cc: Ravi G.

STID 3841

GERAGHTY & MILLER, INC.
Environmental Services

Ground Water *Engineering* *Hydrocarbon* *Remediation* *Education*

92 MAR -1 PM 3:24

March 19, 1992
Project No. RC08501

Mr. Weyman Lee
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

SUBJECT: Source Test Results for the Soil Vapor Extraction and Abatement System, Chevron Service Station #9-2582, 7420 Dublin Blvd., Dublin, California; BAAQMD Permit No. 7703. 94568

Dear Mr. Lee:

This letter presents the analytical results of the air samples collected during the source test of the soil vapor extraction and abatement system located at the site referenced above. The results are presented by Geraghty & Miller, Inc. (Geraghty & Miller) on behalf of Chevron U.S.A. Inc. (Chevron) as part of the conditions set forth in the Authority to Construct Permit No. 7703 (Permit). Per a notification letter to your office (Geraghty & Miller, March 2, 1992), Geraghty & Miller began the operation of the soil vapor extraction and abatement system on March 10, 1992. The system consists of a 5-hp vapor extraction blower and a 100 scfm catalytic oxidation vapor abatement unit.

Condition 9 of the Permit stipulates that a source destruction efficiency test be conducted within 10 days of system start-up. In compliance with Condition 9, samples of the influent and effluent of the catalytic oxidation abatement device were collected on March 10, 1992. Two air samples were collected into Tedlar™ bags; a sample of the influent was collected from a sample port located after the blower and prior to the catalytic unit; and a sample of the effluent was collected from a sample port located in the side of the exhaust stack. The samples were analyzed by Clayton Environmental for total petroleum hydrocarbons (TPH) as gasoline by United States Environmental Protection Agency (USEPA) Method 8015, modified, and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA Method 8020. Concentrations of gasoline in air are calculated based on standard temperature and pressure and are reported for an assumed molecular weight of hexane. A summary of laboratory analytical results with the calculated emission rates and destruction efficiencies are presented in Table 1. Copies of the certified laboratory report are included in Attachment 1.

1050 Marina Way South • Richmond, California 94804 • (510) 233-3200 • FAX (510) 233-3204

Analytical results from Clayton Environmental are reported in parts per million by volume. The source emissions are calculated by determining the weight of benzene per volume of air measured in the sample, then multiplying this number by the total amount of air flow through the catalytic oxidation unit, as shown in the following example from the March 10, 1992 sampling. These results are shown in Table 1.

$$\frac{<0.3 \text{ Parts Benzene Volume}}{1{,}000{,}000 \text{ Parts Air Volume}} \times \frac{0.206 \text{ lbs Benzene}}{\text{ft}^3 \text{ Benzene}} \times \frac{86 \text{ ft}^3 \text{ Air}}{\text{min}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{24 \text{ hr}}{\text{day}}$$

$$= \frac{<0.008 \text{ lbs Benzene}}{\text{day}}$$

The benzene emission rate calculated using the analytical result from the sampling performed on March 10, 1992, indicates that the catalytic oxidation unit is operating in compliance with the conditions set forth in Condition 3 of the Permit (0.02 lbs/day benzene). These analytical results also indicate a destruction efficiency of 96.0 percent for TPH as gasoline. This demonstrates that the system is operating in compliance with Condition 2 of the Permit, which stipulates that the system maintain a destruction efficiency of 95 percent at inlet POC concentrations of 1,000 ppm or less.

In compliance with Condition 10 of the Permit, Geraghty & Miller is maintaining a logbook in which are recorded: the hours and time the system is in operation; the dates of each emission test, together with the analytic results for said test; and the results of analyses used to determine the remaining life of the catalyst.

As shown in Table 1, the inlet of the catalyst bed of the catalytic unit was at a temperature of 627 °F, and the catalyst bed itself has been operating at a temperature of about 900 °F. This is above the 600 °F operating temperature stipulated in Condition 4 of the Permit. Finally, a temperature recorder is continuously recording the operating temperature of the catalyst bed, as required by Condition 8 of the Permit.

If you have any questions regarding this project, please do not hesitate to call the undersigned at (510) 233-3200.

Sincerely,
GERAGHTY & MILLER, INC.

David B. Thomas
Project Engineer

Gary W. Keyes, P.E.
Principal Engineer/Associate

Attachments:

	Table 1	Summary of Analytical Results and Calculated Hydrocarbon Emissions
	Attachment 1	Certified Laboratory Reports

cc: Clint Rogers, Chevron U.S.A. Inc.

Table 1: Summary of Analytical Results and Calculated Hydrocarbon Emissions
Chevron Service Station #9-2582,
7420 Dublin Blvd., Dublin, California.

Date	Compound (ppmv)	Temp. at T-1	Temp. at T-2	Temp. at T-3	Influent (ppmv)	Effluent (ppmv)		Percent Destruction		Air Flow From Well CFM	Removal lbs/day	Emissions lbs/day	
3/10/92	Benzene	627°F	932°F	910°F	19	<0.3	a	98.4	b	86.	0.47	0.01	c
	TPH-gasoline				980	40		95.9		86.	28.52	1.14	

Notes:
Benzene analysis was performed according to USEPA Method 8020.
TPH-as-gasoline analysis was performed according to USEPA Method 8015.
Hydrocarbon concentrations reported in ppmv (as hexane)
a - Maximum hydrocarbon in sample; for example: ND <0.3 ppmv for benzene.
b - Minimum destruction efficiency (calculation based on detection limit).
c - Maximum hydrocarbon emissions (calculation based on detection limit).

ATTACHMENT 1

CERTIFIED LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

March 17, 1992

Mr. David Thomas
GERAGHTY & MILLER, INC.
1050 Marina Way South
Richmond, CA 94804

Client Ref. 9-2582 / RC08501
Clayton Project No. 92031.23

Dear Mr. Thomas:

Attached is our analytical laboratory report for the samples received on March 11, 1992. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Maryann Gambino, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Michael Lynch for

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/tb
Attachments

Clayton ENVIRONMENTAL CONSULTANTS

Results of Analysis
for
Chevron U.S.A. Inc./Geraghty & Miller, Inc.

Client Reference: 9-2582 / RC08501
Clayton Project No. 92031.23

Sample Identification:	SYSTEM INFLUENT	Date Sampled:	03/10/92
Lab Number:	9203123-01A	Date Received:	03/11/92
Sample Matrix/Media:	TEDLAR BAG	Date Analyzed:	03/12/92
Analytical Method:	EPA 8015/8020 (Mod.)		

Analyte	CAS #	Concentration (ppm)	Limit of Detection (ppm)
BTEX/Gasoline			
Benzene	71-43-2	19	1
Toluene	108-88-3	25	1
Ethylbenzene	100-41-4	ND	0.9
p,m-Xylenes	--	4.8	0.9
o-Xylene	95-47-6	2.1	0.9
Gasoline	--	980	80

ND Not detected at or above limit of detection
-- Information not available or not applicable

Clayton
ENVIRONMENTAL CONSULTANTS

Results of Analysis
for
Chevron U.S.A. Inc./Geraghty & Miller, Inc.

Client Reference: 9-2582 / RC08501
Clayton Project No. 92031.23

Sample Identification:	SYSTEM EFFLUENT	Date Sampled:	03/10/92
Lab Number:	9203123-02A	Date Received:	03/11/92
Sample Matrix/Media:	TEDLAR BAG	Date Analyzed:	03/12/92
Analytical Method:	EPA 8015/8020 (Mod.)		

Analyte	CAS #	Concentration (ppm)	Limit of Detection (ppm)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.3
Toluene	108-88-3	0.4	0.2
Ethylbenzene	100-41-4	ND	0.2
p,m-Xylenes	--	0.6	0.2
o-Xylene	95-47-6	0.2	0.2
Gasoline	--	40	20

ND Not detected at or above limit of detection
-- Information not available or not applicable

Clayton ENVIRONMENTAL CONSULTANTS

Results of Analysis
for
Chevron U.S.A. Inc./Geraghty & Miller, Inc.

Client Reference: 9-2582 / RC08501
Clayton Project No. 92031.23

Sample Identification: METHOD BLANK
Lab Number: 9203123-03A
Sample Matrix/Media: TEDLAR BAG
Analytical Method: EPA 8015/8020 (Mod.)

Date Sampled: --
Date Received: --
Date Analyzed: 03/12/92

Analyte	CAS #	Concentration (ppm)	Limit of Detection (ppm)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.3
Toluene	108-88-3	ND	0.2
Ethylbenzene	100-41-4	ND	0.2
p,m-Xylenes	--	ND	0.2
o-Xylene	95-47-6	ND	0.2
Gasoline	--	ND	20

ND Not detected at or above limit of detection
-- Information not available or not applicable

Quality Assurance Results Summary
for
Clayton Project No. 92031.23

Clayton Lab Number:	9203123-MS	Analytical Method:	EPA8015 8020
Ext./Prep. Method:		Instrument ID:	05587
Date:	/ /	Date:	03/12/92
Analyst:		Time:	17:03
Std. Source:	V920311-01W	Analyst:	PF
Sample Matrix/Media:	AIR	Units:	PPM

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	2.10	2.12	101	2.15	102	102	60	140	1.4	25
GASOLINE	(FID)	ND	67.0	62.7	94	62.4	93	93	60	140	0.5	25
TOLUENE	(PID)	ND	5.70	5.84	102	5.99	105	104	60	140	2.5	25

LCS = Laboratory Control Sample   LCL = Lower Control Limit

ox copy of Lab Report and COC to Chevron Contact: ☒ No [illegible] **Chain-of-Custody-Record**

evron U.S.A. Inc.
O. BOX 5004
n Ramon, CA 94583
X (415)842-9591

Chevron Facility Number: 9-2582 (former Chevron station)
Facility Address: 7420 Dublin Blvd, Dublin, California
Consultant Project Number: RC08501
Consultant Name: Geraghty and Miller
Address: 1050 Marina Way South
Project Contact (Name): David Thomas
(Phone) (510) 233-3200 (Fax Number) 233-3204

Chevron Contact (Name): Clint Rogers
(Phone): (510) 842-8658
Laboratory Name: Clayton Environmental
Laboratory Release Number: to follow
Samples Collected by (Name): David B Thomas
Collection Date: 3/10/92
Signature: David B Thomas

Analyses To Be Performed

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)						Remarks
																					Hot. ≠1,000-3,000 ppmv
[illegible] Effluent	-01A	1	A	G	1:25pm	Ice	x	X													low concentration
[illegible] Effluent	-02A	1	A	G	1:29pm	Ice	x	X													

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
David B Thomas	G+M	3/11/92 10:51	J Mitchell	CEC	3/11/92 @ 10:51am
J Mitchell	CEC	3/11/92 @ 12:55pm	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) [signature]		Date/Time 3/11/92 12:55pm

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
(As Contracted)