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

AWD
TECHNOLOGIES

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

AWD Technologies, Inc. 10 West Orange Avenue South San Francisco California 94080 Telephone 415 876 1133 Telex 34297 Telecopier 415 876 1235

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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

	Elevation of TOC	11/6/89		2/20/90		5/31/90	
WELL ID	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, ehtyl-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	Sample Description
B060001	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		

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

NOTE: Analysis was performed using method 601.

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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	Sample Description
B060002	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 method 601.

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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	Sample Description
B060003	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		

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

NOTE: Analysis was performed using method 601.

MOBILE CHEM LABS INC.

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

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		
E060109	EW-1	50	24,000

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

MOBILE CHEM LABS

Joyce A V Dishneau

for Ronald G. Evans
Lab Director

Mobile Chem Lab.

3700 Lakeville Highway, Petaluma, CA 94952
P.O. Box 806024 • Petaluma, CA 94975-6024
Telephone: (707) 763-8349 • FAX: (707) 763-4065

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name CHC / SWD Tech Phone (415) 826-1569
Address 5900 Christie St.
City, State, Zip Emeryville, CA
Client's or Representative's Signature
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pick up samples.

PROJ. NO. | PROJECT NAME: CHC
SAMPLERS (Signature):

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH as Gas	REMARKS / LAB USE ONLY LAB NO.
1	6/29	1210		X	EW-1	2x40ml	X	

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	General Remarks:
	6/29/90	1500	Joseph Bastrin 3:02 6/29	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	

CLIENT COPY

MOBILE CHEM LAB

Fax (415) 876-1235
Reed (415) 876-1569
Send Org.

B060001

SAMPLE CHAIN OF CUSTODY / WORK ORDER

Client's Name AWD Tech. Phone
Address 10 W. Orange Av.
City, State, Zip So San Francisco, CA 94080

Client's or Representative's Signature
(signature authorizes the work and terms listed below)

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client to pick up samples.

PROJ. NO. | PROJECT NAME: CHIC

SAMPLERS (Signature): [signature]

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	8010	8020					REMARKS
001	5/3/90	5[illegible]		X	EMW-1	2 x 40ml	X	X					
002	5/3/90	1600		X	MW-2	1	X	X					
003	5/3/90	1700		X	MW-3	11	X	X					

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
[signature]	5/4/90	0920	[signature]
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)

General Remarks:
2 WK Turnaround
per Dave

LAB COPY