Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

91 NOV 13 PM 1:21

Marketing Department

November 11, 1991

Mr. Ravi Arulananthum
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: Former Chevron Station # 9-2582
7420 Dublin Blvd., Dublin, CA

Dear Mr. Arulananthum:

Enclosed is a groundwater monitoring report dated October 28, 1991 which was prepared by Chevron's consultant, Western Geological Resources / RESNA (WGR/RESNA), to describe the results of groundwater monitoring on August 21 and October 7, 1991 at the site referenced above.

Chevron has submitted an application to the Bay Area Air Quality Management District for a permit to operate a vapor extraction and treatment system at the site. Upon receiving the necessary permit, Chevron's consultant, Geraghty & Miller, will install and begin to operate the system.

If you have any questions or comments, you may contact me at (510) 842-8658.

Sincerely,

Clint B. Rogers

Clint B. Rogers
Environmental Engineer

Enclosure

cc: Lester Feldman, San Francisco Bay RWQCB, Oakland, CA
Janet Clinton (for Parkway Three), 2425 Webb Avenue, Suite 200, Alameda, CA 94501
Hooshang Hadjian, 7420 Dublin Blvd., Dublin, CA (w/o Enclosure)
Dave Thomas, Geraghty & Miller, Richmond, CA

RESNA
Working to Restore Nature

73 Digital Drive
Novato, California 94949-5704
Phone: (415) 382-7400
FAX: (415) 382-7415

October 28, 1991

Mr. Clint Rogers
Chevron USA
2410 Camino Ramon
San Ramon, California 94583-0804

Re: Quarterly Groundwater Monitoring
Sampled August and October 1991
Chevron Service Station #92582
Dublin, California
WGR Project #1-124.08

Dear Mr. Rogers:

This letter report presents the results of the groundwater monitoring performed on August 21, 1991 and October 7, 1991 by Western Geologic Resources, Inc./RESNA, Inc. (WGR/RESNA) at the subject site (Figure 1).

On August 21, 1991, WGR/RESNA staff measured depth to water, purged, and sampled monitor wells EA-1 and EA-2. Well EA-3 could not be accessed due to equipment failure. On October 7, 1991 WGR/RESNA staff measured depth to water in all wells and purged and sampled well EA-3. The standard operating procedure for groundwater sampling, SOP-4, and the standard operating procedure for taking liquid levels, SOP-8, are attached; the field sampling monitoring forms are also attached.

All purged water was temporarily stored on-site in 55-gallon drums pending receipt of analytic reports. Chevron personnel were notified that 154 gallons of water could be picked up for disposal.

The groundwater-elevation measurements are shown in Table 1, along with the measurements from past site monitorings. Figure 2 shows the elevation of shallow groundwater in the two wells measured on August 21, 1991. Figure 3 shows the potentiometric surface of shallow groundwater on October 7, 1991. Table 2 presents a compilation of the laboratory analyses performed this quarter by Superior Precision Analytical, as well as past analytical results.

The next semi-annual sampling event is scheduled for February 1991.

Western Geologic Resources, Inc./RESNA, Inc. is pleased to provide geologic and environmental consulting services for Chevron and trusts that this report meets your needs. Please call us at (415) 382-7400 if you have any questions.

Sincerely,
Western Geologic Resources, Inc./RESNA, Inc.

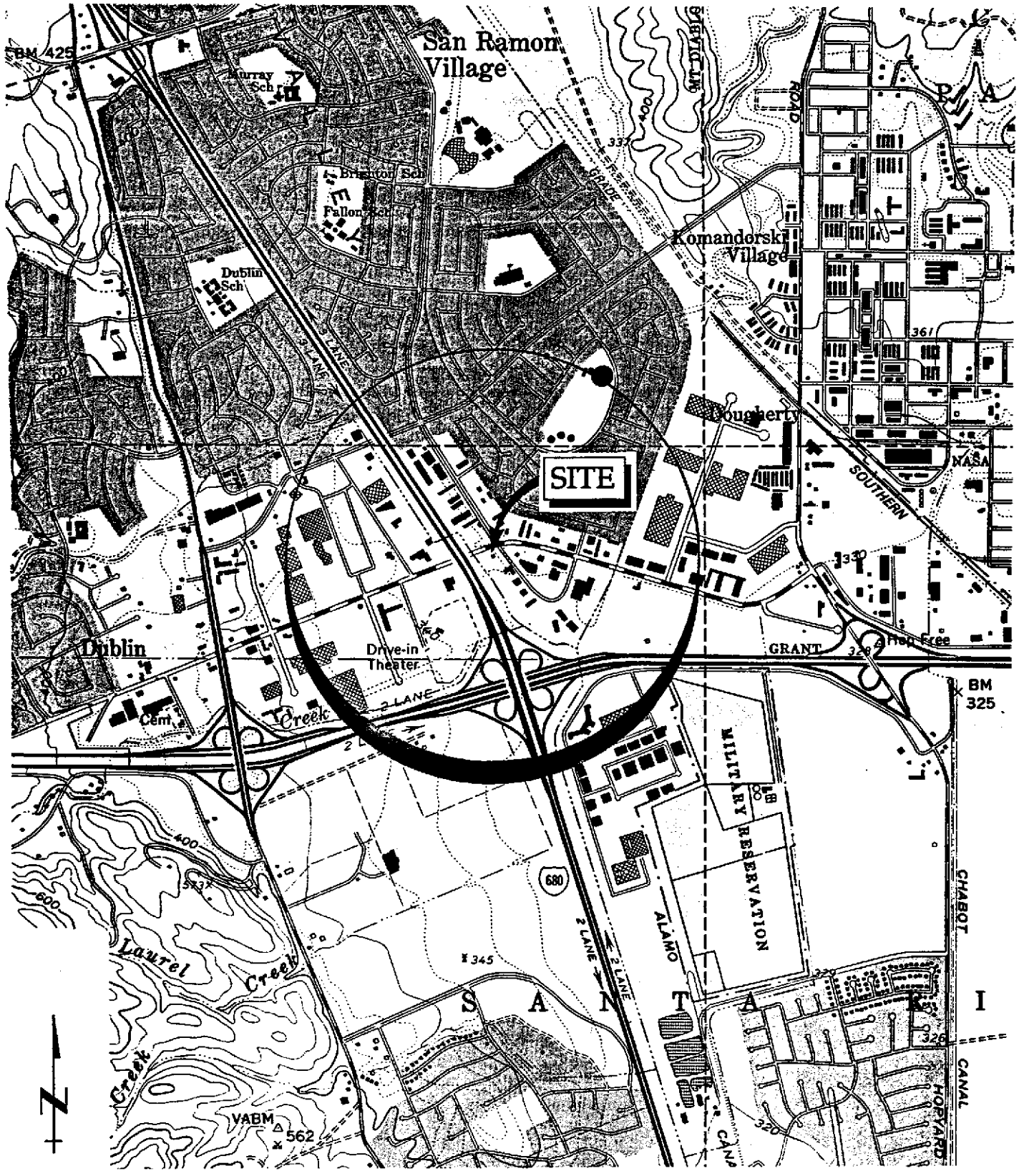
Jennifer A. Krebs
Staff Environmental Scientist

Elizabeth J. Adams
Field Services Manager

JAK/EJA:sg

ENCLOSURES

Figure 1: Site Location Map
Figure 2: Elevation of Shallow Groundwater, August 21, 1991
Figure 3: Potentiometric Surface of Shallow Groundwater, October 7, 1991
Table 1: Groundwater-Elevation Data
Table 2: Analytic Results: Groundwater Samples
SOP-4: Groundwater Purging and Sampling
SOP-8: Gauging Liquid Levels Using Water Level Probe or Interface Probe
Field Sampling and Monitoring Forms
Chain-of-Custody
Laboratory Analytic Reports



10/91

EXPLANATION

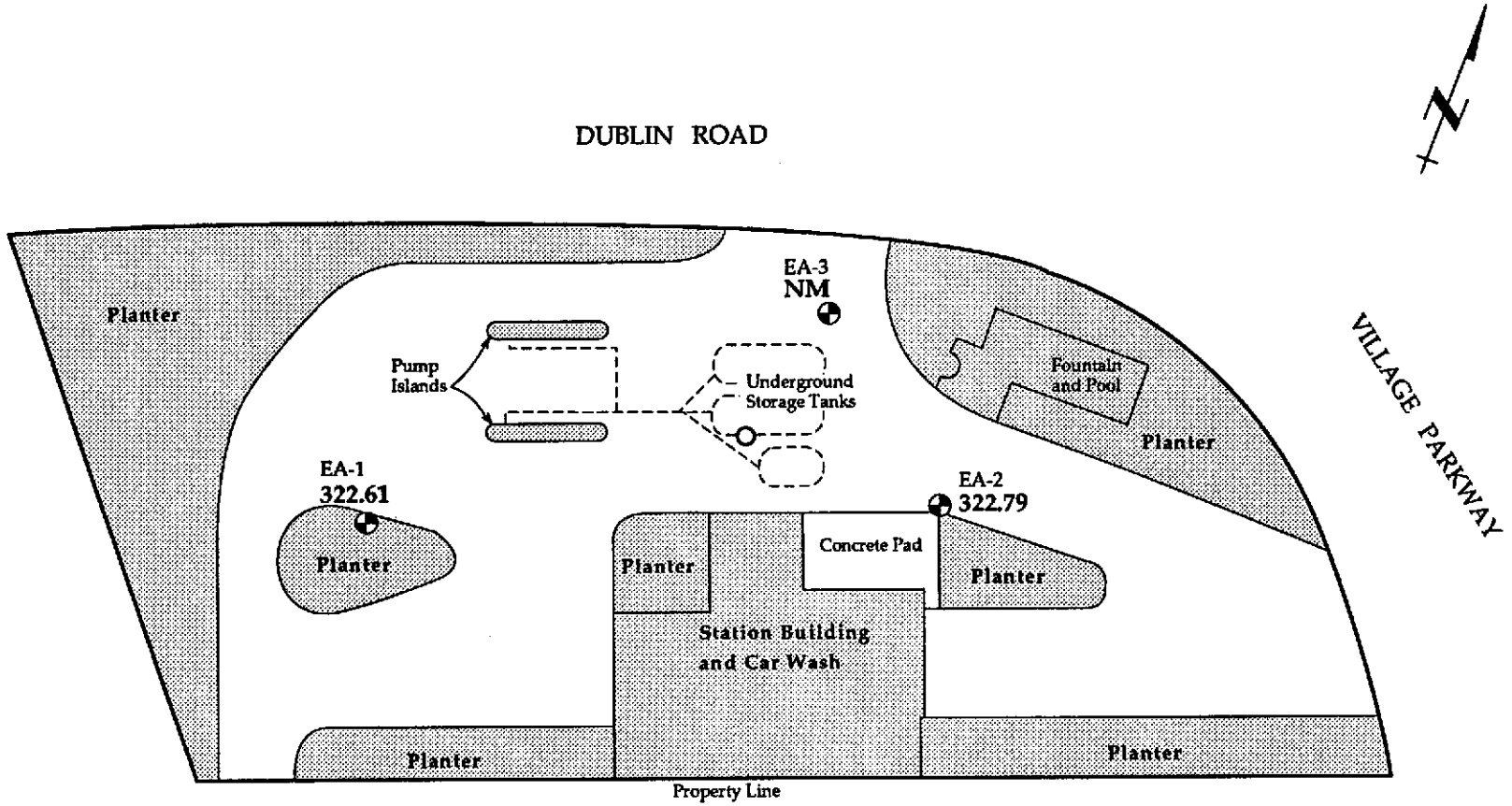
Site Location Map
Former Chevron Service Station #92582
Dublin, California

FIGURE
1

Map Reference: USGS topographic, 7.5 min. series, Dublin quadrangle

RESNA

1-124.08



EXPLANATION

EA-1 322.25	Monitor Well location and groundwater elevation, feet above mean sea level
NM	Not Measured
O	10" diameter PVC casing

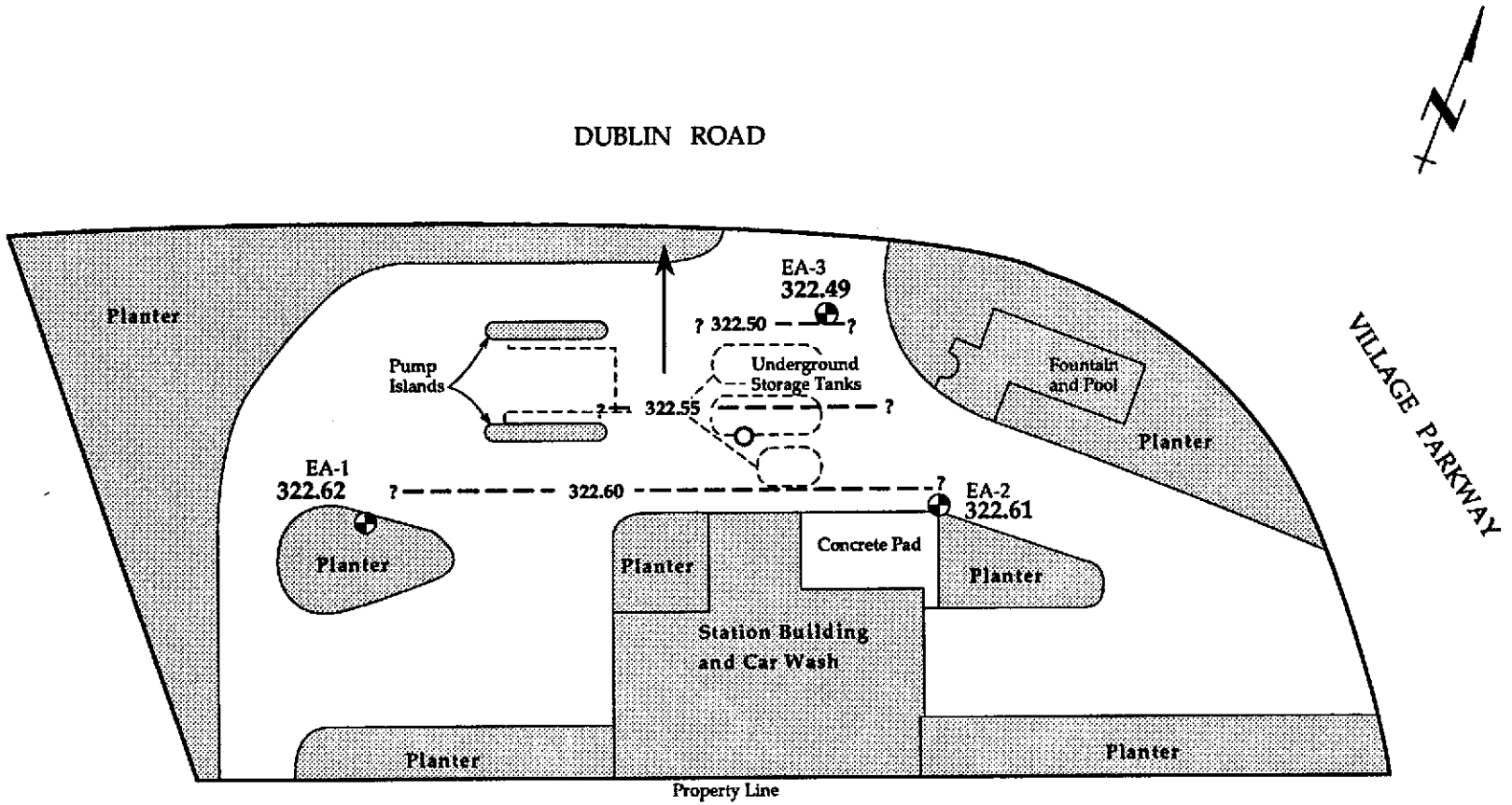
Elevation of Shallow Groundwater
21 August 1991
Former Chevron Service Station #92582
Dublin, California

FIGURE

2

RESNA

1-124.08



EXPLANATION

EA-1 322.62	Monitor Well location and groundwater elevation, feet above mean sea level
O	10" diameter PVC casing
322.50 — — —?	Groundwater elevation contour, feet above mean sea level dashed where inferred, queried where uncertain
←	Estimated direction of groundwater flow

Potentiometric Surface of Shallow Groundwater
October 7, 1991
Former Chevron Service Station #92582
Dublin, California

FIGURE
3

RESNA

1-124.08

TABLE 1. Groundwater-Elevation Data
Chevron Service Station #92582
Dublin, California

Well ID #	Date	TOC	DTW	Elev-W
		<----------ft---------->		
EA-1*	24 Oct 88	333.41	10.64	322.77
EA-1*	2 Nov 88	333.41	10.69	322.72
EA-1*	20 Dec 88	333.41	10.51	322.90
EA-1*	28 Mar 89	333.41	9.87	323.54
EA-1	2 Aug 89	333.41	10.34	323.07
EA-1	6 Nov 89	333.41	10.65	322.76
EA-1	25 Jan 90	333.41	10.60	322.81
EA-1	23 Apr 90	333.41	10.58	322.83
EA-1	1 Aug 90	333.41	10.88	322.53
EA-1	24 Oct 90	333.41	11.12	322.29
EA-1	31 Jan 91	333.41	11.16	322.25
EA-1	21 Aug 91	333.41	10.80	322.61
EA-1	7 Oct 91	333.41	10.79	322.62
EA-2*	24 Oct 88	332.59	9.70	322.89
EA-2*	2 Nov 88	332.59	10.03	322.56
EA-2*	20 Dec 88	332.59	9.98	322.61
EA-2*	28 Mar 89	332.59	8.80	323.79
EA-2	2 Aug 89	332.59	9.44	323.15
EA-2	6 Nov 89	332.59	9.53	323.06
EA-2	25 Jan 90	332.59	9.27	323.32
EA-2	23 Apr 90	332.59	9.35	323.24
EA-2	1 Aug 90	332.59	9.71	322.88
EA-2	24 Oct 90	332.59	10.08	322.51
EA-2	31 Jan 91	332.59	10.21	322.38
EA-2	21 Aug 91	332.59	9.80	322.79
EA-2	7 Oct 91	332.59	9.98	322.61
EA-3*	24 Oct 88	333.64	11.03	322.61
EA-3*	2 Nov 88	333.64	11.03	322.61
EA-3*	20 Dec 88	333.64	10.96	322.68
EA-3*	28 Mar 89	333.64	9.77	322.87
EA-3	2 Aug 89	333.64	10.65	322.99
EA-3	6 Nov 89	333.64	10.78	322.86
EA-3	25 Jan 90	333.64	10.66	322.98
EA-3	23 Apr 90	333.64	10.68	322.96
EA-3	1 Aug 90	333.64	11.03	322.61
EA-3	24 Oct 90	333.64	11.35	322.29
EA-3	31 Jan 91	333.64	11.52	322.12
EA-3	21 Aug 91	333.64	---	---
EA-3	7 Oct 91	333.64	11.15	322.49

RESNA

TABLE 1. Groundwater-Elevation Data
Chevron Service Station #92582
Dublin, California

Well ID #	Date	TOC	DTW	Elev-W
		<----------ft---------->		
PVC	2 Aug 89	---	9.83	---
PVC	6 Nov 89	---	---	---
PVC	25 Jan 90	---	---	---
PVC	23 Apr 90	---	---	---
PVC	1 Aug 90	---	---	---
PVC	24 Oct 90	---	---	---
PVC	31 Jan 91	---	---	---
PVC	21 Aug 91	---	---	---

NOTES:

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

TABLE 2. Analytic Results: Groundwater Samples
Chevron Station #92582
Dublin, California

Well ID #	Date	Lab	EPA Method	TPPH/TPH	B	T	E	X	1,2-DCA
				<----------ppb---------->					
EA-1*	17 Oct 88	NA	NA	<50.0	<0.5	<0.5	<0.5	<0.5	---
EA-1*	20 Dec 88	PACE	8015/8020	<50.0	<0.5	<0.5	<0.5	<0.5	---
EA-1*	28 Mar 89	PACE	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-1	25 Jan 90	SAL	8015/8020/8010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
EA-1	23 Apr 90	SAL	8015/8020/8010	71	2	5	3	8	<0.5
EA-1	1 Aug 90	SAL	8015/8020	300	86	21	10	33	---
EA-1	24 Oct 90	SAL	8015/8020	280	69	13	11	16	---
EA-1	31 Jan 91	SAL	8015/8020	460	160	11	17	17	---
EA-1	21 Aug 91	SAL	8015/8020	2,400	400	220	44	120	---
EA-1D	21 Aug 91	SAL	8015/8020	2,300	390	210	42	120	---
EA-1	7 Oct 91	Well Not Sampled							
EA-2*	17 Oct 88	NA	NA	<50.0	<0.5	<0.5	<0.5	1.2	---
EA-2*	20 Dec 88	PACE	8015/8020	<50.0	<0.5	<0.5	<0.5	<0.5	---
EA-2*	28 Mar 89	PACE	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-2	25 Jan 90	SAL	8015/8020/8010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
EA-2	23 Apr 90	SAL	8015/8020/8010	50	0.6	0.8	<0.5	2	<0.5
EA-2	1 Aug 90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-2	24 Oct 90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-2	31 Jan 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-2D	31 Jan 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-2	21 Aug 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-2	7 Oct 91	Well Not Sampled							

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TABLE 2. Analytic Results: Groundwater Samples (continued)
Chevron Station #92582
Dublin, California

Well ID #	Date	Lab	EPA Method	TPPH/TPH	B	T	E	X	1,2-DCA
				<----------ppb---------->					
EA-3*	17 Oct 88	NA	NA	<50.0	1.8	<0.5	<0.5	3.0	---
EA-3*	20 Dec 88	PACE	8015/8020	240	90.0	1.2	13.0	3.3	---
EA-3*	28 Mar 89	PACE	8015/8020	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
EA-3	25 Jan 90	SAL	8015/8020/8010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
EA-3	23 Apr 90	SAL	8015/8020/8010	<50	0.8	<0.5	0.9	<0.5	<0.5
EA-3	1 Aug 90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-3	24 Oct 90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-3	31 Jan 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
EA-3	21 Aug 91	Well not sampled							
EA-3	7 Oct 91	SAL	8015/8020	180	40	20	4.7	8.4	---
EA-3D	7 Oct 91	SAL	8015/8020	200	43	17	4.1	6.7	---
PVC	2 Aug 89	CCAS	8260	100,000	8,700	14,000	1,700	17,000	50
PVC-D	2 Aug 89	CCAS	8260	110,000	9,200	14,000	1,800	13,000	50
PVC	6 Nov 89	---	---	---	---	---	---	---	---
PVC	25 Jan 90	---	---	---	---	---	---	---	---
PVC	23 Apr 90	---	---	---	---	---	---	---	---
PVC	1 Aug 90	---	---	---	---	---	---	---	---
PVC	24 Oct 90	---	---	---	---	---	---	---	---
EB*	28 Mar 89	PACE	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
TB	25 Jan 90	SAL	8015/8020/8010	<50	<0.5	<0.5	<0.5	<0.5	NA
TB	23 Apr 90	SAL	8015/8020/8010	<50	<0.5	<0.5	<0.5	<0.5	<0.5
TB	1 Aug 90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
TB	24 Oct 90	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
TB	31 Jan 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
TB	21 Aug 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---
TB	7 Oct 91	SAL	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	---

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TABLE 2. Analytic Results: Groundwater Samples (continued)
Chevron Station #92582
Dublin, California

NOTES:

TPPH	= Total Purgeable Petroleum Hydrocarbons as gasoline
TPH	= Total Petroleum Hydrocarbons as gasoline
B	= Benzene
T	= Toluene
E	= Ethylbenzene
X	= Total Xylenes
1,2-DCA	= 1,2-Dichloroethane
ppb	= parts-per-billion
D	= Duplicate analysis
PVC	= 10" PVC casing
EB	= Equipment Blank
TB	= Travel Blank
*	= Sample collected by EA Engineering, Science and Technology, Inc.
NA	= Not Available
---	= Not analyzed/Not applicable
<	= Less than the detection limit
Gas	= Gasoline
PACE	= Pace Laboratories, Inc.
CCAS	= Central Coast Analytical Laboratories, Inc./ Superior Precision Analytical

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RESNA

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.

RESNA

STANDARD OPERATING PROCEDURES
RE: GAUGING LIQUID LEVELS USING WATER LEVEL PROBE OR INTERFACE PROBE
SOP-8

The complete list of field equipment for liquid level gauging is assembled in the Technical office prior to departure to the field. This includes the probe(s), light filter(s), and product bailer(s) to be used for liquid levels (tested in test well before departure). The field kit also includes cleaning supplies (buckets, TSP, spray bottles, and deionized water) to clean the equipment between gauging wells.

When using the water level probe to gauge liquid levels, the probe tip is lowered into the well until the unit sounds. The top-of-casing (TOC) point is determined. This point is marked with a dot or a groove, or is an obvious high point on the casing, or is the north end of the casing. The place on the probe-cord that corresponds with this TOC point is marked and an engineer's tape is used to measure the distance between the probe end and marking on the cord. This measurement is then recorded on the liquid level data sheet as depth to water (DTW).

When using the interface probe to gauge liquid levels, the probe is first grounded by clamping it to the metal stove pipe or another metal object nearby. When no ground is available, reproduceable measurements can be obtained by clipping the ground lead to the handle of the interface probe case. After grounding the probe, the top of the well casing is fitted with a WGR light filter to insure that sunlight does not interfere with the operation of the probe's optical mechanisms. The probe tip is then lowered into the well and submerged in the groundwater. An oscillating (beeping) tone indicates that the probe is in water. The probe is slowly raised until either the oscillating tone ceases or becomes a solid tone. In either case, this is the depth-to-groundwater (DTW) measurement. The solid tone indicates that liquid hydrocarbon is present on top of the groundwater. To determine the thickness of the liquid hydrocarbon, the probe is slowly raised until the solid tone ceases. This is the depth-to-liquid hydrocarbon (DTLH) measurement. The process of lowering and raising the probe must be repeated several times to insure accurate measurements. DTW and DTLH measurements are recorded in hundredths of feet on the liquid level data sheet. When liquid hydrocarbon is found in a well, a product bailer must be lowered partially through the water/liquid hydrocarbon interface to confirm the thickness of liquid hydrocarbon on the water surface. This measurement is recorded on the data sheet as liquid hydrocarbon thickness (PT).

In order to avoid cross contamination of wells during the liquid level gauging process, wells are gauged in a clean to dirty order (where this information is available). In addition, any gauging equipment is cleaned with TSP and water and thoroughly rinsed with deionized water before daily use, before gauging another well on a site, and at the completion of daily use.

LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Date	Initials
1-124.08	Dublin	8/28/91	DO

Well No.	HISTORIC DATA/DATE: DTLH	DTW	LHT	Sounded Depth	CURRENT DATA: DTLH	DTW	LHT	Sounded Depth	Method (WLP / PB / IP *)	Time	Comments
EA-1						10.8				11:50	20 min. to remove well lid.
EA-2						9.8				11:30	"
EA-3						—				—	Cannot remove well lid (T-Bar Broke)

* WLP = Water-Level Probe
PB = Product Bailer
IP = Interface Probe

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	Dublin	EA-1	8/21/91	12:25	DO

WELL DATA

Well Depth (ft.) 37.4	Sounded Depth (ft.)	Well Type: ☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.) 10.80	Date/Time	
Well Diam. (in.) 4	LHC Present? ☐ Yes ☐ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

EVACUATION

Initial Height of Water in Casing (ft) 26.9	Formulas and Conversions: r = well radius in ft. h = ht. of water column in ft. vol. of column = π r² h; 7.48 gal / ft³	Sampling Equipment: Dedicated System ☐ Bladder Pump ☐ Bailer; PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.
Volume (gal) 17.56	V_2 * casing = 0.163 gal / ft.	
Volume to be Evacuated ☑ x3 ☐ x4 52.69	V_3 * casing = 0.367 gal / ft. V_4 * casing = 0.653 gal / ft. $V_{4.5}$ * casing = 0.826 gal / ft. V_5 * casing = 1.470 gal / ft. V_6 * casing = 2.610 gal / ft. V_{12} * casing = 4.080 gal / ft.	Sampling Port No. Volume (gal) / Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	13:15			
Start Time	12:30			
Minutes	45			
Amt Evac'd	53 gal	gal	gal	gal
Total Evac'd	53 gal			
Total Minutes	45 min			
Evac Rate	1.18 gpm			

Pumped Dry? ☐ Yes ☐ No	After (gal)
Depth to Water During Pumping (ft)	Time
Depth to Water for 80% Recovery	Recovery Rate (gpm)
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:	Time Sample Taken 13.20 Date 8/21/91
	Depth to Water (ft) 15.80 Refrigerated? ☑ Yes ☐ No
Sample Color Clear	Odor None
Sediment / Foreign Matter	
Sampling Sequence 2	

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
082191EA1A	40	V	HCl	8002/8015	SRL
1B	〃	〃	〃	〃	〃
1C	〃	〃	〃	〃	〃

Container Codes: P = Plastic Bottle; V = VOA; B = Brown Glass; C = Clear Glass; Other: Describe

COMMENTS

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	Dublin	EA-2	8/21/91	11:55	DO

WELL DATA

Well Depth (ft) 38.3	Sounded Depth (ft) / Date/Time	Well Type: ☑ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) 9.8		
Well Diam. (in.) 4	LHC Present? ☐ Yes ☑ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

EVACUATION

Initial Height of Water in Casing (ft) 28.5	Formulas and Conversions: r = well radius in ft. h = ht. of water column in ft. vol. of column = $\pi r^2 h$ 7.48 gal / ft³	Sampling Equipment: Dedicated System ☐ Bladder Pump ☐ Bailer; PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.
Volume (gal) 18.61	V_2 * casing = 0.163 gal / ft.	
Volume to be Evacuated ☐ x3 ☐ x4 5.85	V_3 * casing = 0.367 gal / ft. ⑥ V_4 * casing = 0.653 gal / ft. $V_{4.5}$ * casing = 0.826 gal / ft. V_5 * casing = 1.470 gal / ft. V_6 * casing = 2.610 gal / ft. V_{10} * casing = 4.080 gal / ft.	Sampling Port No.
		Volume (gal) / Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	12:55			
Start Time	12:00			
Minutes	55			
Amt Evac'd	56 gal	gal	gal	gal
Total Evac'd	56 gal			
Total Minutes	65 min			
Evac Rate	1.02 gpm			

Pumped Dry? ☐ Yes ☑ No	After (gal)
Depth to Water During Pumping (ft) 13.50	Time @ 12:50
Depth to Water for 80% Recovery	Recovery Rate (gpm)
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☑ PE Hose ☐ End of Bailer ☐ Other:	Time Sample Taken 13:00	Date 8/21/91
	Depth to Water (ft)	Refrigerated? ☑ Yes ☐ No
Sample Color clear	Odor none	
Sediment / Foreign Matter		
Sampling Sequence 1		

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
082110ZA	40	V	HCl	602/8015	SAL
02B	〃	〃	〃	〃	〃
02C	〃	〃	〃	〃	〃

Container Codes: P = Plastic Bottle; V = VOA; B = Brown Glass; C = Clear Glass; Other: Describe

COMMENTS

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	DUBLIN	EA-3	8/21/91		PO

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type: ☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.)	Date/Time	
Well Diam. (in.)	LHC Present? ☐ Yes ☐ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.	
1					umhos
2					
3					

EVACUATION

Initial Height of Water in Casing (ft)

Volume (gal)

Volume to be Evacuated ☐ x3 ☐ x4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

V_2 * casing = 0.163 gal / ft.
V_3 * casing = 0.367 gal / ft.
V_4 * casing = 0.653 gal / ft.
$V_{4.5}$ * casing = 0.826 gal / ft.
V_6 * casing = 1.470 gal / ft.
V_8 * casing = 2.610 gal / ft.
V_{10} * casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal) | Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal
Total Evac'd	gal			
Total Minutes	min			
Evac Rate	gpm			

Pumped Dry? ☐ Yes ☐ No

After (gal)

Depth to Water During Pumping (ft)

Time

Depth to Water for 80% Recovery

Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours

% Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken

Date

Depth to Water (ft)

Refrigerated? ☐ Yes ☐ No

Sample Color

Odor

Sediment / Foreign Matter

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
No Samples taken Well lid will not open.					

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	DUBLIN	TB	8/21/91	—	DO

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type: ☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.)	Date/Time	
Well Diam. (in.)	LHC Present? ☐ Yes ☐ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1	—	—	—	— umhos
2	—	—	—	—
3	—	—	—	—

EVACUATION

Initial Height of Water in Casing (ft)

Volume (gal)

Volume to be Evacuated ☐ x 3 ☐ x 4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = π r² h
7.48 gal / ft³

V_2 * casing = 0.163 gal / ft.
V_3 * casing = 0.367 gal / ft.
V_4 * casing = 0.653 gal / ft.
$V_{4.5}$ * casing = 0.826 gal / ft.
V_6 * casing = 1.470 gal / ft.
V_8 * casing = 2.610 gal / ft.
V_{10} * casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Baller

PVC Baller ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal) | Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	—	—	—	—
Start Time	—	—	—	—
Minutes	—	—	—	—
Amt Evac'd	— gal	— gal	— gal	— gal

Total Evac'd — gal

Total Minutes — min

Evac Rate — gpm

Pumped Dry? ☐ Yes ☐ No

After (gal)

Depth to Water During Pumping (ft)

Time

Depth to Water for 80% Recovery

Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours

% Recovery at Time of Sampling

Recovery

	Time	DTW
1	—	—
2	—	—
3	—	—
4	—	—
5	—	—

SAMPLING

Point of Collection ☐ PE Hose ☐ End of Baller ☐ Other:

Time Sample Taken —

Date 8/21/91

Depth to Water (ft) —

Refrigerated? ☑ Yes ☐ No

Sample Color clear

Odor none

Sediment / Foreign Matter none

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
0821L.04A	40	V	HCl	602/8015	SAL
04B	"	"	"	"	"

Container Codes: P = Plastic Bottle; V = VOA; B = Brown Glass; C = Clear Glass; Other: Describe

COMMENTS

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	DUBLIN	DUP (EA-1)	8/21/91		DO

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type: ☑ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.)	Date/Time	
Well Diam. (in.)	LHC Present? ☐ Yes ☑ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

EVACUATION

Initial Height of Water in Casing (ft)

Volume (gal)

Volume to be Evacuated ☐ x3 ☐ x4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

V_{2} " casing = 0.163 gal / ft.
V_{3} " casing = 0.367 gal / ft.
V_{4} " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_{6} " casing = 1.470 gal / ft.
V_{8} " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal)	Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal
Total Evac'd	gal			
Total Minutes	min			
Evac Rate	gpm			

Pumped Dry? ☐ Yes ☐ No — After (gal)

Depth to Water During Pumping (ft) — Time

Depth to Water for 80% Recovery — Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours — % Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Sample Taken: 13:20 — Date: 8/21/91

Depth to Water (ft): 15.80 — Refrigerated? ☑ Yes ☐ No

Sample Color: clear — Odor: none

Sediment / Foreign Matter:

Sampling Sequence:

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
08211.05A	40	V	HCl	8602/8015	SAL
05B	"	"	"	"	"
05C	"	"	"	"	"

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

Please refer to water sampling form EA-1 for further information.

QUID-LEVEL DATA SHEET

ject No.	Project Name	Date	Initials
1-124.08	DUBLIN	10.7.91	MPF

l No.	HISTORIC DATA/DATE: DTLH	DTW	LHT	Sounded Depth	CURRENT DATA: DTLH	DTW	LHT	Sounded Depth	Method WLP / PB / IP *	Time	Comments
1						10.79			WLP	1517	
2						9.98			↓	1515	
3						11.15			↓	1510	

* WLP = Water-Level Probe
PB = Product Bailer
IP = Interface Probe

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	DUBLIN	EA 3	10.7.91	1515	MPF

WELL DATA

Well Depth (ft.): 11.15
DTW (ft.): 3.38
Well Diam. (in.): 4
Sounded Depth (ft.):
Date/Time:
LHC Present? ☐ Yes ☒ No
Well Type: ☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
LHC Thickness:

EVACUATION

Initial Height of Water in Casing (ft): 22.65
Volume (gal): 14.8
Volume to be Evacuated: ☐ x3 ☐ x4 — 44.4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

V_{2} " casing = 0.163 gal / ft.
V_{3} " casing = 0.367 gal / ft.
V_{4} " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_{5} " casing = 1.470 gal / ft.
V_{6} " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System: ☒ Bladder Pump ☐ Bailer
PVC Bailer: ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.
Sampling Port No.:
Volume (gal): Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	1615			
Start Time	1527			
Minutes	48			
Amt Evac'd	45 gal	gal	gal	gal
Total Evac'd	gal			
Total Minutes	min			
Evac Rate	0.9 gpm			

Pumped Dry? ☐ Yes ☒ No — After (gal):
Depth to Water During Pumping (ft): — Time:
Depth to Water for 80% Recovery: Recovery Rate (gpm):
Sampled After: ☐ 80% Rec. ☐ 2 hours — % Recovery at Time of Sampling:

Recovery

	Time	DTW
1		
2		
3		
4		
5		

CHEMICAL DATA

	Time	pH Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

SAMPLING

Point of Collection: ☒ PE Hose ☐ End of Bailer ☐ Other:
Time Sample Taken: 1615 — Date: 10-7-91
Depth to Water (ft): 14.37 — Refrigerated? ☒ Yes ☐ No
Sample Color: CLEAR — Odor: SLIGHT
Sediment / Foreign Matter: —
Sampling Sequence:

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
100B1-03A	40	V	HCl	8015/8020	SAL
B	↓	↓	↓	↓	
C	↓	↓	↓	↓	

Container Codes: P = Plastic Bottle; B = Brown Glass; V = VOA; C = Clear Glass; Other: Describe

COMMENTS

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	DUBLIN	DUP. EA3	10.7.91	1515	MPP

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
DTW (ft.)	Date/Time	☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
Well Diam. (in.)	LHC Present? ☐ Yes ☐ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

EVACUATION

Initial Height of Water in Casing (ft)

Volume (gal)

Volume to be Evacuated ☐ x3 ☐ x4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

V_{2} " casing = 0.163 gal / ft.
V_{3} " casing = 0.367 gal / ft.
V_{4} " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_{6} " casing = 1.470 gal / ft.
V_{8} " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal) | Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal

Total Minutes ____ min

Evac Rate ____ gpm

Pumped Dry? ☐ Yes ☐ No

After (gal)

Depth to Water During Pumping (ft)

Time

Depth to Water for 80% Recovery

Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours

% Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☑ PE Hose ☐ End of Bailer ☐ Other:

Time Sample Taken: 1615 Date: 10.7.91

Depth to Water (ft): 1437 Refrigerated? ☑ Yes ☐ No

Sample Color: CLEAR Odor: SLIGHT

Sediment / Foreign Matter: —

Sampling Sequence:

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
10081-05A	40	V	HCl	BTEX 8020	SEL
↓ B C	↓	↓	↓	↓	↓

Container Codes: P = Plastic Bottle; B = Brown Glass; V = VOA; C = Clear Glass; Other: Describe

COMMENTS

SEE SHEET FOR EA3 FOR MORE SAMPLING INFORMATION.

WATER SAMPLING DATA

Project No.	Project Name	Well Name	Date	Time	Initials
1-124.08	DUBLIN	TRAVEL BLANK	10.7.91	1600	MAF

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type: ☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.)	Date/Time	
Well Diam. (in.)	LHC Present? ☐ Yes ☐ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

EVACUATION

Initial Height of Water in Casing (ft)

Volume (gal)

Volume to be Evacuated ☐ x3 ☐ x4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_5 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal) | Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal

Total Minutes ____ min

Evac Rate ____ gpm

Pumped Dry? ☐ Yes ☐ No — After (gal)

Depth to Water During Pumping (ft) — Time

Depth to Water for 80% Recovery — Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours — % Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken — Date 10.7.91

Depth to Water (ft) — Refrigerated? ☐ Yes ☐ No

Sample Color CLEAR — Odor —

Sediment / Foreign Matter —

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
100B1-04A	40	V	HCl	8015/8020	SAL
↓ B	↓	↓	↓	↓	↓

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

TRAVEL BLANKS SUPPLIED BY SUPERIOR

DATED 10.2.91

Fax copy of Lab Report and COC to Chevron Contact: ☐ Yes ☐ No 72232

Chain-of-Custody-Record

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

Chevron Facility Number 92502
Facility Address —
Consultant Project Number 1-124.08
Consultant Name WGR, INC.
Address 16 DIGITAL DR. SUITE 108 NOVATO CA. 94949
Project Contact (Name) K. SPALA, E. ADAMS
(Phone) 415.382-7400 (Fax Number) 382-7415

Chevron Contact (Name) CLINT ROGERS
(Phone) 842-8658
Laboratory Name GAL
Laboratory Release Number L612300
Samples Collected by (Name) D. OSAKI
Collection Date 8/21/91
Signature Duane Osaki

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
08211.01	ABC	3	W		13:20	HCl	Yes	X												
02	ABC	3			13:40			X												
04	AB	2			—			X												
05	ABC	3			13:20			X												

Please initial:
Samples Stored in ice.
Appropriate containers.
Samples preserved.
VOA's without headspace.
Comments:

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	WGR	8/22/91 11:50	[signature]		
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]			[signature]		
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
			[signature] SDC		8/22/91 1500

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

COC-3.DWG/03.91/HCH

Fax copy of Lab Report and COC to Chevron Contact: ☐ Yes ☒ No 12436

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
Facility Address DUBLIN
Consultant Project Number 1-124.08
Consultant Name WGR / RESNA
Address NOVATO
Project Contact (Name) ELIZABETH ADAMS
(Phone) 382-7400 (Fax Number) 382-7415

Chevron Contact (Name) CLINT ROGERS
(Phone) 842-8658
Laboratory Name SAL
Laboratory Release Number 261800
Samples Collected by (Name) M. FRYE
Collection Date 10.7.91
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: BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
10091-03		3	W	D	1615	HCl	YES	X												
10081-04		2	↓	↓	—	↓	↓	↓												
10081-05		3	↓	↓	1615	↓	↓	↓												

Please initial: JBS
Samples Stored in ice. Y
Appropriate containers. Y
Samples preserved. Y
VOA's without headspace. Y
Comments

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	WGR/RESNA	10.8.91 1030		EXPRESS-IT	10/8/91 10:30
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	EXPRESS-IT	10/8/91 1425			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
					10/8/91 2:25pm

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

COC-3.DWG/03 91/MCH

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12232
CLIENT: Western Geologic Resources
CLIENT JOB NO.: 1-124,08

DATE RECEIVED: 08/22/91
DATE REPORTED: 08/27/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12232- 1	08211.01	08/21/91	08/23/91
12232- 2	08211.02	08/21/91	08/23/91
12232- 3	08211.04	08/21/91	08/24/91
12232- 4	08211.05	08/21/91	08/23/91

Laboratory Number:	12232 1	12232 2	12232 3	12232 4
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)			
OIL AND GREASE:	NA	NA	NA	NA
TPH/GASOLINE RANGE:	2400	ND<50	ND<50	2300
TPH/DIESEL RANGE:	NA	NA	NA	NA
BENZENE:	400	ND<0.5	ND<0.5	390
TOLUENE:	220	ND<0.5	ND<0.5	210
ETHYL BENZENE:	44	ND<0.5	ND<0.5	42
XYLENES:	120	ND<0.5	ND<0.5	120

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 12232

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/l = part per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/l
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/l
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/l
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	07/23/91	200ng	93/93	0.2	59-121
Benzene	06/13/91	200ng	106/102	4.3	70-125
Toluene	06/13/91	200ng	103/99	4.0	74-116
Ethyl Benzene	06/13/91	200ng	103/99	4.5	75-120
Total Xylene	06/13/91	600ng	104/100	4.6	75-119

Richard Srna, Ph.D.
Cecilia Joaquin (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

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

LABORATORY NO.: 12436
CLIENT: Western Geologic Resources
CLIENT JOB NO.: 1-124.08

DATE RECEIVED: 10/08/91
DATE REPORTED: 10/16/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12436- 1	10081-03	10/07/91	10/14/91
12436- 2	10081-04	10/07/91	10/14/91
12436- 3	10081-05	10/07/91	10/15/91

Laboratory Number:	12436 1	12436 2	12436 3
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)		
OIL AND GREASE:	NA	NA	NA
TPH/GASOLINE RANGE:	180	ND<50	200
TPH/DIESEL RANGE:	NA	NA	NA
BENZENE:	40	ND<0.5	43
TOLUENE:	20	ND<0.5	17
ETHYL BENZENE:	4.7	ND<0.5	4.1
XYLENES:	8.4	ND<0.5	6.7

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

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 12436

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/l = part per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/l
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/l
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/l
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	07/23/91	200ng	75/75	0.0	59-121
Benzene	06/13/91	200ng	89/90	1.7	70-125
Toluene	06/13/91	200ng	95/98	3.1	74-116
Ethyl Benzene	06/13/91	200ng	87/92	5.6	75-120
Total Xylene	06/13/91	600ng	107/111	4.4	75-119

Richard Srna, Ph.D.
Cecilia D. Jongwin (for)
Laboratory Director