

ENVIRONMENTAL
PROTECTION

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Chevron

October 14, 1996

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Marketing - Northwest Region
Phone 510 842 9500

**Re: Former Chevron Service Station #9-0100
2428 Central Avenue, Alameda, California**

Dear Ms. Shin:

Enclosed is a copy of the Well Installation Report prepared by our consultant Gettler-Ryan Inc. and completed in accordance to the "Work Plan for Limited Subsurface Investigation", dated June 25, 1996 with an Addendum to the Work Plan, dated July 29, 1996. This limited subsurface investigation was conducted to determine the lateral delineation of the petroleum hydrocarbons in the groundwater and to determine if the hydrocarbon plume has stabilized.

Three off-site borings were installed and converted to monitoring wells MW-4, MW-5 and MW-6. The wells were installed to a depth of 21.5 feet, with MW-5 and MW-6 in a downgradient direction from the site and MW-4 crossgradient from the site. Groundwater was detected at about 8 feet below surface grade with a direction of flow to the north. Soil samples were collected and analyzed for TPH-g, BTEX and MtBE constituents; and two soil samples were analyzed for organic carbon, bulk density, porosity and moisture. The water samples were analyzed for TPH-g, BTEX and MtBE constituents.

The results of the soil sampling did not indicate the presence of any TPH-g, BTEX and MtBE constituents below method detection limits. Organic carbon was detected at 0.073% and 0.030%, total porosity at 37%, bulk dry density at 1.69 and 1.70 gm/cc, and bulk wet density at 1.76 and 2.01 gm/cc. TPH-g, BTEX and MtBE constituents were not detected below method detection limits in the groundwater samples taken from monitoring wells MW-4, MW-5 and MW-6. The other three wells were also monitored at the same time and a third quarter monitoring report will be submitted under separate cover.

Therefore, based on the above noted analytical results, it appears that the soil and groundwater to the north, northeast, and east have not been impacted by petroleum hydrocarbon constituents. It also appears that the lateral extent of the hydrocarbon plume has been determined and that the existing plume is stabilized.

If you have any questions, call me at (51) 842-9136.

Sincerely,
CHEVRON PRODUCTS COMPANY


Philip R. Briggs
Site Assessment and Remediation Project Manager

Ms. Juliet Shin
Former Chevron Service Station # 9-0100
October 14, 1996
Page 2

Enclosure

cc. Ms. Bette Owen, Chevron

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GETTLER-RYAN INC.

WELL INSTALLATION REPORT

for
Former Chevron Service Station #9-0100
2428 Central Avenue
Alameda, California

Project No. 5178.02-3

Prepared for:

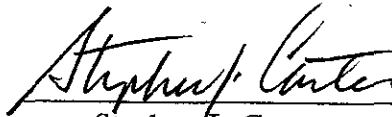
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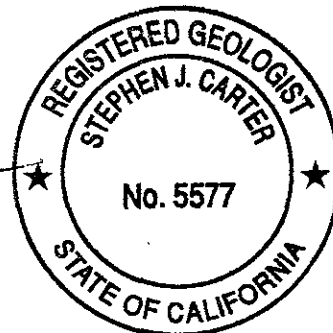
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October 4, 1996

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Appendix C:	Well Development and Sampling Field Data Sheets
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EXECUTIVE SUMMARY

Gettler-Ryan Inc. (G-R) presents this report for a well installation at Former Chevron Service Station #9-0100 located at 2428 Central Avenue in Alameda, California. Three off-site soil borings were drilled and groundwater monitoring wells MW-4 through MW-6 were installed in these borings during this investigation.

Soil encountered in borings MW-4 through MW-6 consisted of fine sand to the total depth explored of 21.5 feet below ground surface (bgs). Groundwater was encountered between 7.5 to 8 feet bgs. Based on the groundwater monitoring data collected during this investigation, shallow groundwater beneath the site appears to flow to the north at an approximate gradient of 0.003.

Porosity of soil from boring MW-4 was 38%, moisture of unsaturated soil was 4%, bulk density ranged from 1.69 grams per cubic centimeter (gm/cc) for unsaturated sample to 2.01 gm/cc for saturated sample.

Petroleum hydrocarbons were not detected in soil samples collected at 6 feet bgs in borings MW-4 through MW-6. Organic carbon was 0.073% and 0.030% in soil samples collected from boring MW-4 at 4 and 16 feet, respectively.

Petroleum hydrocarbons were not detected in the groundwater samples collected from newly installed wells MW-4 through MW-6 or from pre-existing well MW-3. However, pre-existing wells MW-1 and MW-2 contained 7,600 parts per billion (ppb) and 2,700 ppb of total petroleum hydrocarbons as gasoline (TPHg), respectively. Benzene concentrations in these wells were 120 ppb and 35 ppb, respectively.

Based on the analytical results from soil and groundwater samples collected and analyzed during this investigation, it appears that the soil and groundwater north, northeast, or east of the subject site have not been impacted by petroleum hydrocarbons. The third quarter 1996 monitoring and sampling data will be fully presented in the forthcoming *Quarterly Monitoring and Sampling Report*.



GETTLER-RYAN INC.

WELL INSTALLATION REPORT

for
Former Chevron Service Station #9-0100
2428 Central Avenue
Alameda, California

Project No. 5178.02-3

1.0 INTRODUCTION

This report summarizes the results of a well installation performed at Former Chevron Station #9-0100, located at 2428 Central Avenue in Alameda, California. The work was performed at the request of Chevron Products Company (Chevron) to further assess soil and groundwater conditions at the subject site. The scope of work included: obtaining the required well installation permits; installing three off-site groundwater monitoring wells (MW-4 through MW-6); collecting soil samples for chemical and physical analysis; developing the newly installed wells; sampling all site monitoring wells; arranging for Chevron's contractor to dispose of the waste materials; and preparing a report documenting the work. This work was originally proposed in G-R's *Work Plan for Limited Subsurface Investigation* dated June 25, 1996, and *Addendum to Work Plan for Limited Subsurface Investigation*, dated July 29, 1996. These documents were approved by the Alameda County Health Care Services Agency (ACHCSA). The scope of work included: obtaining the required well installation permits; installing three off-site groundwater monitoring wells (MW-4 through MW-6); collecting soil samples for chemical and physical analysis; developing the newly installed wells; sampling all site monitoring wells; arranging for Chevron's contractor to dispose of the waste materials; and preparing a report documenting the work.

2.0 SITE DESCRIPTION

2.1 General

The former Chevron Service Station is located on the southern corner of the intersection of Central and Park Avenues in the City of Alameda, California. A multi-story hotel and office building currently occupy the site. Properties to the north and east are developed for commercial uses. A residential neighborhood is situated to the west (Figure 1).

2.2 Geology and Hydrogeology

The site is located at the western margin of the East Bay Plain, at the southern end of Alameda Island. San Francisco Bay is situated ½ mile to the west, San Leandro Bay is situated ½ mile to the south, and the Oakland Inner Harbor is situated approximately ¼ mile to the north and west. Local topography is relatively flat at an elevation of approximately 10 feet above mean sea level. Soil in the vicinity is mapped as Pleistocene beach and dune sand deposits (Merrit Sand) that consists of loose well-sorted fine to medium sand (E.J. Helley and others, 1979).

Historical groundwater monitoring data indicate that groundwater is approximately 5 to 10 feet bgs, and groundwater flow fluctuates between the north and east.

2.3 Previous Environmental Investigations

According to the data provided by Chevron, a service station operated at the site from 1947 until January 1970. The station building was demolished and four underground storage tanks (UST) with associated product piping were removed. Data on soil conditions at the time of UST removal is not available.

In June 1993, two soil borings (EB-1 and EB-2) were drilled near the former pump island and the former UST pit, respectively. Groundwater was encountered at approximately 10 feet bgs. Soil samples collected from borings EB-1 at 5 feet bgs and EB-2 at 5 and 10 feet bgs did not contain detectable concentrations of TPHg, total petroleum hydrocarbons as diesel (TPHd), or benzene, toluene, ethylbenzene and xylenes (BTEX). The soil sample collected from boring EB-1 at 10 feet bgs contained 211 parts per million (ppm) of TPHd, and 7,94 ppm benzene. The grab groundwater sample collected from boring EB-1 contained concentrations of TPHd (27,870 ppb) and benzene (1,782 ppb). The grab groundwater sample collected from boring EB-2 did not contain detectable concentrations of TPHg, TPHd, or BTEX.

Groundwater monitoring wells MW-1 through MW-3 were installed by Weiss Associates in April 1994. Groundwater was encountered at approximately 7 feet bgs. Soil samples collected from borings MW-1 through MW-3 at 5 feet bgs and MW-3 at 10 feet bgs did not contain detectable concentrations of TPHg, TPHd, or BTEX. The soil sample collected from boring MW-1 at 10 feet bgs contained detectable concentrations of TPHg (1,300 ppm), and TPHd (150 ppm). The soil sample collected from boring MW-2 at 10 feet bgs contained detectable concentrations of TPHg (3,000 ppm), TPHd (340 ppm), and benzene (8 ppm). The groundwater sample collected from MW-1 contained detectable concentrations of TPHg (7,400 ppb), TPHd (840 ppb), and benzene (120 ppb). The groundwater sample collected from well MW-2 contained detectable concentrations of TPHg (6,400 ppb), and TPHd (920 ppb). TPHg, TPHd, or BTEX were not detected in the groundwater sample collected from well MW-3.

The laboratory concluded that the TPHd chromatogram pattern was indicative of weathered gasoline, not diesel. Based on available records, it appears that Chevron never distributed diesel at this site.

Quarterly monitoring and sampling was initiated at the site in March 1994. During the latest monitoring and sampling event (March 1996), the groundwater sample from well MW-1 contained 5,600 ppb TPHg and 250 ppb benzene, and the groundwater sample from well MW-2 contained 1,300 ppb TPHg and 42 ppb benzene. Historical data indicate that hydrocarbon concentrations in groundwater monitoring wells MW-1 and MW-2 have not changed significantly since the quarterly monitoring began. Hydrocarbon concentrations have never been detected in groundwater samples from monitoring well MW-3.

3.0 FIELD WORK

Field work was conducted in accordance with G-R's Field Methods and Procedures (Appendix A) and the Site Safety Plan dated August 22, 1996. Well installation permit (#96493) was acquired from the Zone 7 Water Agency, encroachment permits (EN 96-086 through EN-96-088) were obtained from the City of Alameda, and Underground Service Alert was notified prior to drilling at the site. Copies of the permits are included in Appendix B.

3.1 Drilling Activities

On August 26, 1996, a G-R geologist observed Bay Area Exploration Services, Inc. (C57 #522125) drill and install three off-site groundwater monitoring wells (MW-4 through MW-6) at the locations shown on Figure 2. The well borings were each drilled to 21.5 feet bgs using 8-inch hollow-stem augers driven by a truck-mounted CME-45 drill rig. Soil samples were collected every 5 feet at a minimum. The G-R geologist prepared logs of borings and screened the soil samples in the field for the presence of volatile organic compounds. Screening data are presented on the boring logs (Appendix B).

A groundwater monitoring well was constructed in each boring using 15 feet of two-inch diameter, 0.010-inch machine-slotted Schedule 40 PVC screen and a filter sock. Lonestar #2/12 graded sand was placed in each well across the entire screen interval and extended approximately 1/2 to 1 foot above the top of the screen. The well was then sealed with 1 foot of hydrated bentonite chips followed by neat cement. Well construction details are presented on the boring logs in Appendix B.

Drill cuttings were placed in 55-gallon drums and stored on the former Chevron station site. After completion of drilling, four samples for disposal characterization were collected from the drill cuttings and submitted to the laboratory for compositing and analysis as sample SP-(A-D)COMP. On August 30, 1996, the drill cuttings were removed from the site and transported to the BFI Landfill in Livermore by Integrated Wastestream Management (IWM).

3.2 Well Development and Sampling

On August 31, 1996, groundwater monitoring wells MW-4 through MW-6 were developed by G-R personnel using a vented surge block and hand-bailing. On September 3, 1996, the newly installed wells MW-4 through MW-6 were monitored, purged and sampled in conjunction with quarterly monitoring and sampling of pre-existing site wells MW-1 through MW-3. Purge water generated during well development and sampling was transported to McKittrick Waste Management by IWM. Groundwater monitoring data are presented in Table 1 and copies of the Well Development and Sampling Field Data Sheets are included in Appendix C.

3.3 Wellhead Survey

On September 17, 1996, newly installed wells MW-4 through MW-6 and pre-existing wells MW-1 through MW-3 were surveyed relative to mean sea level by Virgil Chavez, a California licensed land surveyor (#6323). A copy of the survey report is included in Appendix D and the survey data is summarized in Table 1.

3.4 Laboratory Analysis

Soil samples were analyzed by Sequoia Analytical in Redwood City, California (ELAP #1210), and groundwater samples were analyzed by NEI/GTEL Environmental Laboratories, Inc. in Wichita, Kansas (ELAP #1845). The groundwater samples and unsaturated soil samples collected from the borings at 6 feet bgs were analyzed for TPHg, BTEX and methyl t-butyl ether (MTBE) by Environmental Protection Agency (EPA) Method 8015Mod/8020. Two soil samples collected from boring MW-4 (unsaturated sample collected at 4 feet bgs and saturated sample collected at 16 feet bgs) were analyzed for fraction organic carbon by Watley-Black Method, dry and natural bulk density and porosity using API Recommended Practice for Core-Analysis Procedure, 1996. The sample collected from boring B-4 at 4 feet bgs was also analyzed for moisture content. The composite sample from drill cuttings was analyzed for TPHg and BTEX. Copies of the laboratory analytical reports and chain-of-custody records are included in Appendix E.

4.0 RESULTS

4.1 Subsurface Conditions

Soil encountered in borings MW-4 through MW-6 consisted of fine to medium sand to the total depth explored of 21.5 feet bgs. Groundwater was encountered in the borings at 7.5 to 8 feet bgs. Flowing sand conditions were encountered at 15 to 21.5 feet in each boring. Detailed descriptions of the subsurface materials encountered during drilling are presented on the boring logs in Appendix B. Based on the groundwater monitoring data collected on

September 3, 1996, shallow groundwater beneath the site appears to flow to the north at an approximate gradient of 0.003 (Figure 2).

4.2 Analytical Results

Petroleum hydrocarbons were not detected in soil samples collected at 6 feet bgs in borings MW-4 through MW-6. The soil sample collected at 4 feet bgs in boring MW-4 contained 4% moisture. Organic carbon was 0.073% and 0.030% in the soil samples collected from boring MW-4 at 4 and 16 feet bgs, respectively. Total porosity in both of these samples was 37%. Bulk dry and natural densities of the sample collected at 4 feet bgs were 1.69 grams per cubic centimeter (gm/cc) and 1.76 gm/cc, respectively. Bulk dry and natural densities of the sample collected at 16 feet bgs were 1.70 gm/cc and 2.01 gm/cc, respectively. Soil chemical analytical data are summarized in Table 2.

Petroleum hydrocarbons were not detected in the groundwater samples collected from wells MW-3 through MW-6. However, wells MW-1 and MW-2 contained detectable concentrations of TPHg (7,600 ppb and 2,700 ppb, respectively) and benzene (270 ppb and 64 ppb, respectively). Groundwater analytical data are summarized in Table 1.

5.0 CONCLUSIONS

Based on the analytical results from soil and groundwater samples collected and analyzed during this investigation, it appears that the soil and groundwater north, northeast or east of the subject site have not been impacted by petroleum hydrocarbons.

6.0 REFERENCES

E. J. Helley and others, 1979, Flatland Deposits of the San Francisco Bay Region, California: U.S. Geological Survey Professional Paper 943.

Gettler-Ryan Inc., June 25, 1996, Work Plan for Limited Subsurface Investigation at Former Chevron Service Station #9-0100, 2428 Central Avenue, Alameda, California, Job-No. 5178.02-1.

Gettler-Ryan Inc., July 29, 1996, Addendum to Work Plan for Limited Subsurface Investigation at Former Chevron Service Station #9-0100, 2428 Central Avenue, Alameda, California, Job No. 5178.02-2.

TABLES

Table 1. Water Level Data and Groundwater Analytical Results - Former Chevron Service Station #9-0100, 2428 Central Avenue, Alameda, California

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	ppb					
					TPHg <----->	B	T	E	X	MTBE
MW-1/ 29.23	3/10/94 ^{1,2}	6.79	22.44	0	7,400	120	120	33	72	--
	6/21/94	7.74	21.49	0	5,300	140	60	21	43	--
	9/26/94	8.94	20.29	0	9,500	<250 ⁵	<250 ⁵	<250 ⁵	<250 ⁵	--
	12/16/94	6.57	22.66	0	4,700	<0.5	46	15	48	--
	3/22/95	5.16	24.07	0	8,800	55	14	11	<10	--
	6/13/95	5.84	23.39	0	2,100	130	29	9.5	15	--
	9/15/95	7.65	21.58	0	8,100	110	26	6.0	13	--
	3/8/96	5.36	23.87	0	5,600	250	<5.0	<5.0	<5.0	60
29.25**	9/3/96	8.03	21.22	0	7,600	270	5.6	3.4	4.9	120
MW-2/ 29.18	3/10/94 ^{2,3}	6.94	22.24	0	6,400	<5	64	58	17	--
	6/21/94	7.89	21.29	0	1,800	23	12	6.9	32	--
	9/26/94	8.98	20.20	0	8,400	<100 ⁵	<100 ⁵	<100 ⁵	<100 ⁵	--
	12/16/94	6.65	22.53	0	2,300	<0.5	29	8.9	33	--
	3/22/95	5.15	24.03	0	1,500	0.6	4.5	<0.5	2.5	--
	6/13/95	6.06	23.12	0	880	<0.5	<0.5	2.2	10	--
	9/15/95	7.72	21.46	0	2,700	<0.5	17	4.8	13	--
	3/8/96	5.38	23.80	0	1,300	42	2.0	0.7	2.2	10
29.19**	9/3/96	8.14	21.05	0	2,700	64	4.6	1.6	4.6	35
MW-3/ 30.09	3/10/94 ^{2,4}	7.30	22.79	0	<50	<0.5	<0.5	<0.5	<0.5	--
	6/21/94	8.53	21.56	0	<50	<0.5	<0.5	<0.5	<0.5	--
	9/26/94	9.80	20.29	0	<50	<0.5	<0.5	<0.5	<0.5	--
	12/16/94	7.11	22.98	0	<50	<0.5	<0.5	<0.5	<0.5	--
	3/22/95	5.54	24.55	0	<50	<0.5	<0.5	<0.5	<0.5	--
	6/13/95	6.48	23.61	0	<50	<0.5	<0.5	<0.5	<0.5	--
	9/15/95	8.40	21.69	0	<50	<0.5	<0.5	<0.5	<0.5	--
	3/8/96	5.69	24.40	0	<50	<0.5	<0.5	<0.5	<0.5	<5.0
30.10**	9/3/96	8.80	21.30	0	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-4 29.31**	9/3/96	8.32	20.99	0	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-5 28.88**	9/3/96	7.90	20.98	0	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-6 29.24**	9/3/96	7.98	21.26	0	<50	<0.5	<0.5	<0.5	<0.5	<5.0

Table 1. Water Level Data and Groundwater Analytical Results - Former Chevron Service Station #9-0100, 2428 Central Avenue, Alameda, California

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	ppb					
					TPHg <----->	B	T	E	X	MTBE
Trip Blank	3/10/94	--	--	--	< 50	< 0.5	0.7	< 0.5	< 0.5	--
TB-LB	6/21/94	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	--
	9/26/94	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	--
	12/16/94	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	--
	3/22/95	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	--
	6/13/95	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	--
	9/15/95	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	--
	3/8/96	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	9/3/96	--	--	--	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0

EXPLANATION:

DTW = Depth to water
 TOC = Top of casing elevation
 GWE = Groundwater elevation
 msl = Measurements referenced relative to mean sea level
 TPHg = Total Purgeable Petroleum Hydrocarbons as gasoline
 TPHd = Total Petroleum Hydrocarbons as diesel
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 MTBE = Methyl t-Butyl Ether
 EDB = Ethylene Dibromide
 ppb = Parts per billion
 -- = Not analyzed/Not applicable

ANALYTICAL METHODS:

EPA Method 8015/5030 for TPHg
 EPA Method 8020 for BTEX & MTBE

NOTES:

Water level elevation data and laboratory analytic results prior to March 22, 1995 were compiled from Quarterly Monitoring Reports prepared for Chevron by Sierra Environmental Services.

* Product thickness was measured on and after June 21, 1994 with a MMC Flexi-Dip interface probe.

** Wells MW-1 through MW-6 were surveyed on September 17, 1996, by Virgil Chavez of Vallejo, California (PLS 6323).

¹ TPHd was also analyzed and detected at 840 ppb. However, chromatogram does not match typical diesel pattern.

² Organic lead and EDB were also analyzed but not detected at detection limits of 4 and 0.02 ppb, respectively.

³ TPHd was also analyzed and detected at 920 ppb. However, chromatogram does not match typical diesel pattern.

⁴ TPHd was also analyzed but not detected at detection limits of 50 ppb.

⁵ Detection limits raised due to the dilution required by a high amount of foaming in the sample.

Table 2. Soil Analytical Results - Chevron Service Station #9-0100, 2428 Central Avenue, Alameda, California.

Sample ID	Depth (ft)	Date	Analytic Method	TPHg	B	T	E	X	MTBE	Organic Carbon %	Bulk Density		Porosity %	Moisture %
											Dry gm/cc	Wet gm/cc		
<u>Soil Samples</u>														
MW4-4	4	08/26/96	API RP-40	--	--	--	--	--	--	0.073	1.69	1.76	37.0	4.0
MW4-6	6	08/26/96	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	--	--	--	--	--
MW4-16	16	08/26/96	API RP-40	--	--	--	--	--	--	0.030	1.70	2.01	37.0	--
MW5-6	6	08/26/96	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	--	--	--	--	--
MW6-6	6	08/26/96	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.050	<0.025	--	--	--	--	--
SP-(A-D)COMP	--	08/26/96	8015/8020	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	--	--	--	--	--	--

EXPLANATION:

TPHg = Total Petroleum Hydrocarbons as gasoline
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 MTBE = Methyl t-Butyl Ether
 ppm = Parts per million
 gm/cc = Grams per cubic centimeter
 -- = Not analyzed/not applicable

ANALYTICAL METHODS:

8015 = EPA Method 8015Mod for TPHg.
 8020 = EPA Method 8020 for BTEX and MTBE
 API RP-40 = API Recommended Practice for Core-Analysis Procedure, 1960.

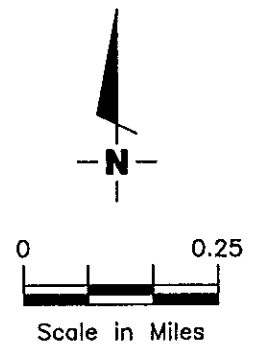
ANALYTICAL LABORATORY:

Sequoia Analytical of Redwood City, California.

FIGURES



Source: Street Atlas USA, Delorme (1995).



Gettler - Ryan Inc.

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 Dublin, CA 94568

VICINITY MAP
 Former Chevron Service Station No. 9-0100
 2428 Central Avenue
 Alameda, California

FIGURE

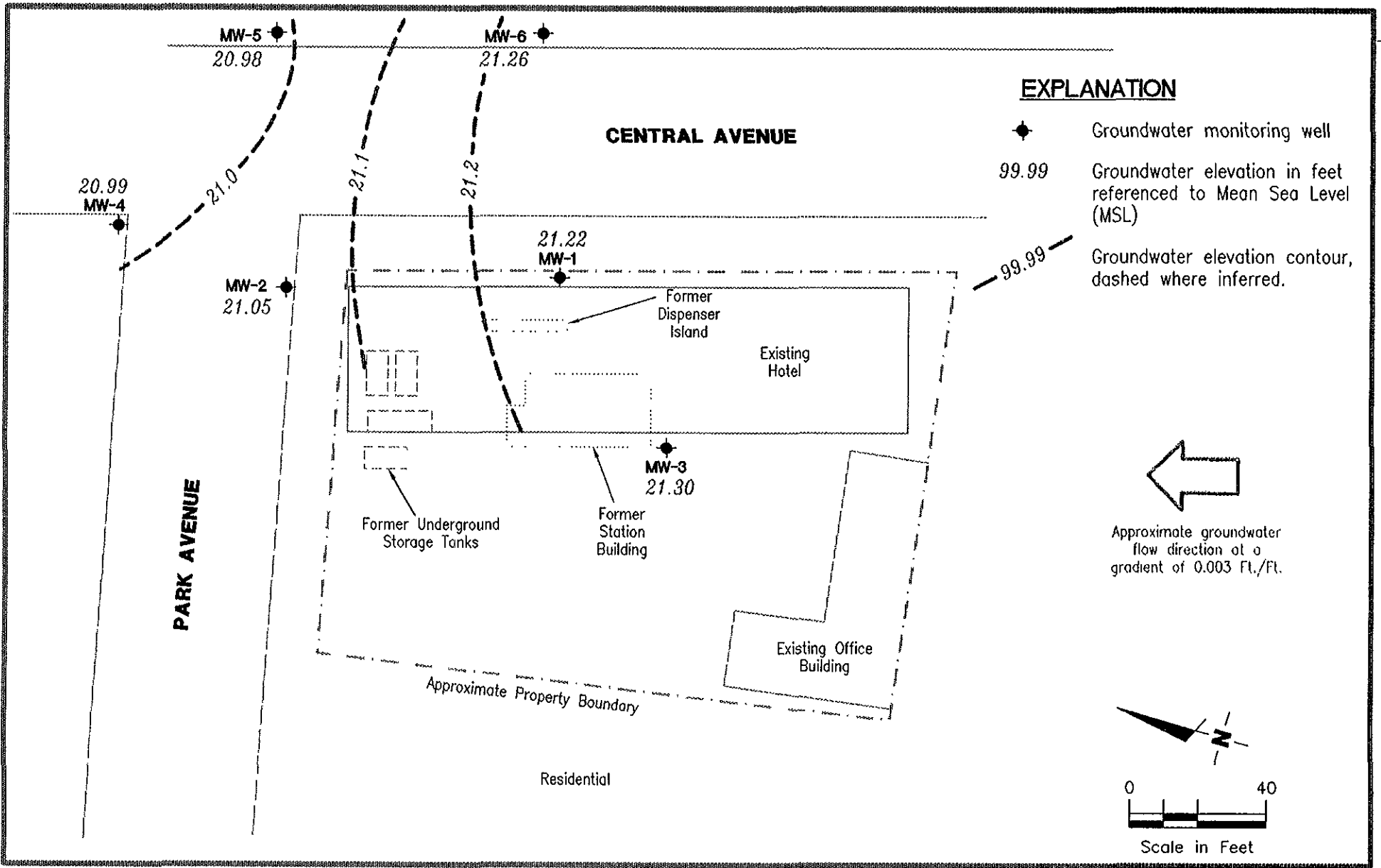
1

JOB NUMBER
 5178

REVIEWED BY
 [Signature]

DATE
 6/96

REVISED DATE



Gettler - Ryan Inc.
 6747 Sierra Ct., Suite J (510) 551-7555
 Dublin, CA 94568

POTENTIOMETRIC MAP
 Former Chevron Service Station No. 9-0100
 2428 Central Avenue
 Alameda, California
 DATE August 30, 1996
 REVISED DATE

FIGURE
2

JOB NUMBER
 5178.02

REVIEWED BY
 [Signature]

APPENDIX A

G-R FIELD METHODS AND PROCEDURES

GETTLER - RYAN
FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan, Inc. (G-R) is conducted in accordance with G-R's Health and Safety Plan and the Site Safety Plan. G-R personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The G-R geologist or engineer at the site when the work is performed acts as the Site Safety Officer. G-R utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Exploratory soil borings are drilled by a California-licensed well driller. A G-R geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the exploratory soil boring with a split-barrel sampler or other appropriate sampling device fitted with clean brass or stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soil is described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

- a. depth relative to underground storage tanks and existing ground surface
- b. depth relative to known or suspected groundwater
- c. presence or absence of contaminant migration pathways
- d. presence or absence of discoloration or staining
- e. presence or absence of obvious gasoline hydrocarbon odors
- f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing some soil from one of the sample tubes not retained for chemical analysis and immediately covering the end of the tube with a plastic cap. The PID probe is inserted into the headspace inside the tube through a hole in the plastic cap. Head-space screening results are recorded on the boring log.

Head-space screening procedures are performed and results recorded as reconnaissance data. G-R does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory borings with Schedule 40 polyvinyl Chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which generally extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space adjacent to the entire screened interval. A bentonite transition seal is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking cap. A lock is placed on the well cap to prevent vandalism and unintentional introduction of materials into the well.

Storing and Sampling of Drill Cuttings

Drill cuttings are stockpiled on plastic sheeting or stored in drums depending on site conditions and regulatory requirements. Stockpile samples are collected and analyzed on the basis of one composite sample per 50 cubic yards of soil. Stockpile samples are composed of four discrete soil samples, each collected from an arbitrary location on the stockpile. The four discrete samples are then composited in the laboratory prior to analysis.

Each discrete stockpile sample is collected by removing the upper 3 to 6 inches of soil, and then driving the stainless or brass sample tube into the stockpiled material with a hand, mallet, or drive sampler. The sample tubes are then covered on both ends with teflon sheeting or aluminum foil, capped, labeled, and placed in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Stockpiled soils are covered with plastic sheeting after completion of sampling.

Wellhead Survey

The top of the newly-installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL).

Well Development

The purpose of well development is to improve hydraulic communication between the well and surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water

is recorded. Wells are then developed by alternately surging the well with the bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized.

Groundwater Monitoring and Sampling

Decontamination Procedures

All physical parameter measuring and sampling equipment are decontaminated prior to sample collection using Alconox or equivalent detergent followed by steam cleaning with deionized water. During field sampling, equipment placed in a well are decontaminated before purging or sampling the next well by cleaning with Alconox or equivalent detergent followed by steam cleaning with deionized water.

Water-Level Measurements

Prior to sampling each well, the static water level is measured using an electric sounder and/or calibrated portable oil-water interface probe. Both static water-level and separate-phase product thickness are measured to the nearest ± 0.01 foot. The presence of separate-phase product is confirmed using a clean, acrylic or polyvinylchloride (PVC) bailer, measured to the nearest ± 0.01 foot with a decimal scale tape. The monofilament line used to lower the bailer is replaced between borings with new line to preclude the possibility of cross-contamination. Field observations (e.g. product color, turbidity, water color, odors, etc.) are noted. Water-levels are measured in wells with known or suspected lowest dissolved chemical concentrations to the highest dissolved concentrations.

Sample Collection and Labeling

A temporary PVC screen is installed in the boring to facilitate a grab groundwater sample collection. Samples of groundwater are collected from the surface of the water in each well or boring using the teflon bailer or a pump. The water samples are then gently poured into laboratory-cleaned containers and sealed with teflon-lined caps, and inspected for air bubbles to check for headspace. The samples are then labeled by an adhesive label, noted in permanent ink, and promptly placed in an ice storage. A Chain-of-Custody Record is initiated and updated throughout handling of the samples, and accompanies the samples to the laboratory certified by the State of California for analyses requested.

APPENDIX B

**WELL INSTALLATION PERMIT, ENCROACHMENT PERMIT,
AND BORING LOGS**



ZONE 7 WATER AGENCY

8997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (810) 484-2800

FAX (810) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Formal Chevron Seismic Station
2428 Central Avenue #9-0100
Alameda, California

PERMIT NUMBER 96493

LOCATION NUMBER _____

CLIENT

Name CHEVRON USA PRODUCTS CO.
Address P.O. Box 5004 Voice _____
City SAN RAMON Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT

Name GUTLER - RYAN
Address 3164 GOLD CAMP DR #12 Fax (916) 631-1817
City RAVINE CORPORA Voice (916) 631-1800
Zip 95670

TYPE OF PROJECT

Well Construction _____ Geotechnical Investigation _____
Cathodic Protection _____ General _____
Water Supply _____ Contamination _____
Monitoring X Well Destruction _____

PROPOSED WATER SUPPLY WELL USE

Domestic _____ Industrial _____ Other _____
Municipal _____ Irrigation _____

DRILLING METHOD:

Mud Rotary _____ Air Rotary _____ Auger X
Cable _____ Other _____

DRILLER'S LICENSE NO. CS7 522125

WELL PROJECTS

Drill Hole Diameter 8 in. Maximum _____
Casing Diameter 2 in. Depth 20 ft.
Surface Seal Depth .5 ft. Number 3

GEOTECHNICAL PROJECTS

Number of Borings _____ Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 7/15/96
ESTIMATED COMPLETION DATE 7/15/96

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-86.

A. GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved _____

Wyman Hong
Wyman Hong

Date 17 Jul 96

CITY OF ALAMEDA
CENTRAL PERMIT OFFICE
2263 SANTA CLARA AVE., ROOM 204
ALAMEDA, CA 94501

415-522-4100

APPLICATION FOR PERMIT TO EXCAVATE IN THE RIGHT-OF-WAY OF THE CITY OF ALAMEDA

SERVICE NUMBER _____ DATE 7-1 19 96

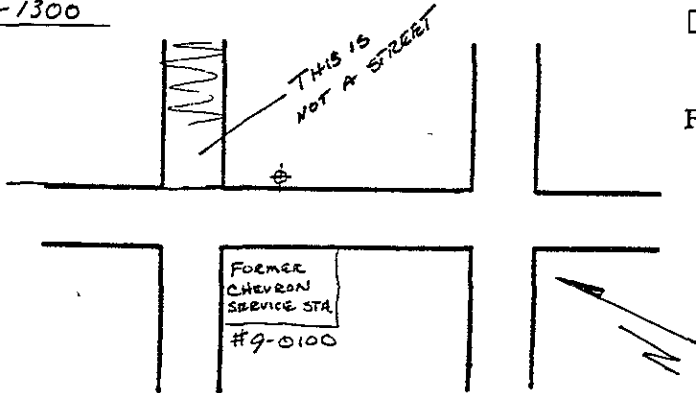
Application is hereby made for a permit to excavate on the ~~NORTHWEST~~ SIDE NORTHEAST side of
CENTRAL Ave. St. _____ feet _____ of

House No. 2428 CENTRAL AVE Owner CHEVRON USA

For the purpose of SUBSURFACE INVESTIGATION

Name of Applicant GETTLER - RYAN INC Address 3164 GOLD CAMP DR; #240, RANCHO CORDOVA, C

Phone (916) 631-1300



VERBAL APPROVAL
Date _____
By _____
Reasons: _____

8/15/96

FOR OFFICE USE ONLY

This permit to be Inspected by ENGINEERING DIVISION MAINTENANCE DIVISION
 ALL STRIPING, PAINTED GRAPHICS AND PAVEMENT MARKERS DAMAGED OR DESTROYED BY STREET EXCAVATION WORK ARE TO BE RESTORED BY THE PERMITEE.
 ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE BARRICADES WITH FLASHERS FOR NIGHT TIME PROTECTION.
 ALL WORK INVOLVED IS TO BE DONE IN ACCORDANCE WITH STANDARD CITY OF ALAMEDA SPECIFICATIONS AND CITY OF ALAMEDA PRACTICES ALL TO THE SATISFACTION OF THE CITY ENGINEER. INSPECTION CHARGES SHALL BE PAID TO THE CITY MONTHLY. ACCEPTANCE OF THIS PERMIT CONSTITUTES ACCEPTANCE OF THE CONDITIONS INCLUDED.

[Signature] 7/15/96
SIGNATURE DATE

CONCRETE PERMIT REQUIRED

NO OPEN TRENCH CUTTING

STATE PERMIT REQUIRED

CLEAR SIGNATURE DATE

SPECIAL CONDITIONS See John Flood, City Inspector, 48 Hrs. PRIOR TO START OF WORK
748-4510

RECEIVED DATE 7/3/96 SIGNED [Signature]
APPROVAL DATE 7/15/96 SIGNED [Signature]
ISSUED DATE 7/16/96 SIGNED [Signature]

PERMIT # EN 96-087

CITY OF ALAMEDA
CENTRAL PERMIT OFFICE
2263 SANTA CLARA AVE., ROOM 204
ALAMEDA, CA 94501

415-522-4100

APPLICATION FOR PERMIT TO EXCAVATE IN THE RIGHT-OF-WAY OF THE CITY OF ALAMEDA

SERVICE NUMBER _____ DATE 7-1 19 96

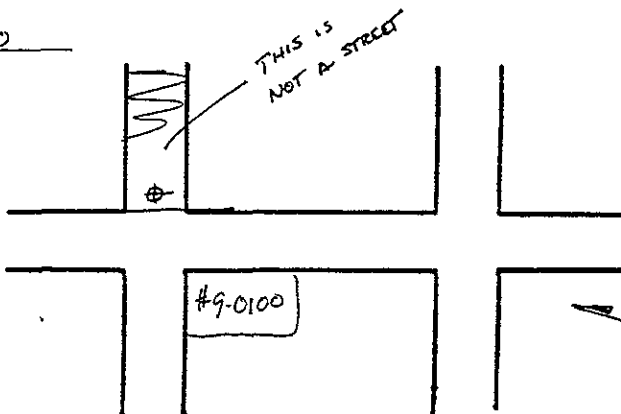
Application is hereby made for a permit to excavate on the NORTHEAST side of
CENTRAL ^{Ave} St. _____ feet _____ of

House No. 2428 CENTRAL AVE Owner CHEVRON USA

For the purpose of SUBSURFACE INVESTIGATION

Name of Applicant GOTTLEB - RYAN INC Address 3164 GOLD CAMP DR, #240, RANCHO CONCORDIA, CA

Phone (916) 631-1300



VERBAL APPROVAL
Date _____
By _____
Reasons: _____

Diagram of Proposed Work

FOR OFFICE USE ONLY

- This permit to be Inspected by ENGINEERING DIVISION MAINTENANCE DIVISION
- ALL STRIPING, PAINTED GRAPHICS AND PAVEMENT MARKERS DAMAGED OR DESTROYED BY STREET EXCAVATION WORK ARE TO BE RESTORED BY THE PERMITEE.
- ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE BARRICADES WITH FLASHERS FOR NIGHT TIME PROTECTION.
- ALL WORK INVOLVED IS TO BE DONE IN ACCORDANCE WITH STANDARD CITY OF ALAMEDA SPECIFICATIONS AND CITY OF ALAMEDA PRACTICES ALL TO THE SATISFACTION OF THE CITY ENGINEER. INSPECTION CHARGES SHALL BE PAID TO THE CITY MONTHLY. ACCEPTANCE OF THIS PERMIT CONSTITUTES ACCEPTANCE OF THE CONDITIONS INCLUDED.

- CONCRETE PERMIT REQUIRED
- NO OPEN TRENCH CUTTING
- STATE PERMIT REQUIRED

[Signature] SIGNATURE 7/15/96 DATE

SPECIAL CONDITIONS See John Flood, City Inspector, 48 HRS PRIOR TO START OF WORK
748-4510

RECEIVED DATE 7/16/96 SIGNED [Signature]

APPROVAL DATE 7/15/96 SIGNED [Signature]

ISSUED DATE 7/16/96 SIGNED [Signature]

PERMIT # EN 96-088

CITY OF ALAMEDA
CENTRAL PERMIT OFFICE
2263 SANTA CLARA AVE., ROOM 204
ALAMEDA, CA 94501

415-522-4100

APPLICATION FOR PERMIT TO EXCAVATE IN THE RIGHT-OF-WAY OF THE CITY OF ALAMEDA

SERVICE NUMBER _____ DATE 7-1 19 96

Application is hereby made for a permit to excavate on the NORTH WEST side of _____ Ave. _____ St. _____ feet _____ of _____

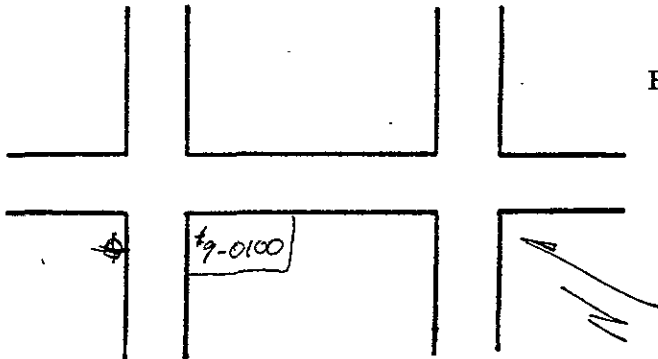
House No. 2428 CENTRAL AVE Owner CHEVRON USA

For the purpose of SUBSURFACE INVESTIGATION

Name of Applicant GETTLE - RYAN INC. Address 3164 GOLD CAMP DR., #240, RANCHO CONCORD, CA

Phone (916) 631-1300

VERBAL APPROVAL
Date _____
By _____
Reasons: _____



Handwritten note: # 115. 69

Diagram of Proposed Work

FOR OFFICE USE ONLY

- This permit to be Inspected by ENGINEERING DIVISION MAINTENANCE DIVISION
- ALL STRIPING, PAINTED GRAPHICS AND PAVEMENT MARKERS DAMAGED OR DESTROYED BY STREET EXCAVATION WORK ARE TO BE RESTORED BY THE PERMITEE.
- ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE BARRICADES WITH FLASHERS FOR NIGHT TIME PROTECTION.
- ALL WORK INVOLVED IS TO BE DONE IN ACCORDANCE WITH STANDARD CITY OF ALAMEDA SPECIFICATIONS AND CITY OF ALAMEDA PRACTICES ALL TO THE SATISFACTION OF THE CITY ENGINEER. INSPECTION CHARGES SHALL BE PAID TO THE CITY MONTHLY. ACCEPTANCE OF THIS PERMIT CONSTITUTES ACCEPTANCE OF THE CONDITIONS INCLUDED.

- CONCRETE PERMIT REQUIRED
- NO OPEN TRENCH CUTTING
- STATE PERMIT REQUIRED

[Signature] 7/15/96
SIGNATURE DATE

CLEAR SIGNATURE DATE

SPECIAL CONDITIONS See John Flood, City Inspector, 48 HAS PAID TO START OF WORK

RECEIVED DATE 7/13/96 SIGNED [Signature]

APPROVAL DATE 7/15/96 SIGNED [Signature]

ISSUED DATE 7/16/96 SIGNED Saul Moore

PERMIT # EN 96-086

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS	ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS	
		CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS	
		OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%	MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
		CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
		OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY	
HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS	

- LL - Liquid Limit (%)
- PI - Plastic Index (%)
- PID - Volatile Vapors in ppm
- MA - Particle Size Analysis
- 2.5 YR 6/2 - Soil Color according to Munsell Soil Color Charts (1975 Edition)
- 5 GY 5/2 - GSA Rock Color Chart

- No Soil Sample Recovered
- "Undisturbed" Sample
- Bulk or Classification Sample
- First Encountered Ground Water Level
- Piezometric Ground Water Level
- Penetration - Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 1 foot are indicated on the logs

**Unified Soil Classification - ASTM D 2488-85
and Key to Test Data**

Gettler-Ryan, Inc.

Log of Boring MW-4

PROJECT: Former Chevron SS# 9-0100

LOCATION: 2428 Central Avenue, Alameda, CA

G-R PROJECT NO.: 5178.02

SURFACE ELEVATION: 29.31 feet MSL

DATE STARTED: 08/26/96

WL (ft. bgs): 8.0 DATE: 08/26/96 TIME: 10:10

DATE FINISHED: 08/26/96

WL (ft. bgs): 8.0 DATE: 08/26/96 TIME: 12:00

DRILLING METHOD: 8 in. Hollow Stem Auger

TOTAL DEPTH: 21.5 Feet

DRILLING COMPANY: Bay Area Exploration, Inc.

GEOLOGIST: B. Sieminski

DEPTH feet	PIID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
0							PAVEMENT - concrete over baserock.	
5	42	16	MW4-4			SP	SAND (SP) - yellowish brown (10YR 5/6), damp, medium dense; 100% fine sand. Becomes moist; with up to 5% silt.	
8.5	3.5	28	MW4-6					
11.5		26	MW4-7.5				∇∇ Becomes saturated.	
15	1.1	34	MW4-16				Becomes dense; color change to light olive brown (2.5Y 5/6); flowing sand.	
20	0	38	MW4-21					
25							(* = converted to equivalent standard penetration blows/ft.)	

Gettler-Ryan, Inc.

Log of Boring MW-5

PROJECT: <i>Former Chevron SS# 9-0100</i>	LOCATION: <i>2428 Central Avenue, Alameda, CA</i>
G-R PROJECT NO. : <i>5178.02</i>	SURFACE ELEVATION: <i>28.88 feet MSL</i>
DATE STARTED: <i>08/26/96</i>	WL (ft. bgs): <i>7.5</i> DATE: <i>08/26/96</i> TIME: <i>15:10</i>
DATE FINISHED: <i>08/26/96</i>	WL (ft. bgs): <i>7.5</i> DATE: <i>08/26/96</i> TIME: <i>16:30</i>
DRILLING METHOD: <i>8 in. Hollow Stem Auger</i>	TOTAL DEPTH: <i>21.5 Feet</i>
DRILLING COMPANY: <i>Bay Area Exploration, Inc.</i>	GEOLOGIST: <i>B. Sieminski</i>

DEPTH feet	PTD (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
							PAVEMENT - concrete over baserock.	
5	25	13	MW5-5.5			SP	SAND (SP) - yellowish brown (10YR 5/6), damp, medium dense; 95% fine sand, 5% silt.	
	111	25	MW5-6				Becomes moist.	
			MW5-7				▽▽ Becomes saturated.	
10	8.3	26	MW5-11					
15	9.7	26	MW5-16				Color change to light olive brown (2.5Y 5/4); 100% fine to medium sand; flowing sand.	
20	0	36	MW5-21				Becomes dense.	
25							(* = converted to equivalent standard penetration blows/ft.)	
30								
35								

Gettler-Ryan, Inc.

Log of Boring MW-6

PROJECT: Former Chevron SS# 9-0100

LOCATION: 2428 Central Avenue, Alameda, CA

G-R PROJECT NO.: 5178.02

SURFACE ELEVATION: 29.24 feet MSL

DATE STARTED: 08/26/96

WL (ft. bgs): 7.9 DATE: 08/26/96 TIME: 12:30

DATE FINISHED: 08/26/96

WL (ft. bgs): 7.9 DATE: 08/26/96 TIME: 14:55

DRILLING METHOD: 8 in. Hollow Stem Auger

TOTAL DEPTH: 21.5 Feet

DRILLING COMPANY: Bay Area Exploration, Inc.

GEOLOGIST: B. Sieminski

DEPTH feet	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
						SP	PAVEMENT - concrete over baserock.	
5	45	10	MW6-5.5				SAND (SP) - yellowish brown (10YR 5/6), damp, medium dense; 95% fine sand, 5% silt.	
	48	20	MW6-6				Becomes moist.	
			MW6-7				∇∇ Becomes saturated.	
10	35	36	MW6-11				Becomes dense.	
15	25	38	MW6-16				Color changes to light olive brown (2.5Y 5/4); 100% fine to medium sand; flowing sand.	
20	0	34	MW6-21					
25							(* = converted to equivalent standard penetration blows/ft.)	
30								
35								

APPENDIX C

**WELL DEVELOPMENT AND SAMPLING
FIELD DATA SHEETS**

(to be filled out in office) [GSI]

Client Cherren SS# # 9-0100 Job# 5178.85
 Name Forman Station Location 24128 Central Ave Alameda

Well# NW-4 Screened Interval 5-20' Depth _____

Aquifer Material Flowing Sand Installation Date 8-26-96

Drilling Method _____ Borehole Diameter 8"

Comments regarding well installation: _____

(to be filled out in the field) [G-R] Name Frank Chini

Date 8-29-96 Development Method Surge & Purge

Total Depth 20' - Depth to liquid 8.32 = Water Column 11.68

Product thickness 0

$\frac{11.68}{\text{Water Column}} \times \frac{0.117}{\text{Diameter (in.)}} \times \frac{1.9}{\text{Vol}} \times 4.0 \times 10^6 = 19 \text{ gals}$

Purge Start _____ Stop _____ Rate _____ gpm

Gallons	Time	Clarity	Temp.	pH	Conductivity	
0	1203	Muddy	24.8	5.83	1008	
2	1106	Muddy	23.6	6.50	650	
3	1168	cloudy	23.8	7.35	648	Dewar
6	1195	Muddy	24.0	6.58	650	Dewar
8	1220	Cloudy	23.0	6.50	660	Dewar
10	1310	Clearing	23.1	6.61	660	Dewar
12	1330	Clearing	22.9	6.58	635	Dewar
18	1340	Clearing	23.0	6.60	670	Dewar
						Dewar

Total gallons removed 18 Development stop time _____

Depth to liquid 10.32 at 1350 (time)

Color of water None Water discharged to Tant

Comments _____

(to be filled out in office) [GSI]

Client Cheriton SS# 9-0100 Job# 5178.85
 Name Forman Station Location 2428 Central Ave Alameda
 Well# MW-5 Screened Interval 5-20' Depth _____
 Aquifer Material Flowing Sand Installation Date 8-26-96
 Drilling Method _____ Borehole Diameter 8"
 Comments regarding well installation: _____

(to be filled out in the field) [G-R]

Name Frank Cline

Date 8-29-96 Development Method Surge & Purge
 Total Depth 20' 21" - Depth to liquid 7.90 = Water Column 13.10

Product thickness _____

13.1 × 0.17 × 2.2 × 0.6608 = 22 gal
 Water Column Diameter (in.) = Vol

Purge Start _____ Stop _____ Rate _____ gpm

Gallons	Time	Clarity	Temp.	pH	Conductivity
0	1111	Muddy	24.1	5.35	900
2	1114	Cloudy	23.1	6.28	930
4	1116	Muddy	22.8	7.00	900
6	1120	Cloudy	23.0	7.00	750 Dewar
7	1123	Cloudy	24.0	7.30	710 Dewar
9	1156	Clearing	23.1	7.40	718 Dewar
12	1210	Clearing	22.9	7.38	715 Dewar
13	1300	Clearing	22.9	7.40	710 Dewar
			23.0	7.41	712 Dewar

Total gallons removed 159 gals.

Development stop time _____

Depth to liquid 10.03 at 1345 (time)

Color of water None

Water discharged to Tank

Comments _____

(to be filled out in office) [GS1]

Client Chelvan SS# # 9-0100 Job# 5178.85

Name Formin Station Location 2428 Central Ave Alameda

Well# MW-6 Screened Interval 5-20' Depth _____

Aquifer Material Flowing Sand Installation Date 8-26-96

Drilling Method _____ Borehole Diameter 8"

Comments regarding well installation: _____

(to be filled out in the field) [6-R] Name Frank Cline

Date 8-27-96 Development Method Surge & Purge

Total Depth 2021 - Depth to liquid 7.98 = Water Column 1302

Product thickness _____

1302 x 0.117 x 22 x 0.0406 = 22 gals

Water Column Diameter (in.) #Vol

Purge Start _____ Stop _____ Rate _____ gpm

Gallons	Time	Clarity	Temp	pH	Conductivity
0	11:30	Muddy	23.5	6.75	1000
2	11:33	cloudy	23.4	6.68	850
4	11:36	cloudy	23.3	7.15	520
6	11:39	Muddy	22.1	6.70	500
7	11:42	cloudy	23.5	6.58	420
10	11:55	clearing	22.1	6.75	465
14	12:30	clearing	22.0	6.68	460
20	13:15	clearing	22.1	6.72	470

Total gallons removed 20 Development stop time _____

Depth to liquid 12' at 13:20 (time)

Color of water None Water discharged to Tank

Comments _____

9-3 8-30
Sampling Develop

DAILY SAMPLING REPORT

TIME BILLED: 5 = 2hr + 3hrs

SITE LOCATION: Chivon #9-0100
2428 Central Ave
Alameda CA

JOB #: 5178.85

DATE: 9-3-96

DESCRIPTION OF WORK PERFORMED:

Monitor ✓
Purge ✓
Sample ✓
Develop _____

Clean Equipment _____
Transfer Water _____
To System _____
To Holding Tank ✓

Number of wells on site 2

Sampling truck 20-14

Number of wells off site 4

Purge water trailer Y (N)

Number of wells monitored only 0

Full lane closure Y (N)

Number of wells sampled <40' 6

Trailer arrow board truck NO

Number of wells sampled >40' _____

Cones NO

Total volume of purge water 50 gals.

Road signs NO

PURGING EQUIPMENT

Teflon Bailer _____
3/8" Stack Pumps _____
1" Double Diaphragm ✓
Suction _____
Grundfo's _____

SAMPLING EQUIPMENT

Teflon Bailer _____
Disposable Bailer 6

SPECIAL EQUIPMENT

Turbidity Meter _____
DO Meter _____
P3D Meter (Gastech) _____

OTHER EQUIPMENT

Gloves 7 /pr
Bailer Cord 60' /ft
Well plugs size # _____ @ _____

COMMENTS

No time charge 8-30-96
on Developing

Sampled By: [Signature]

Date: 9-3-96

Assistant: _____

Reviewed: _____

MONITORING WELL
OBSERVATION SUMMARY SHEET

COMPANY Chevron # 9-0100
 LOCATION 2428 Central Ave
 CITY Alameda CA

JOB NO. 5178.85
 DATE 8-3-76
 TIME _____

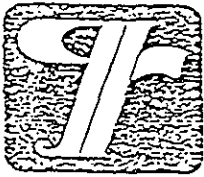
WELL ID	TOTAL WELL DEPTH	DEPTH TO LIQUID	HYDROCARBON THICKNESS	MEASUREMENT POINT TOB or TOC	COMMENTS		
MW-1	24.7	8.03		TOC			
MW-2	23.75	8.14					
MW-3	24.5	8.80					
MW-4	20.0	8.32					
MW-5	21.0	7.90					
MW-6	21.0	7.98					

Comments: _____

Sampler:

Assistant: _____

104
10-9



WELL SAMPLING FIELD DATA SHEET

SAMPLER F Cliné DATE 8-30-96
 ADDRESS 2428 Central Ave JOB # 517825
 CITY Alameda CA SS# 9-0100

Well ID MW-1 Well Condition Okay

Well Location Description _____
 Well Diameter 2" in Hydrocarbon Thickness 0

Total Depth 247 ft
 Depth to Liquid 803 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
--- (VF)	4" = 0.66		

of casing 3x 1667 x 0.17 x (VF) 2-8 #Estimated 8.5 gal.
 Volume 8.5 gal. ^{purge} Volume

Purge Equipment Suction Sampling Equipment Backi

Did well dewater nk If yes, Time _____ Volume _____

Starting Time 1334 Purging Flow Rate 1.5 gpm.

Sampling Time 1342

Time	pH	Conductivity	Temperature	Volume
<u>13:36</u>	<u>6.73</u>	<u>293</u>	<u>21.9</u>	<u>3</u>
<u>13:38</u>	<u>6.73</u>	<u>27.8</u>	<u>21.0</u>	<u>6</u>
<u>13:40</u>	<u>6.72</u>	<u>26.8</u>	<u>21.0</u>	<u>9</u>
<u>13:42</u>	<u>6.73</u>	<u>26.9</u>	<u>21.1</u>	<u>16</u>

Weather Conditions Sunny warm clear

Water Color: Clear Odor: Mild

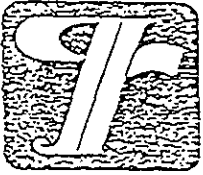
Sediment Description nk

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>MW-3</u>	<u>3x40ml vial</u>	<u>Y</u>	<u>nk</u>	<u>6 TR</u>	<u>6.2 BIT SPENT</u>

Comments _____

23



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Clive DATE 8-30-96
 ADDRESS 2428 Central Ave JOB # 5178185
 CITY Alameda CA SS# _____

Well ID MW-2 Well Condition okay
 Well Location Description _____

Well Diameter 2" in Hydrocarbon Thickness 0
 Total Depth 23.75 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.20
Factor	3" = 0.38		
(VF)	4" = 0.66		

Depth to Liquid 8.14 ft
 # of casing B x 15.61 x 0.17 x (VF) 2.65 #Estimated 7.96 gal.
 Volume _____ x (VF) _____ #Estimated 7.96 gal.
 Purge Volume _____

Purge Equipment Suction Sampling Equipment D. Backer

Did well dewater No If yes, Time _____ Volume _____

Starting Time 13:23 Purging Flow Rate 1.4 gpm.
 Sampling Time _____

Time	pH	Conductivity	Temperature	Volume
<u>13:25</u>	<u>6.58</u>	<u>542</u>	<u>23.7</u>	<u>2.8</u>
<u>13:27</u>	<u>6.57</u>	<u>547</u>	<u>23.5</u>	<u>5.6</u>
<u>13:29</u>	<u>6.58</u>	<u>545</u>	<u>23.0</u>	<u>8.4</u>
<u>13:31</u>	<u>6.56</u>	<u>546</u>	<u>23.2</u>	<u>9.0</u>

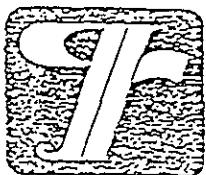
Weather Conditions Sunny warm clear
 Water Color: Clear Odor: None
 Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>MW-2</u>	<u>3x40ml vials</u>	<u>4</u>	<u>HE</u>	<u>CoTEL</u>	<u>Gas, BTEX, MTH, etc</u>

13

Comments _____



WELL SAMPLING FIELD DATA SHEET

SAMPLER F Cliné DATE 8-30-96
 ADDRESS 2428 Central Ave JOB # 5178185
 CITY Alameda CA SS# 9-0100

Well ID MW-3 Well Condition dry

Well Location Description _____

Well Diameter 2" in Hydrocarbon Thickness 0

Total Depth 29.5 ft

Depth to Liquid 9.80 ft

of casing 3x Volume 1517 x 0.17 x(VF) 9.7 #Estimated purge Volume 8.0 gal.

Volume	2" = 0.17	6" = 1.50	12" = 5.20
Factor	3" = 0.38		
(VF)	4" = 0.66		

Purge Equipment Suction Sampling Equipment D. Baller

Did well dewater no If yes, Time _____ Volume _____

Starting Time 1311 Purging Flow Rate 1.5 gpm.

Sampling Time 1320

Time	pH	Conductivity	Temperature	Volume
<u>1313</u>	<u>6.63</u>	<u>386</u>	<u>23.7</u>	<u>3</u>
<u>1315</u>	<u>6.64</u>	<u>373</u>	<u>22.5</u>	<u>6</u>
<u>1317</u>	<u>6.64</u>	<u>370</u>	<u>22.7</u>	<u>9</u>
<u>1320</u>	<u>6.63</u>	<u>369</u>	<u>22.5</u>	<u>10</u>

Weather Conditions Sunny clear warm

Water Color: Clear Odor: None

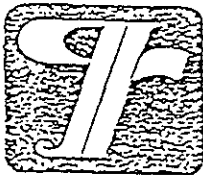
Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>MW-3</u>	<u>3x40ml UCA</u>	<u>Y</u>	<u>ML</u>	<u>GTCL</u>	<u>Gas BTEX AA/B2</u>

Comments _____

82
73



WELL SAMPLING FIELD DATA SHEET

SAMPLER F Cliné DATE 8-30-96
 ADDRESS 2428 Central Ave JOB # 5178.85
 CITY Alameda CA SS# _____

Well ID MW-4 Well Condition okay
 Well Location Description _____

Well Diameter 2' in Hydrocarbon Thickness Ø
 Total Depth 20' ft

Volume	2" = 0.17	6" = 1.50	12" = 5.20
Factor	3" = 0.38		
(VF)	4" = 0.66		

Depth to Liquid 8.32 ft
 # of casing Volume 3x 11.68 x 0.17 x(VF) 1.9 #Estimated 5.9 gal. purge Volume

Purge Equipment Suction Sampling Equipment D. Bath

Did well dewater No If yes, Time _____ Volume _____

Starting Time 12:55 Purging Flow Rate 1.0 gpm.
 Sampling Time 1304

Time	pH	Conductivity	Temperature	Volume
<u>1257</u>	<u>5.16</u>	<u>928</u>	<u>23.6</u>	<u>2</u>
<u>1259</u>	<u>6.59</u>	<u>672</u>	<u>23.3</u>	<u>4</u>
<u>1301</u>	<u>6.59</u>	<u>657</u>	<u>23.1</u>	<u>6</u>
<u>1304</u>	<u>6.60</u>	<u>660</u>	<u>23.2</u>	<u>7</u>

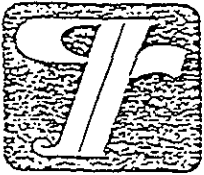
Weather Conditions Sunny warming
 Water Color: clear Odor: None
 Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>MW-4</u>	<u>3x40ml VOA</u>	<u>Y</u>	<u>He</u>	<u>GTCL</u>	<u>Gas, BTEX, Nitrate</u>

73

Comments _____



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Clive DATE 8-30-96
 ADDRESS 2428 Central Ave JOB # 517825
 CITY Alameda CA SS# 9-0100

Well ID MW-5 Well Condition okay

Well Location Description _____

Well Diameter 2" in

Hydrocarbon Thickness C

Total Depth 21 ft

Depth to Liquid 7.90 ft

Volume	2" = 0.17	6" = 1.50	12" = 5.20
Factor	3" = 0.38		
(VF)	4" = 0.66		

of casing 3x Volume 13.1 x 0.17 x (VF) 2.227 #Estimated 6.7 gal. purge Volume

Purge Equipment Suction Sampling Equipment Bailer

Did well dewater No If yes, Time _____ Volume _____

Starting Time 12:30 Purging Flow Rate 1.1 gpm.

Sampling Time 12:39

Time	pH	Conductivity	Temperature	Volume
<u>12:32</u>	<u>6.87</u>	<u>960</u>	<u>23.1</u>	<u>2.2</u>
<u>12:34</u>	<u>7.40</u>	<u>742</u>	<u>22.9</u>	<u>4.4</u>
<u>12:36</u>	<u>7.42</u>	<u>716</u>	<u>22.8</u>	<u>6.6</u>
<u>12:39</u>	<u>7.41</u>	<u>715</u>	<u>22.9</u>	<u>7.0</u>

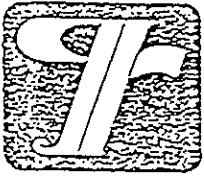
Weather Conditions Partly cloudy warming
 Water Color: Clear Odor: None
 Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>MW-5</u>	<u>3x40 ml</u>	<u>Y</u>	<u>ITA</u>	<u>GTCL</u>	<u>Gas BTEX</u>

62
73

Comments _____



WELL SAMPLING FIELD DATA SHEET

SAMPLER F. Clive DATE 8-30-96
 ADDRESS 2428 Central Ave JOB # 5178.85
 CITY Alameda CA SS# 9-0100

Well ID MW-6 Well Condition OK

Well Location Description _____
 Well Diameter 2" in Hydrocarbon Thickness 0
 Total Depth 21 ft
 Depth to Liquid 7.98 ft
 # of casing Volume 13.02 x 0.17 (VF) x (VF) 2.2 #Estimated 6.6 gal.
 Volume

Volume	2" = 0.17	6" = 1.50	12" = 5.80
Factor	3" = 0.38		
(VF)	4" = 0.66		

Purge Equipment Suction Sampling Equipment Back

Did well dewater No If yes, Time _____ Volume _____

Starting Time 1208 Purging Flow Rate 1.1 gpm.
 Sampling Time 1217

Time	pH	Conductivity	Temperature	Volume
<u>12:10</u>	<u>6.74</u>	<u>1016</u>	<u>22-2</u>	<u>2.2</u>
<u>12:12</u>	<u>6.71</u>	<u>851</u>	<u>22-0</u>	<u>4.4</u>
<u>12:14</u>	<u>6.73</u>	<u>864</u>	<u>22-1</u>	<u>6.6</u>
<u>12:17</u>	<u>6.72</u>	<u>400</u>	<u>22-0</u>	<u>7.0</u>

Weather Conditions Partly cloudy warming
 Water Color: clear Odor: None
 Sediment Description None

LABORATORY INFORMATION

Sample ID	Container	Refrig	Preservative Type	Lab	Analysis
<u>MW-6</u>	<u>3x40ml VOA</u>	<u>Y</u>	<u>None</u>	<u>GTSL</u>	<u>Gas/Bix/NIRS</u>

Comments _____

12
23

APPENDIX D

WELLHEAD SURVEY REPORT

Virgil Chavez Land Surveying
312 Georgia Street
Vallejo, California 94590
(707) 553-2476

September 18, 1996
Project No. 1104-47

Barbara Sieminski
Gettler-Ryan, Inc.
6747 Sierra Ct., Suite J
Dublin, Ca. 94568

Subject: Monitoring Well Survey
Former Chevron Sta. # 9-0100
2428 Central Avenue
Alameda, Ca.

Dear Barbara:

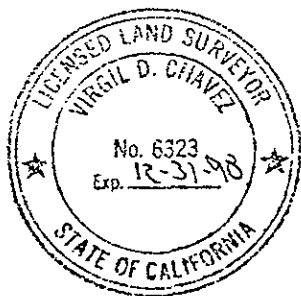
This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was performed on Sept. 17, 1996. Our findings are shown in the table below. The benchmark for the survey was a City of Alameda benchmark, being a cut square in the top of curb, at the north end of the curb return, at the northeast corner of Central Ave. & Park Ave. Benchmark Elev. = 29.77 feet, USGS datum.

<u>Well No.</u>	<u>Rim Elevation</u>	<u>TOC Elevation</u>
MW-1	29.56'	29.25'
MW-2	29.45'	29.19'
MW-3	30.37'	30.10'
MW-4	29.48'*	29.31'*
MW-5	29.07'	28.88'
MW-6	29.44'	29.24'

Measurements taken at approximate north side of top of box, top of casings were marked at location of measurements.

* Measurement taken at approximate west side.

Sincerely,



Virgil D. Chavez
Virgil D. Chavez, P.L.S. 6323

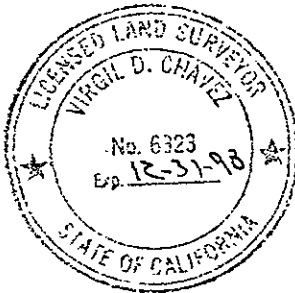
Virgil Chavez Land Surveying
312 Georgia Street
Vallejo, California 94590
(707) 553-2476

September 18, 1996
Project No. 1104-47
Page 2

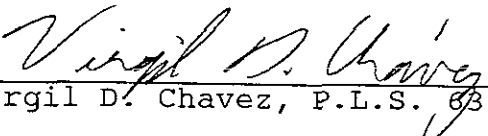
Monitoring Well Survey
Frmr. Chevron Sta. # 9-0100
2428 Central Ave.
Alameda, Ca.

The following table is for top of casing locations. The back of sidewalk on Central Ave. was used as the reference line.

<u>Well No.</u>	<u>Station</u>	<u>Offset</u>
MW- 1	0+55.15	- 2.04' (Lt.)
MW- 2	1+26.71	-23.13' (Lt.)
MW- 3	0+09.41	-76.93' (Lt.)
MW- 4	1+72.80	2.84' (Rt.)
MW- 5	1+36.55	60.49' (Rt.)
MW- 6	0+41.68	60.59' (Rt.)
BSW intersection at South side Park	1+10	0.00
BSW Westerly side of Central	---	0.00



Sincerely,


Virgil D. Chavez, P.L.S. 6323

APPENDIX E

**LABORATORY ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY RECORDS**



Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-0100, Alameda Sample Descript: MW5-6 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9608G38-01	Sampled: 08/26/96 Received: 08/26/96 Extracted: 08/29/96 Analyzed: 09/03/96 Reported: 09/05/96
Attention: Deanna Harding		

QC Batch Number: GC082996BTEXEXC
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 - -130	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Mike Gregory
Project Manager





Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Chevron 9-0100, Alameda
Matrix: Solid

Work Order #: 9608G38 01

Reported: Sep 10, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082996BTEXEXC	GC082996BTEXEXC	GC082996BTEXEXC	GC082996BTEXEXC
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	Porter	Porter	Porter	Porter
MS/MSD #:	9608693-16	9608693-16	9608693-16	9608693-16
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/29/96	8/29/96	8/29/96	8/29/96
Analyzed Date:	8/29/96	8/29/96	8/29/96	8/29/96
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg

Result:	0.18	0.19	0.18	0.56
MS % Recovery:	90	96	90	93
Dup. Result:	0.16	0.16	0.16	0.49
MSD % Recov.:	80	80	80	92
RPD:	12	17	12	1.8
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK082996	BLK082996	BLK082996	BLK082996
Prepared Date:	8/29/96	8/29/96	8/29/96	8/29/96
Analyzed Date:	8/29/96	8/29/96	8/29/96	8/29/96
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg
LCS Result:	0.20	0.20	0.20	0.60
LCS % Recov.:	100	100	100	100

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

SEQUOIA ANALYTICAL

[Signature]
Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9608G38.GET <1>

Chevron Facility Number 9-0100
 Facility Address 2428 Central Avenue, Alameda
 Consultant Project Number 5178.01
 Consultant Name Gettler-Ryan
 Address 6747 Sierra Ct, Ste J, Dublin 94568
 Project Contact (Name) Barbara Sieminski
 (Phone) 510-551-7555 (Fax Number) 551-7888

Chevron Contact (Name) Phil Briggs
 (Phone) (510) 842-9136
 Laboratory Name Sequoia
 Laboratory Release Number 7092480
 Samples Collected by (Name) Barbara Sieminski
 Collection Date 08/26/96
 Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed										DO NOT BILL TB-LB ANALYSIS Remarks
								TPH Gas + BTEX w/MTBE (8016)	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)			
MW5-5.5		1	S	D	14:55		Yes											hold
MW5-6		1			14:55	1A		X										
MW5-7		1			15:10													hold
MW5-11		1			15:30													hold
MW5-16		1			15:40													hold
MW5-21		1	↓	↓	16:00		↓											hold

9600238

Relinquished By (Signature) <u>Barbara Sieminski</u>	Organization <u>G-R</u>	Date/Time <u>08/27/96</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>Sequoia</u>	Date/Time <u>8/27/96 14:15</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>Sequoia</u>	Date/Time <u>8/27/96 15:05</u>	Received By (Signature) <u>[Signature]</u>	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>		Date/Time <u>8/26/96 15:00</u>

Turn Around Time (Circle Choice)

24 Hrs.
 48 Hrs.
 5 Days
 10 Days
 As Contracted

COC-3.DWS/03.81/MCH



Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Client Proj. ID: Chevron 9-0100, Alameda
Lab Proj. ID: 9608F83

Sampled: 08/26/96
Received: 08/27/96
Analyzed: see below

Attention: Barbara Sieminski

Reported: 09/06/96

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9608F83-01 Sample Desc : SOLID,MW4-4				
Bulk Density	-			attached
Fraction Organic Carbon	%	08/31/96	0.020	0.073
Moisture, Percent	%	08/29/96	1.0	4.0
Porosity	-			attached
Lab No: 9608F83-03 Sample Desc : SOLID,MW4-16				
Bulk Density	-			attached
Fraction Organic Carbon	%	08/31/96	0.020	0.030
Porosity	-			attached

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-0100, Alameda Sample Descript: MW4-6 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9608F83-02	Sampled: 08/26/96 Received: 08/27/96 Extracted: 08/29/96 Analyzed: 08/30/96 Reported: 09/06/96
Attention: Barbara Sieminski		

QC Batch Number: GC082996BTEXEXC
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
- Trifluorotoluene	70 130	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-0100, Alameda Sample Descript: MW6-6 Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9608F83-04	Sampled: 08/26/96 Received: 08/27/96 Extracted: 08/29/96 Analyzed: 08/30/96 Reported: 09/06/96
Attention: Barbara Sieminski		


QC Batch Number: GC082996BTEXEXC
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Methyl t-Butyl Ether	0.025	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Mike Gregory
Project Manager



Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568

Client Project ID: Chevron 9-0100, Alameda
Matrix: Solid

Attention: Barbara Sieminski

Work Order #: 9608F83 -01

Reported: Sep 11, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Total Solids
QC Batch:	IN082996160300A
Analy. Method:	EPA 150.1
Prep Method:	N.A.

Analyst: N. Le

Duplicate Sample #: 9608F83-01

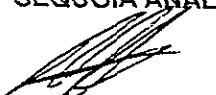
Prepared Date: 8/29/96
Analyzed Date: 8/29/96
Instrument I.D.#: MANUAL

Sample Concentration: 96

Dup. Sample Concentration: 96

RPD: 0.0
RPD Limit: 0-20

SEQUOIA ANALYTICAL


Mike Gregory
Project Manager

** RPD=Relative % Difference



Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568

Client Project ID: Chevron 9-0100, Alameda
Matrix: Solid

Attention: Barbara Sieminski

Work Order #: 9608F83 -02, -04

Reported: Sep 11, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082996BTEXEXC	GC082996BTEXEXC	GC082996BTEXEXC	GC082996BTEXEXC
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	Porter	Porter	Porter	Porter
MS/MSD #:	9608693-16	9608693-16	9608693-16	9608693-16
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/29/96	8/29/96	8/29/96	8/29/96
Analyzed Date:	8/29/96	8/29/96	8/29/96	8/29/96
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg
Result:	0.18	0.19	0.18	0.56
MS % Recovery:	90	95	90	93
Dup. Result:	0.16	0.16	0.16	0.49
MSD % Recov.:	80	80	80	92
RPD:	12	17	12	1.8
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	GBLK082996	GBLK082996	GBLK082996	GBLK082996
Prepared Date:	8/29/96	8/29/96	8/29/96	8/29/96
Analyzed Date:	8/29/96	8/29/96	8/29/96	8/29/96
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg
LCS Result:	0.20	0.20	0.20	0.60
LCS % Recov.:	100	100	100	100

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL


Mike Gregory
Project Manager



CORE LABORATORIES

GEOTECHNICAL ANALYSIS RESULTS

**SEQUOIA ANALYTICAL
SA PROJECT NO. 9608F83**

CL FILE 57111-096244

**PERFORMED BY:
CORE LABORATORIES
3430 UNICORN ROAD
BAKERSFIELD, CA 93308
(805) 392-8600**

**FINAL REPORT PRESENTED
SEPTEMBER 11, 1996**



ENVIRONMENTAL TESTING SERVICES

Mike Gregory
Sequoia Analytical
680 Chesapeake Dr.
Redwood City, CA 94063

September 11, 1996

Subject: Transmittal of Geotechnical Analysis Results
SA Project No. : 9608F83
Core Lab File No.: 57111-96244

Dear Mr Gregory:

Two samples from project number 9608F83 were submitted to our Bakersfield laboratory for total porosity and bulk density determinations. Accompanying this letter, please find the results of this study.

Porosities and bulk densities were determined and calculated as described in API RP-40, API Recommended Practice for Core-Analysis Procedure, 1960.

We appreciate this opportunity to be of service to you and to Sequoia Analytical, should you have any questions, or if we may be of further help in the future, please do not hesitate to contact us.

Very truly yours,

A handwritten signature in cursive script that reads "Jeffrey L. Smith".

Jeffrey L. Smith
Laboratory Supervisor - Rock Properties

JLS:nw
1 original report: Addressee



ENVIRONMENTAL TESTING SERVICES

Sequoia Analytical
SA Project No.: 9608F83

CL File No. 57111-96244

Geotechnical Analysis Results

Sample ID	Bulk Density		Total Porosity %	Description
	Dry gm/cc	Natural gm/cc		
MW4-4	1.69	1.76	37.0	Sand tan vf-fgr sl silty
MW4-16	1.70	2.01	37.0	Sand tan vf-fgr sl silty

Total porosity and bulk densities were determined as described in API RP-40, API Recommended Practice for Core-Analysis Procedure, 1960.

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-0100
Facility Address 2428 Central Avenue, Alameda
Consultant Project Number 5178.01
Consultant Name Gettler-Ryan
Address 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name) Barbara Sieminski
(Phone) 551-7555 (Fax Number) 551-7888

Chevron Contact (Name) Phil Briggs
(Phone) (510) 842-9136
Laboratory Name Sequoia
Laboratory Release Number 7092480
Samples Collected by (Name) Barbara Sieminski
Collection Date 08/26/96
Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analytes To Be Performed												Remarks	
								TPH Gas+ BTEX W/MTBE (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)	Bulk Density	Porosity	Fraction Organic Carbon (Walkley-Black Method)	Moisture Content		
MW4-4	1A,B	1	S	D	9:40		Yes										X	X	X	X	
MW4-6	2A	1			9:59			X													
MW4-7.5		1			10:10																hold
MW4-16	3A,B	1			10:48													X	X	X	
MW4-21		1			11:15																hold
MW6-5.5		1			12:30																hold
MW6-6	4A	1			12:30			X													
MW6-7		1			12:40																hold
MW6-11		1			12:50																hold
MW6-16		1			13:30																hold
MW6-21		1		↓	13:50			↓													hold

9608 F83

DO NOT BILL TB-LB ANALYSIS

Relinquished By (Signature) <u>Barbara Sieminski</u>	Organization <u>G-R</u>	Date/Time <u>08/27/96</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>Sequoia</u>	Date/Time <u>8/27/96 14:15</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days <u>10 Days</u> As Contracted
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>Sequoia</u>	Date/Time <u>8/27/96 15:05</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>[Blank]</u>	Date/Time <u>[Blank]</u>	
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>[Blank]</u>	Date/Time <u>[Blank]</u>	Received For Laboratory By (Signature) <u>[Signature]</u>	Organization <u>[Blank]</u>	Date/Time <u>8/27 1502</u>	

COC-3.DWG/03 01/HCH



408 30 30

GETTLER-RYAN INC

Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568 Attention: Barbara Sieminski	Client Proj. ID: Chevron 9-0010, Alameda Sample Descript: SP-(A-D) COMP Matrix: SOLID Analysis Method: 8015Mod/8020 Lab Number: 9608F38-01	Sampled: 08/26/96 Received: 08/27/96 Extracted: 08/28/96 Analyzed: 08/28/96 Reported: 08/29/96
---	--	--

QC Batch Number: GC082896BTEXEXA
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit mg/Kg	Sample Results mg/Kg
TPPH as Gas	1.0	N.D.
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes (Total)	0.0050	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	79

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager



Gettler Ryan/Geostrategies Client Project ID: Chevron 9-0010, Alameda
 6747 Sierra Court, Ste J Matrix: Solid
 Dublin, CA 94568
 Attention: Barbara Sieminski Work Order #: 9608F38 -01 Reported: Aug 29, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082896BTEXEXA	GC082896BTEXEXA	GC082896BTEXEXA	GC082896BTEXEXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	Porter	Porter	Porter	Porter
MS/MSD #:	G9608E85-08	G9608E85-08	G9608E85-08	G9608E85-08
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/28/96	8/28/96	8/28/96	8/28/96
Analyzed Date:	8/28/96	8/28/96	8/28/96	8/28/96
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg
Result:	0.17	0.17	0.18	0.50
MS % Recovery:	85	85	90	83
Dup. Result:	0.17	0.18	0.18	0.52
MSD % Recov.:	85	90	90	92
RPD:	0.0	5.7	0.0	9.5
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	GBLK082896	GBLK082896	GBLK082896	GBLK082896
Prepared Date:	8/28/96	8/28/96	8/28/96	8/28/96
Analyzed Date:	8/28/96	8/28/96	8/28/96	8/28/96
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	0.20 mg/kg	0.20 mg/kg	0.20 mg/kg	0.60 mg/kg
LCS Result:	0.19	0.19	0.19	0.54
LCS % Recov.:	95	95	95	90

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

SEQUOIA ANALYTICAL

Mike Gregory
 Project Manager

Please Note:
 The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9608F38.GET <1>

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-0100
Facility Address 2428 Central Avenue, Alameda
Consultant Project Number 5178.01
Consultant Name Gettler-Ryan
Address 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name) Barbara Sieminski
(Phone) 551-7555 (Fax Number) 551-7888

Chevron Contact (Name) Phil Briggs
(Phone) (510) 842-9136
Laboratory Name Sequoia
Laboratory Release Number 7092480
Samples Collected by (Name) Barbara Sieminski
Collection Date 08/26/96
Signature Barbara Sieminski

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed												Remarks
								TPH Gas + BTEX WAHBE (8016)	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)	9608F38				
SP-A	<u>01</u>	<u>1</u>	<u>S</u>	<u>G</u>	<u>11:00</u>			X												
SP-B	<u>02</u>	<u>1</u>	<u></u>	<u></u>	<u>11:30</u>			X												
SP-C	<u>0B</u>	<u>1</u>	<u></u>	<u></u>	<u>13:40</u>			X												
SP-D	<u>01</u>	<u>1</u>	<u>↓</u>	<u>↓</u>	<u>15:30</u>			X												

DO NOT BILL
TB-LB ANALYSIS

Remarks
Fax results
to Steve
Shimane of W/M
fax#(408)942-1499

Relinquished By (Signature) <u>Barbara Sieminski</u>	Organization <u>G-R</u>	Date/Time <u>08/27/96</u>	Received By (Signature) <u>[Signature]</u>	Organization <u>Sequoia</u>	Date/Time <u>8/27/96 14:15</u>	Turn Around Time (Circle Choice) 24 Hrs. <u>48 Hrs.</u> 5 Days 10 Days As Contracted
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>Sequoia</u>	Date/Time <u>8/27/96 15:05</u>	Received By (Signature) <u>[Signature]</u>	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>V. JH</u>		Date/Time <u>8/27 15:05</u>	

COC-3.DWG/03 01/FC

NEI/GTEL

ENVIRONMENTAL
LABORATORIES, INC.

Midwest Region

4211 May Avenue
Wichita, KS 67209
(316) 945-2624
(800) 633-7936
(316) 945-0506 (FAX)

September 17, 1996

Deanna Harding
GETTLER-RYAN
6747 Sierra Ct.
Suite J
Dublin, CA 94568

RE: GTEL Client ID:	GTR01CHV08
Login Number:	W6090081
Project ID (number):	5178.85
Project ID (name):	CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

Dear Deanna Harding:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 09/06/96.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes. This report is to be reproduced only in full.

NEI/GTEL is certified by the California Department of Health Service under Certification Number 1845.

If you have any questions regarding this analysis, or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Justin W. Loucks, Project Coordinator for
Terry R. Loucks
Laboratory Director

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: GTR01CHV08
 Login Number: W6090081
 Project ID (number): 5178.85
 Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

Method: EPA 8020A
 Matrix: Aqueous

GTEL Sample Number	W6090081-01	W6090081-02	W6090081-03	W6090081-04
Client ID	TB-LB	MW-3	MW-4	MW-5
Date Sampled		09/03/96	09/03/96	09/03/96
Date Analyzed	09/12/96	09/12/96	09/12/96	09/12/96
Dilution Factor	1.00	1.00	1.00	1.00

Analyte	Reporting		Concentration:			
	Limit	Units				
MTBE	5.0	ug/L	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes (total)	0.5	ug/L	< 0.5	< 0.5	< 0.5	< 0.5
BTEX (total)	--	ug/L	--	--	--	--
TPH as Gasoline	50	ug/L	< 50	< 50	< 50	< 50

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste. Physical/Chemical Methods". SW-846, Third Edition including promulgated Update II.

ANALYTICAL RESULTS
Volatile Organics

GTEL Client ID: GTR01CHV08
 Login Number: W6090081
 Project ID (number): 5178.85
 Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

Method: EPA 8020A
 Matrix: Aqueous

GTEL Sample Number	W6090081-05	W6090081-06	W6090081-07	--
Client ID	MW-6	MW-2	MW-1	--
Date Sampled	09/03/96	09/03/96	09/03/96	--
Date Analyzed	09/12/96	09/13/96	09/13/96	--
Dilution Factor	1.00	1.00	1.00	--

Analyte	Reporting		Concentration:			
	Limit	Units				
MTBE	5.0	ug/L	< 5.0	35.	120	--
Benzene	0.5	ug/L	< 0.5	64.	270	--
Toluene	0.5	ug/L	< 0.5	4.6	5.6	--
Ethylbenzene	0.5	ug/L	< 0.5	1.6	3.4	--
Xylenes (total)	0.5	ug/L	< 0.5	4.6	4.9	--
BTEX (total)	--	ug/L	--	75.	280	--
TPH as Gasoline	50	ug/L	< 50	2700	7600	--

Notes:

Dilution Factor:

Dilution factor indicates the adjustments made for sample dilution.

EPA 8020A:

Gasoline range hydrocarbons (TPH) quantitated by GC/FID with purge and trap and modified EPA Method 8015. Analyte list modified to include additional compounds. "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition including promulgated Update II.

GTEL Client ID: GTR01CHV08

QUALITY CONTROL RESULTS

Login Number: W6090081

Volatile Organics

Project ID (number): 5178.85

Method: EPA 8020A

Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

Matrix: Aqueous

Conformance/Non-Conformance Summary

(X = Requirements Met * = See Comments -- = Not Required NA = Not Applicable)

Conformance Item	Volatile Organics	Semi-Volatile Organics	Inorganics (MT, WC)
GC/MS Tune	--	--	NA
Initial Calibration	--	--	--
Continuing Calibration	X	--	--
Surrogate Recovery	X	--	NA
Holding Time	X	--	--
Method Accuracy	X	--	--
Method Precision	X	--	--
Blank Contamination	X	--	--

Comments:

GTEL Client ID: GTR01CHV08
Login Number: W6090081
Project ID (number): 5178.85
Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020A
Matrix: Aqueous

Surrogate Results

QC Batch No.	Reference	Sample ID	TFT
Method: EPA 8020A			Acceptability Limits: 43-136%
091296GC17-1	CV0912962017	Calibration Verifi	98.5
091296GC17-3	BW09129617	Method Blank Water	91.8
091296GC17-4	LW09129617	Laboratory Control	95.7
091296GC17-7	DP09008107	Duplicate	104.
	09008101	TB-LB	96.9
--	09008102	MW-3	85.0
	09008103	MW-4	95.0
--	09008104	MW-5	94.1
	09008105	MW-6	93.8
--	09008106	MW-2	99.5
	09008107	MW-1	104.

Notes:

*: Indicates values outside of acceptability limits. See Nonconformance Summary.

Project ID (Number): 5178.85
Project ID (Name): Chevron SS #9-0100
2428 Central Ave.
Alameda, CA
Work Order Number: W6-09-0081
Date Reported: 09-17-96

METHOD BLANK REPORT

Volatile Organics in Water
EPA Method 8020A

Date of Analysis: 12-Sep-96 QC Batch No: 091296GC17-3

Analyte	Concentration, ug/L
MTBE	<5.0
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Xylene (total)	<0.5
TPH as Gasoline	<50

GTEL Client ID: GTR01CHV08
Login Number: W6090081
Project ID (number): 5178.85
Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020A
Matrix: Aqueous

Calibration Verification Sample Summary

Analyte	Spike Amount	Check Sample Concentration	QC Percent Recovery	Acceptability Limits Recovery
EPA 8020A	Units:ug/L	QC Batch:091296GC17-1		
Benzene	20.0	23.5	118.	77-123%
Toluene	20.0	22.6	113.	77.5-122.5%
Ethylbenzene	20.0	22.4	112.	63-137%
Xylenes (Total)	60.0	64.1	107.	85-115%
TPH as Gasoline	500.	470.	94.0	80-120%

Notes:

QC check source: Supelco #LA12389

GTEL Client ID: GTR01CHV08
Login Number: W6090081
Project ID (number): 5178.85
Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020A
Matrix: Aqueous

Laboratory Control Sample Summary

Analyte	Spike Amount	Check Sample Concentration	QC Percent Recovery	Acceptability Limits Recovery
EPA 8020A	Units:ug/L	QC Batch:091296GC17-4		
Benzene	20.0	23.5	118.	39-150%
Toluene	20.0	22.6	113.	46-148%
Ethylbenzene	20.0	22.3	112.	32-160%
Xylenes (Total)	60.0	64.0	107.	51-145%

Notes:

GTEL Client ID: GTR01CHV08
Login Number: W6090081
Project ID (number): 5178.85
Project ID (name): CHEVRON/9-0100/2428 CENTRAL AVE/ALAMEDA/CA

QUALITY CONTROL RESULTS

Volatile Organics
Method: EPA 8020A
Matrix: Aqueous

Duplicate Sample Results

Analyte	Original Concentration	Duplicate Concentration	RPD. %	Acceptability Limits. %
EPA 8020A	Units: ug/L	QC Batch: 091296GC17-7	GTEL Sample ID: W6090081-07	Client ID: MW-1
MTBE	121.	116.	4.22	20
Benzene	270.	257.	4.93	23.9
Toluene	5.59	5.31	5.14	27.2
Ethylbenzene	3.43	3.21	6.63	21.6
Xylenes (Total)	4.87	4.62	5.27	22.0
TPH as Gasoline	7620	< 100.	NA	20

Notes:

NA - The concentration of the analyte is less than the reporting limit.

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number: 9-0100
Facility Address: 2428 Central Ave Alameda CA
Consultant Project Number: 5178.85
Consultant Name: Gettler-Ryan
Address: 6747 Sierra Ct, Ste J, Dublin 94568
Project Contact (Name): Deanna Harding
(Phone) 510-551-7555 (Fax Number) 551-7888

Chevron Contact (Name): Tammy Hodge
(Phone): 842-9449
Laboratory Name: GT&L
Laboratory Release Number: 3470820
Samples Collected by (Name): F. Cline
Collection Date: 9-3-96
Signature: [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analytes To Be Performed												Remarks			
								TPH Gas + BTEX w/MTBE (801E)	TPH Diesel (801S)	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)								
TB-43		2	W	TB		HEL	Y																
MW-3		3		G	1320																		
MW-4					1309																		
MW-5					1239																		
MW-6					1217																		
MW-2					1331																		
MW-1	WU-09-0081				1342																		
																							No Seals 12 702650/871

Relinquished By (Signature): <u>[Signature]</u>	Organization: <u>ELK</u>	Date/Time: <u>9-4-96</u>	Received By (Signature): <u>[Signature]</u>	Organization: <u>GT&L</u>	Date/Time: <u>9/4/96</u>
Relinquished By (Signature): <u>[Signature]</u>	Organization: <u>GT&L</u>	Date/Time: <u>9/5/96 14:10</u>	Received By (Signature): <u>[Signature]</u>	Organization: <u>NEI/GTEL</u>	Date/Time: <u>9/5/96</u>
Relinquished By (Signature): <u>[Signature]</u>	Organization: <u>NEI/GTEL</u>	Date/Time: <u>9/5/96</u>	Received For Laboratory By (Signature): <u>[Signature]</u>	Organization: <u>NEI/GTEL</u>	Date/Time: <u>9/6/96</u>

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



Sequoia Analytical

680 Chesapeake Drive
1900 Bates Avenue, Suite L
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Concord, CA 94520
Sacramento, CA 95834

(415) 364-9600
(510) 686-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 686-9689
FAX (916) 921-0100

Superior Precision Analytical
1555 Burke St., Unit 1
San Francisco, CA 94124
Attention: Victor Ezbenho

Client Project ID: 15304, Chevron 9-0100
Matrix: Liquid

QC Sample Group: 4C80901-03

Reported: Mar 21, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	EDB	DBCP
Method:	EPA 504	EPA 504
Analyst:	L. Laikhtman	L. Laikhtman

MS/MSD Batch#:	4C74201	4C74201
Date Prepared:	3/15/94	3/15/94
Date Analyzed:	3/15/94	3/15/94
Instrument I.D.#:	GCHP-14	GCHP-14
Conc. Spiked:	100 µg/L	100 µg/L
Matrix Spike % Recovery:	69	86
Matrix Spike Duplicate % Recovery:	70	85
Relative % Difference:	1.4	1.2

LCS Batch#: -

Date Prepared: -

Date Analyzed: -

Instrument I.D.#: -

LCS % Recovery: -

% Recovery Control Limits:	50-150	50-150
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SEQUOIA ANALYTICAL

Suzanne Chin
Suzanne Chin
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

