

**PIERS**



**Environmental  
Services, Inc.**

1330 S. Bascom Ave., Suite F  
San Jose, CA 95128

Tel. (408) 559-1248 Fax (408) 559-1224

Mr. Amir K. Gholami, REHS -Hazardous Materials Specialist  
Alameda County Health Care Services Agency Environmental Protection  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

*stid  
2017*

March 30, 2001

**APR 04 2001**

**RE: Case Closure Summary Additional Data  
American Auto Dismantler, 3744 Depot Road, Hayward, CA**

Dear Mr. Gholami,

PIERS Environmental Services Inc. is responding to your recent request made in your undated letter to Mr. Eric Freeberg (See Attachment A) regarding the aforementioned site. The outstanding concern with this site and its pending "case closure" appears to be a question of groundwater gradient on the site. PIERS has previously provided documents regarding this issue to your office, most specifically, the wells on the Property were surveyed by a professional engineer, and the site specific groundwater gradient was established. However, per your request we have conducted file reviews with the City of Hayward Fire Department and within your offices in order to provide you with other surrounding site gradient information. The following data is a summary of the information we have gathered per your request.

**SURROUNDING SITE GRADIENT DATA:**  
**3200 Depot Road - Sierra Pacific Steel**

*review 4/4/01  
86*

Please find attached proof that the groundwater at this vicinity site flows in a southwesterly direction.

**3600 Depot Road - Forni Corporation Site**

Please find attached proof that the groundwater at this site flows in a westerly direction.

**23510 Bernhardt Street - California Courier**

Please find attached proof that the groundwater at this very nearby site flows in a southeasterly direction.



If you could please advise this office on this site as soon as possible it would be greatly appreciated.

Respectfully,

Dawn Murray  
REA # 7260

**ATTACHMENT A**  
**LATEST LETTER FROM ACHCS**

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

Stid 2017

March 6, 2000  
Mr. Eric Freeberg  
Riverbend Properties  
P.O. Box 9440  
Rancho Santa Fe, CA 92067-4440

**RE: American Auto Dismantler, 3744 Depot Road, Hayward, CA**

Dear Mr. Eric Freeberg:

I am in receipt of copy of "site closure and request for case closure" document dated August 2000. I would like to make some comments regarding this document:

Per this report the concentrations of all the constituents were found at or near ND, non-detect levels as it had been in the last round. However, I would like to clarify some issues prior to being able to actually close this site as requested.

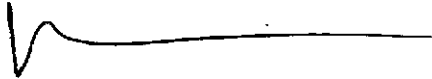
As discussed before there is a concern regarding the groundwater flow gradient. I discussed this case with one of my colleagues and it seems to both of us that the groundwater should be going toward west even though the calculated gradient indicates otherwise. This could be due to the fact that we do not have information on the structure of the agricultural well as to at what depth it has been screened. This office believes that the water in the agricultural well might be confined or semi-confined causing the water level to come up and screw up the calculation of the groundwater flow gradient.

In my previous correspondence, I had requested that you might verify the groundwater flow gradient using the available neighboring sites at the City of Hayward Fire Department to substantiate the accuracy of the flow gradient. This was discussed with Mr. Stuart G. Solomon of E/Risk Information Services, your previous consultant. To this date this office has not received this document.

Prior to closing this case, this issue must be resolved. Additionally please inform this office as to how or based on what document (lab reports) you indicated the concentration of constituents in the summary table included in this report.

Should you have any questions, please do not hesitate to call me at (510) 567-6876.

Sincerely,



Amir K. Gholami, REHS  
Hazardous Materials Specialist

C: Mr. Ben Halsted, Piers Environmental Services, Inc., 1330 S. Bascom Ave., Suite F  
San Jose, CA 95128

KJ & PG. Hein, American Auto Wreckers, Inc., 25858 Peterman Ave.,  
Hayward, CA 945-3102

J Lotz & J Allen, Lotz and Associates, 22320 Foothill Blvd., Hayward, CA 94541

Mr. Hugh Murphy, City of Hayward Hazardous Material Office, 777 B Street, Hayward,  
CA 94541

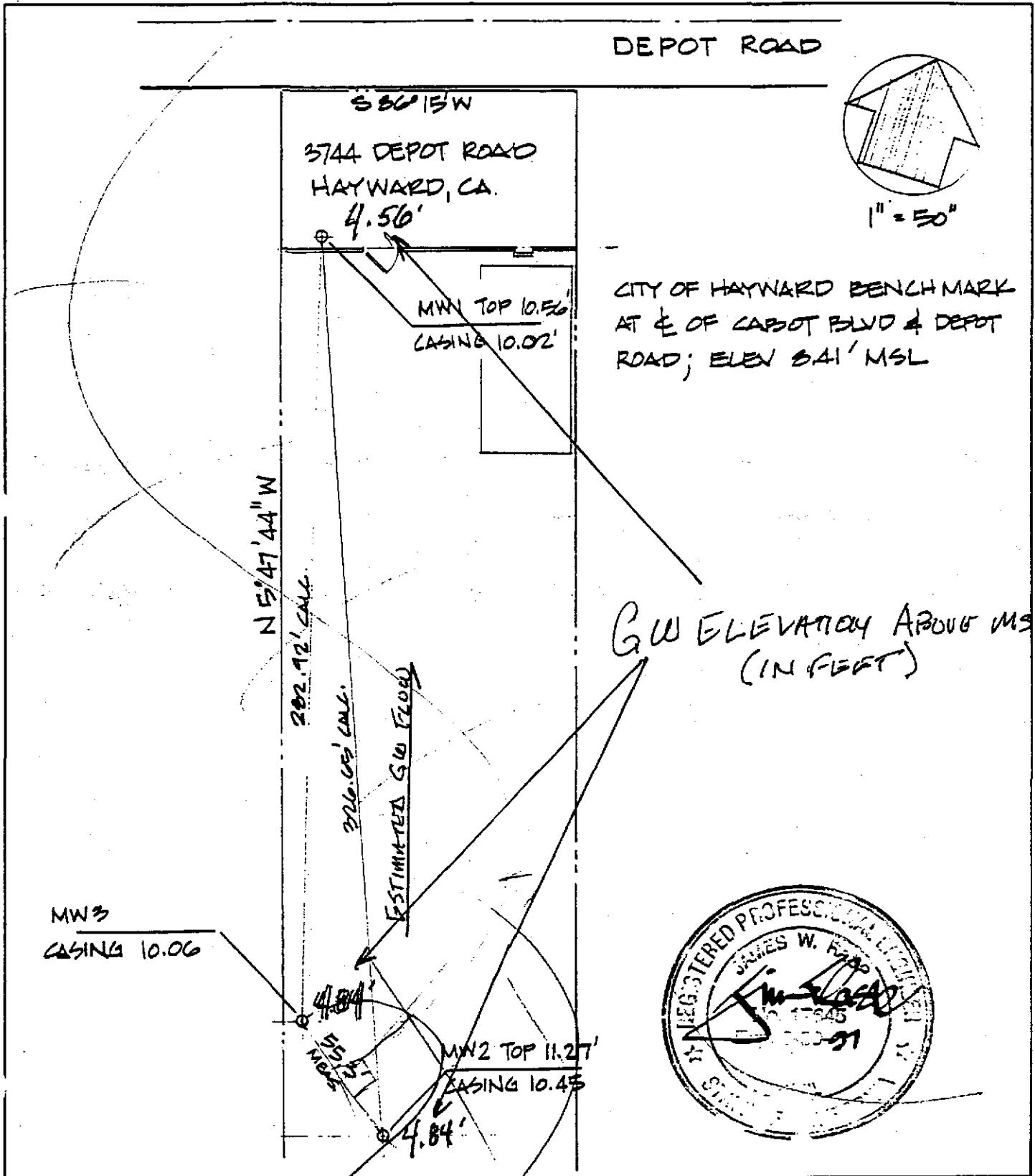
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**ATTACHMENT B**  
**SURROUNDING SITE GRADINET DATA**



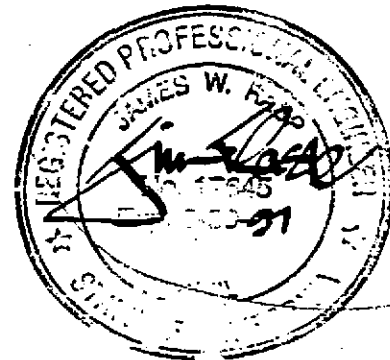
**JAMES RASP P.E.**  
 Civil and Structural Engineering  
 5134 Elrose Avenue  
 San Jose, California 95124  
 (408) 448-6768

JOB 10121 / FERS ENVIRONMENTAL  
 SHEET NO. 1 OF 1  
 CALCULATED BY J RASP DATE 12/96  
 CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 SCALE 1" = 50'



MAY 1997

FIGURE 2



3744 Depot Rd, Hayward  
Hayward - Fire Prev

11/18

Sierra Pacific Steel  
~~3200 Depot Rd~~

3200 Depot Rd.

1/12/98

(A)

" Request for Closure - Sierra Pacific  
Steel Facility - Hayward, CA "

BY: Treadwell & Rollo  
San Francisco, CA

⇒ GW occurs  $\approx 10-12$  feet below ground  
surface

⇒ GW flow direction = S/W @ gradient  
of  $\approx 0.004$ .

⇒ Data on GW contamination at  
neighboring sites is presented supporting  
the premise that 3200 Depot Rd  
has been and is impacted by halogenated  
volatile organic compounds (HVOC) from  
upgradient sources.

FD = SW

~~8/99~~ 8/91

(B)

" Subsurface Investigation - Sierra Pacific Steel, Inc.  
By: CET Environmental Services, Inc.  
Hayward, CA "

GW FD = S/W

2/14/95

"MW Installation and GW Sampling"  
By: Treadwell & Rollo - San Francisco

©

GWFD = S/W





**REQUEST FOR CLOSURE**  
**Sierra Pacific Steel Facility**  
**Hayward, California**

**Regional Water Quality Control Board**  
**Oakland, California**

**12 January 1998**  
**Project No. 1655.03**

**REQUEST FOR CLOSURE  
SIERRA PACIFIC STEEL FACILITY  
3200 Depot Road  
Hayward, California**

## **1.0 INTRODUCTION**

This report has been prepared by Treadwell & Rollo, Inc., at the request of Sierra Pacific Steel, to present to the City of Hayward and the California Regional Water Quality Control Board groundwater chemistry data which demonstrates that the 3200 Depot Road site warrants regulatory closure. An operational history of the 3200 Depot Road site has been prepared, including a brief discussion of the underground storage tank removals in 1990 and the results of quarterly groundwater monitoring events in 1994 and 1995. Data on groundwater contamination at neighboring sites is presented supporting the premise that 3200 Depot Road has been and continues to be impacted by halogenated volatile organic compounds (HVOC) originating from upgradient sources.

## **2.0 SITE HISTORY**

The 3200 Depot Road site (Figures 1 and 2) has been owned and operated by Sierra Pacific Steel as a steel distribution facility since 1970. No manufacturing occurs at the site. Prior to that time the property was a rebar fabrication facility. There is no record or evidence that HVOCs were ever used or stored at the site.

The property is underlain by approximately 0-2.5 feet of fill, which overlies dense clayey sand and sandy clay. Groundwater occurs at approximately 10 to 12 feet below ground surface, and flows to the southwest at a gradient of approximately 0.004.

Two underground diesel fuel storage tanks and one underground waste oil tank were removed in 1990. Soil and groundwater testing during tank excavation indicated the presence of both fuel and chlorinated hydrocarbons. Approximately 850 cubic yards of hydrocarbon-contaminated soil was subsequently removed and replaced with clean fill.

Groundwater sampling of three monitoring wells on the site was performed in December 1994, and in April, July, and October 1995. Groundwater samples were analyzed for Total Petroleum Hydrocarbon as diesel (TPH-d) and gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylene (BTEX), and halogenated volatile organic compounds (HVOCs). The results of this sampling and analysis are given in Table 1.

The groundwater monitoring indicates that no BTEX or TPH-g remains in groundwater at the site, and that TPH-d concentrations are below those generally considered to be of regulatory concern. HVOC concentrations of perchloroethene (PCE), trichloroethene (TCE), dichloroethene (DCE), dichloroethane (DCA), and trichloroethane (TCA) were found in each well. Well MW-1 is located upgradient of the former underground storage tanks, and exhibits the highest concentrations of TCE, PCE, and cis-1,2-DCE. This indicates that the Sierra Pacific site has been impacted by upgradient sources, as discussed below.

### 3.0 OFFSITE SOURCES OF GROUNDWATER CONTAMINATION

Documented sources of HVOCs occur upgradient and in close proximity to the Sierra Pacific Steel site. These include East Bay Oil (EBO) and Thermionics Metals Processing (TMPI) (Figure 2). Several other potential upgradient sites identified by the RWQCB include the Xerox Corporation Facility at 24600 Industrial Boulevard, Continental White Cap at 24493 Clawiter Road, Concise Casting Corporation at 3197 Depot Road, and the Hayward Business Park.

The EBO site is located directly upgradient of Sierra Pacific Steel. Five underground storage tanks have been removed from the site and numerous others are still present. Results of groundwater sampling and analyses for 1994-1997 are presented in Table 2, and show that high concentrations of HVOCs greater than those found at Sierra Pacific Steel are present at the site. As recently as 11 September 1997, the San Francisco Bay Regional Water Quality Control Board (RWQCB) has issued notice to EBO that they are considered a source of HVOC contamination.

Figures 3, 4, and 5 present PCE, TCE, and 1,1-DCE groundwater monitoring data from EBO, Sierra Pacific, and Diablo Business Park during 1995-1996. This period was chosen as data from each site was available for 1995. Chemical concentrations are highest at and adjacent to EBO. PCE is found at up to 230 micrograms per liter (ug/l) at EBO, and at 18 ug/l at Sierra Pacific. Similar trends occur for other HVOCs. Groundwater sampling at EBO in April 1997 indicates that PCE concentrations up to 620 ug/l occur at EBO.

Four groundwater samples were collected at the TMPI property in April 1997. This site is adjacent to and directly east of Sierra Pacific and south of EBO. TCE was found at up to 1,700 ug/l, 1,1-DCE at 470 ug/l, and PCE at up to 66 ug/l. This data has not been posted on Figures 3, 4, or 5 as a well location map was not provided with the TMPI report. TMPI does not believe that they are a source of HVOCs, and they assert the property has been impacted by offsite sources.

EBO prepared a report in October 1995 that identified several potential upgradient sources of HVOCs which may impact groundwater at EBO. It is likely that these sources would also impact Sierra Pacific Steel as EBO is directly upgradient of Sierra Pacific. EBO reported that PCE, TCE, 1,1-DCE, and other HVOCs were found in soil and groundwater at the Xerox facility, and that a vapor and groundwater extraction system was installed at Xerox in 1988. The Continental White Cap facility encountered xylene and ethylbenzene concentrations as high as

120 mg/l in groundwater in 1985. PCE, TCE, and 1,2-DCE were found in groundwater at the Hayward Industrial Park in 1988 at 240, 290, and 68 ug/l respectively.

#### 4.0 DOWNGRAIENT PROPERTIES

The Diablo Industrial Park is located directly downgradient of Sierra Pacific Steel (Figure 2). Soil gas and groundwater sampling were performed in the mid-1990's to determine if the property was a source of HVOCs and fuel hydrocarbons, or if it had been impacted by upgradient sources. As shown in Table 2 and on Figures 3, 4, and 5, the groundwater at Diablo Industrial Park had been impacted by HVOCs at concentrations similar to those found at Sierra Pacific Steel. The RWQCB issued a letter on 9 October 1996 in which they found that the groundwater contamination at Diablo Industrial Park was likely due to "...an area-wide groundwater pollution problem...". On the basis of this finding, the RWQCB stated that no further action would be required by Diablo Industrial Park with respect to chlorinated solvents.

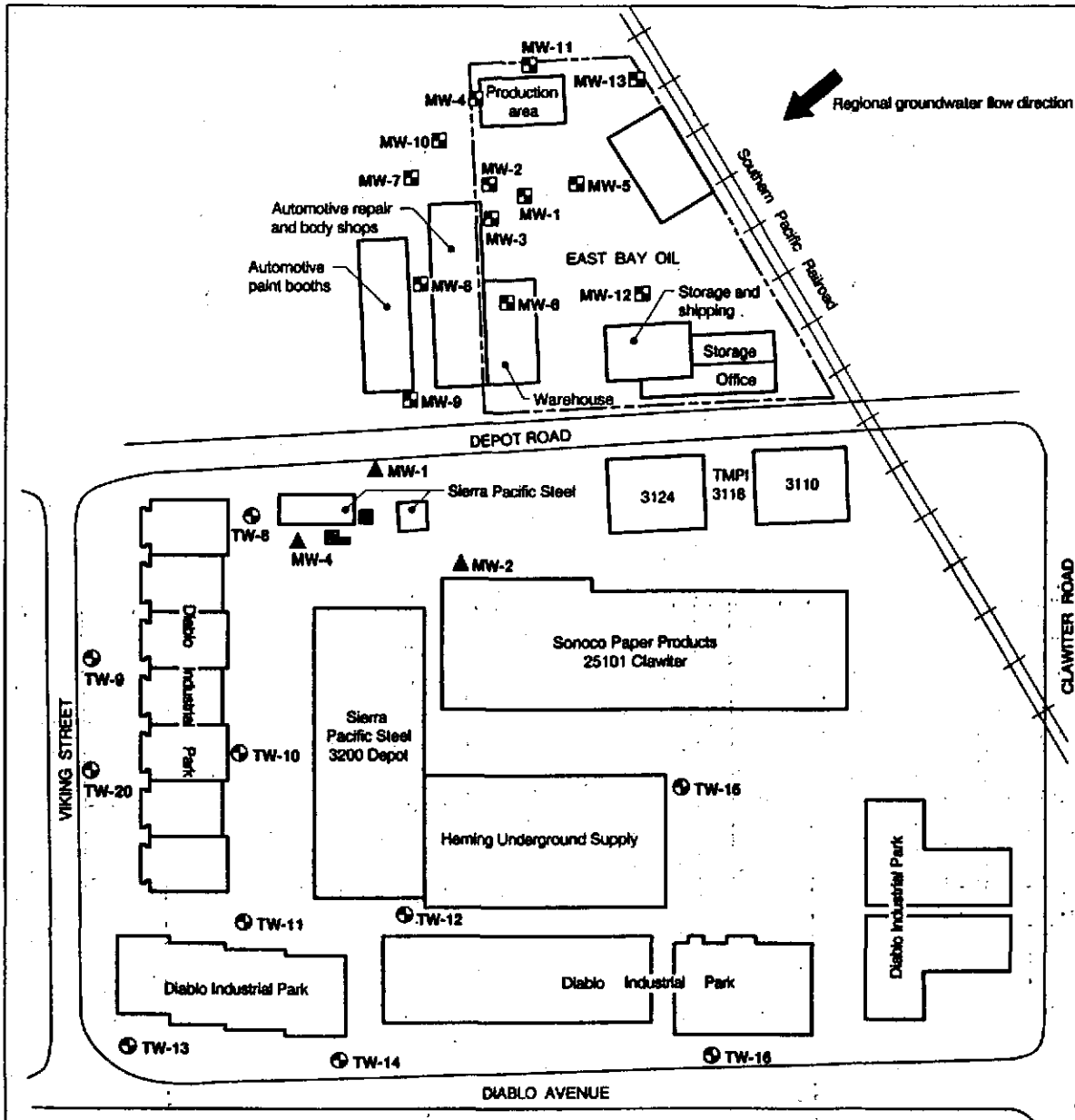
#### 5.0 CONCLUSIONS

The following conclusions have been made regarding the Sierra Pacific Steel property:

1. Well-defined sources of HVOC groundwater contamination exist directly upgradient of the Sierra Pacific property. The East Bay Oil site is directly across Depot Road and hydraulically upgradient, and has monitoring wells onsite with PCE concentrations exceeding 600 ug/l, and TCE exceeding 100 ug/l. East Bay Oil has identified additional potential upgradient sources which are likely impacting East Bay Oil and Sierra Pacific Steel, including Xerox Corporation, Hayward Industrial Park, and Continental White Cap.

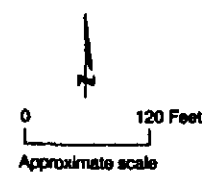
2. Groundwater quality monitoring at Sierra Pacific Steel has indicated that HVOCs are present at concentrations equivalent to those found at the downgradient Diablo Industrial Park and less than the upgradient East Bay Oil. For example, PCE concentrations at Sierra Pacific Steel and Diablo Industrial Park range from nondetect to 38 ug/l but exceed 600 ug/l at EBO. No HVOCs have ever been used or stored at Sierra Pacific Steel.
  
3. The Sierra Pacific Steel property is located within the regional groundwater contamination plume identified by the RWQCB in their 9 October 1996 letter to Kemper Real Estate Management Company regarding Diablo Industrial Park (RWQCB File No. 01S0442). As shown on Figures 3, 4, and 5, each property in the immediate vicinity of Sierra Pacific Steel has been impacted by HVOCs. The properties immediately upgradient of Sierra Pacific Steel have higher concentrations of HVOCs in groundwater than either Sierra Pacific Steel or Diablo Industrial Park, which is located immediately adjacent to and downgradient of Sierra Pacific Steel.

Given the facts presented in this document, Sierra Pacific Steel requests that the RWQCB issue to Sierra Pacific Steel a "no future action" letter with respect to groundwater contamination, and allow the abandonment of the three monitoring wells currently on site.

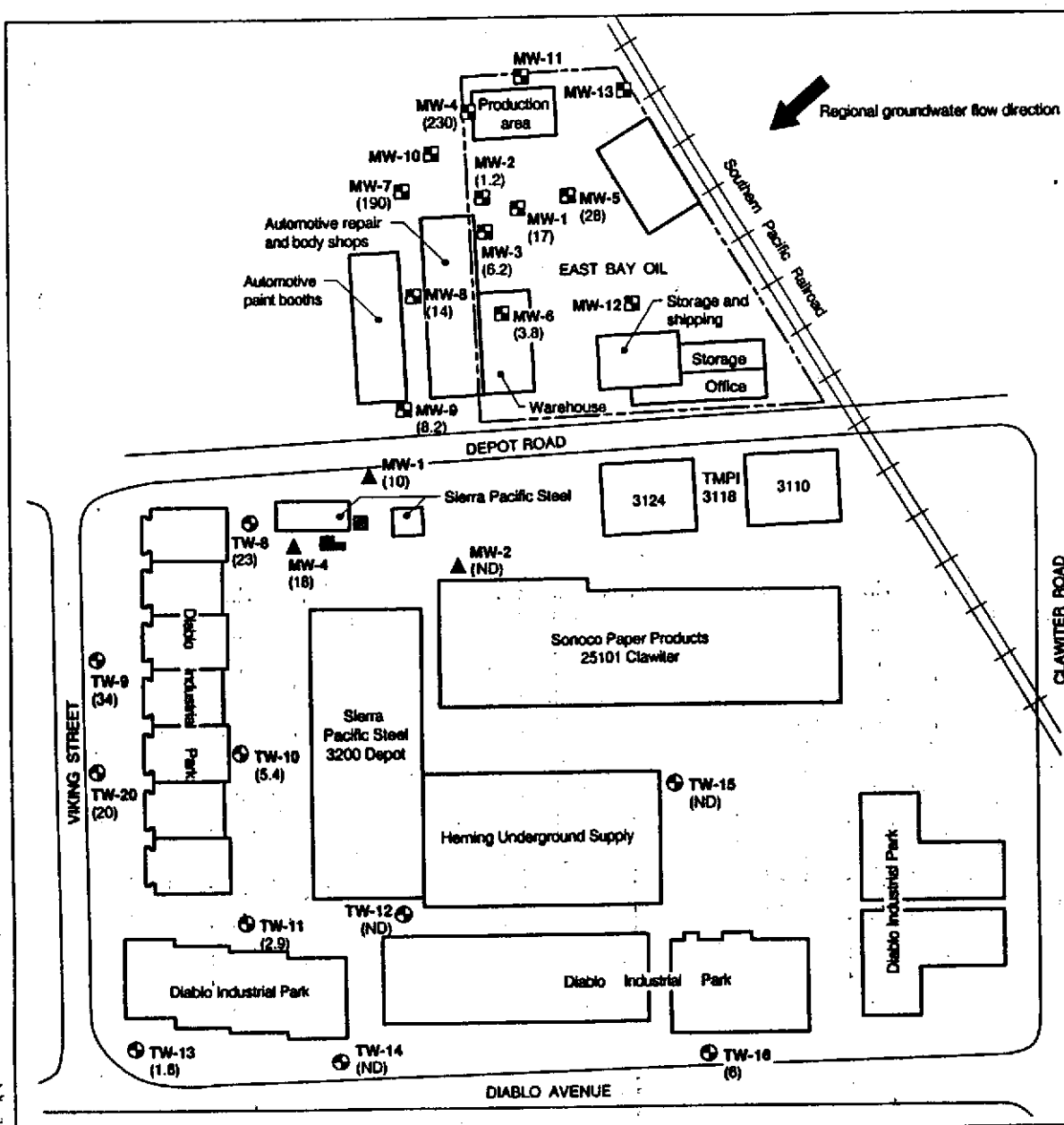


- EXPLANATION**
- TW-8 ⊕ Diablo Industrial Park sampling location
  - MW-1 ⊠ East Bay Oil sampling location
  - MW-1 ▲ Sierra Pacific Steel sampling location
  - ⊠ Approximate location of former underground storage tanks

Note: Sample locations are approximate.



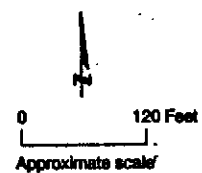
SIERRA PACIFIC STEEL INCORPORATED Hayward, California	
GROUNDWATER SAMPLING LOCATION MAP	
Project No. 1055.03	Figure 2
<b>Treadwell &amp; Rollo</b>	



**EXPLANATION**

- TW-8 ⊕ Diablo Industrial Park 6/4/96 sampling location
- MW-1 ⊠ East Bay Oil 5/25/95 sampling location
- MW-1 ▲ Sierra Pacific Steel 7/7/95 sampling location
- (3.8) PCE concentration, in parts per billion (µg/l), ND = not detected at laboratory reporting limit
- ⊠ Approximate location of former underground storage tanks

Note: Sample locations are approximate.



<b>SIERRA PACIFIC STEEL INCORPORATED</b> Hayward, California	
<b>PCE CONCENTRATIONS IN GROUNDWATER</b>	
Project No. 1655.03	Figure 3
<b>Treadwell &amp; Rollo</b>	



**TABLE 1**  
**GROUNDWATER ANALYTICAL DATA**  
**SIERRA PACIFIC STEEL**  
**3200 DEPOT ROAD**

Well Number	Date Sampled	TPHd mg/L	TPHg mg/L	Benzene ug/L	Toluene ug/L	Ethylbenzene ug/L	Xylenes ug/L	1,1-DCA ug/L	1,1-DCE ug/L	cis-1,2-DCE ug/l	PCE ug/L	1,1,1-TCA ug/L	TCE ug/L
MW-1	12/29/94	ND(<0.05)	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	9	9	75	38	ND(<5)	110
	4/4/95	ND(<0.05)	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	6	7	26	21	ND(<5)	44
	7/7/95	ND(<0.05)	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	10	ND(<5)	10	ND(<5)	17
	10/3/95	ND(<0.05)	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	5	9	13	15	ND(<5)	15
MW-2	12/29/94	0.93	ND(<0.05)	1	ND(<0.5)	ND(<0.5)	ND(<2)	14	36	ND(<5)	6	10	5
	4/4/95	0.8	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	15	26	ND(<5)	6	7	5
	7/7/95	0.66	0.9	1	ND(<0.5)	ND(<0.5)	ND(<2)	13	28	ND(<5)	ND(<5)	7	5
	10/3/95	1.1	ND(<0.5)	1	ND(<0.5)	ND(<0.5)	ND(<2)	11	32	ND(<5)	ND(<5)	6	8
MW-4	12/29/94	0.71	1.1	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	6	19	21	ND(<5)	47
	4/4/95	0.2	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	ND(<5)	35	16	ND(<5)	76
	7/7/95	0.2	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	6	28	18	ND(<5)	75
	10/3/95	0.07	ND(<0.05)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	8	20	14	ND(<5)	48

Notes: ND = Not detected at the indicated detection limit  
 NA = Not analyzed  
 mg/L = milligrams per liter  
 ug/L = micrograms per liter

1,1-DCA = 1,1-Dichloroethane  
 1,1-DCE = 1,1-Dichloroethene  
 cis-1,2-DCE = cis-1,2-Dichloroethene  
 PCE = Tetrachloroethene  
 1,1,1-TCA = 1,1,1-Trichloroethane  
 TCE = Trichloroethene

TABLE 2  
GROUNDWATER ANALYTICAL RESULTS  
REGIONAL AREA OF SIERRA PACIFIC STEEL  
3200 DEPOT ROAD  
HAYWARD, CALIFORNIA

Location	Well ID	Date Sampled	PCE	TCE	1,1-DCE
Sierra Pacific Steel	MW-1	12/29/94	38	110	9
		4/4/95	21	44	7
		7/7/95	10	17	10
		10/3/95	15	15	9
Sierra Pacific Steel	MW-2	12/29/94	6	5	36
		4/4/95	6	5	26
		7/7/95	ND	5	28
		10/3/95	ND	8	32
Sierra Pacific Steel	MW-4	12/29/94	21	47	6
		4/4/95	16	76	ND
		7/7/95	18	75	6
		10/3/95	14	48	8
East Bay Oil	MW-1	7/26/94	23	ND	29
		10/20/94	39	ND	43
		5/25/95	17	7.6	31
		8/29/95	--	--	--
		6/14/96	--	--	--
		4/23/97	--	--	--
East Bay Oil	MW-2	7/26/94	ND	ND	ND
		10/20/94	ND	ND	36
		5/25/95	1.2	5.2	41
		8/29/95	ND	ND	32
		6/14/96	5	7	50
		4/23/97	1.2	2.8	17
East Bay Oil	MW-3	7/26/94	ND	ND	120
		10/20/94	ND	7	120
		5/25/95	6.2	15	110
		8/29/95	ND	7	120
		6/14/96	1	3	17
		4/23/97	6	6	63

TABLE 2  
GROUNDWATER ANALYTICAL RESULTS  
REGIONAL AREA OF SIERRA PACIFIC STEEL  
3200 DEPOT ROAD  
HAYWARD, CALIFORNIA

Location	Well ID	Date Sampled	PCE	TCE	1,1-DCE
East Bay Oil	MW-4	7/26/94	310	58	26
		10/20/94	440	67	ND
		5/25/95	230	110	51
		8/29/95	510	100	15
		6/14/96	590	130	8
		4/23/97	620	130	ND
East Bay Oil	MW-5	7/26/94	5	ND	140
		10/20/94	ND	ND	110
		5/25/95	28	21	130
		8/29/95	ND	ND	120
		6/14/96	4	ND	36
		4/23/97	4.6	1.7	45
East Bay Oil	MW-6	7/26/94	5	9	31
		10/20/94	6	11	19
		5/25/95	3.8	9.6	38
		8/29/95	ND	9	15
		6/14/96	5	8	6
		4/23/97	3.3	4.2	10
East Bay Oil	MW-7	7/27/94	300	120	10
		10/20/94	280	120	ND
		5/25/95	190	110	35
		8/29/95	180	79	15
		6/14/96	210	66	8
		4/23/97	--	--	--
East Bay Oil	MW-8	7/27/94	7	6	100
		10/20/94	7	6	92
		5/25/95	14	14	240
		8/29/95	5	6	88
		6/14/96	5	5	35
		4/23/97	4	6	52
East Bay Oil	MW-9	7/27/94	ND	ND	50
		10/20/94	ND	ND	38
		5/25/95	8.2	9.3	82
		8/29/95	ND	ND	26
		6/14/96	ND	ND	14
		4/23/97	3.8	2.6	22

TABLE 2  
GROUNDWATER ANALYTICAL RESULTS  
REGIONAL AREA OF SIERRA PACIFIC STEEL  
3200 DEPOT ROAD  
HAYWARD, CALIFORNIA

Location	Well ID	Date Sampled	PCE	TCE	1,1-DCE
East Bay Oil	MW-10	8/29/95	31	8	6
		6/14/96	37	14	3
		4/23/97	36	20	4.7
East Bay Oil	MW-11	8/29/95	320	43	6
		6/14/96	220	33	7
		4/23/97	190	38	6
East Bay Oil	MW-12	8/31/95	7	7	15
		6/14/96	6	6	ND
		4/23/97	6.6	8	11
East Bay Oil	MW-13	8/31/95	5	ND	30
		6/14/96	12	1	42
		4/23/97	13	2	44
<hr/>					
Diablo Industrial Park	TW-8	6/4/96	23	20	2.7
Diablo Industrial Park	TW-9	6/4/96	34	39	5.3
Diablo Industrial Park	TW-10	6/4/96	5.4	7.1	29
Diablo Industrial Park	TW-11	6/4/96	2.9	37	20
Diablo Industrial Park	TW-12	6/4/96	ND	240	44
Diablo Industrial Park	TW-13	6/4/96	1.6	210	22
Diablo Industrial Park	TW-14	6/4/96	ND	120	26
Diablo Industrial Park	TW-15	6/4/96	ND	28	18
Diablo Industrial Park	TW-16	6/4/96	6	ND	ND
Diablo Industrial Park	TW-20	6/4/96	20	15	8.9

Notes:

All concentrations are in parts per billion (micrograms per liter).

PCE = Tetrachloroethene

TCE = Trichloroethene

1,1-DCE = 1,1-Dichloroethene

ND = Not detected at or above the laboratory reporting limit.

-- = Not analyzed

(B)

The soil underlying the site vicinity is comprised mostly of clays and interbedded silts which have been deposited as alluvial fans by streams. Based on various reports, groundwater is encountered in confined conditions varying in depth. The reported beneficial use aquifer is approximately 150 feet below ground surface (bgs).

#### **4.0 SUBSURFACE INVESTIGATION**

##### **4.1 Soil Borings and Sample Collection**

During June 14 and 15, a total of eight soil borings (Borings SB-1 to SB-8) were drilled at the subject site. The locations of the borings are shown on Figure 2. The wells were drilled by Aqua Science Engineers (ASE) using a Mobile B-61 drill rig equipped with 11-inch outside diameter (O.D.) continuous flight, hollow stem augers.

Soil samples were collected at 5 feet and 10 feet bgs. For the lithologic evaluation boring SB-1 was continuously sampled from 2 to 30 feet bgs. Samples were collected utilizing an 18 inch long, modified California split-spoon sampler with three 2.5 inch O.D. by 6 inch long ring liners. Sample collection was performed in accordance with EPA SW-846 procedures.

CET personnel evaluated the soil samples petroleum hydrocarbon compounds. Evaluation was based on the presence of soil discoloration and photoionization detector (PID) measurements. Field instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but do not measure hydrocarbon concentrations with the same precision as a laboratory analysis. The soil samples from borings SB-1 through SB-8 showed relatively low hydrocarbon vapor concentrations. Samples from SB-1 through SB-8 had levels of hydrocarbon vapors of less than 50 parts per million.

The samples were packed on ice and delivered to Med-Tox Associates, in Pleasant Hill a California State DHS certified laboratory for analysis. Boring logs are enclosed in Appendix A.

##### **4.2 Well Completion and Sample Collection**

Three of the eight soil borings drilled were converted to groundwater monitoring wells. The wells were completed to a depth of twenty (20) feet bgs. using 4-inch diameter, schedule 40 polyvinyl chloride (PVC) well screen and casing, The wells were screened with 0.020 inch slotted PVC from total depth to 5 feet below ground surface. Above 5 feet, the wells were completed with blank PVC well casing. The well annular space was packed with #3 Monterey sand from total depth to 3 feet

bgs. In each of the three wells, one hundred pounds of bentonite chips were placed on top of the sand packing and then hydrated to seal off the packing. The wells were then sealed using fifty pounds of portland cement. The well construction are shown on the boring logs in Appendix A.

Groundwater wells MW-1 through MW-3 were allowed to stabilize prior to sampling. On July 11, 1991 the wells were checked for free product and the depth to water were measured. The wells were purged of approximately three (3) well volumes and allowed to recharge before collecting groundwater samples. The samples were collected using a Teflon bailer, placed in 40 milliliter glass vials leaving no head space and immediately packed in ice for shipment to the laboratory. The samples were collected and shipped using strict chain of custody procedures.

#### **4.3 Results of Well Survey and Groundwater Flow Direction and Gradient Measurements**

During July 11, 1991, the monitoring wells designated MW-1 through MW-3 were surveyed to evaluate distance between each well and the casing elevations. CET personnel measured the depth to groundwater in each well using a Solinst Interface Probe and combined the groundwater depth with the casing elevation to determine the groundwater elevation. Based on the groundwater elevations, a groundwater flow direction to the southwest at a gradient of 0.002 ft/ft was calculated. Assumptions of the calculation of the groundwater flow direction and gradient are shown on Figure 4.

#### **5.0 ANALYTICAL RESULTS**

Laboratory analysis of the soil samples from borings SB-1 through SB-8 indicated ND concentrations of TPH as gasoline, ND to 3.0 parts micrograms per kilogram (mg/kg) concentrations of BTEX and 160 to 610 ppm of TPH as diesel. Additional samples for soil in boring SB-1 were analyzed for volatile organic compounds indicated ND. Results of the soil samples are shown on Table 2.

Laboratory analyses of groundwater samples from monitoring wells MW-1, MW-2, MW-3, and TMW-1 indicate ND concentrations of TPH as gasoline and ND to 3.0 micrograms per liter (ug/l) concentration of benzene (Table 3). CET did not initially analyze the groundwater samples for TPH as diesel because of the reporting time. Due to the holding time of the groundwater samples (14 days), any additional testing could not have been performed because the laboratory issued the final report 14 days past the sampling time.

## 6.0 DISCUSSION AND CONCLUSIONS

The area is underlain by Holocene sediments which comprise mostly of clays and silts to a depth of approximately 20 feet below ground surface. Beyond this depth, medium grained sands comprise the remainder of the boring to a depth of 30 feet below ground surface. Groundwater is encountered at approximately 12 feet bgs. Figure 5 shows the cross section lines A-A' and B-B'.

Laboratory analyses indicate soil is impacted with diesel at approximately 10 feet bgs in soil borings SB-2, SB-3, SB-4, SB-5 and SB-8 (Figures 6 and 7). The concentrations are located adjacent to the former fuel and waste oil UST locations and a sump found later in the investigation on the west side of the property. The lateral extent of diesel has not been defined to the east and south of the former UST locations.

Laboratory analyses of soil samples from the soil boring adjacent to the former waste oil tank indicate nondetectable TPH, BTEX and volatile organics concentrations.

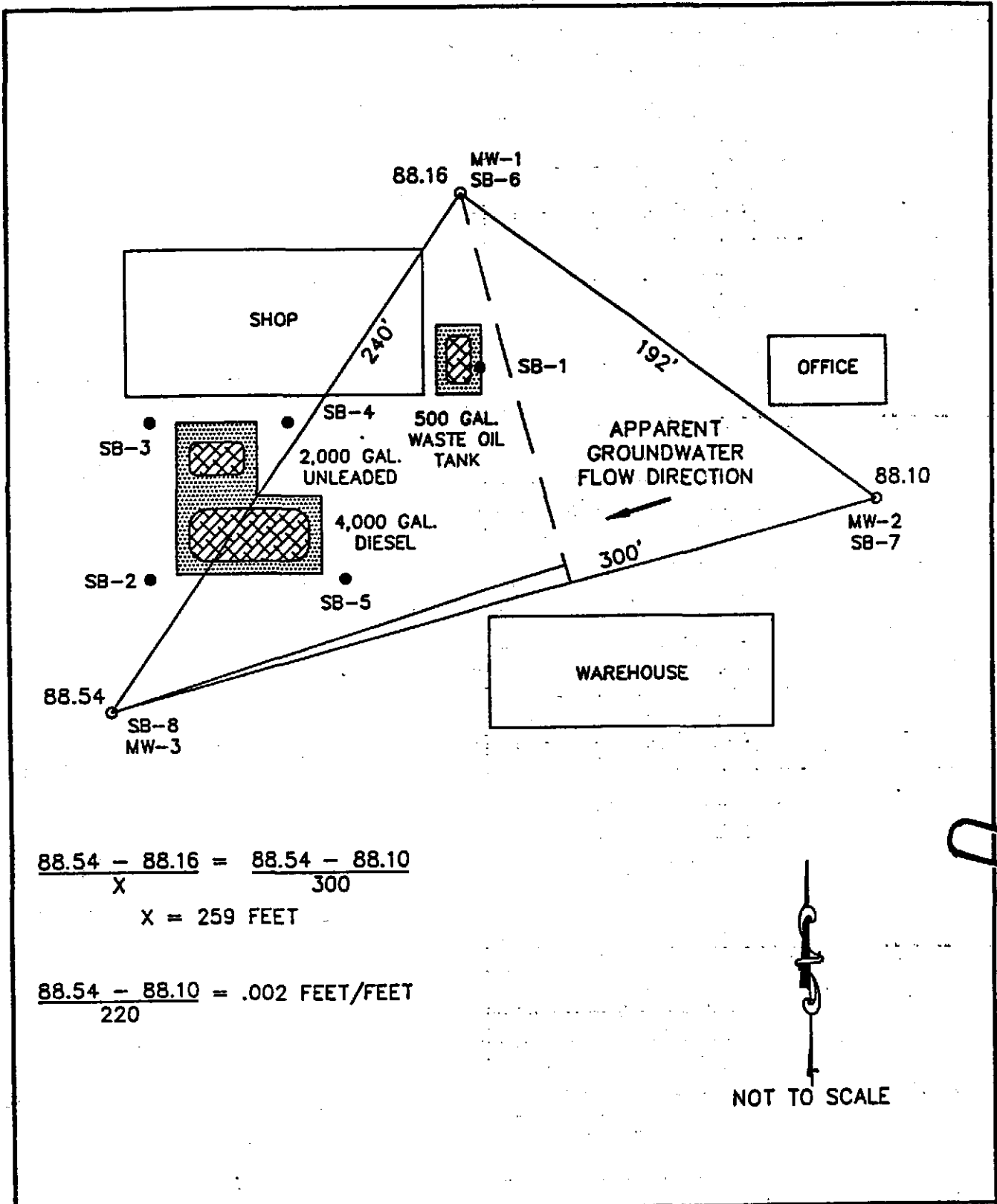
Groundwater in monitoring wells MW-2 and TMW-1 were impacted with benzene concentrations to 3.0 ug/l. The action level for benzene is 0.5 ug/l according to the Regional Water Quality Control Board action guidelines. The location of MW-2 is on the property boundary and may indicate migration of benzene from another source to the northeast.

## 7.0 LIMITATIONS

The project was performed imparting the same degree and skill expected of other similar firms practicing in similar situations or localities.

The statements and conclusions are based on field observations and analytical test results. No warranty is expressed or implied between our soil borings where latent or concealed conditions may exist. Evaluation of the geologic condition at the facility for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

The conclusions and statements expressed in this report are based on present conditions and are valid relative to current site conditions and regulations. Conditional changes may occur through time by natural or manmade processes on this or adjacent properties. Future review and interpretations should



 **CET Environmental Services, Inc.**  
A Division of Consolidated Environmental Technologies, Inc.

PROJECT NO. 3E-5002

**GROUNDWATER FLOW MAP**  
 SIERRA PACIFIC STEEL  
 3200 DEPOT ROAD  
 HAYWARD, CALIFORNIA  
 DATE: AUGUST 1991

FIGURE  
 4



**TABLE 3**

**MONITORING WELL RESULTS  
3200 DEPOT ROAD  
JULY 11, 1991**

	TPH	B	T	X	E
MW-1	ND	ND	ND	ND	ND
MW-2	ND	0.3	ND	ND	ND
MW-3	ND	3	ND	ND	ND
TMW-1	ND	3	ND	ND	ND
TB-1	ND	ND	ND	ND	ND

All results are given in ug/l

**TABLE 4**  
**GROUNDWATER MONITORING**  
**SURVEY RESULTS**

	Casing Elevation	Depth To Water	Relative Groundwater Elevation
MW-1	99.44	88.16	11.84
MW-2	99.42	88.10	11.90
MW-3	99.41	88.54	11.46
*TMW-1	—	—	

\* = Did not measure since no data as to the construction of the well was given.

table-4.wk1

WELL CONSTRUCTION	CHEMICAL ANALYSES		BLOW COUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	LITHOLOGY SYMBOL	U.S.C.S. DESIGN.	SOIL DESCRIPTION
	Laboratory	Field PID (ppm)							
<p>Concrete backfill 0-5 feet below ground surface</p> <p>Bentonite seal 5-7 feet below ground surface</p> <p>Well completed with 5 foot screen &amp; 15 feet of screened .020 pipe</p>				0			RC CL	<p>CONCRETE</p> <p>SILTY CLAY: Soft, moist, black with organic material, minor amount of rootlets, minor amount of subangular rock fragments approximately 1/4 inch in diameter.</p>	
				5	5.0				<p>SILTY CLAY: Soft, moist, tan to black coloration, minor amounts of caliche (reacted to HCl), some subangular rock fragments.</p>
				10	10.0			ML	<p>SILTY CLAY: Soft, moist, tan, minor amounts of caliche veins, some debris.</p> <p>CLAYEY SILT: Soft, tan, saturated, slightly plastic, minor debris.</p>
				15					<p>CLAYEY SILT: Soft, tan, saturated, slightly plastic, minor debris, minor gravel layer below water interface, dense.</p>
				20				SC SP	<p>CLAYEY SILT: Soft, tan, saturated, dense.</p> <p>CLAYEY SAND: Soft, tan, saturated, dense, very thick amount of caliche, some interbedded sands within a clay matrix.</p> <p>GRAVELLY SAND: Hard, poorly graded, saturated.</p>
<p>Total depth is 23 feet below ground surface.</p> <p>Groundwater encountered at 12 feet below ground surface.</p>									

Surface Elevation: 100.0 feet	Logged By: Tim Lane
Total Depth: 23.0 feet	Supervised By: Bill Gilmour
Date Drilled: June 13, 1991	Diameter of Boring: 4 inches
	Water Encountered at: 12.0 feet

<p><b>CET Environmental Services, Inc.</b></p> <p>Project Number 3E-5002</p> <p>July 1991</p>	<p>Sierra Pacific Steel</p> <p>3200 Depot Road</p> <p><i>LOG of BORING</i></p> <p><b>MW-1/SB-6</b></p>	<p>PLATE</p> <p>6</p> <p>Page 1 of 1</p>
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WELL CONSTRUCTION	CHEMICAL ANALYSES		BLOW COUNT	DEPTH (feet)	SAMPLE			SOIL DESCRIPTION
	Laboratory	Field			INTERVAL	NUMBER	LITHOLOGY SYMBOL	
		PID (ppm)						
Concrete backfill 0-5 feet below ground surface				0			RC CL	CONCRETE SILTY CLAY: Soft, moist, black with organic material, minor amount of rootlets, minor amount of subangular rock fragments approximately 1/4 inch in diameter.
Bentonite seal 5-7 feet below ground surface				5	5.0			SILTY CLAY: Soft, moist, tan to black coloration, minor amounts of caliche (reacted to HCl), some subangular rock fragments.
				10	10.0		ML	SILTY CLAY: Soft, moist, tan, minor amounts of caliche veins, some debris. CLAYEY SILT: Soft, tan, saturated, slightly plastic, minor debris.
Well completed with 5 foot screen & 15 feet of screened .020 pipe				15			SC	CLAYEY SILT: Soft, tan, saturated, slightly plastic, minor debris, minor gravel layer below water interface, dense. CLAYEY SILT: Soft, tan, saturated, dense. CLAYEY SAND: Soft, tan, saturated, dense, very thick amount of caliche, some interbedded sands within a clay matrix.
				20			SP SC SP	GRAVELLY SAND: Hard, poorly graded, saturated. CLAYEY SAND: Soft, tan, saturated, dense, very thick amount of caliche, some interbedded sands within a clay matrix. GRAVELLY SAND: Hard, poorly graded, saturated.
				25				Total depth is 23 feet below ground surface. Groundwater encountered at 12 feet below ground surface.

Surface Elevation: 100.0 feet  
 Total Depth: 23.0 feet  
 Date Drilled: June 13, 1991

Logged By: Tim Lane  
 Supervised By: Bill Gilmour  
 Diameter of Boring: 4 inches  
 Water Encountered at: 12.0 feet

CET Environmental Services, Inc.

Sierra Pacific Steel  
 3200 Depot Road

LOG of BORING

MW-2/SB-7

PLATE

7

Page 1 of 1

Project Number 3E-5002

July 1991

WELL CONSTRUCTION	CHEMICAL ANALYSES		BLOW COUNT	DEPTH (feet)	SAMPLE		LITHOLOGY SYMBOL	U.S.C.S. DESIGN.	SOIL DESCRIPTION
	Laboratory	Field			INTERVAL	NUMBER			
<p>Concrete backfill 0-5 feet below ground surface</p> <p>Bentonite seal 5-7 feet below ground surface</p> <p>Well completed with 5 foot screen &amp; 15 feet of screened .020 pipe</p>				0			RC CL	<p>CONCRETE</p> <p>SILTY CLAY: Soft, moist, black with organic material, minor amount of rootlets, minor amount of subangular rock fragments approximately 1/4 inch in diameter.</p>	
				5	5.0				<p>SILTY CLAY: Soft, moist, tan to black coloration, minor amounts of caliche (reacted to HCl), some subangular rock fragments.</p> <p>SILTY CLAY: Soft, moist, tan, minor amounts of caliche veins, some debris.</p>
				10	10.0		ML	<p>CLAYEY SILT: Soft, tan, saturated, slightly plastic, minor debris.</p> <p>CLAYEY SILT: Soft, tan, saturated, slightly plastic, minor debris, minor gravel layer below water interface, dense.</p> <p>CLAYEY SILT: Soft, tan, saturated, dense.</p>	
				15			SC	<p>CLAYEY SAND: Soft, tan, saturated, dense, very thick amount of caliche, some interbedded sands within a clay matrix.</p>	
				20			SP SC SP	<p>GRAVELLY SAND: Hard, poorly graded, saturated.</p> <p>CLAYEY SAND: Soft, tan, saturated, dense, very thick amount of caliche, some interbedded sands within a clay matrix.</p> <p>GRAVELLY SAND: Hard, poorly graded, saturated.</p>	
				25				<p>Total depth is 23 feet below ground surface.</p> <p>Groundwater encountered at 12 feet below ground surface.</p>	

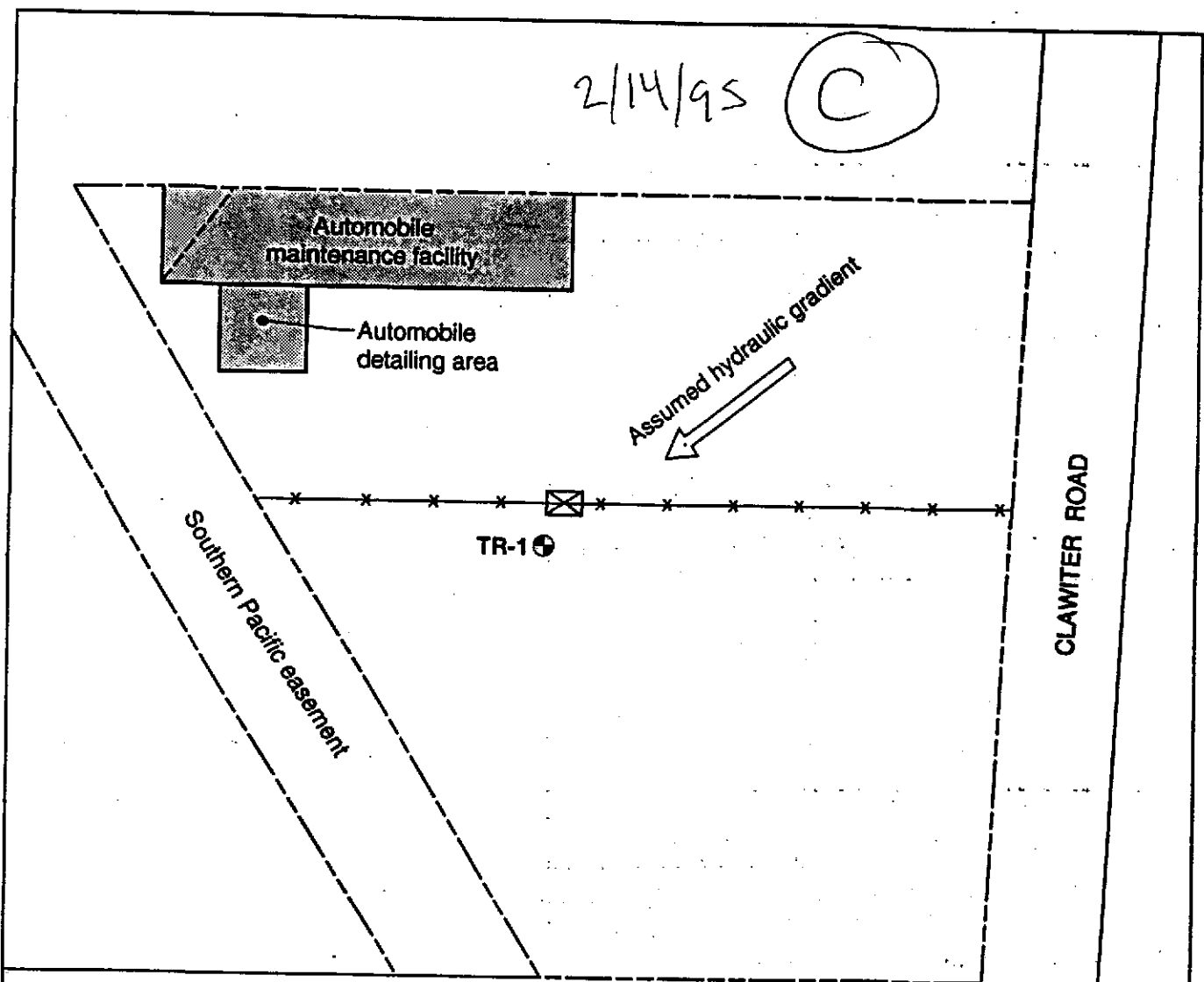
Surface Elevation: 100.0 feet  
 Total Depth: 23.0 feet  
 Date Drilled: June 13, 1991

Logged By: Tim Lane  
 Supervised By: Bill Gilmour  
 Diameter of Boring: 4 inches  
 Water Encountered at: 12.0 feet



<b>CET Environmental Services, Inc.</b>  Project Number 3E-5002	Sierra Pacific Steel 3200 Depot Road	<b>PLATE</b>  8  Page 1 of 1
	<b>LOG of BORING</b>  <b>MW-3/SB-8</b>  July 1991	

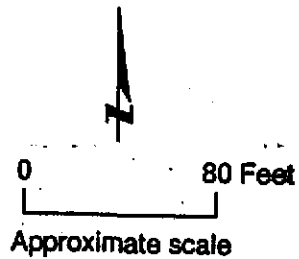
2/14/95

(C)



EXPLANATION

-  Location of abandoned underground storage tank
- TR-1  Location of monitoring well



Base map: Levine-Fricke

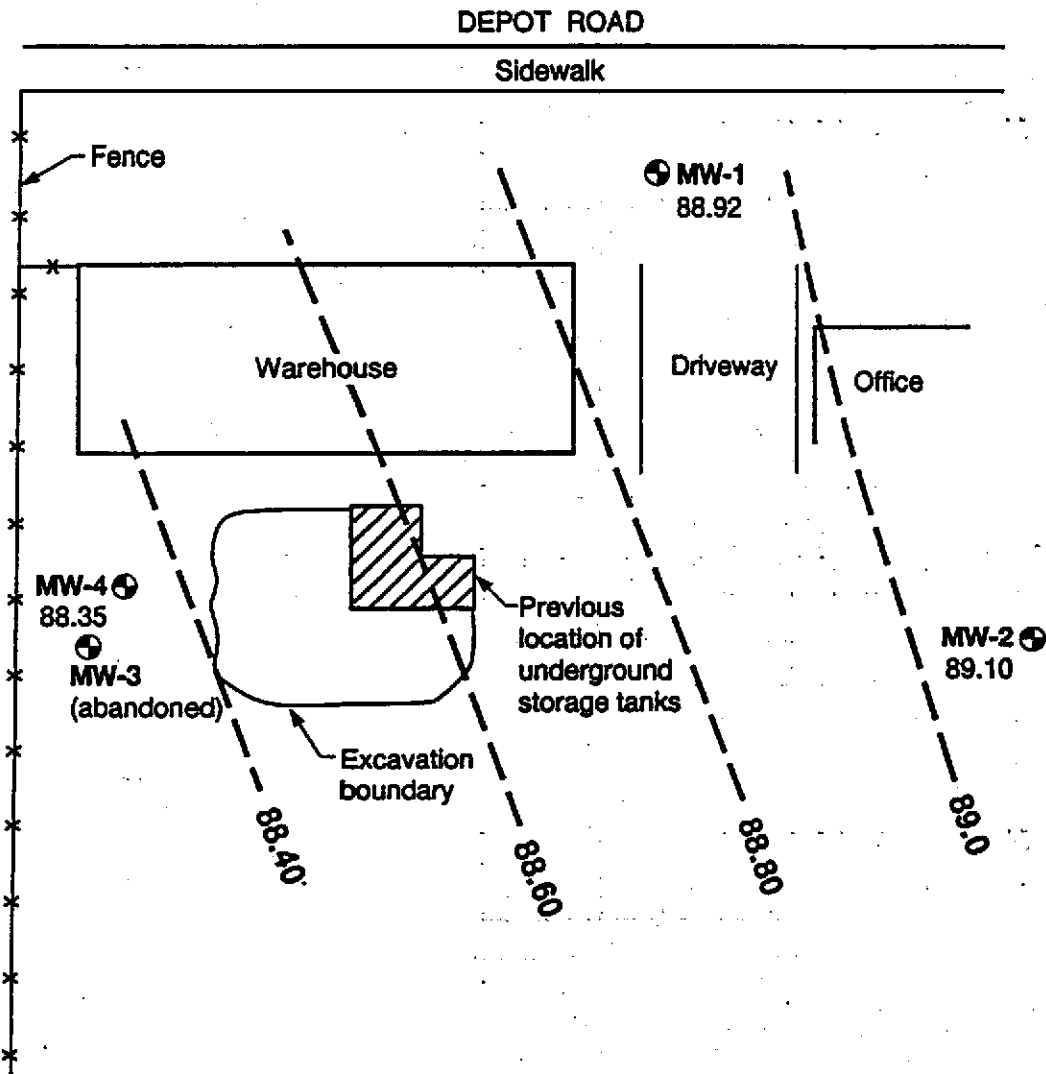
EPSTEIN INVESTMENT  
Hayward, California

SITE PLAN  
24785 CLAWITER ROAD

**Treadwell & Rollo**

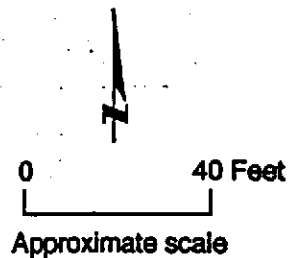
Project No. 1655.02

Figure 2



**EXPLANATION**

- MW-1 ⊕ Location of monitoring well
- 88.92 Groundwater elevation in feet above MSL referenced to temporary benchmark at northwest corner of 3200 Depot Road office building



Base map: Levine-Fricke

**SIERRA PACIFIC STEEL**  
Hayward, California

**POTENTIOMETRIC SURFACE MAP**  
29 DECEMBER 1994  
3200 DEPOT ROAD

**Treadwell & Rollo**

Project No. 1655.02

Figure 4

PROJECT: SIERRA PACIFIC STEEL  
3200 Depot Road  
Hayward, California

# Log of Well MW-4

Boring location: See Figure 3

Date started: 12/27/93

Date finished: 12/27/93

Drilling method: Hollow stem auger, Mobile B-61

Hammer weight: 140 lb.

Drop: 30 inches

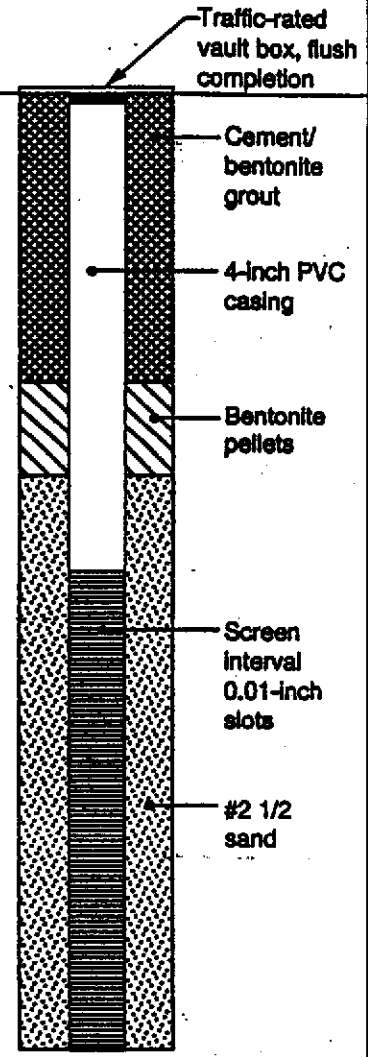
Sampler: California modified split spoon

**NOTES:**

Logged by D. O'Rourke

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION
	OWM Reading	Inches Driven/Inches Recovered	Sample	Blows/foot		
1						Concrete
2						CLAYEY SAND (SC) brown, moist, medium dense, fine-grained
3						
4						
5						
6	0.9	18/12	X	30		
7					SC	
8						
9						
10						grades brown to gray with diesel odor
11	59.7	18/18	X	12		
12						groundwater encountered at approximately 12 feet
13						
14						
15						CLAYEY SAND/SANDY CLAY (SC/CL) brown-gray, wet, medium dense, fine
16	0.1	18/18	X	10		
17					SC/CL	
18						
19						
20						Boring terminated at a depth of 20 feet. Boring backfilled with cement/ bentonite grout.
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

**WELL CONSTRUCTION DETAILS**





PROJECT:		EPSTEIN INVESTMENT 24785 Clawiter Road Hayward, California			Log of Well TR-1		PAGE 1 OF 1			
Boring location: See Figure 2							NOTES: Logged by D. O'Rourke			
Date started: 12/29/93			Date finished: 12/29/93							
Drilling method: Hollow stem auger, Mobile B-61										
Hammer weight: 140 lb.			Drop: 30 inches							
Sampler: California modified split spoon										
DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	WELL CONSTRUCTION DETAILS			
	OMV Reading	Inches Driven/ Inches Recovered	Sample	Blows/foot						
1					ML	CLAYEY SILT (ML) dark brown, moist, hard, with minor white roots				
2										
3										
4										
5										
6	0.1	18/12	X	35						
7										
8					CL	SILTY CLAY (CL) brown-gray, moist to wet				
9										
10										
11	0.1	18/12	X	8						
12						groundwater encountered at approximately 12 feet				
13										
14										
15										
16	0.1	18/18	X	17	SM/SW	SILTY to GRAVELLY SAND (SM/SW) brown, wet, medium dense, fine to coarse				
17					SC	CLAYEY SAND (SC) brown, wet, stiff				
18										
19										
20										
21					CL	CLAY (CL) brown, stiff, wet				
22						Boring terminated at a depth of 20 feet. Boring backfilled with cement/ bentonite grout.				
23										
24										
25										
26										
27										
28										
29										
30										

## GROUND WATER MONITORING REPORT

for

FORMER FORNI CORPORATION SITE

3500 DEPOT ROAD

HAYWARD, CALIFORNIA

prepared for

Law Offices of Barry M. Gallagher  
One Kaiser Plaza, Suite 2450  
Oakland, California 94612

September 30, 1996

Project C94053

GROUND WATER MONITORING REPORT  
for  
FORMER FORNI CORPORATION SITE  
3600 DEPOT ROAD  
HAYWARD, CALIFORNIA

INTRODUCTION

The project site is located at 3600 Depot Road, Hayward (Alameda County), California as indicated on Figure 1. The site had been occupied by FORNI Corporation, for the manufacturing of pre-cast concrete products. FORNI Corporation has ceased operation and the site has been cleared of residual concrete equipment and debris.

Two underground gasoline storage tanks were removed from the subject property in March, 1992 by KTW & Associates at the location indicated on Figure 2. Analytical testing reported by KTW & Associates identified that concentrations of Total Petroleum Hydrocarbons as gasoline in the samples obtained from beneath the tanks (see Figure 2) ranged from below detectable concentrations to 490 parts per million (ppm).

Limited over-excavation activities were reportedly performed to remove the remaining fuel contaminated soils. The excavation was reportedly extended in all directions and continued to within two feet of the western property boundary (see Figure 2). Analytical testing of additional soil samples obtained from the base of the excavation contained concentrations of Total Petroleum Hydrocarbons as gasoline ranging from 1.5 to 30 ppm with one sample obtained beneath the former dispenser pump (adjacent to the property line fence) which contained 2,200 ppm. The tank excavation was subsequently backfilled.

REMEDIAL INVESTIGATION

To evaluate the limits of the remaining contaminated soil, Geo Plexus was retained to advance three subsurface exploration borings on the "down-gradient" adjacent property immediate west of the former underground storage tanks (see Figure 3). In summary, the findings of the investigation indicated that the gasoline impacted soil which remained in-place following the tank removal were isolated to an area immediately along the property boundary and did not extend onto the adjacent property for more than 15-feet. Ground water grab samples were obtained from the borings for analytical testing which identified moderate to high concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene).

Geo Plexus, Incorporated

1900 Wyatt Drive, Suite 1, Santa Clara, California 95054 Phone 408/987-0210 Fax 408/988-0815

### SUPPLEMENTAL REMEDIAL ACTION - SOIL EXCAVATION

Additional soil was excavated in December, 1994 to further abate the impacted soil conditions and to facilitate site closure. The excavation extended from the limits of the original tank removal excavation and progressed laterally and vertically based on visual observations. The excavation achieved a depth of 12-feet below the ground surface to achieve removal of the impacted soil materials. The excavation activities were terminated upon reaching the lateral and vertical extent based on the results of the analytical testing (see Figure 3).

### SUPPLEMENTAL CHARACTERIZATION AND QUARTERLY MONITORING

Geo Plexus, Inc. was retained to install three (3) ground water monitoring wells located as indicated on Figure 4 to further characterize the ground water conditions. Initial sampling of the monitoring wells indicated the presence of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds in the ground water and the concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds have continued to decrease with time verifying the source removal activities.

### GRADIENT SURVEY

The elevation of the top of the casing for the monitoring wells were established with vertical control to 0.01 feet (referenced to a City of Hayward monument as a Temporary Bench Mark with an assigned elevation of 13.14 feet MSL). The depth to ground water (measured to the nearest 0.01 foot) was measured with an electronic water level meter in each monitoring well prior to purging the well.

Ground water elevations recorded suggest that ground water is from 8- to 9.5-feet below the ground surface and continues to flow in a westerly direction at a gradient of 0.0066 ft/ft as indicated on Figure 4.

This flow direction is consistent with the general westerly directions recorded for the regional ground water flow. This flow direction places Monitoring Wells MW-2 and MW-3 in the "down-gradient" direction of the former tank area.

### MONITORING WELL SAMPLING

Free product measurements were obtained at the time of sample acquisition utilizing an acrylic bailer lowered into the wells to obtain a surface water sample. The bailer was used to collect a water sample to observe the presence of hydrocarbon odors, visible sheen, or free product.

Free product, visible sheen, or odors were not observed in the monitoring wells prior to purging. Prior to sampling, a minimum of four well volumes were purged from the well through the use of a teflon bailer. Electrical conductivity, temperature, and pH of the ground water were recorded throughout the purging process.

The purging activities continued until the electrical conductivity, temperature, and pH of the discharged water stabilized. Water samples for analytical testing were obtained through the use of the teflon bailer. The water developed from the monitoring wells was contained on-site pending receipt of the laboratory test results.

The water samples were collected in sterilized glass vials with Teflon lined screw caps. The water samples collected for Total Petroleum Hydrocarbons as gasoline and Volatile Organics were collected in 40 mil. vials acidified with HCL by the analytical laboratory. The samples were immediately sealed in the vials and properly labeled including: the date, time, sample location, project number, and indication of any preservatives added to the sample. The samples were placed on ice immediately for transport to the laboratory under chain-of-custody documentation.

### ANALYTICAL TESTING

The ground water samples were submitted to and tested by McCampbell Analytical, Inc., a State of California certified laboratory. Analytical testing was scheduled and performed in accordance with the State of California, Regional Water Quality Control Board and Alameda County Department of Environmental Health Guidelines. The Chain-of-Custody Forms and the analytical test data is presented in Appendix A.

The ground water samples were tested for Total Petroleum Hydrocarbons as gasoline by Method GCFID 5030/8015 and Volatile Aromatics (BTEX and MTBE) by EPA Method 602 as indicated on the Chain-of-Custody Form.

The results of the current and previous analytical testing are summarized on Table 1.

TABLE 1

SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

<u>Sample</u>	<u>Total Petroleum Hydrocarbons</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-Benzene</u>	<u>Total Xylenes</u>	<u>MTBE</u>
<u>MW-1</u>						
12-15-94	870	43	4.1	27	74	
3-17-95	710	43	2.7	33	40	
6-22-95	480	28	1.4	15	22	
9-26-95	760	51	2.4	47	32	
9-23-96	580	37	2.4	38	21	ND
<u>MW-2</u>						
12-15-94	5,800	140	88	180	830	
3-17-95	2,000	140	11	94	120	
6-22-95	800	57	8.5	47	58	
9-26-95	490	34	2.7	30	23	
9-23-96	330	23	0.69	32	12	18
<u>MW-3</u>						
12-15-94	2,200	49	16	80	320	
3-17-95	660	26	2.9	43	69	
6-22-95	750	29	2.1	58	32	
9-26-95	280	6.3	0.52	12	7.0	
9-23-96	340	3.6	0.69	9.1	16	29

Note: Concentrations in parts per billion (ug/l).  
 Total Petroleum Hydrocarbons as gasoline.

### CONCLUSIONS

Although concentrations of gasoline constituents remain above detection limits, the concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds continue to exhibit significant reductions following the remedial excavation action.

No further remedial action or site characterization is warranted or recommended.

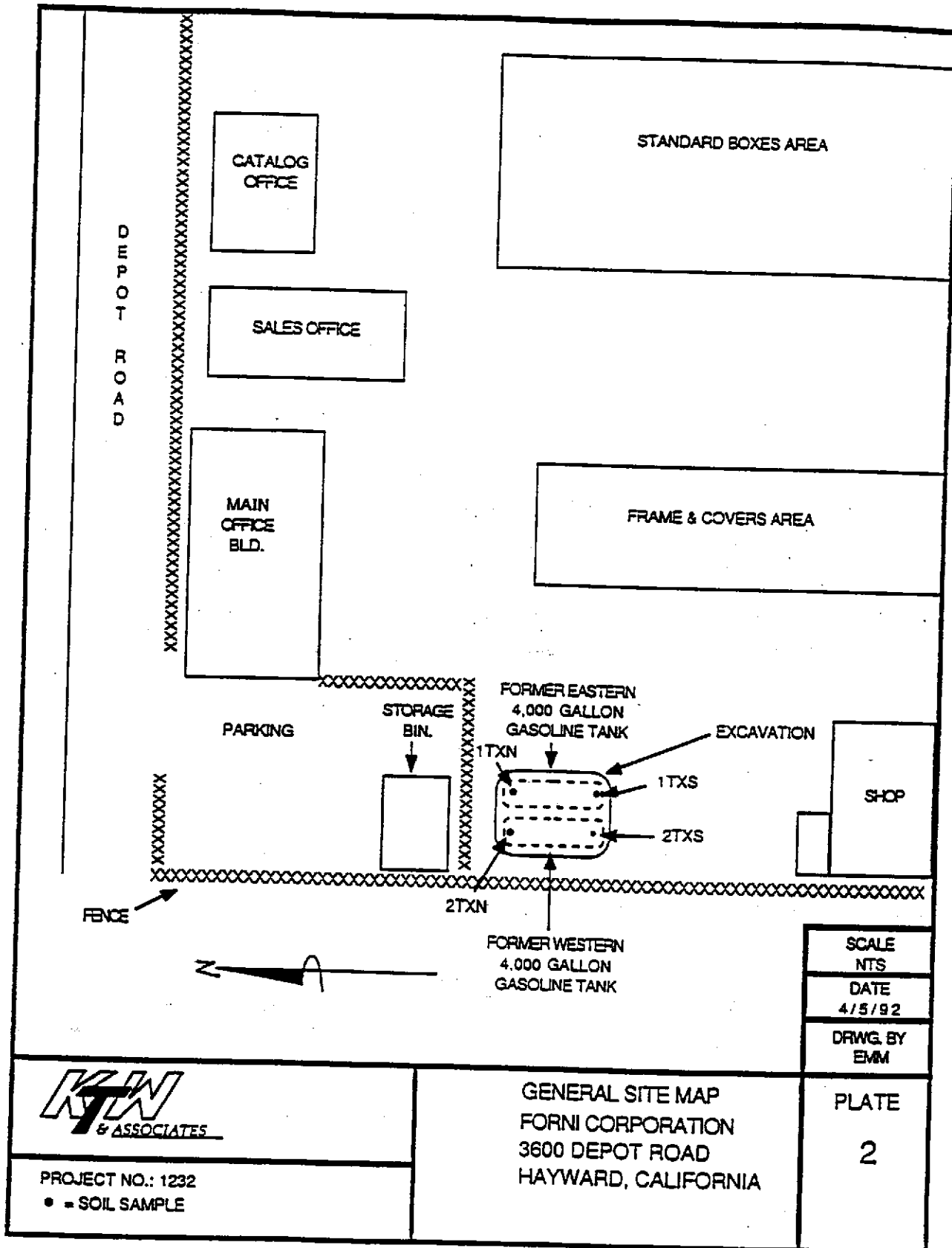
### LIMITATIONS

We have only observed a small portion of the pertinent soil and ground water conditions present at the site. Subsurface conditions across the site have been extrapolated from information obtained from review of existing documents and from the field investigation. The conclusions made herein are based on the assumption that soil conditions do not deviate appreciably from those described in the reports and observed during the field investigation.

Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

No attempt was made to verify the accuracy of the published information prepared by others used in preparation of this assessment report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.



SCALE	NTS
DATE	4/5/92
DRWG. BY	EMM

**KTW**  
 & ASSOCIATES

PROJECT NO.: 1232  
 ● = SOIL SAMPLE

GENERAL SITE MAP  
 FORNI CORPORATION  
 3600 DEPOT ROAD  
 HAYWARD, CALIFORNIA

PLATE  
 2

SOURCE: KTW & ASSOCIATES CLOSURE REPORT

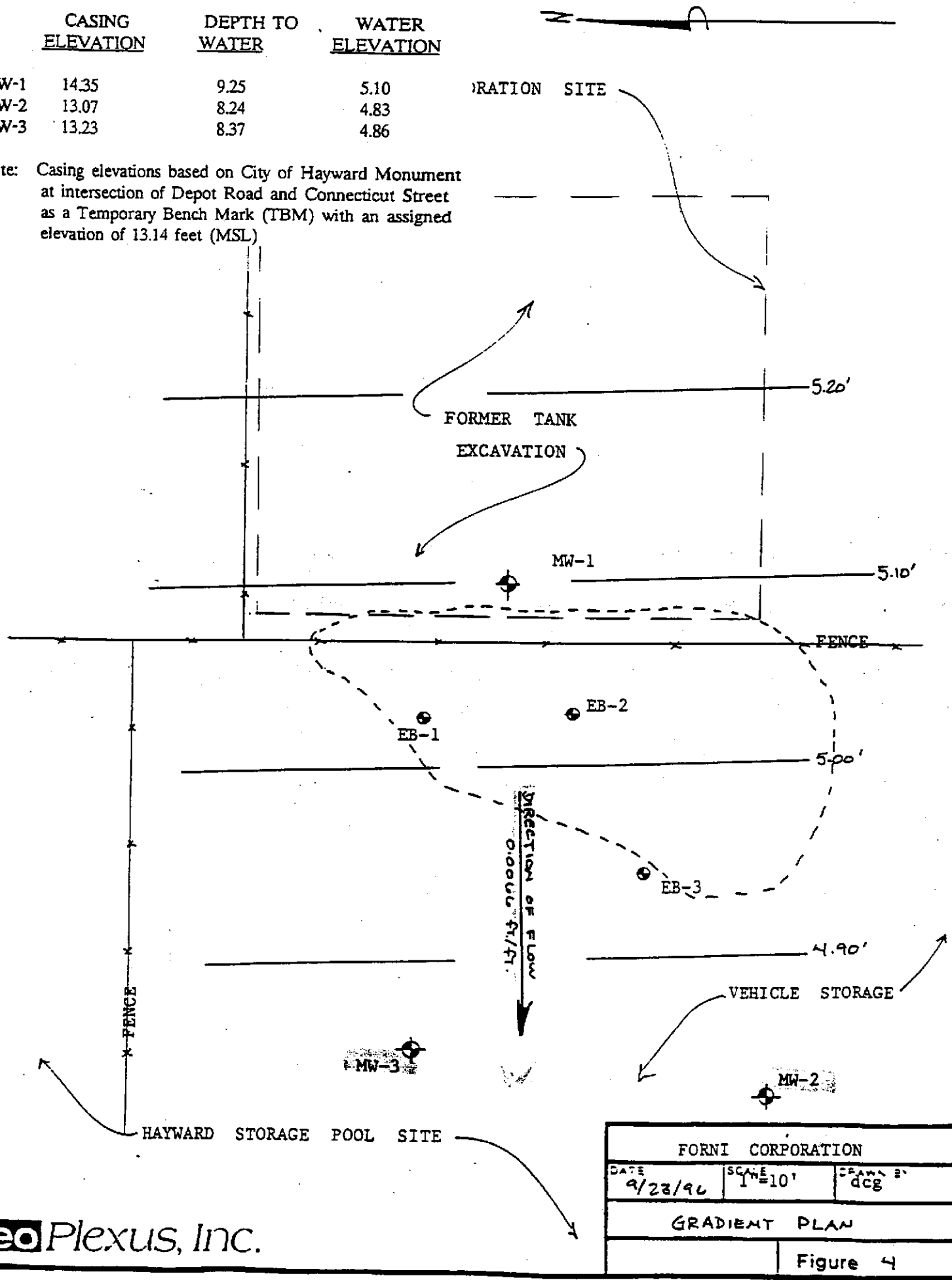
FORNI CORPORATION		
DATE	SCALE	DRAWN BY
2/10/93	n/a	
FORMER TANK LOCATION PLAN		
		Figure 2



GROUND WATER DATA SEPTEMBER, 1996

	CASING ELEVATION	DEPTH TO WATER	WATER ELEVATION
MW-1	14.35	9.25	5.10
MW-2	13.07	8.24	4.83
MW-3	13.23	8.37	4.86

Note: Casing elevations based on City of Hayward Monument at intersection of Depot Road and Connecticut Street as a Temporary Bench Mark (TBM) with an assigned elevation of 13.14 feet (MSL)



7260A6P289

PROJECT NUMBER		PROJECT NAME						Type of Analysis								Condition of Samples	Initial
194053		FORMI															
Send Report Attention of:				Report Due		Verbal Due		Number of Cntrs	Type of Containers								
DAVID GLICK				/ /		/ /											
Sample Number	Date	Time	Comp	Grab	Station Location												
MW1 - WSLAB	9/23/96	1435		/	MON well 1	2nd	Acidified 40ml VOA	T Phg / 574 / 1078								69405	
MW2 - WSLAB		1400		/	MON well 2											69406	
MW3 - WSLAB		1330		/	MON well 3											69407	
Relinquished by: (Signature) <i>[Signature]</i> Date/Time 9/24/96 9:00 Received by: (Signature) <i>[Signature]</i> Date/Time 9/24/96 9:26												Remarks: STANDARD TURNAROUND  ICEP <input checked="" type="checkbox"/> GOOD CONDITION <input checked="" type="checkbox"/> PRESERVATIVE <input checked="" type="checkbox"/> IN 45 SPACE ABSENT <input checked="" type="checkbox"/> APPROPRIATE CONTAINERS <input checked="" type="checkbox"/>					
Relinquished by: (Signature) <i>[Signature]</i> Date/Time 9/24/96 12:00 Received by: (Signature) <i>[Signature]</i> Date/Time 9/24/96 12:00																	
Relinquished by: (Signature) _____ Date/Time _____ Received by: (Signature) _____ Date/Time _____																	



## RBCA TIER 1 EVALUATION REPORT

for

FORMER FORNI CORPORATION SITE

3600 DEPOT ROAD

HAYWARD, CALIFORNIA

prepared for

Law Offices of Barry M. Gallagher  
One Kaiser Plaza, Suite 2450  
Oakland, California 94612

November 15, 1996

Project C94053

**TABLE 1**

**SUMMARY OF GROUND WATER ANALYTICAL TEST DATA**

Sample	TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes
<b>MW-1</b> 12-15-94	870	43	4.1	27	74
3-17-95	710	43	2.7	33	40
6-22-95	480	28	1.4	15	22
9-26-95	760	51	2.4	47	32
9-23-96	580	37	2.4	38	21
<b>MW-2</b> 12-15-94	5800	140	88	180	830
3-17-95	2000	140	11	94	120
6-22-95	800	57	8.5	47	58
9-26-95	490	34	2.7	30	23
9-23-96	330	23	0.69	32	12
<b>MW-3</b> 12-15-94	2200	49	16	80	320
3-17-95	600	26	2.9	43	69
6-22-95	750	29	2.1	58	32
9-26-95	280	6.3	0.52	12	7.0
9-23-96	340	3.6	0.69	9.1	16

Note: Concentrations in parts per billion (ug/l).  
 TPH - Total Petroleum Hydrocarbons as gasoline.

The concentrations of Benzene (limiting constituent) in the soil samples collected from the remedial excavation ranged from non-detect to a maximum of 0.060 ppm. As such, the soil conditions are significantly below the critical RBSL's.

Similarly, the ground water data indicates that the current concentrations of Benzene in the water range from 0.0036 to 0.037 ppm which again are significantly below the critical RBSL's for gas generation/migration and for ground water ingestion. To date, the highest concentration of Benzene recorded is 0.140 ppm (December, 1994 and March, 1995) which was observed immediately following the remedial excavation action is below the critical RBSL's for ground water.

### CONCLUSIONS

Although concentrations of gasoline constituents remain above detection limits in both the soil and ground water, the concentrations of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (BTEX) in the ground water continue to exhibit significant reductions following the remedial excavation action.

No further remedial action or site characterization is warranted or recommended.

Based on the results of the analytical testing, and the ASTM RBCA Tier-1 Evaluation, the soil and ground water conditions are significantly below all RBSL threshold limit concentrations for all exposure pathways.

It is our opinion that the project site does not represent an environmental risk to the local or regional ground water conditions and it is recommended that the site be considered for closure without further action as a low-risk case.

It is also recommended that upon issuance of the closure notification from Alameda County Department of Environmental Health and the Regional Water Quality Control Board that the existing ground water monitoring wells be destroyed in accordance with Alameda County and State of California well abandonment guidelines.

### LIMITATIONS

We have only observed a small portion of the pertinent soil conditions present at the site. Subsurface conditions across the site have been extrapolated from information obtained from review of existing documents, field investigations, and excavation observations. The conclusions made herein are based on the assumption that soil conditions do not deviate appreciably from those described in the reports and observed in the field. No attempt was made to verify the accuracy of the information prepared/provided by others used in preparation of this assessment report.

Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

The findings and conclusions presented in this report are based on a preliminary field reconnaissance, a review of previous site investigation reports, on data obtained from the literature research, and on information derived from the subsurface investigation and analytical testing. This assessment did not include an inspection/evaluation for the presence of asbestos products and/or radon gas, or other organic/inorganic compounds not tested for.

This report provides neither certification nor guarantee that the property is free of hazardous substance contamination.

This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The personnel performing this assessment are qualified to perform such investigations. No warranty, expressed or implied, is made as to the findings, conclusions and recommendations included in the report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.

Geo Plexus, Incorporated

## REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

### Representative COC Concentration

CONSTITUENT	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	3.7E-2		1.0E-3		6.0E-2	
Ethylbenzene	3.8E-2		1.0E-3		1.2E-1	
Toluene	2.4E-3		1.0E-3		2.6E-2	
Xylene (mixed isomers)	2.1E-2		1.0E-3		3.5E-1	

Site Name: ~~RBCA~~

Site Location: Depot Road, Hayward

Completed By: David Glick

Date Completed: 11/8/1996



**GROUNDWATER DAF VALUES**

(Enter DAF values in the grey area of the following table)

Dilution Attenuation Factor

(DAF) in Groundwater

CONSTITUENT	Residential	Comm./Ind.
	Receptor	Receptor
Benzene	1.0E+0	1.0E+0
Ethylbenzene	1.0E+0	1.0E+0
Toluene	1.0E+0	1.0E+0
Xylene (mixed isomers)	1.0E+0	1.0E+0

Site Name: FORNI

Site Location: Depot Road, Hayward

Completed By: David Glick

Date Completed: 11/8/1996

RBCA CHEMICAL DATABASE

Miscellaneous Chemical Data

CAS Number	Constituent	Maximum Contaminant Level		Permissible Exposure Limit PEL/TLV (mg/m3)	ref	Relative Absorption Factors		Detection Limits			Half Life (First-Order Decay) (days)		ref	
		MCL (mg/L)	reference			Oral	Dermal	Groundwater (mg/L)	Soil (mg/kg)	Saturated	Unsaturated			
71-43-2	Benzene	5.00E-03	52 FR 25690	3.20E+00	OSHA	1	0.5	0.002	C	0.005	S	720	720	H
100-41-4	Ethylbenzene	7.00E-01	6 FR 3526 (30 Jan 91)	4.34E+02	ACGIH	1	0.5	0.002	C	0.005	S	228	228	H
108-88-3	Toluene	1.00E+00	6 FR 3526 (30 Jan 91)	1.47E+02	ACGIH	1	0.5	0.002	C	0.005	S	28	28	H
1330-20-7	Xylene (mixed isomers)	1.00E+01	6 FR 3526 (30 Jan 91)	4.34E+02	ACGIH	1	0.5	0.005	C	0.005	S	360	360	H

Site Name: FORNI

Site Location: Depot Road, Hayward

Completed By: David Glick

Date Completed: 11/8/1996

Software version: v 1.0

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RBCA SITE ASSESSMENT

Tier 1 Worksheet 8.1

Site Name: FORNI

Site Location: Depot Road, Hayward

Completed By: David Glick

Date Completed: 11/8/1996

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TIER 1 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

GROUNDWATER EXPOSURE PATHWAYS

(CHECKED IF PATHWAY IS ACTIVE)

SOL: LEACHING TO GROUNDWATER  
INGESTION

Exposure Concentration

1) Source Medium

2) NAF Value (L/kg)  
Receptor

3) Exposure Medium (mg/L)  
Groundwater (1)(2)

4) Exposure Multiplier  
(IRxEFxED)(BWxAT) (L/kg-day)

5) Average Daily Intake Rate  
(mg/kg-day)

Constituents of Concern

Benzene  
Ethylbenzene  
Toluene  
Xylene (mixed isomers)

Soil Concentration (mg/kg)

6.0E-2  
1.2E-1  
2.6E-2  
3.5E-1

On-Site Commercial

5.9E+0  
1.3E+1  
1.8E+1  
3.0E+1

On-Site Commercial

1.0E-2  
9.2E-3  
1.5E-3  
1.1E-2

On-Site Commercial

3.5E-3  
9.8E-3  
9.8E-3  
9.8E-3

On-Site Commercial

3.6E-5  
9.0E-5  
1.4E-5  
1.1E-4

NOTE: AT = Averaging time (days)

BW = Body Weight (kg)  
CF = Units conversion factor  
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)  
IR = Intake rate (L/day)

POE = Point of exposure



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RBCA SITE ASSESSMENT

Tier 1 Worksheet 8.1

Site Name: FORNI

Site Location: Depot Road, Hayward

Completed By: David Glick

Date Completed: 11/8/1996

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TIER 1 EXPOSURE CONCENTRATION AND INTAKE CALCULATION

(CHECKED IF PATHWAY IS ACTIVE)

GROUNDWATER EXPOSURE PATHWAYS

GROUNDWATER: GNESTON

Exposure Concentration

1) Source Medium

2) NAF Value (dirm)

Receptor

3) Exposure Medium

Groundwater: POE Conc. (mg/L) (1)/(2)

4) Exposure Multiplier

(IRxEFxED)/(BWxAT) (L/kg-day)

5) Average Daily Intake Rate

(mg/kg-day)

MAX. PATHWAY INTAKE (mg/kg-day)

(Maximum intake of active pathways  
soil leaching & groundwater routes.)

Constituents of Concern	Groundwater Concentration (mg/L)
Benzene	3.7E-2
Ethylbenzene	3.8E-2
Toluene	2.4E-3
Xylene (mixed isomers)	2.1E-2

On-Site Commercial
3.6E-5
9.0E-5
1.4E-5
1.1E-4

NOTE: AT = Averaging time (days)

BW = Body Weight (kg)  
CF = Units conversion factor  
ED = Exp. duration (yrs)

EF = Exposure frequency (days/yr)  
IR = Intake rate (L/day or mg/day)

POE = Point of exposure

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Version: v 1.0

**RBCA SITE ASSESSMENT**

Tier 1 Worksheet 8.2

Site Name: FORNI

Site Location: Depol Road, Hayward

Completed By: David Glick

Date Completed: 11/8/1996

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**TIER 1 PATHWAY RISK CALCULATION**

**GROUNDWATER EXPOSURE PATHWAYS**

■ (CHECKED IF PATHWAYS ARE ACTIVE)

	(1) EPA Carcinogenic Classification	CARCINOGENIC RISK			TOXIC EFFECTS			
		(2) Total Carcinogenic Intake Rate (mg/kg/day)	(3) Oral Slope Factor	(4) Individual COC Risk (2) x (3)	(5) Total Toxicant Intake Rate (mg/kg/day)	(6) Oral Reference Dose	(7) Individual COC Hazard Quotient (5) / (6)	
Constituents of Concern		On-Site Commercial		On-Site Commercial	On-Site Commercial		On-Site Commercial	
Benzene	A	3.6E-5	(mg/kg-day) <sup>-1</sup> 2.9E-2	1.0E-6				
Ethylbenzene	D				9.0E-5	1.0E-1	9.0E-4	
Toluene	D				1.4E-5	2.0E-1	7.2E-5	
Xylene (mixed isomers)	D				1.1E-4	2.0E+0	5.6E-5	
<b>Total Pathway Carcinogenic Risk =</b>				<b>1.0E-6</b>	<b>0.0E+0</b>	<b>Total Pathway Hazard Index =</b>	<b>1.0E-3</b>	<b>0.0E+0</b>

**RBCA SITE ASSESSMENT**

Site Name: FORNI  
 Site Location: Depot Road, Hayward

Completed By: David Glick  
 Date Completed: 11/8/1996

**TIER 1 BASELINE RISK SUMMARY TABLE**

**BASELINE CARCINOGENIC RISK**

**BASELINE TOXIC EFFECTS**

EXPOSURE PATHWAY	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
<b>AIR EXPOSURE PATHWAYS</b>										
Complete:	1.9E-9	1.0E-4	1.9E-9	N/A	<input type="checkbox"/>	1.1E-4	1.0E+0	1.1E-4	N/A	<input type="checkbox"/>
<b>GROUNDWATER EXPOSURE PATHWAYS</b>										
Complete:	1.0E-6	1.0E-4	1.0E-6	N/A	<input type="checkbox"/>	9.0E-4	1.0E+0	1.0E-3	N/A	<input type="checkbox"/>
<b>SOIL EXPOSURE PATHWAYS</b>										
Complete:	3.0E-10	1.0E-4	3.0E-10	N/A	<input type="checkbox"/>	2.9E-7	1.0E+0	4.5E-7	N/A	<input type="checkbox"/>
<b>CRITICAL EXPOSURE PATHWAY (Select Maximum Values From Complete Pathways)</b>										
	1.0E-6	1.0E-4	1.0E-6	N/A	<input type="checkbox"/>	9.0E-4	1.0E+0	1.0E-3	N/A	<input type="checkbox"/>

Site Name: FORNI  
 Site Location: Depot Road, Hayward

**RBCA SITE ASSESSMENT**

Completed By: David Gilck  
 Date Completed: 11/8/1996

Tier 1 Worksheet 6.3

**GROUNDWATER RBSL VALUES**

Target Risk (Class A & B) 1.0E-4  
 Target Risk (Class C) 1.0E-4  
 Target Hazard Quotient 1.0E+0

MCL exposure limit?  
 PEL exposure limit?

Calculation Option: 1

**RBSL Results For Complete Exposure Pathways ("x" if Complete)**

CONSTITUENTS OF CONCERN		Representative Concentration (mg/L)	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable RBSL (mg/L)	RBSL Exceeded?	Required CRF
CAS No.	Name		Residential (on-site)	Commercial (on-site)	Regulatory(MCL) (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial (on-site)			
71-43-2	Benzene	3.7E-2	NA	9.9E-1	NA	NA	1.6E+0	NA	4.6E+2	9.9E-1	<input type="checkbox"/>	<1
100-41-4	Ethylbenzene	3.8E-2	NA	1.0E+1	NA	NA	>Sol	NA	>Sol	1.0E+1	<input type="checkbox"/>	<1
108-88-3	Toluene	2.4E-3	NA	2.0E+1	NA	NA	1.1E+2	NA	>Sol	2.0E+1	<input type="checkbox"/>	<1
1330-20-7	Xylene (mixed isomers)	2.1E-2	NA	>Sol	NA	NA	>Sol	NA	>Sol	>Sol	<input type="checkbox"/>	<1

Ms. Amy Leech  
Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, CA 94502

97 MAR -6 PM 4: 28

**Subject: Response to Comments on RBCA Tier 1 Evaluation Report and Site Closure Recommendations for former FORNI Corporation Site, 3600 Depot Road, Hayward, California**

Dear Ms. Leech:

In response to comments received from your office on the subject report, we have prepared this Letter Report to present our reply along with the additional analysis requested and to address the absence of domestic or commercial/industrial water supply wells on the subject property and adjacent properties.

The subject Report included a Risk Based Corrective Action (RBCA) Tier 1 Evaluation performed for the subject site in accordance with the procedures presented in ASTM E 1739-95 to achieve case closure through Alameda County and Regional Water Quality Control Board as a "low-risk" soils case. This analysis was performed using a commercially available, automated process known as "Tier 2 RBCA Tool Kit" published by Groundwater Services, Inc. The following conditions and assumptions were used to assess the project site:

- (1) the project site is a commercial/industrial land use site;
- (2) there are no existing or planned structures for the project area;
- (3) there is no potential that the site will be developed for residential use;
- (4) the project site and adjoining site will remain un-paved and continue to be used for vehicle/equipment storage;
- (5) there is low to very low daily personnel occupancy of the project area;
- (6) ground water is at a depth of 7- to 8-feet below the ground surface; and
- (7) ground water is brackish and is not an existing or potential drinking water source.

Based on the above factors, use of a cancer risk of  $1 \times 10^{-4}$  as outlined in the ASTM-RBCA document was considered to be conservative and applicable for the development of petroleum related evaluation levels for the project site. The risk-based analysis required establishing Tier-1 Evaluation Risk-Based Screening Levels (RBSL) for contaminants of concern.

The data analysis indicated that the critical exposure pathways include: soil gas generation/migration to indoor air, soil gas generation/migration to outdoor air, contaminant leaching to ground water, and ground water ingestion. The RBSL values for the other exposure pathways evaluated exceeded these RBSL's. It is again noted that the project site is zoned commercial/industrial and used for vehicle/equipment storage. There are no existing or planned structures at the project site and the development of the site for residential use is not feasible.



As requested, additional analysis was performed to present  $1 \times 10^{-5}$  and  $1 \times 10^{-6}$  commercial risk levels and  $1 \times 10^{-4}$ ,  $1 \times 10^{-5}$ , and  $1 \times 10^{-6}$  residential risk levels (included as Appendix A). Again, Benzene was the controlling constituent and the critical exposure pathways include: soil gas generation/migration to indoor air, contaminant leaching to ground water, and ground water ingestion.

Table 1 presents the ASTM-RBCA RBSL's for Benzene in soil and ground water for critical exposure pathways and at various commercial and residential risk levels:

**TABLE 1**  
**ASTM RBCA TIER 1 DATA**  
**FOR BENZENE**

	Representative Benzene Concentrations in Soil		Representative Benzene Concentrations in Ground Water	
Maximum Concentration	0.06 ppm	0.06 ppm	0.037 ppm	0.037 ppm
<b>RBCA TIER 1 RBSL's FOR BENZENE</b>				
Exposure Level	Soil Leaching to Protect Ground Water	Gas Migration to Buildings from Soil	Ground Water Ingestion	Gas Migration to Buildings from Ground Water
Commercial $1 \times 10^{-4}$	1.68 ppm	0.38 ppm	0.29 ppm	0.464 ppm
Commercial $1 \times 10^{-5}$	0.17 ppm	0.21 ppm	0.03 ppm	0.26 ppm
Commercial $1 \times 10^{-6}$	0.02 ppm	0.02 ppm	0.003 ppm	0.03 ppm
Residential $1 \times 10^{-4}$	0.49 ppm	0.17 ppm	0.07 ppm	0.18 ppm
Residential $1 \times 10^{-5}$	0.05 ppm	0.08 ppm	0.01 ppm	0.08 ppm
Residential $1 \times 10^{-6}$	0.01 ppm	0.01 ppm	0.0008 ppm	0.008

Note: Benzene value reduced by 0.29 factor in accordance with RWQCB Guidelines.

As indicated on Table 1, the concentrations of Benzene in the soil and ground water at the site are less than the  $1 \times 10^{-4}$  RBSL's for both commercial and residential exposure pathways.

The concentration of Benzene in the soil is between the  $1 \times 10^{-5}$  and  $1 \times 10^{-6}$  commercial risk levels for soil leaching potential and gas migration into buildings from pathways. Similarly, the concentration of Benzene in the soil is between the  $1 \times 10^{-4}$  and  $1 \times 10^{-5}$  residential risk levels for soil leaching potential and between the  $1 \times 10^{-5}$  and  $1 \times 10^{-6}$  for the gas migration into buildings from pathways.

The concentration of Benzene in the ground water is at the  $1 \times 10^{-5}$  commercial risk level for ground water ingestion and is between  $1 \times 10^{-5}$  and  $1 \times 10^{-6}$  for the commercial risk levels for gas migration into buildings from ground water pathways. The concentration of Benzene in the water is between the  $1 \times 10^{-4}$  and  $1 \times 10^{-5}$  residential risk levels for ground water ingestion and is between the  $1 \times 10^{-5}$  and  $1 \times 10^{-6}$  for the residential risk levels for gas migration into buildings from ground water pathways.

It is noted that the shallow water table (7- to 20-foot depth) is brackish in nature, is of limited vertical extent, and is not considered to be a potable water supply. Furthermore, there are no known domestic or commercial wells, or impoundments where ground water could collect, on the subject or adjacent properties which could expose individuals to this shallow water. Therefore, although the concentrations are at the  $1 \times 10^{-5}$  commercial risk levels and between the  $1 \times 10^{-4}$  and  $1 \times 10^{-5}$  residential risk levels for ground water ingestion, there is a low to very low potential for exposure or contact with this ground water, further reducing the risk to the public from this pathway.

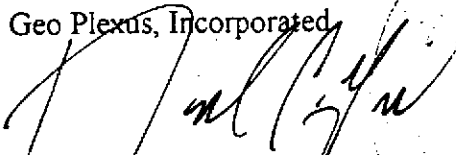
It remains our opinion that the project site does not represent an environmental risk to the local or regional ground water conditions and does not represent an environmental risk to personnel occupying the property (indoors or outdoors).

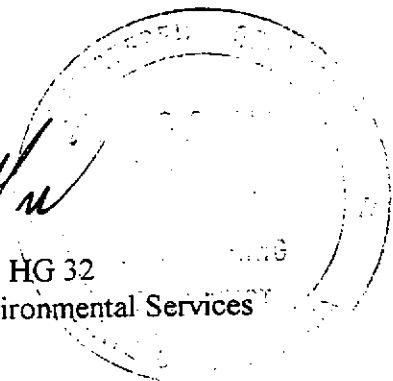
It remains our recommendation that the site be closure as a low-risk case without further action.

Questions or comments regarding this Letter Report or attached analysis should be addressed to the undersigned.

Respectfully submitted,

Geo Plexus, Incorporated

  
David C. Glick, CEG 1338, HG 32  
Director, Geologic and Environmental Services



cc: Mr. Barry Gallagher  
Law Offices of Barry M. Gallagher  
One Kaiser Plaza, Suite 2450  
Oakland, California 94612

Site Name: FORNI  
 Site Location: Depot Road, Hayward

**RBCA SITE ASSESSMENT**

Completed By: David Glick  
 Date Completed: 11/8/1996

Tier 1 Worksheet 6.3

1 OF 1

**GROUNDWATER RBSL VALUES**

Target Risk (Class A & B) 1.0E-6  
 Target Risk (Class C) 1.0E-6  
 Target Hazard Quotient 1.0E+0

MCL exposure limit?  
 PEL exposure limit?

Calculation Option: 1

RBSL Results For Complete Exposure Pathways ("x" if Complete)

**CONSTITUENTS OF CONCERN**

CAS No.	Name	Representative Concentration (mg/L)	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable RBSL (mg/L)	RBSL Exceeded ?	Required CRF
			Residential (on-site)	Commercial (on-site)	Regulatory (MCL) (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial (on-site)			
71-43-2	Benzene	3.7E-2	2.9E-3	NA	NA	2.9E-2	NA	1.5E+1	NA	2.9E-3	■	1.3E+01
100-41-4	Ethylbenzene	3.8E-2	3.7E+0	NA	NA	9.8E+1	NA	>Sol	NA	3.7E+0	□	<1
108-88-3	Toluene	2.4E-3	7.3E+0	NA	NA	4.1E+1	NA	>Sol	NA	7.3E+0	□	<1
1330-20-7	Xylene (mixed isomers)	2.1E-2	7.3E+1	NA	NA	>Sol	NA	>Sol	NA	7.3E+1	□	<1

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Software: GSI RBCA Spreadsheet  
 Version: v 1.0

Serial: g-265-vhx-686

Site Name: FORNI  
 Site Location: Depot Road, Hayward

**RBCA SITE ASSESSMENT**

Completed By: David Glick  
 Date Completed: 11/8/1996

**GROUNDWATER RBSL VALUES**

Target Risk (Class A & B) 1.0E-4  
 Target Risk (Class C) 1.0E-4  
 Target Hazard Quotient 1.0E+0

MCL exposure limit?  
 PEL exposure limit?

Calculation Option: 1

**RBSL Results For Complete Exposure Pathways ("X" If Complete)**

CONSTITUENTS OF CONCERN	Representative Concentration	RBSL Results For Complete Exposure Pathways ("X" If Complete)									Applicable RBSL	RBSL Exceeded?	Required CRF
		X	Groundwater Ingestion			X	Groundwater Volatilization to Indoor Air		X	Groundwater Volatilization to Outdoor Air			
CAS No. Name	(mg/L)	Residential (on-site)	Commercial (on-site)	Regulatory(MCL): (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial (on-site)	Residential (on-site)	Commercial (on-site)	(mg/L)	* If yes	Only if "yes" left
71-43-2 Benzene	3.7E-2	NA	9.9E-1	NA	NA	1.6E+0	NA	4.6E+2	NA	4.6E+2	9.9E-1	<input type="checkbox"/>	<1
100-41-4 Ethylbenzene	3.8E-2	NA	1.0E+1	NA	NA	>Sol	NA	>Sol	NA	>Sol	1.0E+1	<input type="checkbox"/>	<1
108-88-3 Toluene	2.4E-3	NA	2.0E+1	NA	NA	1.1E+2	NA	>Sol	NA	>Sol	2.0E+1	<input type="checkbox"/>	<1
1330-20-7 Xylene (mixed isomers)	2.1E-2	NA	>Sol	NA	NA	>Sol	NA	>Sol	NA	>Sol	>Sol	<input type="checkbox"/>	<1

# SITE CLOSURE SUMMARY

## I. AGENCY INFORMATION

Date: July 1, 1997

Agency Name: S.F.B.R.W.Q.C.B.	Address: 2101 Webster Street
City/State/Zip: Oakland, CA 94612	Phone: (510) 286-1255
Responsible Staff Person: Eddy So	Title: AWRCE

## II. SITE INFORMATION

GWFD=SW

Site Facility Name: <del>California Courier - Inc.</del>				
Site Facility Address: <del>1008 Mariposa Avenue</del>				
RB LUSTIS Case No.: Unknown	Local or LOP Case No.: None	Priority: N/A		
URF Filing Date: None on file	SWEEPS No.: N/A			
Responsible Parties (include addresses and phone numbers)				
California Courier, Inc.				
c/o Law Offices of Malcolm Leader-Picone				
1008 Mariposa Avenue				
Berkeley, CA 94707				
Tank No.	Size in Gallons	Contents	Closed In—Place/Removed?	Date
1	9,500	Gasoline (Unleaded)	Removed	3/7/88

## III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Unknown		
Site characterization complete? Yes	Date Approved By Oversight Agency: July 1, 1997	
Monitoring wells installed? Yes	Number: 5	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 3.87'	Lowest Depth: 4.2'	Direction: SW
Most Sensitive Current Use: Industrially Zoned.		
Most Sensitive Potential Use: Industrial and Probability of Use: Industrial		
Are drinking water wells affected? No	Aquifer Name: Unknown	
Is surface water affected? No	Nearest/Affected SW Name: None	
Off-Site Beneficial Use Impacts (Addresses/Locations): None		
Report(s) on file? Yes	Where is report(s) filed? City of Hayward Fire Department	

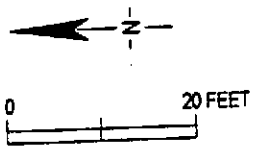
V. TECHNICAL REPORT CORRESPONDENCE ETC., THAT THIS ASSURE RECOMMENDATION WAS BASED UPON

Title:	Date:
"Work Plan form Monitoring Well Destruction and Installation at 23510 Bernhardt Street in Hayward, California" - Certified	11/9/92
"Draft Workplan to Monitor and Remediate Site at 23510 Bernhardt Street Hayward, California with a "Pump and Treat" Ground-water System"	1/28/93
"Monitoring Well Destruction, Installation and Sampling at 13510 Bernhardt Street, Hayward, California" - Certified	3/16/93
"23510 Bernhardt Street, haywaard, Califronia, Ground-Water Monitoring and Sampling, October 8, 1993" - Certified	11/3/93
"23510 Bernhardt Street, Hayward, California, Ground-water Monitoring and Sampling, March 22, 1994, following Additional Well Installation, March 10, 1994" - Certified	6/21/94
"Remedial Action Plan" - Burlington Environmental	8/29/94
Remedial Activities Report and Quarterly Monitoring Report - Philip Environmental	6/17/96
Quarterly Groundwater Monitoring Report - Philip Environmental	8/26/96
Post Remediation Monitoring Report - Philip Environmental	9/10/97
Summary of Findings from Post Remediation Ground-Water Sampling - Marfleet Environmental	9/13/96
Post Remediation Monitoring Report - November 1996 - Philip Environmental	1/15/97
Post Remediation Monitoring Report - February 1997 - Philip Environmental	3/18/97

VI. ADDITIONAL COMMENTS, DATA, ETC.

PLEASE INCLUDE/ATTACH THE FOLLOWING AS APPROPRIATE:

- 1) SITE MAP INDICATING TANK PIT LOCATION, MONITORING WELL LOCATION, GROUNDWATER GRADIENT, ETC. AND
- 2) SITE COMMENTS WORTHY OF NOTICE (E.G., AREA OF RESIDUAL POLLUTION LEFT IN PLACE, DEED NOTICES ETC.)



BUILDING  
(23510 Bernhardt St.)

FORMER  
UST  
(approx.)

PAVED DRIVEWAY  
AND PARKING

CMW-5

CMW-4

CMW-2

CMW-3

7.45  
7.40  
7.35  
7.30

Property line

BERNHARDT STREET

EXPLANATION

CMW-4

Monitoring well

7.45

Ground water elevation  
(feet above mean sea level)



SITE PLAN SHOWING GROUND-WATER ELEVATIONS (2/14/96)

23510 BERNHARDT STREET  
HAYWARD, CALIFORNIA

FIGURE  
2

PROJECT  
101-01.5

3744 Depot Rd, Hayward  
Hayward - Fire Dept

11/18  
K3210  
SERVING  
CITY

California Courier

~~23510 Rumboldt St.~~

3/18/97

" Post Remediation Monitoring  
Report - Feb 1997 "

BY: Phillip Environmental - Seattle, WA

⇒ "GW elev in the MW's beneath site on  
2/3/97 ranged from 6.89 to 7.38 feet  
above mean sea level."

⇒ Approximate ~~GW flow direction S-SW~~  
w/ gradient of ~ 0.023 feet/foot  
based on 2/97 Data.

⇒ Case Closed 8/01/97 [VISTA]

⇒ Analytica Data Also Included

6/21/94

" Ground Water Monitoring and Sampling,  
March 27, 1994, following Additional  
Well Installation, March 10, 1994 "

BY: Certified, Brisbane, CA

[Reference file # S30289 and S40049]

⇒ ~~GW Flow - 0.1/E~~



March 18, 1997  
CCI101/16417

Mr. Hugh Murphy  
Environmental Specialist  
City of Hayward Fire Department  
25151 Clawiter Road  
Hayward, CA 94545

**Subject: POST REMEDIATION MONITORING REPORT**  
**February 1997**  
23510 Bernhardt Street, Hayward, California

Dear Mr. Murphy:

Philip Environmental Services Corporation (Philip), is pleased to submit the following post remediation groundwater monitoring report on behalf of Michael Geiger, former president and shareholder of California Courier, Inc. (California Courier), for the facility located at 23510 Bernhardt Street in Hayward, California. The groundwater monitoring and sampling was conducted by Philip in February 1997.

## **BACKGROUND**

The site is located approximately one mile east of San Francisco Bay in the northwestern portion of Hayward, California (see Figure 1). Properties within one mile of the site are industrial, including several with documented petroleum hydrocarbon and chlorinated solvent releases.

The site was initially operated by Pearson Equipment Company. The site was purchased by California Courier for use as an office and warehouse facility. In 1985, well CMW-1 was installed adjacent to the western end of the gasoline underground storage tank to meet county requirements. In 1988 during removal of the gasoline underground storage tank (UST) for Pearson, a Hayward Fire Department inspector noted that the protective tar and fiberglass coating of the tank had deteriorated and a dark colored oily substance was floating on the groundwater in the excavation pit.

Following tank removal, soil samples collected from the western and eastern excavation sidewalls did not contain detectable concentrations of total petroleum hydrocarbons as gasoline (TPHg) or benzene, toluene and total xylenes (BTX), except for 5.8 parts per million (ppm) in a sample from the western side of the excavation pit. A groundwater sample from the excavation pit contained 46 ppm of TPHg and 2.3 to 9.3 ppm of BTX

constituents. The excavation pit which reached a depth of approximately 9 feet below ground surface was subsequently backfilled with sand and pea gravel and resurfaced.

In 1989, California Courier sold the property to ComTech of Hayward, California, a mobile telephone company. In 1991, ComTech vacated the premises and began leasing the property to Wagner Process Equipment, Inc (Wagner).

During sampling in September 1992, dark oily material from the top of the well casing was noted in well MW-1. The source of the oil is unknown, but may be attributed to dissolution of tar used to protect the tank or introduction of oil to well MW-1. In November 1992, well MW-1 was overdrilled and well CMW-1 was installed in the borehole and wells CMW-2 and CMW-3 were installed southwest and west of the former gasoline tank location, respectively (see Figure 2). Wells CMW-4 and CMW-5 were subsequently installed south and east of the former gasoline tank location, respectively.

Results of groundwater monitoring in March 1994 indicate that the highest concentrations of TPHg and benzene, toluene, ethylbenzene and total xylenes (BTEX) were located near the western end of the former gasoline tank location. In March 1994, well CMW-1 contained 19,000 micrograms per liter ( $\mu\text{g/L}$ ) of TPHg, 2,000  $\mu\text{g/L}$  of benzene, 610  $\mu\text{g/L}$  of toluene, 1,200  $\mu\text{g/L}$  of ethylbenzene and 3,700  $\mu\text{g/L}$  of total xylenes. In March 1994, wells CMW-2, CMW-3, CMW-4 and CMW-5 contained less than 250  $\mu\text{g/L}$  of TPHg and less than 1  $\mu\text{g/L}$  of benzene and did not contain detectable concentrations of toluene, ethylbenzene and total xylenes (see Table 1).

On September 30, 1994, well CMW-1 was overdrilled and sealed to the surface in preparation for Philip's remedial activities.

In October 1994 Philip was contracted to perform pre-remediation investigation activities which were followed by remedial activities in June 1995. Site activities were designed to remove the source of petroleum hydrocarbon impact detected near the former UST. During the pre-remediation investigation the extent of soil impact by gasoline or oil related petroleum hydrocarbons was defined.

During remedial activities, approximately 400 tons of soil were excavated and transported offsite for disposal/recycling. Petroleum hydrocarbon impacted soil was present at depths of 3 to 5 feet below the first-encountered groundwater which is unusual due to their lower density relative to water. Petroleum hydrocarbons were removed to below 1.0 milligrams per kilogram of total volatile organic compounds. Approximately 10 to 20 gallons of phase-separated hydrocarbons (PSH) and 50,000 gallons of fluids were extracted from the excavation pit.

Monitoring of the groundwater was conducted at the request of the Hayward Fire Department to insure that petroleum contaminates have been remediated from the soil.

## MONITORING ACTIVITIES

An initial post remediation monitoring event was performed on the site on July 24, 1995, immediately following the 1995 remedial activities. These findings were submitted in a report dated June 14, 1996. The subsequent post remediation monitoring events were completed on June 11 and September 10, 1996. Findings were submitted in reports dated September 10, 1996 and January 15, 1997, respectively.

The fourth post remediation monitoring event was conducted on February 3, 1997. In each well, the depth to groundwater and the presence or absence of PSH were determined. Groundwater samples were collected and analyzed to determine the concentrations of TPHg, total petroleum hydrocarbons as diesel (TPHd) and total petroleum hydrocarbons as motor oil (TPHo) using U.S. Environmental Protection Agency (EPA) Method modified 8015 as well as BTEX using EPA Method 8020/602.

Groundwater samples were collected and analyzed in accordance with EPA guidelines. The monitoring and sampling procedures are presented in Appendix A. Field data sheets are presented in Appendix B. Western Environmental Science & Technology, located in Davis, California, performed the analysis. The analytical results and detection limits are presented in Table 1.

## RESULTS

~~The groundwater elevation in the monitoring wells beneath the site on February 3, 1997, ranged from 6.89 to 7.38 feet above mean sea level (see Table 2). A contour map of these data is presented in Figure 3. The approximate groundwater flow direction based on the February 1997 data is to the south/southwest with an approximate hydraulic gradient of 0.07 feet/foot. This is consistent with data obtained during the previous monitoring events.~~

No PSH were detected in any of the groundwater monitoring wells. Concentrations of TPHg were found in all four groundwater samples at 110 µg/L, 530 µg/L, 460 µg/L and 110 µg/L in monitoring wells CMW-2, CMW-3, CMW-4 and CMW-5, respectively. TPHd was found at a concentration of 63 µg/L in well CMW-5. TPHo was detected at concentrations of 110 µg/L in well CMW-2 and 140 µg/L in well CMW-5. Benzene was also detected in the groundwater samples from wells CMW-2 and CMW-3 at concentrations of 0.94 µg/L and 0.88 µg/L, respectively. No other constituents analyzed for were detected in any of the groundwater samples (see Table 1).

Chain-of-custody documentation and certified analytical results are presented in Appendix C. Purge and rinse water was stored on the site in 55-gallon drums. The drums were labeled by the field sampling technician. Purge and rinse water disposal will be arranged in the future.

Mr. Hugh Murphy  
March 18, 1997  
Page 4

## CONCLUSIONS

As discussed above, significant investigation and remediation activities have been conducted at the site in connection with the former gasoline UST. Remediation activities included removing the UST in 1988 and subsequently excavating approximately 400 tons of soil and pumping approximately 50,000 gallons of groundwater.

The results of the fourth post remediation groundwater sampling indicate that the TPHg, TPHd, TPHo and BTEX concentrations in groundwater remain at low concentrations or below detection levels following the completion of remediation activities at the site. TPHg concentrations continue to fluctuate within the range between 100 µg/L and 600 µg/L (during the fourth post remediation sampling event two wells showed a decrease in TPHg concentrations and two wells showed an increase in TPHg concentrations). TPHd, which had been detected in three of the four wells for the first time during the previous monitoring event, was only identified in CMW-5 and the concentration had decreased. TPHo, which had been identified in CMW-4 and CMW-5 for the first time during the previous monitoring event, decreased in CMW-5, was not identified above detection levels in CMW-4 and was detected for the first time in CMW-2 at 110 µg/L. Benzene was again detected in two of the four wells; the benzene concentration remained unchanged in CMW-3 and decreased in CMW-2. Benzene concentrations in both wells are now less than 1 µg/L. Concentrations of toluene, ethylbenzene and xylenes remain below detection levels in all four wells. The concentrations of TPH and BTEX should continue to decrease over time due to natural biodegradation.

On the basis of this data, we request that the site be considered for closure and that no further action be required.

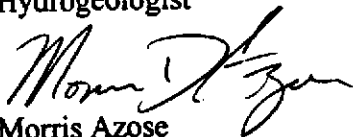
Please feel free to contact us if we can provide further assistance.

Sincerely,

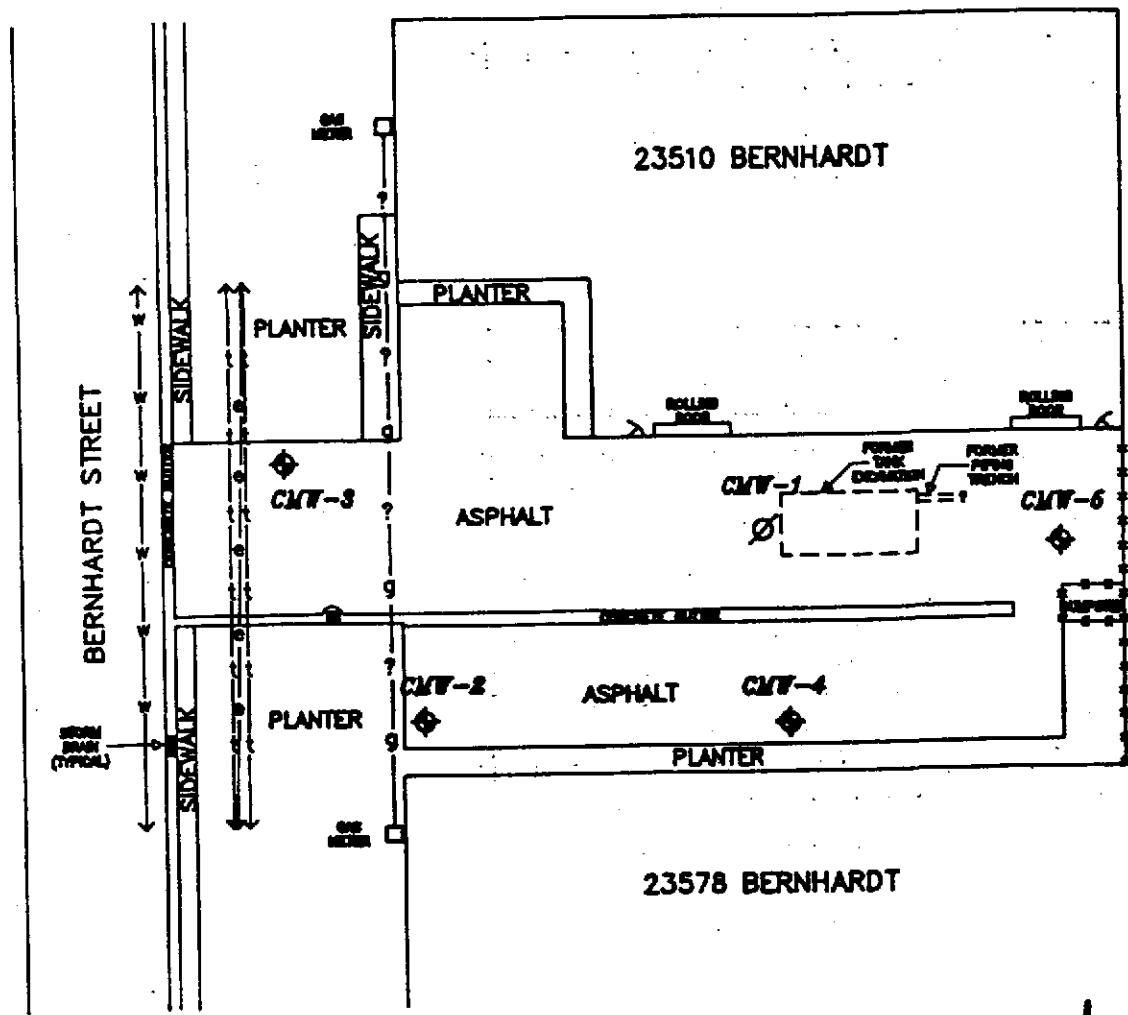
**PHILIP ENVIRONMENTAL SERVICES CORPORATION**









David Broten  
Hydrogeologist

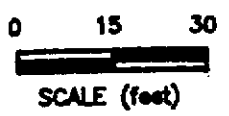


Morris Azose  
Department Manager, Consulting and Remediation Services



**EXPLANATION**

- 
**CMW-3**  
 GROUNDWATER MONITORING WELL
- 
**CMW-1**  
 ABANDONED GROUNDWATER MONITORING WELL
- 
 WATER LINE
- 
 TELEPHONE LINE
- 
 ELECTRICAL LINE
- 
 POTENTIAL GAS LINE



**SITE PLAN**  
 23510 Bernhardt Street  
 Hayward, California

Reviewed By :

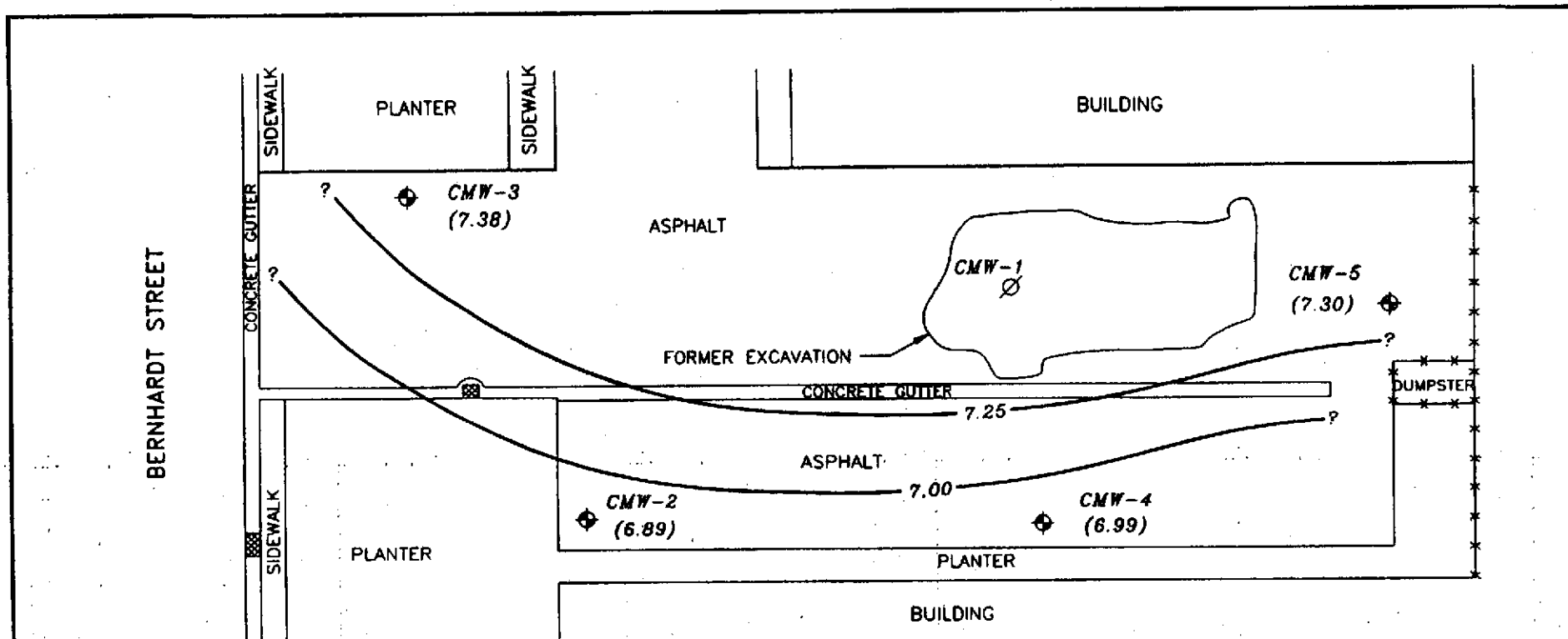
Date :

**Figure 2**

Project No. 12821

Drawn By SBW Date 10/6/94

Drawing No. ACC0103



**EXPLANATION**

- CMW-3**  
 GROUNDWATER MONITORING WELL
- CMW-1**  
 ABANDONED GROUNDWATER MONITORING WELL
- STORM DRAIN

(6.89)  
 GROUNDWATER ELEVATION  
 IN FEET ABOVE MEAN SEA  
 LEVEL, MEASURED ON  
 FEBRUARY 3, 1997

— 7.25 —  
 APPROXIMATE GROUNDWATER  
 ELEVATION CONTOUR

0 10 20



SCALE (feet)



First Quarter 1997

**PHILIP**  
**ENVIRONMENTAL**

**GROUNDWATER ELEVATION  
 CONTOUR MAP**  
 Former California Courier, Inc.  
 23510 Bernhardt Street  
 Hayward, California

**Figure 3**

Project No. 16417

Drawn By SBW Date 2/25/97

Drawing No. ACCI0113

Reviewed By :

Date :

**Table 1  
GROUNDWATER ANALYTICAL DATA**

Former California Courier, Inc.  
Hayward, California

Monitoring Well No.	Date Sampled	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
EPA Analytical Method:		8015m	8015m	8015m	602	602	602	602	602
CMW-2	12/4/92	<b>800</b> *	-	-	ND	ND	ND	ND	-
	3/22/94	<b>230</b> *	-	-	<b>0.56</b>	ND(<0.5)	ND(<0.5)	ND(<0.5)	-
	7/24/95	<b>730</b> *	ND(<50)	ND(<100)	<b>1.3</b>	ND(<0.30)	ND(<0.30)	ND(<0.50)	-
	6/11/96	<b>140</b> *	ND(<50)	ND(<100)	<b>1.1</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	-
	11/5/96	<b>240</b> *	<b>83</b>	ND(<100)	<b>1.3</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
	2/3/97	<b>110</b> *	ND(<50)	<b>110</b>	<b>0.94</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
CMW-3	12/4/92	<b>660</b> *	-	-	ND	ND	ND	ND	-
	3/22/94	<b>220</b> *	-	-	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)	-
	7/24/95	<b>780</b> *	ND(<50)	ND(<100)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	-
	7/24/95 D	<b>800</b> *	ND(<50)	ND(<100)	<b>0.48</b>	ND(<0.30)	ND(<0.30)	ND(<0.50)	-
	6/11/96	<b>140</b> *	ND(<50)	ND(<100)	<b>1.2</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	-
	11/5/96	<b>360</b> *	ND(<50)	ND(<100)	<b>0.88</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
	2/3/97	<b>530</b> *	ND(<50)	ND(<100)	<b>0.88</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
CMW-4	3/22/94	<b>200</b> *	-	-	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)	-
	7/24/95	<b>340</b> *	ND(<50)	ND(<100)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	-
	6/11/96	<b>130</b> *	ND(<50)	ND(<100)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	-
	11/5/96	<b>200</b> *	<b>700</b>	<b>770</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
	2/3/97	<b>460</b> *	ND(<50)	ND(<100)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
CMW-5	3/22/94	<b>130</b> *	-	-	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)	-
	7/24/95	<b>210</b> *	ND(<50)	ND(<100)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	-
	6/11/96	<b>80</b> *	ND(<50)	ND(<100)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	-
	11/5/96	<b>170</b> *	<b>170</b>	<b>160</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)
	2/3/97	<b>110</b> *	<b>63</b>	<b>140</b>	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5.0)

**DRINKING WATER STANDARDS:**

California Primary

Maximum Contaminant Levels:

1      150      700      1250

Results above detection limit are bolded for emphasis.

All results presented in micrograms per liter (ug/L)

D Duplicate sample

EPA United States Environmental Protection Agency

MTBE Methyltertiarybutyl ether

ND

TPHg

TPHd

TPHo

Not detected above method detection limit shown in parentheses (if available)

Total petroleum hydrocarbons as gasoline

Total petroleum hydrocarbons as diesel

Total petroleum hydrocarbons as motor oil

**Table 2  
GROUNDWATER ELEVATION DATA**

Former California Courier, Inc.  
Hayward, California

Monitoring Well No.	Date Measured	Well Diameter (inches)	Total Depth (ft-BTOC)	TOC Elevation (ft-MSL)	Depth to Water (ft-BTOC)	Water Elevation (ft-MSL)
CMW-2	7/24/95	4	9.28	10.97	3.90	7.07
	6/11/96	4	9.30	10.97	3.91	7.06
	11/5/96	4	9.30	10.97	4.01	6.96
	2/3/97	4	9.30	10.97	4.08	6.89
CMW-3	7/24/95	4	9.30	11.25	4.13	7.12
	6/11/96	4	9.31	11.25	4.09	7.16
	11/5/96	4	9.30	11.25	4.21	7.04
	2/3/97	4	9.30	11.25	3.87	7.38
CMW-4	7/24/95	4	16.10	11.09	4.14	6.95
	6/11/96	4	16.08	11.09	4.18	6.91
	11/5/96	4	16.07	11.09	4.24	6.85
	2/3/97	4	16.07	11.09	4.10	6.99
CMW-5	7/24/95	2	12.02	11.48	4.18	7.30
	6/11/96	2	12.07	11.48	4.20	7.28
	11/5/96	2	12.06	11.48	4.23	7.25
	2/3/97	2	12.06	11.48	4.18	7.30

ft-BTOC      Feet below top of casing  
ft-MSL      Feet above mean sea level  
TOC          Top of casing





JUN 2 1994

HAYWARD FIRE DEPARTMENT

June 21, 1994

Mr. Ken Hunt  
California Couriers, Inc.  
1250 Sunset Boulevard  
Los Angeles, CA 90026

Subject: 23510 Bernhardt Street, Hayward, California, Ground-water Monitoring and Sampling, March 22, 1994, following Additional Well Installation, March 10, 1994 (CERTIFIED file reference S30289 and S40049)

Dear Mr. Hunt:

This report has been prepared by CERTIFIED Engineering & Testing Company, Incorporated (CERTIFIED) to summarize the results of the well installation and ground-water sampling event performed during March 1994 by CERTIFIED at 23510 Bernhardt Street, Hayward, California. This report presents discussions of data collected and technical procedures performed at the site by CERTIFIED. Included in this report are the following:

- A summary of the monitoring well installation event
- A summary of the ground-water sampling event
- Laboratory reports and a cumulative table of analytical data for the wells monitored
- Ground-water level data for the wells monitored
- Monitoring well location map

**WELL INSTALLATION**

Two monitoring wells (CMW-4 and CMW-5) were installed at the site on March 10, 1994, using a truck-mounted drill rig equipped with 10-inch diameter hollow-stem auger. The wells were developed on March 18,

Certified  
Engineering  
& Testing®  
Company

Environmental  
Consultants  
& Laboratory  
Services

7000 Marina Boulevard  
4th Floor  
Brisbane, CA 94005  
415-742-9900  
Fax 415-742-1033

Boston  
Providence  
New York  
Memphis  
Dallas  
San Francisco  
Los Angeles

1994, by surge and bail techniques. The procedures used for soil boring, well installation and development, and soil and ground-water sampling are summarized in Attachment A.

Soil samples were collected from the borings on approximately five-foot intervals. The sample from each boring collected from the interpreted capillary fringe and retained for laboratory analysis. Ground-water samples were collected four days following well development and submitted for laboratory analysis. Soil and ground-water samples were analyzed by Sequoia Analytical of Redwood City, California, a State-certified hazardous waste laboratory, for total petroleum hydrocarbons as gasoline (TPHg), and benzene, toluene, ethylbenzene, and xylenes (BTEX) in general accordance with U.S. Environmental Protection Agency (EPA) Method Nos. 8015 modified and 8020, respectively. The soil samples were not reported to contain TPHg and BTEX in concentrations exceeding the laboratory reporting limit for the analytical methods used. Ground-water analytical results are presented in the following sections.

#### GROUND-WATER SAMPLING

Ground-water sampling was conducted on March 22, 1994, by CERTIFIED personnel. Ground-water samples were analyzed by Sequoia Analytical. This monitoring event included the collection and analysis of ground-water samples from five on-site monitoring wells.

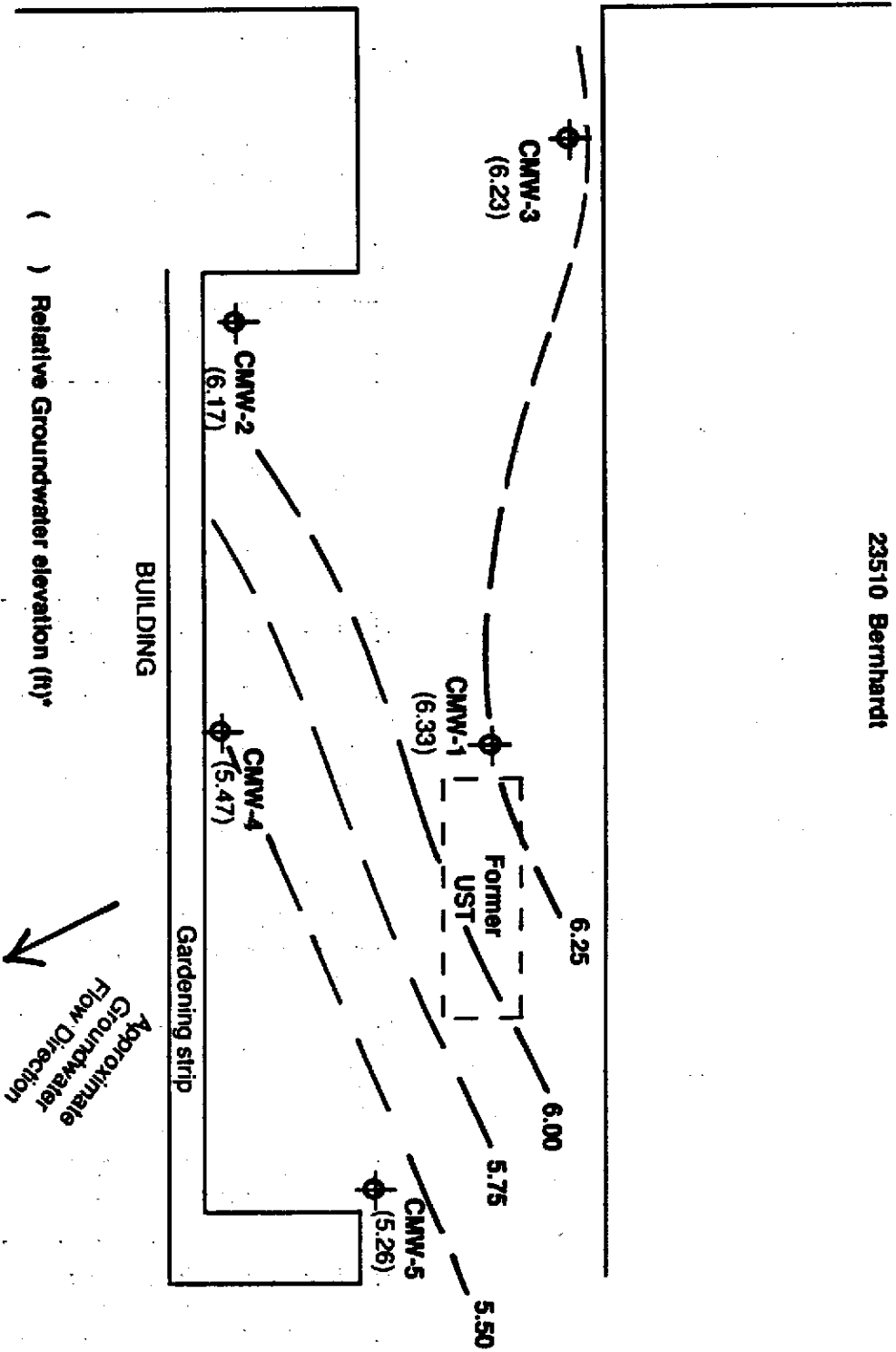
To assess the potentiometric conditions at the site, the ground-water levels in each of the monitoring wells (see Table 1 and Figure 1) were measured to the nearest 0.01 foot. Preparation for ground-water sample collection included purging approximately three well-casing volumes of ground water from each monitoring well immediately prior to sample collection. Monitoring well purging was accomplished by hand bailing. During the purging procedure measurements of temperature, specific conductance, and pH of the purge water were recorded (Attachment B). Once the temperature, specific conductance, and pH were judged to have stabilized and three casing volumes of ground water removed, the ground-water level within the well was allowed to recover to at least approximately 80% of the pre-purge level and a ground-water sample was collected from the monitoring well using a disposable polyethylene bailer. The locations of the monitoring wells from which samples were collected are presented in Figure 1.

Ground-water samples were transferred from the bailer into laboratory-supplied containers, labeled for identification purposes, and stored on ice in an insulated chest pending delivery to the laboratory for analysis. Samples were collected, retained, and transported to the laboratory using Chain-of-Custody procedures. Ground-water samples collected at the site on March 22, 1994, were analyzed for TPHg and BTEX in general accordance with EPA Method Nos. 8015 modified and 8020, respectively. The Chain-of-Custody forms and laboratory reports are presented in Attachment C.

23510 Bernhardt

Bernhardt Street

Sewer



( ) Relative Groundwater elevation (ft)\*

\* Referenced to arbitrary datum CMW-1 = 10.00'



CERTIFIED

FIGURE 1.  
POTENTIOMETRIC SURFACE MAP  
23510 BERNHARDT STREET  
HAYWARD, CALIFORNIA  
(3/22/94)

CERTIFIED

Legend

- GW
- GP
- GM
- GC
- SW
- SP
- SM
- SC
- ML
- CL
- OL
- MH
- CH
- OH
- Pt

Job No.: S40049		Location: 23510 Bernhardt Street Hayward, CA	
Drilling Method: Hollow Stem Auger		Boring # <b>CMW4</b>	
Drilling Company: West HazMat		Sheet # 1	
Drilling Crew: Tom & Ruben		Drilling Time 0930	
Geologist: Fred Hayden		Date 3/10/94	
Sampling Method: Calif Mod Sampler		Casing/Sand/Seal Depth: 4" 5.5 5.0	
Depth to Water/Time: 8' @ 0945		Surface Conditions: Asphalt	
Soil Description:			

Elevation:

Well Const.	Sample No.	Blows/6 in.	Moisture Content	Product Odor	Depth in Feet	USGS Code	Soil Description
					1	GW	Asphalt
					2	GW	Base coarse gravel
					3	ML	Black to dark greenish black sandy CLAY (slightly moist, no odor)
					4	ML	
					5	ML	
					6	ML	
					7	SC	Change to olive gray clayey fine SAND (slightly moist) mottled black & gray
	CMW4-7	9/9/10		NO	8	▼ 0945	(saturated)
					9	SW/SC	Olive gray SAND with clay (not as clean as CMW5 sand lens) (very moist) increase in clay decrease in moisture.
					10	SC	Olive gray clayey SAND.
					11	SC	
					12	SC	
	CMW4-12			NO	13		
					14		
					15	GC	Dark gray clayey sandy (fine GRAVEL (moist) lens approx. one foot.
	CMW4-15.5			NO	16	SM	Olive gray and olive brown clayey silty SAND (slightly moist)
					17	SM	
					18		TD @ 18' @ 1010 AM Install well
					19		
					20		

Grout
















Bentonite

Sand

2 foot sump

**CERTIFIED**

**Legend**

-  GW
-  GP
-  GM
-  GC
-  ML
-  CL
-  OL
-  SW
-  SP
-  SM
-  SC
-  MH
-  CH
-  OH
-  Pt

Elevation:

Job No.: S40049		Location: 23510 Bernhardt Street Hayward, CA	
Drilling Method: Hollow Stem Auger			Boring #
			<b>CMW5</b>
Drilling Company: West HazMat			Sheet # 1
Drilling Crew: Tom & Ruben			Drilling Time
Geologist: Fred Hayden			0830
Sampling Method: Calif Mod Sampler			Date 3/10/94
Casing/Sand/Seal Depth:		2"	5.5
Depth to Water/Time:		7.5 @ 0900	
Surface Conditions: Asphalt			
Soil Description:			

Well Const.	Sample No.	Blows/6 in.	Moisture Content	Product Odor	Depth in Feet	USGS Code	Soil Description
					1	GW	Asphalt
					2	GW	Base coarse gravel
					3	CL	Dark brown/black silty CLAY (slightly moist) with coarse sand.
					4	CL	
					5	ML/SC	Light gray olive sandy CLAY with interbedded clayey SAND (slightly moist).
	CMW5-5.5	6/14/18		NO	5	MH	Dark olive gray clayey SILT (sticky).
	CMW5-6.5	9/14/18		NO	6	MH	
					7	SC	Olive brown clayey fine SAND (slightly moist).
					8	SC	0900
	CMW5-8			NO	8	SW	Light brown fine SAND 1-1.5' thick with black mottlings (saturated)
					9	SW	
					10	SC	Olive gray clayey fine SAND increase in sticky clay.
					11	SC	
					12	MH	Dark gray clayey SILT.
				NO	12		
					13		TD @ 12' # 0920 Install well
					14		
					15		
					16		
					17		
					18		
					19		
					20		

Grout

Bentonite

Sand