

QUARTERLY GROUNDWATER MONITORING REPORT

5800 CHRISTIE AVENUE
EMERYVILLE, CALIFORNIA

July 12, 1990

SUBMITTED TO:

MR. DENNIS BYRNE
ALAMEDA COUNTY HEALTH CARE SERVICES
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CALIFORNIA 94621

PREPARED FOR:

CROLEY & HERRING INVESTMENT COMPANY
1311 63RD STREET
EMERYVILLE, CALIFORNIA 94608

PREPARED BY:

AWD TECHNOLOGIES, INC.
10 WEST ORANGE AVENUE
SOUTH SAN FRANCISCO, CALIFORNIA 94080

90 JUL 13 AM 10:50

July 12, 1990

Mr. Steve Croley
Croley and Herring Investment Company
1311 63rd Street
Emeryville, CA 94608

Subject: Quarterly Report for Groundwater Monitoring
5800 Christie Avenue, Emeryville, California

Enclosed please find a copy of the quarterly status report regarding the results of groundwater sampling performed on May 31, 1990 at the subject facility.

Should you have any questions regarding the subject report, please contact me.

Sincerely yours,



Walter Loo
Director of Remediation

WWL/isw

Enclosure

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1.0 INTRODUCTION

Croley and Herring Investment Company (CHIC) facility is located at 5800 Christie Street, Emeryville in California. The subject facility is currently leased to the Good Guys, an electronic merchandise retailers. Prior to leasing, soil contamination was identified at the subject facility. The contaminated soil was removed with the exception of those underlying a building because of safety concern. The removed soil was remediated onsite and properly disposed of upon approval from the regulatory agencies.

There is a vapor extraction system installed near the building to mitigate the residual volatile hydrocarbons contained in the soil. As part of the site closure plan, a quarterly groundwater monitoring program is currently implemented. The first quarterly monitoring event was performed on November 6, 1989 and the second monitoring event was performed on February 20, 1990. The third quarterly groundwater sampling was conducted on May 31, 1990. Water samples were sent to a State-certified laboratory for analysis under proper chain-of-custody procedures.

This report present the result of the third quarterly groundwater monitoring activities including groundwater movement analysis, laboratory analytical results, summary of findings, and conclusions and discussions.

2.0 GROUNDWATER MOVEMENT ANALYSIS

Prior to sample collection of this quarterly sampling, depth to water table in each of the three existing monitoring wells at the facility was measured for the analysis of groundwater movement. Table 1 presents a summary of the water levels in the three wells (EW-1, MW-2, and MW-3) from the three rounds of sampling events.

From the result of the water level measurement on May 31, 1990, water levels in Wells EW-1 and MW-3 rose by 0.7 and 0.49 feet respectively, as compared to the data collected in February 1990. The groundwater flow direction remains in the same direction, flowing toward south. The hydraulic gradient was 0.0125 feet per horizontal foot.

TABLE 1
SUMMARY OF WATER LEVEL DATA

WELL ID	Elevation	11/6/89		2/20/90		5/31/90	
	of TOC Ft (MSL)	DTW Ft	SWL Ft	DTW Ft	SWL Ft	DTW FT	SWL FT
EW-1	8.62	6.15	2.47	5.93	2.69	5.86	2.76
MW-2	7.42	4.37	3.05	4.26	3.16	4.26	3.16
MW-3	6.42	5.10	1.32	5.42	1.00	4.93	1.49

Note:

- TOC is top of casing
 - DTW is depth to water table
 - SWL is static water level above MSL
 - MSL is mean sea level
-
-

3.0 GROUNDWATER QUALITY

On May 31, 1990, AWD field personnel collected water samples from each of the three monitoring wells for analysis. These groundwater samples were sent to a State-certified laboratory for analyses of halocarbons, total petroleum hydrocarbons (TPH) as gasoline and gasoline constituents benzene, toluene, ethyl-benzene, and total xylenes (BTEX). During water sampling, field parameters as water temperature, electric conductivity, pH. and dissolved oxygen were measured and recorded.

From the results of the laboratory analysis, none of the water samples collected from Wells MW-2 and MW-3 contain detectable concentration of the above analytes on this sampling event. Detection limit of these compounds is 1.0 ug/l. However, volatile organic compounds in water sample taken from Well EW-1 detected with some compounds having concentration higher than those were detected in the second quarterly monitoring event. The compounds detected in Well EW-1 from the May 31, 1990 sampling episode are listed as following:

TPH	24,000 ppb
Benzene	56 ppb
Toluene	6,100 ppb
Ethylbenzene	17 ppb
Xylenes	140 ppb
1,1 DCE	69 ppb
1,2 DCE	110 ppb
1,1 DCA	1,900 ppb
1,2 DCA	33 ppb
1,1,1 TCA	1,200 ppb
1,1,2 TCA	9.7 ppb
TCE	830 ppb
Chloroethane	94 ppb
Methylene Chloride	40 ppb
Vinyl Chloride	2,600 ppb
Temperature	66 F
EC	14.71 mmhos/cm
pH	6.6

4.0 SUMMARY OF FINDINGS

Groundwater movement across the facility remains in a similar pattern, as compared to the result from the previous sampling event in February 1990. Data of flow direction and hydraulic gradient are summarized as following:

Date of Sampling	4/25/89	11/6/89	2/20/90	5/31/90
Flow Direction	Southwest	South	South	South
Hydraulic gradient	0.00145	0.012	0.016	0.0125

None of the water samples collected from Wells MW-2 and MW-3 contained hydrocarbons with concentration above detection limits. However, analytical results of groundwater in Well EW-1 indicated that concentrations of TPH, toluene, 1,1,1-TCA, and vinyl chloride increased through the sampling periods. The trend of water quality in Well EW-1 is listed below:

	Concentrations in ppb			
	5/8/89	11/6/89	2/20/90	5/31/90
TPH as Gasoline	NT	740	12,000	24,000
Benzene	N.D.	180	1,300	56
Toluene	190	39	3,600	6,100
Xylenes	170	67	47	140
Ethylbenzene	N.D.	0.8	7.1	17
TCE	640	740	1,100	830
1,1 DCE	78	2.3	14	69
1,2 DCE	N.D.	350	2,500	110
1,1,1 TCA	N.D.	26	550	1,200
1,1 DCA	N.D.	34	460	1,900
1,2 DCA	N.D.	4.8	34	33
Vinyl Chloride	N.D.	29	N.D.	2,600
Chloroethane	N.D.	N.D.	29	94
Methylene Chloride	N.D.	N.D.	14	40

NT: Not tested

There are several major factors that affect the changes in the hydrocarbons concentration. These factors are soil desorption due to variation of water table, chemical breakdown due to natural degradation, and unidentified source. It is AWD's opinion that changes of halocarbons concentrations are caused by the combination of soil desorption and naturally degrading process. The increase in gasoline constituent toluene is likely caused by a suspect upgradient source, the former F.P. Lathrop underground gasoline tank (Figure 1). AWD will recommend to Alameda County Health Services that potential responsible party/parties (PRP) for the gasoline contamination at this facility be identified. Once the PRP is identified, AWD will then recommend that a groundwater extraction system be installed in the source area to reverse the groundwater movement and remediate the gasoline plume.



MOBILE CHEM LABS INC.

1678 Reliez Valley Road
Lafayette, CA 94549 • (415) 945-1266

AWD Technologies
10 W. Orange Avenue
So. San Francisco, CA 94080
Attn: Ethan Wayne
Project Manager

Date Sampled: 05-31-90
Date Received: 06-01-90
Date Reported: 06-13-90

Sample Number

B060001

Sample Description

Proj. : CHIC
EW-1 WATER

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Benzene.....	56	trans-1,2-Dichloroethene..	110
Bromomethane.....	<1.0	1,2-Dichloropropane.....	<1.0
Bromodichloromethane.....	<1.0	1,3-Dichloropropene.....	<1.0
Bromoform.....	<1.0	Ethylbenzene.....	17
Carbon tetrachloride.....	<1.0	Methylene chloride.....	40
Chlorobenzene.....	<1.0	1,1,2,2-Tetrachloroethane..	<1.0
Chloroethane.....	94	Tetrachloroethene.....	<1.0
2-Chloroethylvinyl ether.....	<1.0	1,1,1-Trichloroethane....	1200
Chloroform.....	<1.0	1,1,2-Trichloroethane.....	9.7
Chloromethane.....	<1.0	Trichloroethene.....	830
Dibromochloromethane.....	<1.0	Toluene.....	6100
1,1-Dichloroethane.....	1900	Vinyl chloride.....	2600
1,2-Dichloroethane.....	33	Total Xylenes.....	140
1,1-Dichloroethene.....	69		

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Ronald G. Evans
Lab Director

NOTE: Analysis was performed using
method 601.



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10 W. Orange Avenue
So. San Francisco, CA 94080
Attn: Ethan Wayne
Project Manager

Date Sampled: 05-31-90
Date Received: 06-01-90
Date Reported: 06-13-90

Sample Number

B060002

Sample Description

Proj. : CHIC
MW-2 WATER

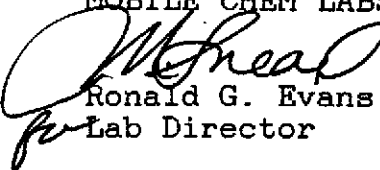
PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

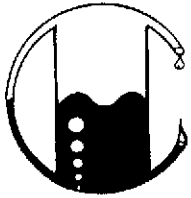
results in ppb

Benzene.....	<1.0	trans-1,2-Dichloroethene...	<1.0
Bromomethane.....	<1.0	1,2-Dichloropropane.....	<1.0
Bromodichloromethane.....	<1.0	1,3-Dichloropropene.....	<1.0
Bromoform.....	<1.0	Ethylbenzene.....	<1.0
Carbon tetrachloride.....	<1.0	Methylene chloride.....	<1.0
Chlorobenzene.....	<1.0	1,1,2,2-Tetrachloroethane..	<1.0
Chloroethane.....	<1.0	Tetrachloroethene.....	<1.0
2-Chloroethylvinyl ether.....	<1.0	1,1,1-Trichloroethane.....	<1.0
Chloroform.....	<1.0	1,1,2-Trichloroethane.....	<1.0
Chloromethane.....	<1.0	Trichloroethene.....	<1.0
Dibromochloromethane.....	<1.0	Toluene.....	<1.0
1,1-Dichloroethane.....	<1.0	Vinyl chloride.....	<1.0
1,2-Dichloroethane.....	<1.0	Total Xylenes.....	<1.0
1,1-Dichloroethene.....	<1.0		

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NOTE: Analysis was performed using
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AWD Technologies
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Attn: Ethan Wayne
Project Manager

Date Sampled: 05-31-90
Date Received: 06-01-90
Date Reported: 06-13-90

Sample Number

B060003

Sample Description

Proj. : CHIC
MW-3 WATER

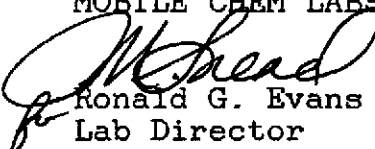
PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

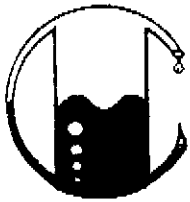
results in ppb

Benzene.....	<1.0	trans-1,2-Dichloroethene...	<1.0
Bromomethane.....	<1.0	1,2-Dichloropropane.....	<1.0
Bromodichloromethane.....	<1.0	1,3-Dichloropropene.....	<1.0
Bromoform.....	<1.0	Ethylbenzene.....	<1.0
Carbon tetrachloride.....	<1.0	Methylene chloride.....	<1.0
Chlorobenzene.....	<1.0	1,1,2,2-Tetrachloroethane..	<1.0
Chloroethane.....	<1.0	Tetrachloroethene.....	<1.0
2-Chloroethylvinyl ether.....	<1.0	1,1,1-Trichloroethane.....	<1.0
Chloroform.....	<1.0	1,1,2-Trichloroethane.....	<1.0
Chloromethane.....	<1.0	Trichloroethene.....	<1.0
Dibromochloromethane.....	<1.0	Toluene.....	<1.0
1,1-Dichloroethane.....	<1.0	Vinyl chloride.....	<1.0
1,2-Dichloroethane.....	<1.0	Total Xylenes.....	<1.0
1,1-Dichloroethene.....	<1.0		

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Ronald G. Evans
Lab Director

NOTE: Analysis was performed using
method 601.



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AWD Technology
#10 W. Orange Ave.
South San Francisco, CA
Attn: Ethan Wang
Project Manager

Date Sampled: 06-29-90
Date Received: 06-29-90
Date Reported: 06-30-90

Sample Number	Sample Description	Detection Limit	WATER Total Petroleum Hydrocarbons as Gasoline
-----	-----	-----	-----
		ppb	ppb
	Project Name: CHIC		
B060109	EW-1	50	24,000

Note: Analysis was performed using EPA methods 5030 and TPH LUFT

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Joseph A. V. Deshneau

for Ronald G. Evans
Lab Director

