



WEISS ASSOCIATES

2938 McClure Street, Oakland, CA 94609

Consulting in Geology & Geohydrology

415-465-1100

September 13, 1989

Gordon Davitt
Chevron USA
P.O. Box 5004
San Ramon, CA 94583-0804

Re: Chevron Service Station #90076
4625 Foothill Boulevard
Oakland, California
WA Job #4-417-01

Dear Mr. Davitt:

Weiss Associates (WA) collected ground water samples from three monitoring wells on August 8, 1989 as part of the quarterly ground water monitoring program at Chevron Service Station #90076 in Oakland, California (Figure 1). Monitoring well C-2 (Figure 2) was not sampled because it contained approximately 1/8-inch feet of free-floating product. Ground water samples from monitoring wells C-1, C-3, and C-4 contained benzene above the California Department of Health Services (DHS) maximum contaminant level (MCL) for drinking water. Ground water samples from monitoring well C-4 also contained toluene above the DHS recommended action level for drinking water.

GROUND WATER SAMPLING

WA environmental technician Tim Wickens collected ground water samples from monitoring wells C-1, C-3 and C-4 on August 8, 1989. Monitoring well C-2 contained about 1/8-inch of free-floating product and was not sampled. Prior to sampling, monitoring well C-3 was purged of at least three well-casing volumes of ground water, approximately 11 gallons, using a steam-cleaned PVC bailer. Wells C-1 and C-4 were bailed dry after evacuating 7 to 16.5 gallons of water with steam-cleaned PVC bailers, and they were sampled after water levels recovered to about 80 percent of initial static water levels. Each ground water sample was collected in a steam-cleaned Teflon sampling bailer and decanted from the bailer into a 40 ml glass volatile organic analysis vial (VOA) with a Teflon septum, preserved with sodium bisulfate, sealed within a plastic guard bottle, and refrigerated for transport to Superior Analytical Laboratory, Inc. of San Francisco, California. The water sample collection records and chain of custody forms are included as Attachments A and B, respectively.

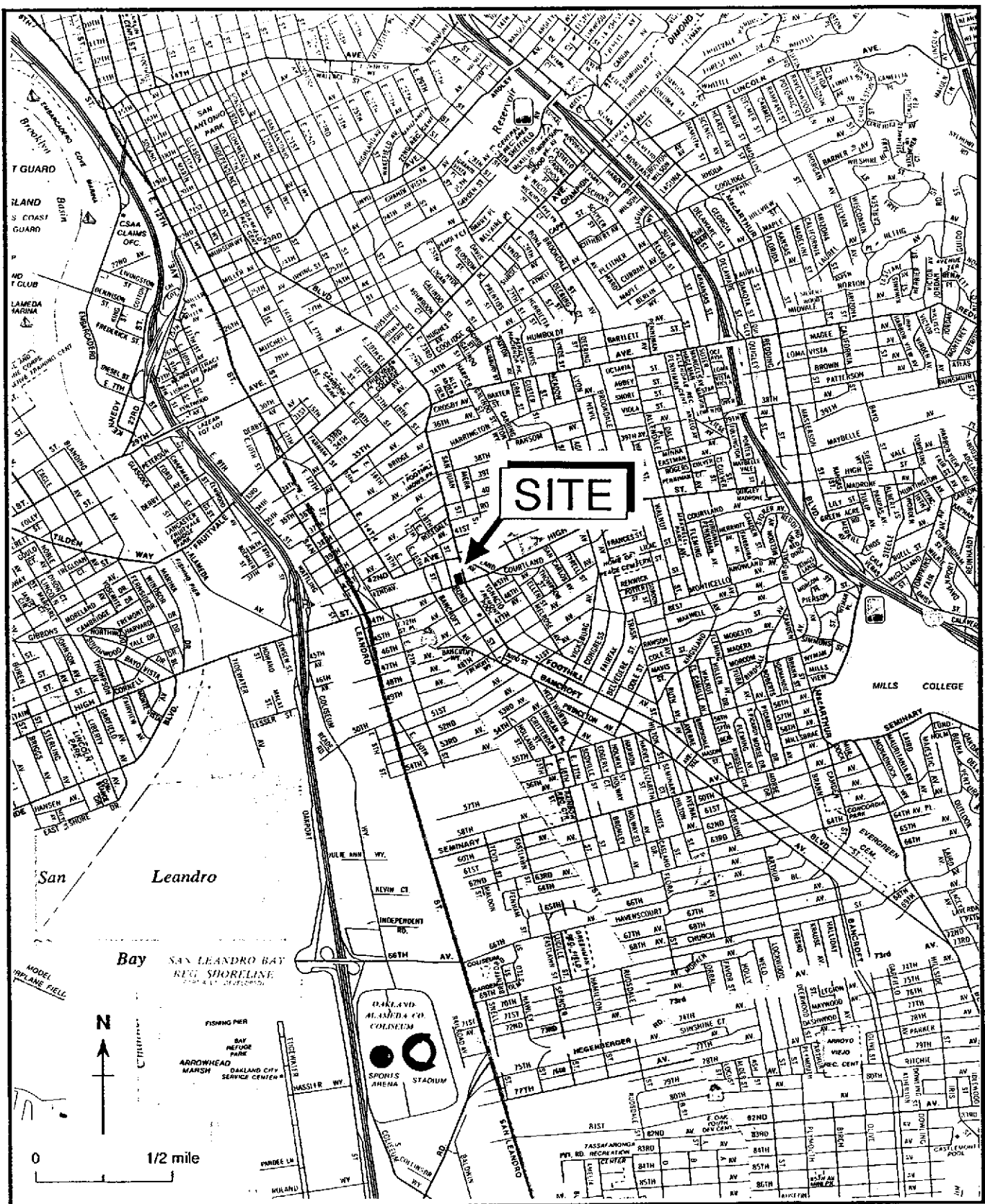


Figure 1. Site Location Map - Chevron Service Station #90076, Oakland, California

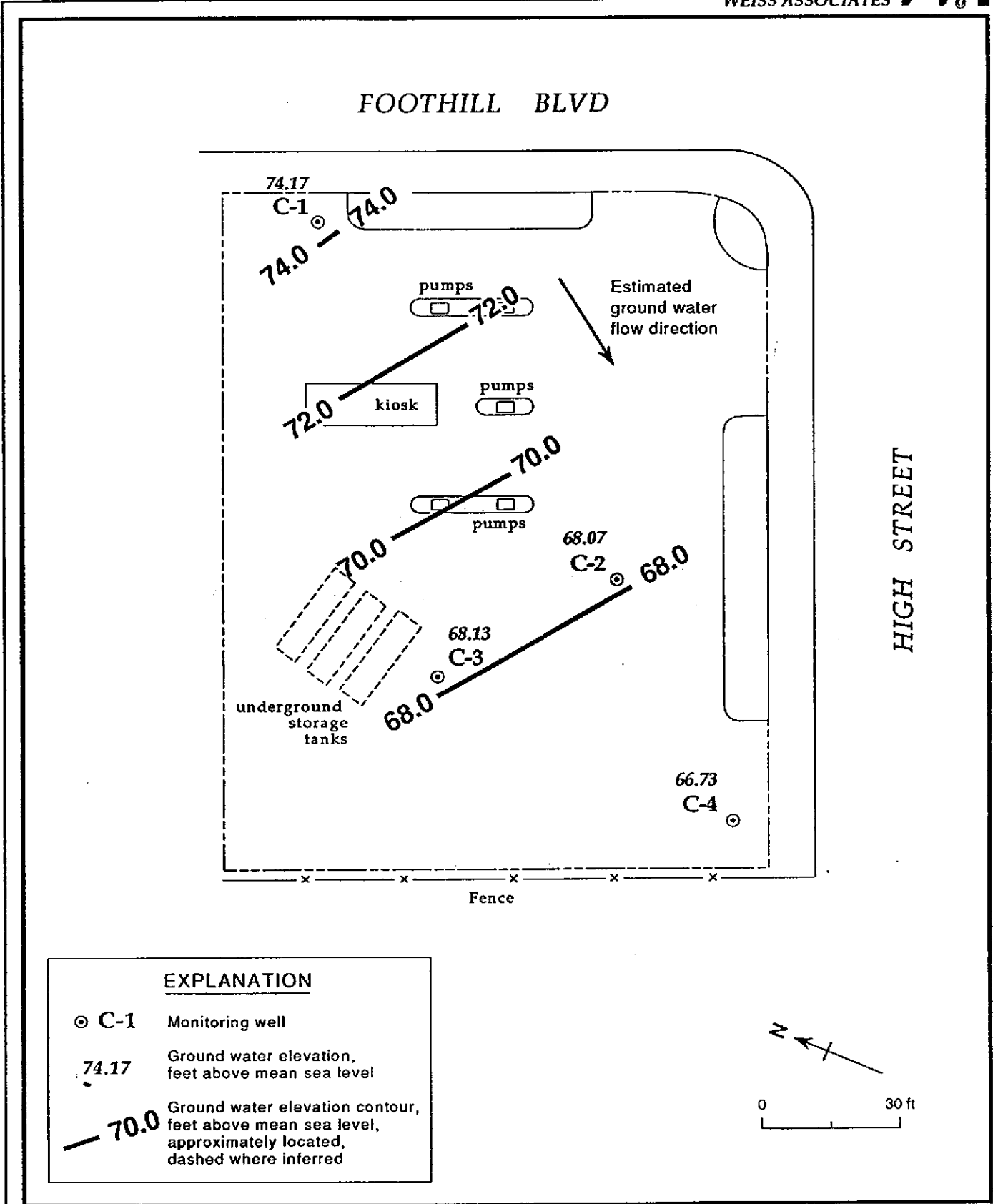


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - August 8, 1989 - Chevron Service Station #90076, Oakland, California

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A bailer blank and a travel blank were shipped with the ground water samples. The bailer blank was prepared by pouring distilled water into a clean Teflon bailer prior to sample collection. The water was then decanted from the bailer into a 40 ml VOA, preserved, refrigerated and transported to the laboratory with the ground water samples. A travel blank of certified organic-free distilled water, supplied by the laboratory, accompanied the samples to provide assurance that contamination was not introduced during sample bottle transport or sample storage.

GROUND WATER GRADIENT

Water levels for all monitoring wells were measured on August 8, 1989. Ground water elevations are presented in Table 1, and ground water elevation contours are plotted on Figure 2. The gradient appears unusually steep, with a ground water elevation difference of about 7.5 feet across the site. Ground water elevations appear to have fluctuated by as much as 4 feet historically. Such a steep gradient and large fluctuations in ground water levels could suggest intermittent discharge or pumping.

TABLE 1. Ground Water Elevation Data, Chevron Service Station #90076, Oakland, California

Well ID	Date	Top-of-Casing Elevation (project datum)	Depth to Water (ft)	Ground Water Elevation (project datum)
C-1	1-12-89	98.24	23.25	74.99
	4-12-89		20.05	78.19
	8-08-89		24.07	74.17
C-2	1-12-89	97.97	---	---
	4-12-89		26.44	71.53*
	8-08-89		29.90	68.07*
C-3	1-12-89	98.13	29.48	68.65
	4-12-89		28.00	70.13
	8-08-89		30.00	68.13
C-4	1-12-89	96.28	29.49	66.79
	4-12-89		27.44	68.84
	8-08-89		29.55	66.73

* Ground water elevation not adjusted for free-floating hydrocarbons due its insignificance in relation to the steep site gradient

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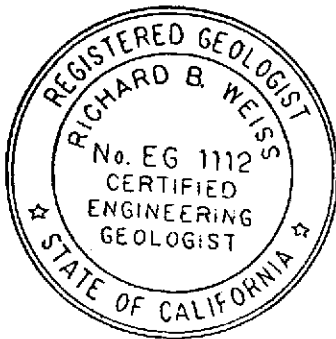
5

CHEMICAL ANALYSES

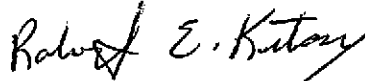
The ground water samples were analyzed for total purgeable petroleum hydrocarbons (TPPH) by EPA Method 8015 and for benzene, ethylbenzene, toluene and xylenes (BETX) by EPA Method 8020. The results of the water analysis are presented in Table 2 and the analytic reports are included as Attachment C.

Analytic results for this quarter are generally similar to results from the previous sampling. However, TPPH, ethylbenzene, toluene, and xylene concentrations decreased in well C-4 while benzene concentrations increased somewhat during this period.

We appreciate the opportunity to provide hydrogeologic consulting services to Chevron and trust that this report meets your needs. If you have any questions, please call Jim Carmody.



Sincerely,
Weiss Associates



Robert E. Kitay
Staff Geologist



Richard B. Weiss
Principal Hydrogeologist

REK/RBW:rek

C:\WP50\CHEVRON\417L3AU9.WP

Attachments: A - Water Sample Collection Records
B - Chain of Custody
C - Analytic Reports

TABLE 2. Analytical Results for Ground Water, Chevron Service Station #90076, Oakland, California

Sample ID	Sample Date	Analytic Method	Analytic Lab	-----parts per billion-----				
				TPPH	B	E	T	X
C-1	4/28/89	8015/8020	SAL	940	30	11	1.3	13
	8/08/89	8015/8020	SAL	820	45	13	2	13
C-2	4/28/89*	8015/8020	SAL	120,000	30,000	3,000	22,000	17,000
	8/08/89*	---	---	---	---	---	---	---
C-3	4/28/89	8015/8020	SAL	<500	1.7	<0.5	<0.5	<0.5
	8/08/89	8015/8020	SAL	<500	1	<0.5	<0.5	<0.5
C-4	4/28/89	8015/8020	SAL	20,000	6,300	230	550	1,500
	8/08/89	8015/8020	SAL	8,000	7,500	88	340	1,000
Bailer Blank	8/08/89	8015/8020	SAL	<500	<0.5	<0.5	<0.5	<0.5
Travel Blank	4/28/89	8015/8020	SAL	<500	<0.5	<0.5	<0.5	<0.5
	8/08/89	8015/8020	SAL	<500	<0.5	<0.5	<0.5	<0.5
DHS MCLs	---	---	---	NE	1	620	100 ^a	1,750

Abbreviations:

TPPH = Total Purgeable Petroleum Hydrocarbons
 B = Benzene
 E = Ethylbenzene
 T = Toluene
 X = Xylenes
 * = Free-floating product in well
 DHS MCLs = Department of Health Services maximum
 contaminant levels for drinking water
 NE = Not established
^a = DHS recommended action level for drinking water

Analytic Laboratory:

SAL = Superior Analytical Laboratory, Inc., San Francisco, California

Analytic Method:

8015 = Modified EPA Method 8015, Total Purgeable Petroleum Hydrocarbons
 8020 = EPA Method 8020, Aromatic Volatile Hydrocarbons

ATTACHMENT A
WATER SAMPLE COLLECTION RECORDS



From top of metal cap
ring which is
.11" above
PVC casing

WATER SAMPLING DATA Well Name C-1 Date 8/8/89 Time 14:39
 Job Name/Number CHEV. Oak. # 14-417-00 Initials EWA
 Well Spring Surface Other _____
 Location N. corner of site

WELL DATA: Well type M (Describe; M - monitoring well)
 Depth to Water 24.07 ft (pump/stat) Maximum Drawdown Limit (MDL) _____ ft
 Well depth 39.89 ft (sounded) Well depth 39.58 ft (spec)
 Well diameter 3 in. TOC height above ground 5.5 ft Water elev. _____ ft

Volume Evacuated: Pumped Pumped Bailed
 Time: Stop _____ Start _____ 10:10
 Total hrs/min _____ 9:19
 Total Evacuated 16.5 gal.
 Evacuation Rate .3 gpm
 Pump # and type _____ Bailer # and type 1/2 PVC BE
 Hose # and type _____

Formulas/Conversions
 r = well radius in ft
 h = ht of water col in ft
 vol. in cyl. = $\pi r^2 h$
 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 = 1.47 gal/ft
 V_{8"} casing = 2.61 gal/ft

Sampling Port: Rate _____ gpm Volume _____ gal.
 Location/description _____

Initial height of water in casing - 15.82 ft; volume - 5.8 gal. x 3
 Evacuation at drawdown limit - 3 x initial volume - _____ gal.
 Evacuation at sampling point - 1 x initial volume - _____ gal.
 Total to be evacuated - 17.4 gal.

Water Color: None Odor: None
 Description of sediment and/or foreign matter in sample: Very small number

27.23 =
80% of initial
water level
bailed

Point of collection: End of Teflon bailer AA
 Depth to water during pumping _____ ft time Sampling 27.84 ft 14:31 time
 Pumped dry? yes After 16.5 gal. Recovery rate ~.05 /min ~2.8 /hr
 76% of initial height of water in casing

ADDITIONAL COMMENTS, LOCATION SKETCH, ENVIRONMENTAL CONDITIONS, e.g., weather, van running nearby, problems with equipment or sampling, etc., pump on/off times, etc. (over).

CHEMICAL DATA

Temperature _____ °C Thermometer # _____ Specific Conductance _____ umhos
 pH _____ Calibration _____ 4.0, _____ 7.0, _____ 10.0 Calibration Temp. _____ °C

SAMPLES COLLECTED:

Sample ID No.	Bottle/Cap (Specify)	Filtered (size, u) (N - No)	Preservative (specify) (R - Refrigerated)	Analysis	Lab
2 089417-1	40 ml C/V	N	NaHSO ₄ R	Gas + BETX	Sup.
	ml				
	ml				
	ml				
	ml				
	ml				
	ml				
	ml				
	ml				
	ml				

Bottles: P - Polyethylene; Pp - Polypropylene; C or B - Clear/Brown Glass; O - Other (describe)
 Additional Cap Codes: Py - Polyseal; V - VOA/Teflon septa; M - Metal

NOT SAMPLED - PRODUCT IN WELL ($\geq 1/8$ " brown product)

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WATER SAMPLING DATA Well Name C-2 Date 8/8/89 Time
 Job Name/Number Chvron Oakland II / 4-47.00 Initials TW
 Well Spring Surface Other
 Location SE end of site near pumps

WELL DATA: Well type M (Describe; M - monitoring well)
 Depth to Water 29.90 ft (pump star) Maximum Drawdown Limit (MDL) N/A ft
 Well depth 32.43 ft (sounded) Well depth 32.34 ft (spec)
 Well diameter 3 in. TOC height above ground NA ft Water elev. NA ft
 Volume Evacuated: Pumped Pumped Bailed

Time: Stop Start
 Total hrs/min
 Total Evacuated gal.
 Evacuation Rate gpm
 Pump # and type Bailer # and type
 Hose # and type

Formulas/Conversions
 r = well radius in ft
 h = ht of water col in ft
 vol in cyl = $\pi r^2 h$
 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_5 " casing = 0.826 gal/ft
 V_6 " casing = 1.47 gal/ft
 V_8 " casing = 2.61 gal/ft

Sampling Port. Rate gpm Volume gal.
 Location/description

Initial height of water in casing - ft; volume - gal.
 Evacuation at drawdown limit - $3 \times$ initial volume - gal.
 Evacuation at sampling point - $1 \times$ initial volume - gal.
 Total to be evacuated - gal.

Water Color: Odor:
 Description of sediment and/or foreign matter in sample
 Point of collection
 Depth to water during pumping ft time Sampling ft time
 Pumped/dry After gal. Recovery rate

ADDITIONAL COMMENTS, LOCATION SKETCH, ENVIRONMENTAL CONDITIONS, e.g. weather, van running nearby, problems with equipment or sampling, etc., pump on/off times, etc. (over)

CHEMICAL DATA
 Temperature °C Thermometer # Specific Conductance umhos
 pH Calibration 4.0, 7.0, 10.0 Calibration Temp. °C

SAMPLES COLLECTED:

Sample ID No.	Bottle/ Cap (Specify)	Filtered (size, u) (N - No)	Preservative (specify) (R - Refrigerated)	Analysis	Lab
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____
_____	ml	_____	_____	_____	_____

Bottles: P - Polyethylene; Pp - Polypropylene; C or B - Clear/Brown Glass;
 O - Other (describe)
 Additional Cap Codes: Py - Polyseal; V - VOA/Teflon septa; M - Metal



WATER SAMPLING DATA Well Name C-3 Date 8/8/89 Time 11:00
 Job Name/Number Chavon Oak land II / 4-417-00 Initials TW
 Well Spring Surface Other _____
 Location middle of lot, near tanks
 WELL DATA: Well type M (Describe; M = monitoring well)
 Depth to Water 30.00 ft (pump/stat) Maximum Drawdown Limit (MDL) NA ft
 Well depth 39.80 ft (sounded) Well depth 39.77 ft (spec)
 Well diameter 3 in. TOC height above ground NA ft Water elev. NA ft
 Volume Evacuated: Pumped Pumped Bailed
 Time: Stop _____ Start _____
 Total hrs/min _____
 Total Evacuated 11 gal.
 Evacuation Rate .5 gpm
 Pump # and type _____ Bailer # and type evac: 5' PVC bailer # BD
 Hose # and type _____ sample: teflon bailer # GG

Formulas/Conversions
 r = well radius in ft
 h = ht of water col in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft³
 V_{2"} casing = 0.163 gal/ft
 V_{3"} casing = 0.367 gal/ft
 V_{4"} casing = 0.652 gal/ft
 V_{4.5"} casing = 0.826 gal/ft
 V_{6"} casing = 1.47 gal/ft
 V_{8"} casing = 2.61 gal/ft

Sampling Port: Rate _____ gpm Volume _____ gal.
 Location/description _____

Initial height of water in casing = 9.80 ft; volume = 3.6 gal. x 3
 Evacuation at drawdown limit = 3 x initial volume = _____ gal.
 Evacuation at sampling point = 1 x initial volume = _____ gal.
 Total to be evacuated = 10.8 gal.

Water Color greenish brown Odor none
 Description of sediment and/or foreign matter in sample mod amt suspended silt trace s^l fine settled sand

Point of collection: End of teflon bailer GG
 Depth to water during pumping _____ ft time Sampling 32.91 ft, 11:01 time
 Pumped dry? NO After _____ gal. Recovery rate _____

ADDITIONAL COMMENTS, LOCATION SKETCH, ENVIRONMENTAL CONDITIONS, e.g., weather, van running nearby, problems with equipment or sampling, etc., pump on/off times, etc. (over).

CHEMICAL DATA
 Temperature _____ °C Thermometer # _____ Specific Conductance _____ umhos
 pH _____ Calibration _____ 4.0, _____ 7.0, _____ 10.0 Calibration Temp. _____ °C

SAMPLES COLLECTED:

Sample ID No.	Bottle/Cap (Specify)	Filtered (size, u) (N - No)	Preservative (specify) (R - Refrigerated)	Analysis	Lab
(2) 0894773	40 ml C/V	N	NaHSO ₄ R	gas/BETA	Jvp
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Additional Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal



WATER SAMPLING DATA Well Name C-4 Date 8/8/89 Time 14:07
 Job Name/Number Chemcon Oakland II / 4-417-00 Initials TW
 Well Spring Surface Other _____
 Location South corner of lot

WELL DATA: Well type M (Describe; M - monitoring well)
 Depth to Water 29.56 ft (pump, ~~stat~~) Maximum Drawdown Limit (MDL) NA ft
 Well depth 39.95 ft (sounded) Well depth 39.83 ft (spec)
 Well diameter 3 in. TOC height above ground NA ft Water elev. NA ft

Volume Evacuated: Pumped Pumper Bailed
 Time: Stop _____ Start _____
 Total hrs/min _____
 Total Evacuated 7 gal.
 Evacuation Rate 0.28 gpm

Formulas/Conversions

r = well radius in ft
 h = ht of water col in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft³
 V₂" casing = 0.163 gal/ft
 V₃" casing = 0.367 gal/ft
 V₄" casing = 0.653 gal/ft
 V_{4.5}" casing = 0.826 gal/ft
 V₆" casing = 1.47 gal/ft
 V₈" casing = 2.61 gal/ft

Pump # and type _____ Bailer # and type 5 PVC bailer # BF
 Hose # and type _____ Sample: teflon # C

Sampling Port: Rate _____ gpm Volume _____ gal.
 Location/description _____

Initial height of water in casing - 10.4 ft; volume - 3.8 gal x 3
 Evacuation at drawdown limit - 3 x initial volume - _____ gal.
 Evacuation at sampling point - 1 x initial volume - _____ gal.
 Total to be evacuated - 11.4 gal

Water Color: None Odor: Strong
 Description of sediment and/or foreign matter in sample: None

Point of collection: decont. barrel of teflon bailer # C
 Depth to water during pumping _____ ft time: Sampling 3010 ft 14:05 time
 Pump - dry yes After 7 gal Recovery rate 2.3 gal/hr

80% recov
- 31.63

ADDITIONAL COMMENTS, LOCATION SKETCH, ENVIRONMENTAL CONDITIONS, e.g., weather, van running nearby, problems with equipment or sampling, etc., pump on/off times, etc. (over) sampled at 95% recov

CHEMICAL DATA
 Temperature _____ °C Thermometer # _____ Specific Conductance _____ umhos
 pH _____ Calibration _____ 4.0, _____ 7.0, _____ 10.0 Calibration Temp. _____ °C

SAMPLES COLLECTED:

Sample ID No.	Bottle/Cap (Specify)	Filtered (size, u) (N = No)	Preservative (specify) (R = Refrigerated)	Analysis	Lab
(2) 089417-4	40 ml CIV	N	H ₂ SO ₄ R	gp/BETX	Sp
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Bottles: P - Polyethylene; Pp - Polypropylene; C or B - Clear/Brown Glass; O - Other (describe)
 Additional Cap Codes: Py - Polyseal; V - VOA/Teflon septa; M - Metal

BAILER BLANK

WEISS ASSOCIATES



WATER SAMPLING DATA Well Name C-3 Date 8/8/89 Time 10:53
 Job Name/Number Chw Oakland II / 4-417-00 Initials TW
 Well Spring Surface Other

Location _____
 WELL DATA: Well type _____ (Describe; M = monitoring well)

Depth to Water _____ ft (pump/stat) Maximum Drawdown Limit (MDL) _____ ft

Well depth _____ ft (sounded) Well depth _____ ft (spec)

Well diameter _____ in. TOC height above ground _____ ft Water elev. _____ ft

Volume Evacuated: Pumped _____ Pumped _____ Bailed _____

Time: Stop _____ Start _____

Total hrs/min _____

Total Evacuated _____ gal.

Evacuation Rate _____ gpm

Pump # and type _____ Bailer # and type _____

Hose # and type _____

Formulas/Conversions
 r = well radius in ft
 h = ht of water col in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft³
 V₂" casing = 0.163 gal/ft
 V₃" casing = 0.367 gal/ft
 V₄" casing = 0.653 gal/ft
 V_{4.5}" casing = 0.826 gal/ft
 V₆" casing = 1.47 gal/ft
 V₈" casing = 2.61 gal/ft

Sampling Port: Rate _____ gpm Volume _____ gal.

Location/description _____

Initial height of water in casing _____ ft; volume _____ gal.

Evacuation at drawdown limit - 3 x initial volume = _____ gal

Evacuation at sampling point - 1 x initial volume = _____ gal

Total to be evacuated = _____ gal

Water Color _____ Odor _____

Description of sediment and/or foreign matter in sample _____

Point of collection: drawn from end of teflon bailer # 66 - Armhead dist

Depth to water during pumping _____ ft time _____ Sampling _____ ft time _____

Pumped dry? _____ After _____ gal Recovery rate _____

ADDITIONAL COMMENTS, LOCATION SKETCH, ENVIRONMENTAL CONDITIONS, e.g., weather, van running nearby, problems with equipment or sampling, etc., pump on/off times, etc. (over).

CHEMICAL DATA

Temperature _____ °C Thermometer # _____ Specific Conductance _____ umhos

pH Calibration _____ 4.0, _____ 7.0, _____ 10.0 Calibration Temp. _____ °C

SAMPLES COLLECTED:

Sample ID No.	Bottle/Cap (Specify)	Filtered (size, u) (N = No)	Preservative (specify) (R = Refrigerated)	Analysis	Lab
(2) 08947-22 40 ml	CV	N	NaHSO ₄ R	gas/BETX	Sup.
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
 Additional Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

TRIP BLANK

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WATER SAMPLING DATA Well Name Q NA Date 8/8/89 Time NA
 Job Name/Number Chemon Oakland II / 14-417-00 Initials JW
 Well Spring Surface Other

Location _____
 WELL DATA: Well type _____ (Describe; M - monitoring well)

Depth to Water _____ ft (pump/stat) Maximum Drawdown Limit (MDL) _____ ft

Well depth _____ ft (sounded) Well depth _____ ft (spec)

Well diameter _____ in. TOC height above ground _____ ft Water elev. _____ ft

Volume Evacuated: Pumped _____ Pumped _____ Bailed _____

Time: Stop _____

Start _____

Total hrs/min _____

Total Evacuated _____ gal.

Evacuation Rate _____ gpm

Pump # and type _____ Bailer # and type _____

Hose # and type _____

Formulas/Conversions
 r = well radius in ft
 h = ht of water col in ft
 vol. in cyl. = $\pi r^2 h$
 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 = 1.47 gal/ft
 V_{8"} casing = 2.61 gal/ft

Sampling Port: Rate _____ gpm Volume _____ gal.

Location/description _____

Initial height of water in casing = _____ ft; volume = _____ gal.

Evacuation at drawdown limit = 3 x initial volume = _____ gal.

Evacuation at sampling point = 1 x initial volume = _____ gal.

Total to be evacuated = _____ gal.

Water Color: _____ Odor: _____

Description of sediment and/or foreign matter in sample: _____

Point of collection: _____

Depth to water during pumping _____ ft. time Sampling _____ ft. _____ min

Pumped/dry? _____ After _____ gal. Recovery rate _____

ADDITIONAL COMMENTS, LOCATION SKETCH, ENVIRONMENTAL CONDITIONS, e.g., weather, van running nearby, problems with equipment or sampling, etc., pump on/off times, etc. (over): _____

CHEMICAL DATA

Temperature _____ °C Thermometer # _____ Specific Conductance _____ umhos

pH _____ Calibration _____ 4.0, _____ 7.0, _____ 10.0 Calibration Temp. _____ °C

SAMPLES COLLECTED:

Sample ID No.	Bottle/Cap	Filtered (size, u)	Preservative (specify)	Analysis	Lab
(2) 089417-21 40 ml	C/V	N	NA R	gas/BSTX	Sup
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____	_____

Bottles: P - Polyethylene; Pp - Polypropylene; C or B - Clear/Brown Glass; O - Other (describe)
 Additional Cap Codes: Py - Polyseal; V - VOA/Teflon septa; M - Metal

2938 McClure St., Oakland, CA 94609 415-465-1100

CHAIN-OF-CUSTODY RECORD AND ANALYTIC INSTRUCTIONS

Shuttle Inventory Number: NA

Shipping Seal No. NA

WA Personnel: Be sure to include copy of this form in the field sampling files

Project ID: 4-417-00

Sampled by: TW/EA Laboratory Name: Superior

NOTES TO LAB:

- 1) Specify analytic method and detection limit in report.
- 2) Notify us if there are any anomalous peaks on GC or other scans.
- 3) Duplicates listed in parentheses.
- 4) ANY QUESTIONS/CLARIFICATIONS: CALL US.

#	Sample ID	Sampling Date	Sample/ Container Type ¹	Analyze/ Hold ²	Turn-around ³	Analyze For:	Analytic Method/ Detection Limit	Comments
2	089417-1	8/8/89	W/V	A	N	Gas + BETX		
2	089417-2							
2	089417-3							
2	089417-4							
2	089417-21							
2	089417-22							

x [Signature] 8/9/89 Released by (Signature), Date
 x [Signature] x499 Released by (Signature), Date
 x [Signature] 8/9/89 x [Signature] 8/9/89 x [Signature] 8/9/89
 Released by (Signature), Date Shipping Carrier, Method, Date Received by Lab Personnel, Date, Telephone Seal Intact?, Number

- 1 - Sample Type Codes: W = Water, S = Soil, O = Other (specify).
Container Type Codes: V = VOA Bottle, P = Plastic Bottle, G = Glass Bottle, T = Brass Tube, O = Other (specify).
- 2 - Analyze/Hold: A = Analyze; HOLD (spell out) = DO NOT ANALYZE UNLESS NECESSARY OR REQUESTED.
- 3 - N = Normal Turnaround, F = 1-Week Turnaround, R = 24-Hour Turnaround

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.: 10091
CLIENT: Weiss Associates
CLIENT JOB NO.: 4-417-00

DATE RECEIVED: 08/09/89
DATE REPORTED: 08/17/89

Page 1 of 2

Lab Number	Customer Sample Identification	Date Sampled
10091- 1	089417-1	08/08/89
10091- 2	089417-3	08/08/89
10091- 3	089417-4	08/08/89
10091- 4	089417-21	08/08/89
10091- 5	089417-22	08/08/89

Laboratory Number:	10091 1	10091 2	10091 3	10091 4	10091 5
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ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	820	ND<500	8000	ND<500	ND<500
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	45	1	7500	ND<0.5	ND<0.5
TOLUENE:	2	ND<0.5	340	ND<0.5	ND<0.5
ETHYL BENZENE:	13	ND<0.5	88	ND<0.5	ND<0.5
XYLENES:	13	ND<0.5	1000	ND<0.5	ND<0.5

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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
Diesel by Modified EPA SW-846 Method 8015
Gasoline by Purge and Trap: EPA Method 8015/5030
ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

Page 2 of 2
QA/QC INFORMATION
SET: 10091

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:
Duplicate RPD NA
Minimum Detection Limit in Water: 5000ug/L

Modified EPA Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 1000ug/L
Daily Standard run at 200mg/L; RPD Diesel = NA
MS/MSD Average Recovery = NA: Duplicate RPD = NA

8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 500ug/L
Daily Standard run at 2mg/L; RPD Gasoline = 3%
MS/MSD Average Recovery = 97%: Duplicate RPD = 0%

8020/BTXE
Minimum Quantitation Limit in Water: 0.50ug/L
Daily Standard run at 20ug/L; RPD = <15%
MS/MSD Average Recovery = 100%: Duplicate RPD = <1%

Richard Srna, Ph.D.



Laboratory Director

OUTSTANDING QUALITY AND SERVICE