Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Operations

D. Moller
Manager, Operations
S. L. Patterson
Area Manager, Operations
C. G. Trimbach
Manager, Engineering

February 6, 1990

Mr. Gil Wistar
Alameda County Environmental Health Department
80 Swan Way, Room 200
Oakland, California 94621

Re: Former Chevron Station #9-2582
Dublin, California

Dear Mr. Wistar:

Enclosed is the report documenting groundwater sampling and analysis of the three monitor wells, conducted November 6, 1989. As seen in the report, all groundwater samples had contaminant concentrations below the method detection limits for all analyzed hydrocarbon components. A sample was not taken from the 10-inch PVC casing installed during tank installation at this sampling event, but it was noted that a hydrocarbon odor eminated from the casing when it was uncapped.

Chevron is having WGR coordinate with the dealer the timing of vent well installation (for testing) and well installation within the above mentioned PVC casing. You will be contacted by them regarding permitting.

If you have any questions or require additional information, please contact Robert Foss at (415) 842-9594.

Sincerely,

D. MOLLER

By R.C. Foss
R.C. Foss, Engineer

Enclosure

cc: Ms. Dyan Whyte
California Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street, Room 6040
Oakland, California 94607

WESTERN GEOLOGIC RESOURCES, INC.

2169 E. FRANCISCO BOULEVARD, SUITE B
SAN RAFAEL, CALIFORNIA 94901
415/457-7595 FAX: 415/457-8521

1 February 1990

Robert Foss
Chevron USA
2410 Camino Ramon
San Ramon, CA 94583

Re: Quarterly Groundwater Sampling
Sampled November 1989
Chevron Service Station #92582
7420 Dublin Boulevard
Dublin, California
WGR Job #1-124.05

Dear Mr. Foss:

This letter report presents the results of groundwater sampling performed on 6 November 1989 by Western Geologic Resources, Inc. (WGR) at Chevron Service Station #92582, located at 7420 Dublin Boulevard in Dublin, California (Figures 1 and 2).

The scope of work for this project was to:

1) Collect depth-to-water and well-casing volume measurements in all groundwater monitor wells and produce a potentiometric surface map based on the water-level measurements;

2) Collect groundwater samples from the wells for analyses of total purgeable petroleum hydrocarbons (TPPH) by EPA Method 8015 and aromatic hydrocarbons including benzene, toluene, ethylbenzene and total xylenes (BTEX) and halocarbons by EPA Method 8240;

3) Update the database for water-level measurements and groundwater chemistry data; and,

4) Review results and prepare a report of the investigation.

BACKGROUND

On 25 March 1988, EA Engineering, Science and Technology Inc. (EA) conducted a soil vapor survey at the Chevron Service Station. A total of 15 vapor points were installed and hydrocarbon vapors up to 9,700 parts-per-million by volume (ppmv) were detected near the west end of the former pump island location.

Subsequent to the soil vapor survey, EA drilled three exploratory soil borings and converted them to groundwater monitor wells. Monitor well EA-1 was installed to the southwest of the pump islands. Monitor wells EA-2 and EA-3 were installed to the east and the north of the underground fuel storage tanks, respectively. No information has been made available to WGR concerning the dates these wells were installed, nor any analytical data from soil samples that may have been collected.

On 17 October 1988, EA collected groundwater samples from all three wells. No TPPH or BTEX concentrations were detected in samples from well EA-1. Samples from wells EA-2 and EA-3 contained no detectable TPPH, but slight concentrations of BTEX were detected.

On 20 December 1988, groundwater samples were again collected by EA from all three wells. No liquid hydrocarbons were detected in any of the wells. No TPPH or BTEX were detected in samples from wells EA-1 and EA-2. However, samples from well EA-3 contained 240 parts-per-billion (ppb) TPPH, 90 ppb benzene, 1.2 ppb toluene, 13 ppb ethylbenzene, and 3.3 ppb total xylenes.

TPPH or BTEX were not detected in groundwater samples collected by EA on 28 March 1989 from wells EA-1 and EA-2. However, samples collected on the same date from well EA-3 contained 2,300 ppb TPPH, 380 ppb benzene, 130 ppb toluene, 240 ppb ethylbenzene, and 910 ppb total xylenes.

On 16 February 1989, three underground storage tanks were removed under the supervision of Blaine Tech Services, Inc. (BTS) of San Jose, California. BTS collected four native soil samples from the capillary zone in the underground storage tank excavation and collected a water sample from ponded water within the excavation. The soil and water samples were analyzed by Sequoia Analytical

Laboratories by EPA Methods 8015 and 8020. The analytic results for the soil samples indicated concentrations of total petroleum hydrocarbons (TPH) ranging from 1.9 parts-per-million (ppm) to 29 ppm, respectively. The water sample contained low- to medium-boiling point hydrocarbons at 100,000 ppb. Based on the hydrocarbon concentrations in both the soil and water samples, WGR was contracted by Chevron to oversee further excavation and proper disposal of the excavated soil.

On 14 March 1989, WGR collected six samples from pea-gravel backfill material in the former underground storage tank excavation. Based on the hydrocarbon concentrations of the pea-gravel, it was excavated and separated into Class I and Class II stockpiles on 17 March 1989 (reference WGR report 12 April 1989). During the excavation of the pea gravel, 2,846 gallons of water that contained petroleum hydrocarbons were pumped out of the excavation by Erikson Trucking and disposed of at Gibson Oil in Bakersfield, California.

On 17 and 18 March 1989, five small-diameter soil borings (B-1 through B-5) were drilled by WGR staff in the vicinity of the former pump island locations. Soil samples were collected at depths ranging from 3 feet (ft) to 15.5 ft below grade. Analytic results of soil samples collected from these borings contained non-detectable to low concentrations of TPH and aromatic hydrocarbons. On the same date, nine sample locations, PS-1 through PS-9, were hand augered in the vicinity of former product-line locations, and soil samples were collected at depths ranging from 2.5 ft to 10.5 ft below grade. Analytic results of soil samples collected from these locations indicated TPH concentrations ranging from 6.7 ppm to 750 ppm at two soil sample locations. These sample locations, PS-1 and PS-9, were on the north and south side of the southernmost pump island.

On 20 March 1989, approximately 18 cubic yards of Class I material were manifested and transported to Casmalia Resources, Inc., in Casmalia, California. On 20 March 1989, approximately 162 cubic yards were transported to McKittrick Landfill, a Class II landfill, in Bakersfield, California.

Because of the TPH concentrations detected in the soil samples PS-1 and PS-9, excavation and sampling were initiated by WGR in the vicinity of the southern pump island. A total of fourteen confirmatory soil samples were collected in the sidewalls of the excavation. The first round of soil

samples were collected on 4 and 5 May 1989 and two samples, PS-12 and PS-14, collected at 6 ft and 9 ft below grade, respectively, contained TPH above 100 ppm.

Because soil samples PS-12 and PS-14 were above 100 ppm TPH, additional excavation was performed on 11 May 1989. Confirmatory soil samples were collected 10 ft below grade in the same sample locations and laboratory analysis indicated TPH concentrations of over 1,000 ppm.

On 23 May 1989, representatives from WGR and Chevron met with Gil Wistar, Hazardous Materials Specialist with the Alameda County Health Agency, to discuss the implementation of a soil vapor extraction system in the vicinity of the pump islands. As per conversation with Gil Wistar, the installation of a soil-vapor extraction system was approved. Due to limited access on the site, the excavation was terminated and all soil that was excavated was manifested and transported to Casmalia Resources, Inc., a Class I facility in Casmalia, California.

On 15 June 1989, WGR staff coordinated the installation of underground piping for a future soil-vapor extraction system near the pump islands and in the underground storage tank backfill. The potential vent system is intended to allow the removal of hydrocarbon contamination remaining in the inaccessible soils surrounding the vicinity of the pump islands and, if necessary, the tank backfill. A 10-inch diameter PVC casing was also installed in the tank backfill to allow for safe drilling within the backfill in the future. These systems were installed concurrent with the installation and backfilling of three new underground storage tanks and associated piping.

On 2 August 1989, groundwater monitor wells EA-1, EA-2 and EA-3 were sampled by WGR. TPPH, aromatic hydrocarbons and halocarbons were not detected in any of the monitor wells. A water sample was also collected from the 10-inch diameter PVC casing installed within the underground fuel tank backfill. The sample contained TPPH at 110,000 ppb, benzene at 9,200 ppb, toluene at 14,000 ppb, ethylbenzene at 1,800 ppb, total xylenes at 17,000 ppb and 50 ppb 1,2-dichloroethane. Historic analytic results and water-level measurements are available on Tables 1 and 2, respectively.

GROUNDWATER SAMPLING

Groundwater monitor wells EA-1, EA-2 and EA-3 were sampled on 6 November 1989 by WGR environmental technicians. All three monitor wells were sampled according to WGR's standard operating procedure included as Attachment A. At least three well-casing volumes of groundwater were removed from each monitor well prior to sampling. Approximately 161 gallons of purged groundwater was evacuated and temporarily stored on-site in containment bins pending results of laboratory analyses. Groundwater samples were collected using dedicated bladder pumps. A hydrocarbon odor was reported from the water in the 10-inch diameter PVC casing, which was installed in the underground fuel storage tank backfill. This casing is not a monitor well and was not sampled. No liquid hydrocarbons or hydrocarbon odors were reported in any of the monitor wells.

The groundwater samples and travel blank, made up of deionized water at the laboratory, were sent under chain-of-custody to Superior Analytical Laboratory, Inc. (SAL) for analysis.

ANALYTIC RESULTS

Groundwater samples from all wells were analyzed for the presence of TPPH, BTEX and halocarbons. Analytic results are presented in Table 1. Chain-of-custody forms and laboratory reports are included as Attachments B and C, respectively.

TPPH, BTEX and halocarbons were not detected in the groundwater samples collected from monitor wells EA-1, EA-2 and EA-3 or in the travel blank.

GROUNDWATER FLOW

Figure 3 is a potentiometric surface map of the shallow groundwater based on depth-to-water measurements taken on 6 November 1989. Water-level measurements are presented in Table 2.

Hydrographs are included in Attachment D. Depth-to-groundwater for the three monitor wells was measured by WGR prior to groundwater sampling on 6 November 1989 and the average depth-to-groundwater was 10.32 ft. Groundwater at the site was estimated to flow to the northwest at a gradient of approximately 0.3%. Sample calculation A shows how the gradient was derived.[1]

TRENDS

TPPH concentrations in groundwater samples collected from well EA-3 decreased from 2,300 ppb in March 1989, when sampled by EA, to below detection limits in August and November 1989 when sampled by WGR. BTEX concentrations in samples collected from well EA-3 were also below detection limits during the same time periods. During the August and November 1989 sampling periods, TPPH and BTEX concentrations have remained non-detectable in monitor wells EA-1, EA-2 and EA-3.

Estimated groundwater flow beneath the site is to the northwest at an average gradient of 0.3%. Groundwater gradients for the site have been consistently very shallow.

SUMMARY

Groundwater monitor wells EA-1, EA-2 and EA-3 were sampled by WGR on 6 November 1989. TPPH, BTEX and halocarbons were not detected in any of the monitor wells. TPPH and BTEX concentrations in groundwater samples collected from EA-3 have decreased to below detection limits

---

1 SAMPLE CALCULATION A: GROUNDWATER GRADIENT CALCULATION

From Figure 3; reference line C-C'

$$\text{Gradient} = \frac{h}{l} = \frac{0.14 \text{ ft}}{45 \text{ ft}} = 0.0031\%$$

or about 0.3%

h = 323.0 ft - 322.86 ft = 0.14 ft
l = 45 ft (distance along C-C')

as compared to the March 1989 sampling event performed by EA. The estimated direction of groundwater flow is to the northwest with a gentle gradient of 0.3%.

Western Geologic Resources, Inc. is pleased to conduct hydrogeologic and environmental consulting services for Chevron and trust that this report will meet your needs. Please call us at (415) 457-7595 if you have any questions.

Sincerely,
Western Geologic Resources, Inc.

Julie A. Noffke
Staff Geologist

Lee A. Otis
Project Hydrogeologist

Kathleen A. Isaacson
Senior Geologist

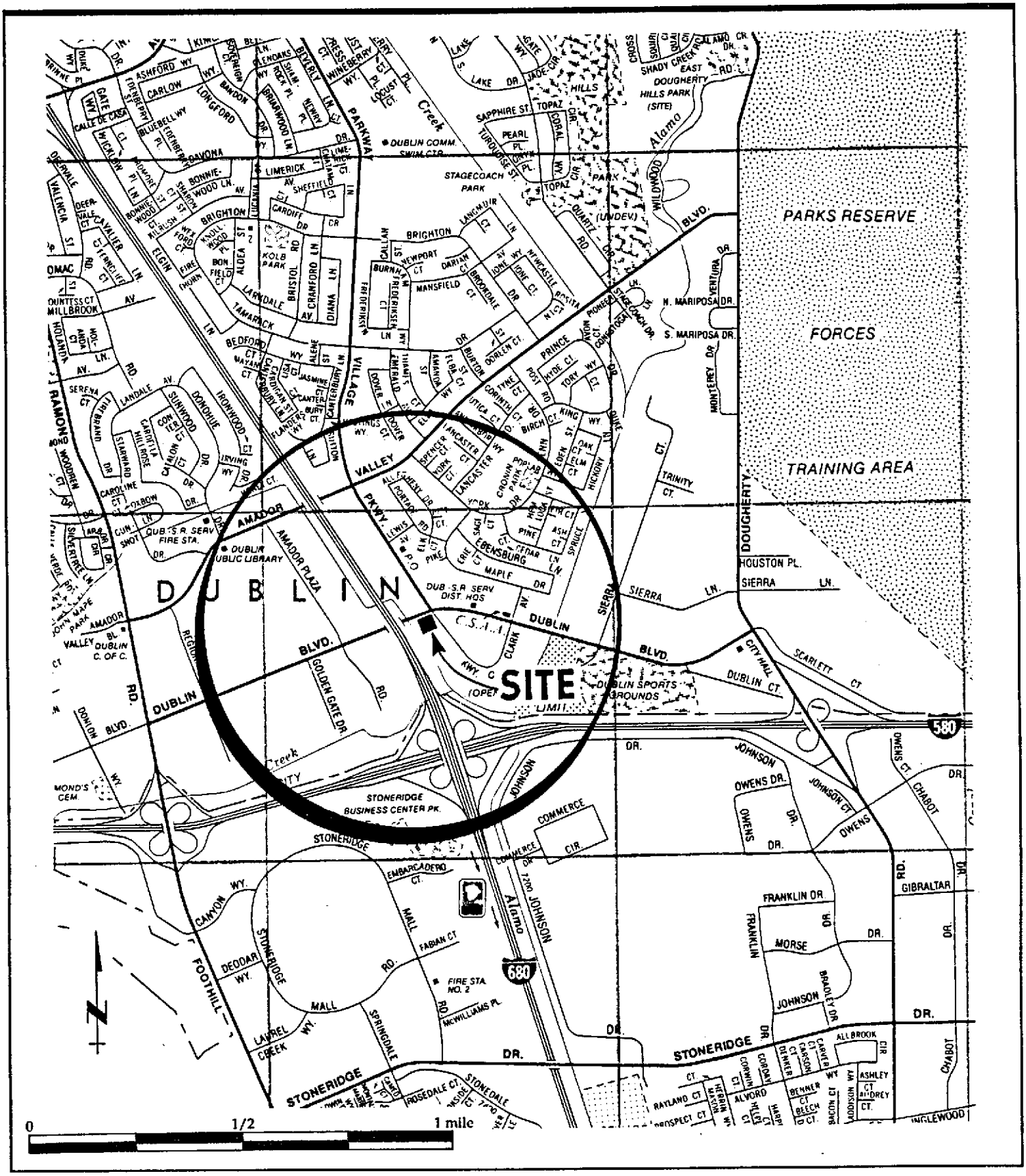
dms/LPN/LAO/KAI

124L1JA0.WP

FIGURES

TABLES

ATTACHMENTS

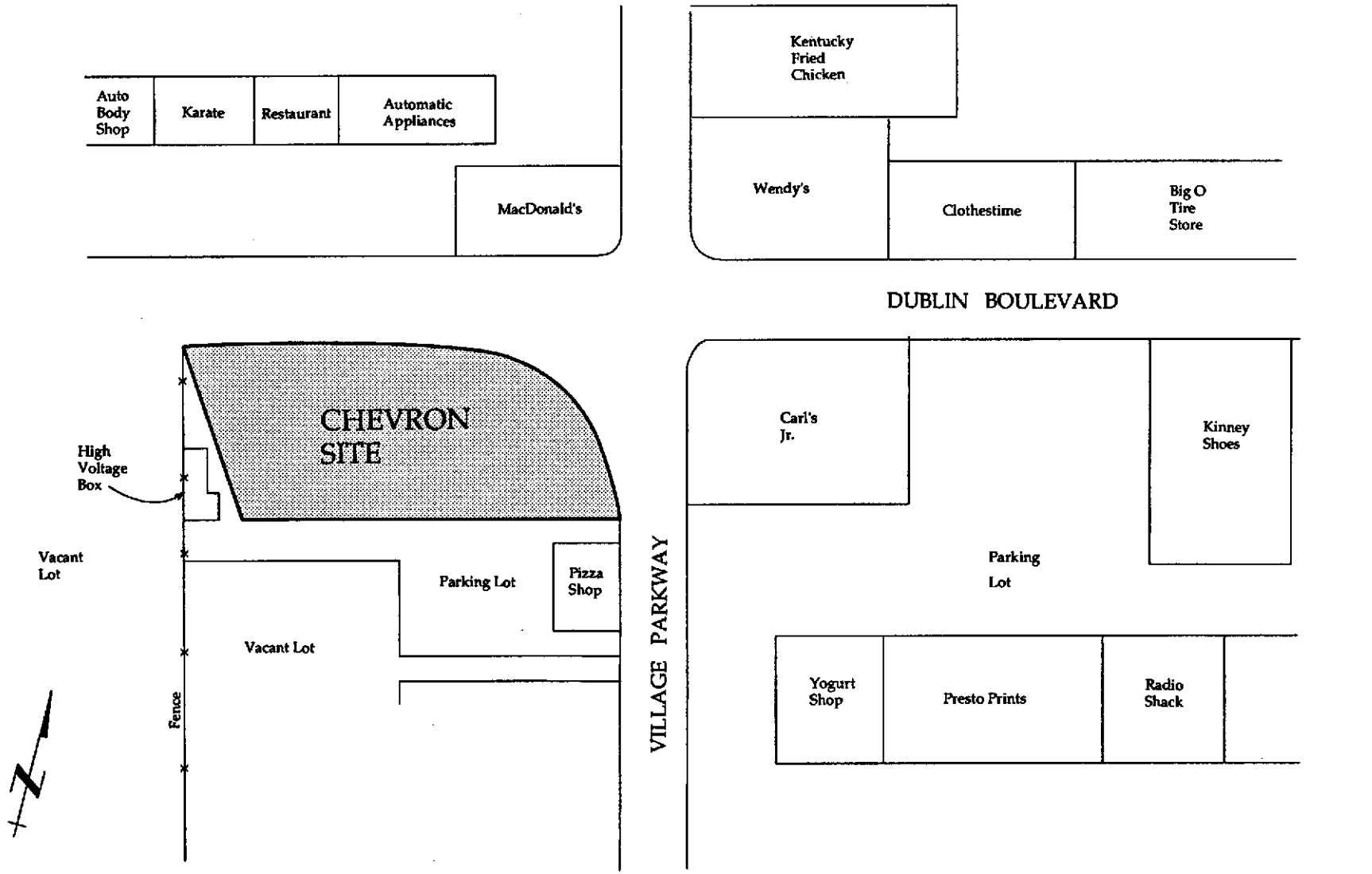


Site Location Map
Chevron Service Station #92582
Dublin, California

FIGURE
1

WESTERN GEOLOGIC RESOURCES, INC.

1-124.05



LEGEND

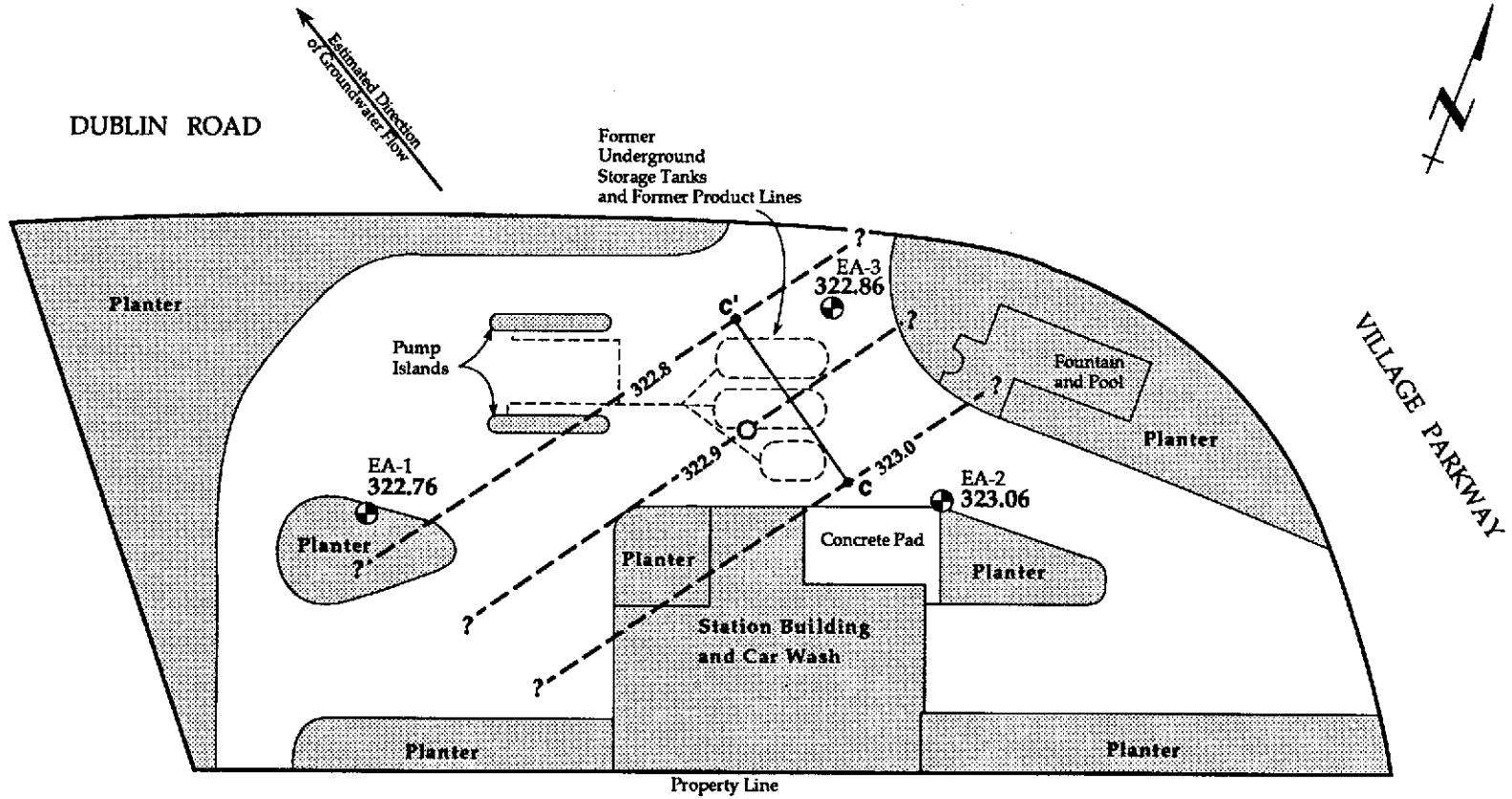
NOT TO SCALE

Vicinity Map
Chevron SS# 92582, Dublin, California

FIGURE
2

WESTERN GEOLOGIC RESOURCES, INC.

1-124.05



LEGEND

EA-1 322.76	Groundwater Monitor Well and Groundwater Elevation, feet above mean sea level
O	10" Diameter PVC Casing
323.0 — — — ?	Groundwater Elevation Contour, feet above mean sea level, dashed where inferred, queried where uncertain
C' ●——● C	Reference Line for gradient calculation

Potentiometric Surface of the Shallow Groundwater
6 November 1989, Chevron Service Station #92582
Dublin, California

FIGURE
3

WESTERN GEOLOGIC RESOURCES, INC.

1-124.05

TABLE 1. Analytic Results: Groundwater
Chevron Station #92582
Dublin, California
WGR #1-124.05

Well ID #	Date	Lab	EPA Method	FC	TPPH	B	T	E	X	EDC
					<----------ppb---------->					
EA-1	17 Oct 88 *	NA	NA	---	<50.0	<0.5	<0.5	<0.5	<0.5	---
EA-1	20 Dec 88 *	PL	8015/8020	---	<50.0	<0.5	<0.5	<0.5	<0.5	---
EA-1	28 Mar 89 *	PL	8015/8020	---	<250	<0.5	<0.5	<0.5	<0.5	---
EA-1	2 Aug 89	CCAS	8260	---	<50.0	<0.1	<0.1	<0.1	<0.1	<0.1
EA-1	6 Nov 89	SAL	8015/8240	---	<500	<3.0	<5.0	<5.0	<5.0	<5.0
EA-2	17 Oct 88 *	NA	NA	---	<50.0	<0.5	<0.5	<0.5	1.2	---
EA-2	20 Dec 88 *	PL	8015/8020	---	<50.0	<0.5	<0.5	<0.5	<0.5	---
EA-2	28 Mar 89 *	PL	8015/8020	---	<250	<2.0	<0.5	<0.5	<0.5	---
EA-2	2 Aug 89	CCAS	8260	---	<50.0	<0.1	<0.1	<0.1	<0.1	<0.1
EA-2	6 Nov 89	SAL	8015/8240	---	<500	<3.0	<5.0	<5.0	<5.0	<5.0
EA-3	17 Oct 88 *	NA	NA	---	<50.0	1.8	<0.5	<0.5	3.0	---
EA-3	20 Dec 88 *	PL	8015/8020	Gas	240	90.0	1.2	13.0	3.3	---
EA-3	28 Mar 89 *	PL	8015/8020	Gas	2,300	380.0	130.0	240.0	910.0	---
EA-3	2 Aug 89	CCAS	8260	---	<50.0	<0.1	<0.1	<0.1	<0.1	<0.1
EA-3	6 Nov 89	SAL	8015/8240	---	<500	<3.0	<5.0	<5.0	<5.0	<5.0
PVC	2 Aug 89	CCAS	8260	Gas	100,000	8,700	14,000	1,700	17,000	50
PVC-D	2 Aug 89	CCAS	8260	Gas	110,000	9,200	14,000	1,800	13,000	50
PVC	6 Nov 89	---	---	---	---	---	---	---	---	---
EA	28 Mar 89 *	PL	8015/8020	---	<250.0	<0.5	<0.5	<0.5	<0.5	---
TB	28 Jul 89	CCAS	8260	---	<50.0	<0.1	<0.1	<0.1	<0.1	<0.1
TB	6 Nov 89	SAL	8015/8240	---	<500	<3.0	<5.0	<5.0	<5.0	<5.0

NOTES:

FC = Fuel Characterization
TPPH = Total Purgeable Petroleum Hydrocarbons
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
EDC = 1,2-Dichloroethane
ppb = parts-per-billion
PL = Pace Laboratories, Inc.
CCAS = Central Coast Analytical Services
SAL = Superior Analytical Laboratory
* = Sample collected by EA Engineering, Science and Technology, Inc.
D = Duplicate analysis
PVC = 10" PVC casing
EB = Equipment Blank
TB = Travel Blank
Gas = Gasoline
NA = Not Available
--- = Not analyzed/Not Applicable

124T1JA0.WP

TABLE 2. Water Level Measurements
Chevron Service Station #92582
Dublin, California
WGR #1-124.05

Well ID #	Date	DTW	TOC *	Elev-W
		<----------ft---------->		
EA-1	24 Oct 88 *	10.64	333.41	322.77
EA-1	2 Nov 88 *	10.69	333.41	322.72
EA-1	20 Dec 88 *	10.51	333.41	322.90
EA-1	28 Mar 89 *	9.87	333.41	323.54
EA-1	2 Aug 89	10.34	333.41	323.07
EA-1	6 Nov 89	10.65	333.41	322.76
EA-2	24 Oct 88 *	9.70	332.59	322.89
EA-2	2 Nov 88 *	10.03	332.59	322.56
EA-2	20 Dec 88 *	9.98	332.59	322.61
EA-2	28 Mar 89 *	8.80	332.59	323.79
EA-2	2 Aug 89	9.44	332.59	323.15
EA-2	6 Nov 89	9.53	323.59	323.06
EA-3	24 Oct 88 *	11.03	333.64	322.61
EA-3	2 Nov 88 *	11.03	333.64	322.61
EA-3	20 Dec 88 *	10.96	333.64	322.68
EA-3	28 Mar 89 *	9.77	333.64	322.87
EA-3	2 Aug 89	10.65	333.64	322.99
EA-3	6 Nov 89	10.78	333.64	322.86
PVC	2 Aug 89	9.83	---	---
PVC	6 Nov 89	---	---	---

NOTES:

DTW = Depth-to-Water
TOC = Top-of-Casing Elevation
* = Data obtained by EA Engineering, Science and Technology, Inc.
Elev-W = Elevation of Water
PVC = 10" PVC Casing
--- = Not Measured

ATTACHMENT A

STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURES
RE: GROUNDWATER PURGING AND SAMPLING
SOP-4

Prior to water sampling, each well is purged by evacuating a minimum of three well-casing volumes of groundwater or until the discharge water temperature, conductivity, and pH stabilize. The groundwater sample should be taken when the water level in the well recovers to 80% of its static level.

The sampling equipment used consists of either a teflon bailer or a stainless steel bladder pump with a teflon bladder. If the sampling system is dedicated to the well, then the bailer is made of teflon, but the bladder pump is PVC with a polypropylene bladder. Forty milliliter (ml) glass volatile-organic-analysis (VOA) vials, with teflon septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is a meniscus at the top of the vial. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information should include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

For quality control purposes, a duplicate water sample is collected from each well. This sample is put on hold at the laboratory. A trip blank is prepared at the laboratory and placed in the transport cooler. It remains with the cooler and is analyzed by the laboratory along with the groundwater samples. A field blank is prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been steam-cleaned, prior to use in a second well, and is analyzed along with the other samples. The field blank demonstrates the quality of in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all the well-development and water-sampling equipment that is not dedicated to a well is steam-cleaned between each well. As a second precautionary measure, wells will be sampled in order of least to highest concentrations as established by previous analyses.

ATTACHMENT B

CHAIN-OF-CUSTODY FORMS

SA# 10260

Chain-of-Custody Record

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

Chevron Facility Number #92582
Consultant Release Number 2612800
Consultant Project Number 1-124.05
Consultant Name Western Geologic Resources
Address 2169 E. Francisco Blvd. Suite B, San Rafael Ca. 94901
Fax Number
Project Contact (Name) Lee Otis
(Phone) (415) 457-7595

Chevron Contact (Name) Bob Foss
(Phone)
Laboratory Name Superior Analytical
Contract Number
Samples Collected by (Name) Madeleine Stanger + Dan Backes
Collection Date 11-6-89
Signature Madeleine B. Stanger

Sample Number	Lab Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite	Time	Sample Preservation	Iced	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline	Modified EPA 8015 Total Petro. Hydrocarb. as Gasoline + Diesel	503 Oil and Grease	Arom. Volatiles - BTXE Soil: 8020/Wtr.: 602	Arom. Volatiles - BTXE Soil: 8240/Wtr.: 624	Total Lead DHS-Luft	EDB DHS-AB 1803				Remarks
11069-01A,B		2	W		16:40	none	YS					X						
11069-02A,B		↓			17:01							↓						
11069-03A,B		↓			15:18													
11069-TBA		1																
11069-01CD		2			16:40			X										
11069-02CD		↓			17:01			↓										
11069-03CD		↓			15:18													
11069-TBC		1				↓	↓	↓										

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Madeleine B. Stanger	Western Geologic Resources	11-6-89 4:25			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					11/7/89 1:20

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

ATTACHMENT C

LABORATORY REPORTS

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 10260
CLIENT: Western Geologic Resources
CLIENT JOB NO.: 1-124.05

DATE RECEIVED: 11/07/89
DATE REPORTED: 11/14/89

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (ug/l) Gasoline Range
1	11069-01	ND<500
2	11069-02	ND<500
3	11069-03	ND<500
4	11069-TB	ND<500

ug/L - parts per billion (ppb)

Minimum Detection Limit for Gasoline in Water: 500ug/L

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = <15%
MS/MSD Average Recovery = 95%: Duplicate RPD = 5%

Richard Srna, Ph.D.

Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO. 10260-1
CLIENT: Western Geologic Resources

DATE RECEIVED: 11/7/89
DATE REPORTED: 11/14/89
JOB NO. 1-124.05

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: 11069-01

Compound	ug/l	Compound	ug/l
Chloromethane	ND<10	Cis-1,3-Dichloropropene	ND<5
Bromomethane	ND<10	Trichloroethene	ND<5
Vinyl Chloride	ND<10	Dibromochloromethane	ND<5
Chloroethane	ND<10	1,1,2-Trichloroethane	ND<5
Methylene Chloride	ND<10	Benzene	ND<3
Acetone	ND<10	Trans-1,3-Dichloropropene	ND<5
Carbon disulfide	ND<5	2-Chloroethyl vinyl ether	ND<5
Trichlorofluoromethane	ND<5	Bromoform	ND<5
1,1-Dichloroethene	ND<5	4-Methyl-2-Pentanone	ND<10
1,1-Dichloroethane	ND<5	2-Hexanone	ND<10
1,2-Dichloroethene (total)	ND<5	Tetrachloroethene	ND<5
Chloroform	ND<5	1,1,2,2-Tetrachloroethane	ND<5
1,2-Dichloroethane	ND<5	Toluene	ND<5
2-Butanone	ND<20	Chlorobenzene	ND<5
1,1,1-Trichloroethane	ND<5	Ethylbenzene	ND<5
Carbon Tetrachloride	ND<5	Styrene	ND<5
Vinyl Acetate	ND<10	Total Xylenes	ND<5
Bromodichloromethane	ND<5	1,3-Dichlorobenzene	ND<5
1,2-Dichloropropane	ND<5	1,2&1,4-Dichlorobenzenes	ND<5

ug/l = part per billion (ppb)

QC DATA:

Surrogate Recoveries		QC Limits water	QC Limits soil
1,2-DCA-d4.....	115%	76-114	81-117
Toluene-d8.....	95%	88-110	81-140
Bromofluorobenzene.....	98%	86-115	74-121

comments:

Richard Srna, Ph.D.

Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO. 10260-2
CLIENT: Western Geologic Resources

DATE RECEIVED: 11/7/89
DATE REPORTED: 11/14/89
JOB NO. 1-124.05

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: 11069-02

Compound	ug/l	Compound	ug/l
Chloromethane	ND<10	Cis-1,3-Dichloropropene	ND<5
Bromomethane	ND<10	Trichloroethene	ND<5
Vinyl Chloride	ND<10	Dibromochloromethane	ND<5
Chloroethane	ND<10	1,1,2-Trichloroethane	ND<5
Methylene Chloride	ND<10	Benzene	ND<3
Acetone	ND<10	Trans-1,3-Dichloropropene	ND<5
Carbon disulfide	ND<5	2-Chloroethyl vinyl ether	ND<5
Trichlorofluoromethane	ND<5	Bromoform	ND<5
1,1-Dichloroethene	ND<5	4-Methyl-2-Pentanone	ND<10
1,1-Dichloroethane	ND<5	2-Hexanone	ND<10
1,2-Dichloroethene (total)	ND<5	Tetrachloroethene	ND<5
Chloroform	ND<5	1,1,2,2-Tetrachloroethane	ND<5
1,2-Dichloroethane	ND<5	Toluene	ND<5
2-Butanone	ND<20	Chlorobenzene	ND<5
1,1,1-Trichloroethane	ND<5	Ethylbenzene	ND<5
Carbon Tetrachloride	ND<5	Styrene	ND<5
Vinyl Acetate	ND<10	Total Xylenes	ND<5
Bromodichloromethane	ND<5	1,3-Dichlorobenzene	ND<5
1,2-Dichloropropane	ND<5	1,2&1,4-Dichlorobenzenes	ND<5

ug/l = part per billion (ppb)

QC DATA:

Surrogate Recoveries		QC Limits water	QC Limits soil
1,2-DCA-d4.....	116%	76-114	81-117
Toluene-d8.....	92%	88-110	81-140
Bromofluorobenzene.....	98%	86-115	74-121

comments:

Richard Srna, Ph.D.

Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO. 10260-3
CLIENT: Western Geologic Resources

DATE RECEIVED: 11/7/89
DATE REPORTED: 11/14/89
JOB NO. 1-124.05

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: 11069-03

Compound	ug/l	Compound	ug/l
Chloromethane	ND<10	Cis-1,3-Dichloropropene	ND<5
Bromomethane	ND<10	Trichloroethene	ND<5
Vinyl Chloride	ND<10	Dibromochloromethane	ND<5
Chloroethane	ND<10	1,1,2-Trichloroethane	ND<5
Methylene Chloride	ND<10	Benzene	ND<3
Acetone	ND<10	Trans-1,3-Dichloropropene	ND<5
Carbon disulfide	ND<5	2-Chloroethyl vinyl ether	ND<5
Trichlorofluoromethane	ND<5	Bromoform	ND<5
1,1-Dichloroethene	ND<5	4-Methyl-2-Pentanone	ND<10
1,1-Dichloroethane	ND<5	2-Hexanone	ND<10
1,2-Dichloroethene (total)	ND<5	Tetrachloroethene	ND<5
Chloroform	ND<5	1,1,2,2-Tetrachloroethane	ND<5
1,2-Dichloroethane	ND<5	Toluene	ND<5
2-Butanone	ND<20	Chlorobenzene	ND<5
1,1,1-Trichloroethane	ND<5	Ethylbenzene	ND<5
Carbon Tetrachloride	ND<5	Styrene	ND<5
Vinyl Acetate	ND<10	Total Xylenes	ND<5
Bromodichloromethane	ND<5	1,3-Dichlorobenzene	ND<5
1,2-Dichloropropane	ND<5	1,2&1,4-Dichlorobenzenes	ND<5

ug/l = part per billion (ppb)

QC DATA:

Surrogate Recoveries		QC Limits water	QC Limits soil
1,2-DCA-d4.....	118%	76-114	81-117
Toluene-d8.....	84%	88-110	81-140
Bromofluorobenzene.....	100%	86-115	74-121

comments:

Richard Srna, Ph.D.
Laboratory Director

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO. 10260-4
CLIENT: Western Geologic Resources

DATE RECEIVED: 11/7/89
DATE REPORTED: 11/14/89
JOB NO. 1-124.05

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: 11069-TB

Compound	ug/l	Compound	ug/l
Chloromethane	ND<10	Cis-1,3-Dichloropropene	ND<5
Bromomethane	ND<10	Trichloroethene	ND<5
Vinyl Chloride	ND<10	Dibromochloromethane	ND<5
Chloroethane	ND<10	1,1,2-Trichloroethane	ND<5
Methylene Chloride	ND<10	Benzene	ND<3
Acetone	ND<10	Trans-1,3-Dichloropropene	ND<5
Carbon disulfide	ND<5	2-Chloroethyl vinyl ether	ND<5
Trichlorofluoromethane	ND<5	Bromoform	ND<5
1,1-Dichloroethene	ND<5	4-Methyl-2-Pentanone	ND<10
1,1-Dichloroethane	ND<5	2-Hexanone	ND<10
1,2-Dichloroethene (total)	ND<5	Tetrachloroethene	ND<5
Chloroform	ND<5	1,1,2,2-Tetrachloroethane	ND<5
1,2-Dichloroethane	ND<5	Toluene	ND<5
2-Butanone	ND<20	Chlorobenzene	ND<5
1,1,1-Trichloroethane	ND<5	Ethylbenzene	ND<5
Carbon Tetrachloride	ND<5	Styrene	ND<5
Vinyl Acetate	ND<10	Total Xylenes	ND<5
Bromodichloromethane	ND<5	1,3-Dichlorobenzene	ND<5
1,2-Dichloropropane	ND<5	1,2&1,4-Dichlorobenzenes	ND<5

ug/l = part per billion (ppb)

QC DATA:

Surrogate Recoveries		QC Limits water	QC Limits soil
1,2-DCA-d4.....	120%	76-114	81-117
Toluene-d8.....	88%	88-110	81-140
Bromofluorobenzene.....	97%	86-115	74-121

comments:

Richard Srna, Ph.D.

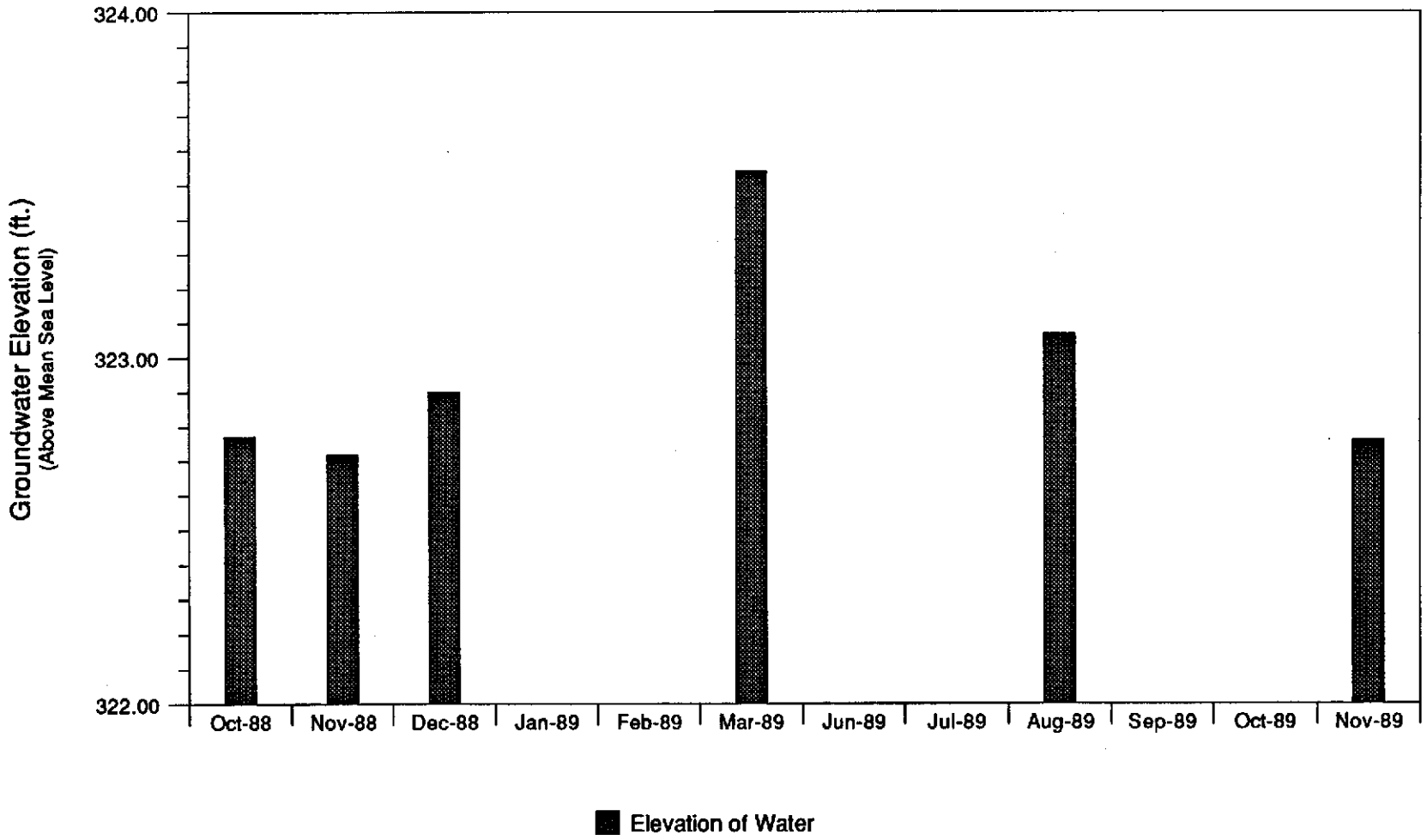
Laboratory Director

ATTACHMENT D

HYDROGRAPHS

GROUNDWATER MONITOR WELL EA-1

Chevron Service Station #92582 Dublin, California

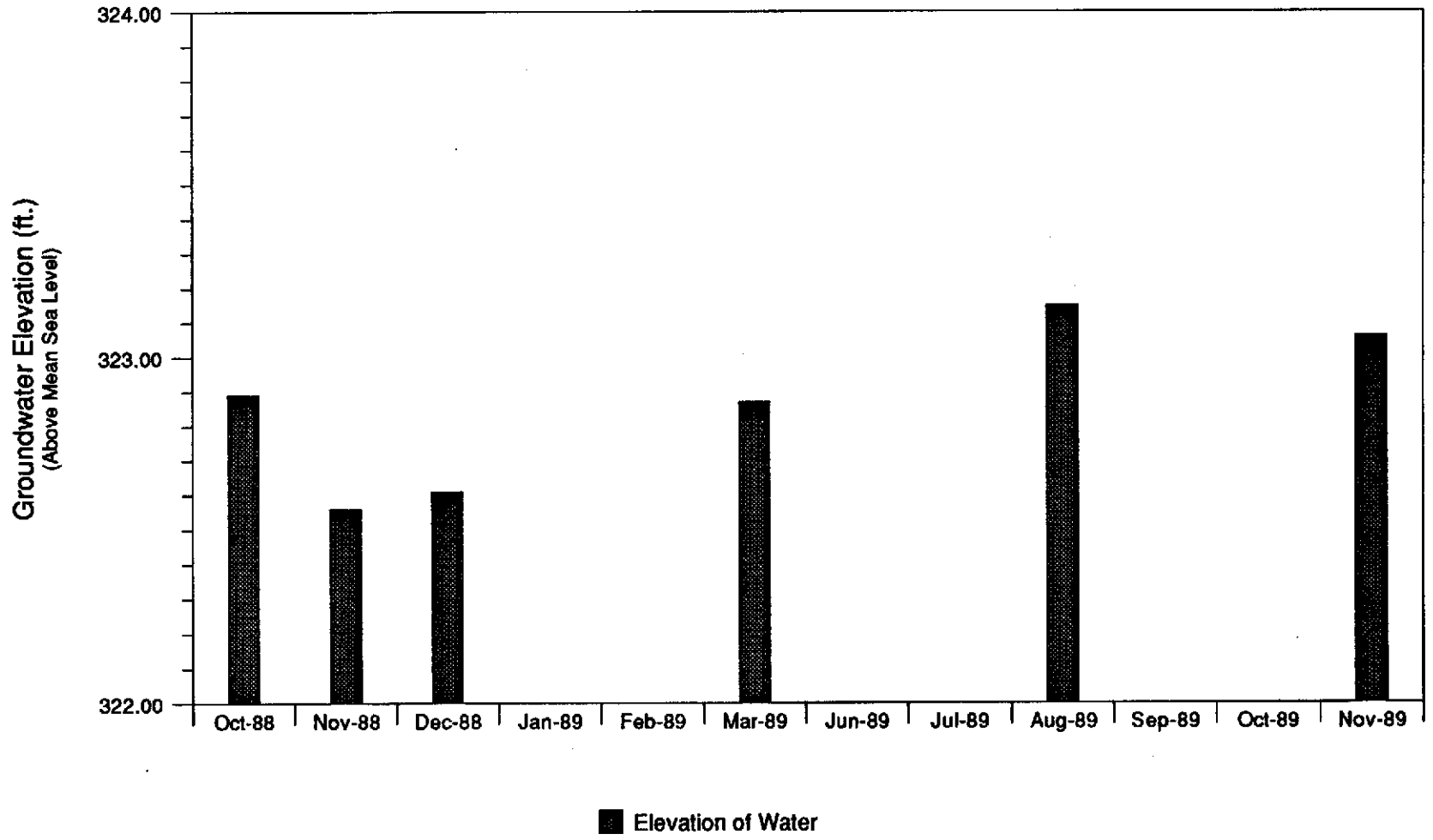


WGR #1-124.05

WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL EA-2

Chevron Service Station #92582 Dublin, California



WGR #1-124.05

WESTERN GEOLOGIC RESOURCES, INC.

GROUNDWATER MONITOR WELL EA-3

Chevron Service Station #92582 Dublin, California