.80	0.25	mg/Kg	EPA 8260B	6/24/2001
Total Xylenes	4.1	0.50	mg/Kg	EPA 8260B	6/24/2001
Methyl-t-butyl ether (MTBE)	< 0.25	0.25	mg/Kg	EPA 8260B	6/24/2001
TPH as Gasoline	270	20	mg/Kg	EPA 8260B	6/24/2001
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	6/24/2001
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	6/24/2001
TPH as Diesel	9500	20	mg/Kg	M EPA 8015	7/5/2001
1-Chlorooctadecane (Diesel Surrogate)	Diluted Out		% Recovery	M EPA 8015	7/5/2001

Approved By:  Joel Kiff





Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-4-PL6

Matrix : Soil

Lab Number : 20888-12

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Total Xylenes	0.024	0.0050	mg/Kg	EPA 8260B	6/27/2001
Methyl-t-butyl ether (MTBE)	0.14	0.0050	mg/Kg	EPA 8260B	6/27/2001
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/27/2001
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	6/27/2001
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	6/27/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-4-PL7

Matrix : Soil

Lab Number : 20888-13

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.10	0.10	mg/Kg	EPA 8260B	6/28/2001
Toluene	< 0.10	0.10	mg/Kg	EPA 8260B	6/28/2001
Ethylbenzene	7.8	0.10	mg/Kg	EPA 8260B	6/28/2001
Total Xylenes	44	0.25	mg/Kg	EPA 8260B	6/28/2001
Methyl-t-butyl ether (MTBE)	1.4	0.50	mg/Kg	EPA 8260B	7/3/2001
TPH as Gasoline	1100	50	mg/Kg	EPA 8260B	7/3/2001
Toluene - d8 (Surr)	97.0		% Recovery	EPA 8260B	6/28/2001
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	6/28/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-PL8

Matrix : Soil

Lab Number : 20888-14

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Methyl-t-butyl ether (MTBE)	0.017	0.0050	mg/Kg	EPA 8260B	6/27/2001
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/27/2001
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/27/2001
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	6/27/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : S-3-PL9

Matrix : Soil

Lab Number : 20888-15

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/25/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/25/2001
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/25/2001
Total Xylenes	0.0083	0.0050	mg/Kg	EPA 8260B	6/25/2001
Methyl-t-butyl ether (MTBE)	0.39	0.0050	mg/Kg	EPA 8260B	6/25/2001
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/25/2001
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/25/2001
4-Bromofluorobenzene (Surr)	119		% Recovery	EPA 8260B	6/25/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : SP1a-d (comp)

Matrix : Soil

Lab Number : 20888-16

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/27/2001
Ethylbenzene	0.0061	0.0050	mg/Kg	EPA 8260B	6/27/2001
Total Xylenes	1.0	0.010	mg/Kg	EPA 8260B	6/27/2001
Methyl-t-butyl ether (MTBE)	1.4	0.0050	mg/Kg	EPA 8260B	6/27/2001
TPH as Gasoline	70	10	mg/Kg	EPA 8260B	6/24/2001
Toluene - d8 (Surr)	94.4		% Recovery	EPA 8260B	6/27/2001
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/27/2001
TPH as Diesel	320	1.0	mg/Kg	M EPA 8015	7/3/2001
1-Chlorooctadecane (Diesel Surrogate)	Interference		% Recovery	M EPA 8015	7/3/2001

Approved By:  Joel Kiff



Report Number : 20888

Date : 7/10/2001

Project Name :

Project Number : 022-280

Sample : SP2a-d (comp)

Matrix : Soil

Lab Number : 20888-17

Sample Date :6/19/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/25/2001
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/25/2001
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	6/25/2001
Total Xylenes	0.011	0.0050	mg/Kg	EPA 8260B	6/25/2001
Methyl-t-butyl ether (MTBE)	0.068	0.0050	mg/Kg	EPA 8260B	6/25/2001
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/25/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/25/2001
4-Bromofluorobenzene (Surr)	93.7		% Recovery	EPA 8260B	6/25/2001

Approved By:  Joel Kiff

Joel Kiff  
720 Olive Drive,  
Suite D  
Davis, CA 95616

07/06/2001

Attention: Joel Kiff

Reference: Analytical Results

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Project Name:  
Project No.: 022-280  
Date Received: 06/25/2001  
Chain Of Custody: 20888

CLS ID No.: S9489  
CLS Job No.: 839489

The following analyses were performed on the above referenced project:

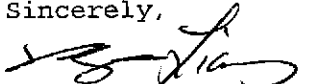
<u>No. of Samples</u>	<u>Turnaround Time</u>	<u>Analysis Description</u>
2	4 Days	Lead by EPA Method 6010

These samples were received by CLS Labs in a chilled, intact state and accompanied by a valid chain of custody document.

Calibrations for analytical testing have been performed in accordance to and pass the EPA's criteria for acceptability.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,



James Liang, Ph.D.  
Laboratory Director

20888

59489

**KIFF ANALYTICAL SUBCONTRACT FORM**

Subcontract Lab:

**CLS Labs**

Please mail results to :

Please fax to :

**3249 Fitzgerald Rd.**

**Rancho, Cordova, CA 95742**

JOEL KIFF  
KIFF ANALYTICAL  
720 OLIVE DRIVE, SUITE D  
DAVIS, CA 95616

530-297-4803

916-638-7301

Account No. :

**PROJECT NAME :**

**PROJECT NUMBER: 022-280**

Sample	Matrix	Sampled	Tests	Due	Container
SP1a-d (comp)	SO	06/19/2001	Lead - ICAP	06/29/2001	
SP2a-d (comp)	SO	06/19/2001	Lead - ICAP	06/29/2001	

Relinquished by: Scott [Signature] / KIFF ANALYTICAL Date/Time: 6/25/01 1435 Received by: Jonas [Signature] CLS

Relinquished by: Jonas [Signature] Date/Time: 6/25/01 1630 Received by: [Signature]

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_



# CALIFORNIA LABORATORY SERVICES

Environmental  
Chemistry 

Analysis Report: Lead, EPA Method 6010

Client: Joel Kiff  
720 Olive Drive,  
Suite D  
Davis, CA 95616

Project No.: 022-280  
Contact: Joel Kiff  
Phone: (530) 297-4800

Project:

Date Sampled: 06/19/2001  
Date Received: 06/25/2001  
Date Extracted: 06/27/2001  
Date Analyzed: 07/02/2001  
Date Reported: 07/06/2001

Lab Contact: James Liang  
Lab ID No.: S9489  
Job No.: 839489  
COC Log No.: 20888  
Batch No.: M010627A  
Instrument ID: IP004  
Analyst ID: SCOTT  
Matrix: SOIL

## ANALYTICAL RESULTS

Lab / Client ID Analyte	CAS No.	Results (mg/kg)	Rep. Limit (mg/kg)	Dilution (factor)
1A / SP1a-d (comp) Pb (Lead)	7439921	ND	2.5	1.0
2A / SP2a-d (comp) Pb (Lead)	7439921	ND	2.5	1.0

ND = Not detected at or above indicated Reporting Limit