



September 4, 1991

SFO28830.A1

Mr. Wilbur Sprague
Associated Services
2128 Tice Creek Drive #3
Walnut Creek, CA 94595

Subject: Quarterly monitoring data for Del Monte's Plant 35; West Parcel, removed fuel oil and gasoline tank areas at 4202 Hollis Street, Emeryville, California

Dear Wilbur:

The quarterly (fourth) monitoring data for the removed fuel tanks area (monitoring Wells MW7 through MW11) at the Del Monte Plant No. 35; West Parcel in Emeryville, California are summarized in the attached table. This table is prepared to correspond with the quarterly monitoring reports previously submitted to the Alameda County Health Agency (ACHA). Results of the groundwater monitoring program (monitoring Wells MW7 through MW11) are presented in this report. The laboratory data sheets are also attached. This data needs to be submitted to the following:

Mr. Dennis Byrne
Hazardous Materials Specialist
Alameda County Health Care Services
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, CA 94621

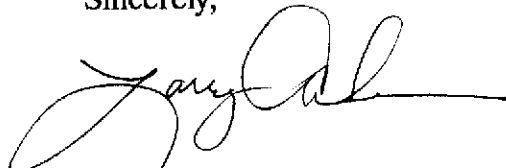
Mr. Lester Feldman
Regional Water Quality Control Board
San Francisco Region
1800 Harrison, 7th Floor
Oakland, CA 94612

Well MW7 is downgradient from the removed gasoline tank near the proposed Haven Street location. The concentrations of benzene, ethylbenzene, and toluene have remained the same. The concentration of xylene has increased while the concentration of TPH as gasoline in MW7 has decreased since the third quarter monitoring. Well MW8 is adjacent and downgradient of the removed fuel oil tanks. Concentrations of chlorinated organic compounds have decreased in Well MW8 except for tetrachloroethane (PCE) which has increased since the third quarter. Concentrations in Well MW9 (upgradient) have increased or remain the same. MW10 is (downgradient) of the removed fuel oil tanks. Concentrations of chlorinated organic compounds in MW10 have either increased or remained the same with the exception of the levels of PCE and vinyl chloride. Concentrations of these two constituents have decreased since last quarter. Concentrations in MW11 have increased with the exception of trichloroethene (TCE), 1,2-dichloropropane (1,2-DP) and 1,1-dichloroethane (1,1-DCE). Concentrations in MW11 of TCE, 1,2-DP 1, and 1,1-DCE have decreased.

According to the water quality goals promulgated by the Regional Water Quality Control Board (RWQCB), concentrations of 1,1-DCE, 1,2-DCA, TCE, PCE and VC in Wells MW7 through MW11 all exceed the Drinking Water Standards Maximum Contaminant Level (MCL). No MCLs have been established for TPH as gasoline in groundwater. Based on these regulatory criteria, additional monitoring is required at the removed fuel tanks site.

If you have any questions, please call me at my office (415) 652-2426 ext. 2120.

Sincerely,



for Jeff Holloway
Project Manager

Enclosures

cc: Ron Tribault/Del Monte
Bill Riker/Del Monte
Cora Lewis/Delmonte
Liz Dodge/CH2M HILL

p35-5

DEL MONTE PLANT NO. 35
 4204 HOLLIS STREET, EMERYVILLE, CA
 QUARTERLY GROUNDWATER MONITORING RESULTS
 (Removed Gasoline Tank)

Concentration (mg/l)

Monitoring Well	Sampling Date	TPH Gasoline	Benzene	Ethyl-benzene	Toluene	Xylene
MW7	12-May-89	1.000	0.0490	0.0045	0.0016	0.0059
MW7	10-Jul-89	0.500	0.0052	<0.0003	0.0006	0.0056
MW7	24-Oct-89	1.800	0.0081	<0.0003	<0.0003	0.0120
MW7	07-Feb-90	1.300	0.0100	0.0039	0.0010	0.0130
MW7	10-Jul-90	0.210	0.0006	<0.0003	0.0003	0.0010
MW7	17-Oct-90	0.640	0.0020	0.0030	0.0010	0.0014
MW7	24-Jan-91	0.300	0.0018	0.0024	0.0019	0.0053
MW7	17-Apr-91	0.400	<0.0005	<0.0005	<0.0005	<0.0005
MW7	31-Jul-91	0.070	<0.0005	<0.0005	<0.0005	0.0009
WATER QUALITY STANDARDS						
	Cancer Risk	--	0.00066	--	--	--
	Primary MCL	--	0.001	0.68	2.0	1.75
	AATC (Freshwater)	--	5.3	32.0	17.0	--

DEL MONTE PLANT NO. 35
4204 HOLLIS STREET, EMERYVILLE, CA
QUARTERLY GROUNDWATER MONITORING RESULTS
(Removed Fuel Oil Tanks Site)

Monitoring Well	Sampling Date	Concentration (mg/l)						
		1,2-DCE(a)	1,1-DCE(b)	1,2-DCA(c)	TCE(d)	PCE(e)	VC(f)	1,2-DP(g)
MW7	17-Apr-91	0.085	<0.0005	<0.0005	0.023	0.014	0.0051	<0.0005
MW7	31-Jul-91	0.100	<0.0005	<0.0005	0.029	0.019	0.0051	<0.0005
MW8	12-May-89	0.29	<0.0100	<0.0100	1.400	0.020	0.0780	<0.0100
MW8	10-Jul-89	0.14	<0.0025	<0.0025	0.330	0.014	0.0170	<0.0025
MW8-dup	10-Jul-89	0.13	<0.0025	<0.0025	0.310	0.012	0.0160	<0.0025
MW8	24-Oct-89	0.10	<0.0020	<0.0020	0.330	0.024	0.0040	<0.0020
MW8	07-Feb-90	0.10	<0.0020	<0.0020	0.520	0.018	0.0120	<0.0020
MW8	10-Jul-90	0.005	<0.0002	<0.0005	0.091	0.036	0.0030	<0.0005
MW8	17-Oct-90	0.059	<0.0010	<0.0010	0.160	0.021	0.0020	<0.0010
MW8	24-Jan-91	0.160	<0.0020	0.0050	0.450	0.013	0.0090	0.0270
MW8	17-Apr-91	0.210	<0.0050	<0.0050	0.830	0.016	<0.0050	<0.0050
MW8	31-Jul-91	0.085	<0.0020	<0.0020	0.350	0.030	0.0020	<0.0020
MW9	10-Jul-89	0.0630	<0.0005	<0.0005	0.013	0.038	0.0160	<0.0005
MW9	24-Oct-89	0.0064	<0.0005	<0.0005	0.029	0.048	0.0230	<0.0005
MW9	07-Feb-90	0.0550	<0.0005	<0.0005	0.015	0.030	0.0071	<0.0005
MW9	10-Jul-90	0.0030	<0.0002	<0.0005	0.009	0.043	0.0100	<0.0005
MW9	17-Oct-90	0.0700	<0.0005	<0.0005	0.014	0.032	0.0046	<0.0005
MW9	24-Jan-91	0.0700	<0.0020	<0.0020	0.220	0.023	<0.0020	<0.0020
MW9	17-Apr-91	0.0440	<0.0005	<0.0005	0.012	0.026	<0.0005	<0.0005
MW9	31-Jul-91	0.0550	<0.0005	<0.0005	0.014	0.032	0.0023	<0.0005
MW10	10-Jul-89	0.0850	0.0008	<0.0005	0.027	0.042	0.0280	<0.0005
MW10	24-Oct-89	0.1048	<0.0005	<0.0005	0.037	0.028	0.0069	<0.0005
WATER QUALITY STANDARDS								
	Primary MCL	---	0.006	0.0005	0.005	0.005	0.0005	---
	Cancer Risk	---	0.000033	0.00094	0.0027	0.0008	0.002	---
	AATC (Freshwater)	23.2	11.6	118	45	5.28	---	23
a	total 1,2-Dichloroethene*		d Trichloroethene			f Vinyl chloride		
b	1,1-Dichloroethene		e Tetrachloroethene			g 1,2-Dichloropropane		
c	1,2-Dichloroethane		* Sum of cis-1,2-Dichloroethene and trans-1,2-Dichloroethene					

DEL MONTE PLANT NO. 35
4204 HOLLIS STREET, EMERYVILLE, CA
QUARTERLY GROUNDWATER MONITORING RESULTS
(Removed Fuel Oil Tanks Site)

Monitoring Well	Sampling Date	Concentration (mg/l)						
		1,2-DCE(a)	1,1-DCE(b)	1,2-DCA(c)	TCE(d)	PCE(e)	VC(f)	1,2-DP(g)
MW10	07-Feb-90	0.0500	<0.0005	<0.0005	0.011	0.008	0.0053	<0.0005
MW10	10-Jul-90	0.0090	<0.0002	<0.0005	0.030	0.076	0.054	<0.0005
MW10-dup	10-Jul-90	0.010	0.005	<0.0005	0.028	0.069	0.017	<0.0005
MW10	17-Oct-90	0.140	<0.0005	<0.0005	0.035	0.037	0.013	<0.0005
MW10	24-Jan-91	0.065	<0.0005	<0.0005	0.014	0.031	0.0033	<0.0005
MW10	17-Apr-91	0.210	<0.002	<0.002	0.048	0.052	0.010	<0.002
MW10	31-Jul-91	0.280	<0.002	<0.002	0.066	0.014	0.002	<0.002
MW11	10-Jul-89	0.073	<0.0010	0.0040	0.160	0.012	0.0160	0.0057
MW11	24-Oct-89	0.188	<0.0020	0.0100	0.410	0.015	0.0220	0.0200
MW11	07-Feb-90	0.105	<0.0020	0.0020	0.270	0.008	0.0110	0.0130
MW11	10-Jul-90	0.004	<0.0002	0.0230	0.046	0.018	0.0150	<0.0005
MW11	17-Oct-90	0.150	<0.0020	0.0110	0.300	0.008	<0.002	0.0310
MW11	24-Jan-91	0.120	<0.0010	<0.0010	0.029	0.029	0.0030	<0.0010
MW11	17-Apr-91	0.100	<0.001	0.014	0.160	0.012	0.005	0.029
MW11	31-Jul-91	0.250	<0.0020	<0.0020	0.061	0.065	0.012	0.002
WATER QUALITY STANDARDS								
	Primary MCL	---	0.006	0.0005	0.005	0.005	0.0005	---
	Cancer Risk	---	0.000033	0.00094	0.0027	0.0008	0.002	---
	AATC (Freshwater)	23.2	11.6	118	45	5.28	---	23
a total 1,2-Dichloroethene*			d Trichloroethene			f Vinyl chloride		
b 1,1-Dichloroethene			e Tetrachloroethene			g 1,2-Dichloropropane		
c 1,2-Dichloroethane			* Sum of cis-1,2-Dichloroethene and trans-1,2-Dichloroethene					

Analytical Report

RECEIVED

AUG 13 1991

CH2M HILL
SAN FRANCISCO

LOG NO: E91-07-711

Received: 31 JUL 91

Mailed: AUG 08 1991

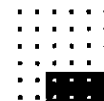
Mr. Jeff Holloway
CH2M Hill
6425 Christie Street, Suite 500
Emeryville, California 94608

Project: SF028830.A1

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED				
07-711-1	MW-7	31 JUL 91				
07-711-2	MW-8	31 JUL 91				
07-711-3	MW-9	31 JUL 91				
07-711-4	MW-10	31 JUL 91				
07-711-5	MW-11	31 JUL 91				
PARAMETER	07-711-1	07-711-2	07-711-3	07-711-4	07-711-5	
TPH-Volatile/BTEX						
Date Analyzed	08.01.91	---	---	---	---	
Dilution Factor, Times	1	---	---	---	---	
Benzene, ug/L	<0.5	---	---	---	---	
Ethylbenzene, ug/L	<0.5	---	---	---	---	
Toluene, ug/L	<0.5	---	---	---	---	
Total Xylene Isomers, ug/L	0.9	---	---	---	---	
C6 to C12 Hydrocarbons, ug/L	70	---	---	---	---	



Analytical Report

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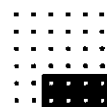
Project: SF028830.A1

REPORT OF ANALYTICAL RESULTS

Page 2

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-711-1	MW-7	31 JUL 91
07-711-2	MW-8	31 JUL 91
07-711-3	MW-9	31 JUL 91
07-711-4	MW-10	31 JUL 91
07-711-5	MW-11	31 JUL 91

PARAMETER	07-711-1	07-711-2	07-711-3	07-711-4	07-711-5
Halocarbons (EPA 601)					
Date Analyzed	08.02.91	08.04.91	08.02.91	08.02.91	08.04.91
Confirmation Date	08.04.91	08.04.91	08.02.91	08.05.91	08.04.91
Dilution Factor, Times	1	5	1	5	5
1,1,1-Trichloroethane, ug/L	<0.5	<2	<0.5	<2	<2
1,1,2,2-Tetrachloroethane, ug/L	<0.5	<2	<0.5	<2	<2
1,1,2-Trichloroethane, ug/L	<0.5	<2	<0.5	<2	<2
1,1-Dichloroethane, ug/L	<0.5	<2	<0.5	<2	<2
1,1-Dichloroethene, ug/L	<0.5	<2	<0.5	<2	<2
1,2-Dichloroethane, ug/L	<0.5	<2	<0.5	<2	<2
1,2-Dichlorobenzene, ug/L	<0.5	<2	<0.5	<2	<2
1,2-Dichloroethene (Total), ug/L	100	85	55	280	250
1,2-Dichloropropane, ug/L	<0.5	<2	<0.5	<2	<2
1,3-Dichlorobenzene, ug/L	<0.5	<2	<0.5	<2	<2
1,4-Dichlorobenzene, ug/L	<0.5	<2	<0.5	<2	<2
2-Chloroethylvinylether, ug/L	<0.5	<2	<0.5	<2	<2
Bromodichloromethane, ug/L	<0.5	<2	<0.5	<2	<2
Bromomethane, ug/L	<0.5	<2	<0.5	<2	<2
Bromoform, ug/L	<0.5	<2	<0.5	<2	<2
Chlorobenzene, ug/L	<0.5	<2	<0.5	<2	<2
Carbon Tetrachloride, ug/L	<0.5	<2	<0.5	<2	<2
Chloroethane, ug/L	<0.5	<2	<0.5	<2	<2
Chloroform, ug/L	<0.5	2	<0.5	<2	<2
Chloromethane, ug/L	<0.5	<2	<0.5	<2	<2



Analytical Report

LOG NO: E91-07-711

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Mr. Jeff Holloway
CH2M Hill
6425 Christie Street, Suite 500
Emeryville, California 94608


Project: SF028830.A1

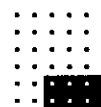
REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-711-1	MW-7	31 JUL 91
07-711-2	MW-8	31 JUL 91
07-711-3	MW-9	31 JUL 91
07-711-4	MW-10	31 JUL 91
07-711-5	MW-11	31 JUL 91

PARAMETER	07-711-1	07-711-2	07-711-3	07-711-4	07-711-5
Dibromochloromethane, ug/L	<0.5	<2	<0.5	<2	<2
Dichlorodifluoromethane, ug/L	<0.5	<2	<0.5	<2	<2
Freon 113, ug/L	<0.5	<2	<0.5	<2	<2
Methylene chloride, ug/L	<0.5	<2	<0.5	<2	<2
Trichloroethene, ug/L	29	350	14	66	61
Trichlorofluoromethane, ug/L	<0.5	<2	<0.5	<2	<2
Tetrachloroethene, ug/L	19	30	32	68	65
Vinyl chloride, ug/L	5.1	<2	2.3	14	12
cis-1,2-Dichloroethene, ug/L	100	85	53	270	240
cis-1,3-Dichloropropene, ug/L	<0.5	<2	<0.5	<2	<2
trans-1,2-Dichloroethene, ug/L	5.6	<2	2.2	10	10
trans-1,3-Dichloropropene, ug/L	<0.5	<2	<0.5	<2	<2


Sim D. Lessley, Ph.D., Laboratory Director





BATCH QC REPORT: Definitions and Terms

Accuracy	The ability of a procedure to determine the "true" concentration of an analyte
Precision	The reproducibility of a procedure demonstrated by the agreement between analyses performed on either duplicates of the same sample or a pair of duplicate spikes
Batch	A group of samples analyzed sequentially using the same calibration curve, reagents, and instrument
Laboratory Control Standard (LCS)	Laboratory reagent water spiked with known compounds and subjected to the same procedures as the samples. The LCS thus indicates the accuracy of the analytical method and, because it is prepared from a different source than the standard used to calibrate the instrument, it also serves to double-check the calibration
Matrix QC	Quality control tests performed on actual client samples. For most inorganic analyses, the laboratory uses a pair of duplicate samples and a spiked sample. For most organic analyses, the laboratory uses a pair of spiked samples (duplicate spikes)
LC Result	Laboratory result of an LCS analysis
LT Result	Expected result, or true value, of the LCS analysis
R1, R2 Result:	Result of the analysis of replicate aliquots of a sample, with R1 indicating the first analysis of the sample and R2 its corresponding duplicate; used to determine precision
S1, S2 Result	Result of the analysis of replicate spiked aliquots, with S1 indicating one spike of the sample and S2 the second spike; used to determine precision and accuracy
R Bar Result	The average of replicate analysis results
S Bar Result:	The average of spike analysis results
True value	The theoretical, or expected, result of a spike sample analysis
Percent Recovery	The percentage of analyte recovered. For LCS, the percent recovery calculation is: $LC \div LT \times 100$ For spike recoveries, the percent recovery calculation is: $\frac{(S \text{ Bar} - \text{Sample Concentration})}{\text{Spike Amount}} \times 100$
Relative Percent Difference (RPD)	Calculated using one of the following: $\frac{(R1 - R2) \times 100}{(R1 + R2) \div 2} \quad \frac{(S1 - S2) \times 100}{(S1 + S2) \div 2}$
Blank Result	The result of the analysis of a method blank, which is reagent water that is analysed using the same reagents, instruments and procedures as the samples in a batch; used to determine laboratory contamination
Reporting Detection Limit (RDL)	BCA-assigned limit based on—but not the same as—method detection limits (MDLs) determined using EPA guidelines

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE....	METHOD.....	EQUIP.	BATCH	ID.NO
			ANALYZED				
107711*1	MW-7	GAS.5030.BTEX	08.01.91	5030/8015	516-23	162	7867
		VH.601	08.02.91	601	516-21	475	7314
107711*2	MW-8	VH.601	08.04.91	601	516-21	477	7314
107711*3	MW-9	VH.601	08.02.91	601	516-21	475	7314
107711*4	MW-10	VH.601	08.02.91	601	516-21	475	7314
107711*5	MW-11	VH.601	08.04.91	601	516-21	477	7314

**

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

BC ANALYTICAL

BATCH QC REPORT
 ORDER: E9107711

ATE REPORTED : 08/09/91

Page 1

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
PH-Volatile/BTEX						
Dilution Factor	08.01.91	162	1	1	Times	100
Benzene	08.01.91	162	20	25	ug/L	80
Ethylbenzene	08.01.91	162	24	25	ug/L	96
Toluene	08.01.91	162	23	25	ug/L	92
Total Xylene Isomers	08.01.91	162	52	50	ug/L	104
C6 to C12 Hydrocarbons	08.01.91	162	440	480	ug/L	92
alocarbons (EPA 601)						
Dilution Factor	08.02.91	475	1	1	Times	100
1,1,1-Trichloroethane	08.02.91	475	23	20	ug/L	115
1,1,2,2-Tetrachloroethane	08.02.91	475	22	20	ug/L	110
1,1,2-Trichloroethane	08.02.91	475	24	20	ug/L	120
1,1-Dichloroethane	08.02.91	475	23	20	ug/L	115
1,1-Dichloroethene	08.02.91	475	22	20	ug/L	110
1,2-Dichloroethane	08.02.91	475	23	20	ug/L	115
1,2-Dichlorobenzene	08.02.91	475	25	20	ug/L	125
1,2-Dichloroethene (Total)	08.02.91	475	44	40	ug/L	110
1,2-Dichloropropane	08.02.91	475	23	20	ug/L	115
1,3-Dichlorobenzene	08.02.91	475	23	20	ug/L	115
1,4-Dichlorobenzene	08.02.91	475	25	20	ug/L	125
2-Chloroethylvinylether	08.02.91	475	19	20	ug/L	95
Bromodichloromethane	08.02.91	475	22	20	ug/L	110
Bromomethane	08.02.91	475	17	20	ug/L	85
Bromoform	08.02.91	475	22	20	ug/L	110
Chlorobenzene	08.02.91	475	22	20	ug/L	110
Carbon Tetrachloride	08.02.91	475	22	20	ug/L	110
Chloroethane	08.02.91	475	17	20	ug/L	85
Chloroform	08.02.91	475	25	20	ug/L	125
Chloromethane	08.02.91	475	15	20	ug/L	75
Dibromochloromethane	08.02.91	475	22	20	ug/L	110
Dichlorodifluoromethane	08.02.91	475	9.2	20	ug/L	46
Freon 113	08.02.91	475	22	20	ug/L	110
Methylene chloride	08.02.91	475	24	20	ug/L	120
Trichloroethene	08.02.91	475	23	20	ug/L	115
Trichlorofluoromethane	08.02.91	475	23	20	ug/L	115
Tetrachloroethene	08.02.91	475	24	20	ug/L	120
Vinyl chloride	08.02.91	475	16	20	ug/L	80
cis-1,2-Dichloroethene	08.02.91	475	21	20	ug/L	105
cis-1,3-Dichloropropene	08.02.91	475	32	32	ug/L	100

BC ANALYTICAL

BATCH QC REPORT
 ORDER: E9107711

ATE REPORTED : 08/09/91

Page 2

LABORATORY CONTROL STANDARDS

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
trans-1,2-Dichloroethene	08.02.91	475	23	20	ug/L	115
trans-1,3-Dichloropropene	08.02.91	475	9.6	8.0	ug/L	120
alocarbons (EPA 601)						
Dilution Factor	08.04.91	477	1	1	Times	100
1,1,1-Trichloroethane	08.04.91	477	23	20	ug/L	115
1,1,2,2-Tetrachloroethane	08.04.91	477	23	20	ug/L	115
1,1,2-Trichloroethane	08.04.91	477	25	20	ug/L	125
1,1-Dichloroethane	08.04.91	477	24	20	ug/L	120
1,1-Dichloroethene	08.04.91	477	20	20	ug/L	100
1,2-Dichloroethane	08.04.91	477	24	20	ug/L	120
1,2-Dichlorobenzene	08.04.91	477	26	20	ug/L	130
1,2-Dichloroethene (Total)	08.04.91	477	42	40	ug/L	105
1,2-Dichloropropane	08.04.91	477	23	20	ug/L	115
1,3-Dichlorobenzene	08.04.91	477	24	20	ug/L	120
1,4-Dichlorobenzene	08.04.91	477	26	20	ug/L	130
2-Chloroethylvinylether	08.04.91	477	20	20	ug/L	100
Bromodichloromethane	08.04.91	477	23	20	ug/L	115
Bromomethane	08.04.91	477	17	20	ug/L	85
Bromoform	08.04.91	477	23	20	ug/L	115
Chlorobenzene	08.04.91	477	22	20	ug/L	110
Carbon Tetrachloride	08.04.91	477	21	20	ug/L	105
Chloroethane	08.04.91	477	17	20	ug/L	85
Chloroform	08.04.91	477	25	20	ug/L	125
Chloromethane	08.04.91	477	16	20	ug/L	80
Dibromochloromethane	08.04.91	477	23	20	ug/L	115
Dichlorodifluoromethane	08.04.91	477	9.2	20	ug/L	46
Freon 113	08.04.91	477	21	20	ug/L	105
Methylene chloride	08.04.91	477	22	20	ug/L	110
Trichloroethene	08.04.91	477	22	20	ug/L	110
Trichlorofluoromethane	08.04.91	477	21	20	ug/L	105
Tetrachloroethene	08.04.91	477	23	20	ug/L	115
Vinyl chloride	08.04.91	477	17	20	ug/L	85
cis-1,2-Dichloroethene	08.04.91	477	21	20	ug/L	105
cis-1,3-Dichloropropene	08.04.91	477	32	32	ug/L	100
trans-1,2-Dichloroethene	08.04.91	477	21	20	ug/L	105
trans-1,3-Dichloropropene	08.04.91	477	10	8.0	ug/L	125

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MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	S1 RESULT	S2 RESULT	UNIT	RELATIVE ZDIFF
Aromatic Hydrocarbons						
Dilution Factor	08.01.91	162	1	1	Times	0
Benzene	08.01.91	162	21	20	ug/L	5
Ethylbenzene	08.01.91	162	25	24	ug/L	4
Toluene	08.01.91	162	23	23	ug/L	0
Total Xylene Isomers	08.01.91	162	53	53	ug/L	0
Halocarbon (EPA 601)						
Dilution Factor	08.02.91	475	1	1	Times	0
1,1,1-Trichloroethane	08.02.91	475	17	16	ug/L	6
1,1-Dichloroethane	08.02.91	475	17	15	ug/L	13
1,1-Dichloroethene	08.02.91	475	14	13	ug/L	7
1,2-Dichloroethane	08.02.91	475	17	16	ug/L	6
1,2-Dichloroethene (Total)	08.02.91	475	130	130	ug/L	0
1,2-Dichloropropane	08.02.91	475	17	16	ug/L	6
Bromodichloromethane	08.02.91	475	16	15	ug/L	6
Bromoform	08.02.91	475	14	13	ug/L	7
Carbon Tetrachloride	08.02.91	475	15	14	ug/L	7
Chloroform	08.02.91	475	20	18	ug/L	11
Dibromochloromethane	08.02.91	475	16	15	ug/L	6
Methylene chloride	08.02.91	475	17	16	ug/L	6
Trichloroethene	08.02.91	475	38	36	ug/L	5
Tetrachloroethene	08.02.91	475	32	31	ug/L	3
Vinyl chloride	08.02.91	475	4.8	5.4	ug/L	12
cis-1,2-Dichloroethene	08.02.91	475	110	110	ug/L	0
trans-1,2-Dichloroethene	08.02.91	475	21	20	ug/L	5
Halocarbon (EPA 601)						
1,1,1-Trichloroethane	08.04.91	477	73	85	ug/L	15
1,1-Dichloroethane	08.04.91	477	65	86	ug/L	28
1,1-Dichloroethene	08.04.91	477	57	71	ug/L	22
1,2-Dichloroethane	08.04.91	477	78	91	ug/L	15
1,2-Dichloroethene (Total)	08.04.91	477	130	160	ug/L	21
1,2-Dichloropropane	08.04.91	477	89	96	ug/L	8
Bromodichloromethane	08.04.91	477	84	92	ug/L	9
Bromoform	08.04.91	477	71	85	ug/L	18
Carbon Tetrachloride	08.04.91	477	64	72	ug/L	12
Chloroform	08.04.91	477	81	96	ug/L	17
Dibromochloromethane	08.04.91	477	77	84	ug/L	9
Methylene chloride	08.04.91	477	64	79	ug/L	21
Trichloroethene	08.04.91	477	340	380	ug/L	11
Tetrachloroethene	08.04.91	477	95	100	ug/L	5

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MATRIX QC PRECISION (DUPLICATE SPIKES)

PARAMETER	DATE	BATCH	S1	S2	UNIT	RELATIVE ZDIFF
cis-1,2-Dichloroethene	08.04.91	477	130	160	ug/L	21

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MATRIX QC ACCURACY (SPIKES)

PARAMETER	DATE ANALYZED	BATCH NUMBER	SBAR RESULT	TRUE RESULT	RBAR RESULT	UNIT	PERCENT RECOVERY
Aromatic Hydrocarbons							
Benzene	08.01.91	162	20.5	25	<0.5	ug/L	82
Ethylbenzene	08.01.91	162	24.5	25	<0.5	ug/L	98
Toluene	08.01.91	162	23	25	<0.5	ug/L	92
Total Xylene Isomers	08.01.91	162	53	50	<0.5	ug/L	106
Alclocarbons (EPA 601)							
1,1,1-Trichloroethane	08.02.91	475	16.5	12	<0.5	ug/L	138
1,1-Dichloroethane	08.02.91	475	16	12	<0.5	ug/L	133
1,1-Dichloroethene	08.02.91	475	13.5	12	<0.5	ug/L	113
1,2-Dichloroethane	08.02.91	475	16.5	12	<0.5	ug/L	138
1,2-Dichloroethene (Total)	08.02.91	475	130	130	100	ug/L	SOR
1,2-Dichloropropane	08.02.91	475	16.5	12	<0.5	ug/L	138
Bromodichloromethane	08.02.91	475	15.5	12	<0.5	ug/L	129
Bromoform	08.02.91	475	13.5	12	<0.5	ug/L	113
Carbon Tetrachloride	08.02.91	475	14.5	12	<0.5	ug/L	121
Chloroform	08.02.91	475	19	12	<0.5	ug/L	158
Dibromochloromethane	08.02.91	475	15.5	12	<0.5	ug/L	129
Methylene chloride	08.02.91	475	16.5	12	<0.5	ug/L	138
Trichloroethene	08.02.91	475	37	41	29	ug/L	SOR
Tetrachloroethene	08.02.91	475	31.5	31	19	ug/L	104
cis-1,2-Dichloroethene	08.02.91	475	110	110	100	ug/L	SOR
trans-1,2-Dichloroethene	08.02.91	475	20.5	18	5.6	ug/L	120
Alclocarbons (EPA 601)							
1,1,1-Trichloroethane	08.04.91	477	79	60	<2	ug/L	132
1,1-Dichloroethane	08.04.91	477	75.5	60	<2	ug/L	126
1,1-Dichloroethene	08.04.91	477	64	60	<2	ug/L	107
1,2-Dichloroethane	08.04.91	477	84.5	60	<2	ug/L	141
1,2-Dichloroethene (Total)	08.04.91	477	145	140	85	ug/L	109
1,2-Dichloropropane	08.04.91	477	92.5	60	<2	ug/L	154
Bromodichloromethane	08.04.91	477	88	60	<2	ug/L	147
Bromoform	08.04.91	477	78	60	<2	ug/L	130
Carbon Tetrachloride	08.04.91	477	68	60	<2	ug/L	113
Chloroform	08.04.91	477	88.5	62	2	ug/L	144
Dibromochloromethane	08.04.91	477	80.5	60	<2	ug/L	134
Methylene chloride	08.04.91	477	71.5	60	<2	ug/L	119
Trichloroethene	08.04.91	477	360	410	350	ug/L	SOR
Tetrachloroethene	08.04.91	477	97.5	90	30	ug/L	113
cis-1,2-Dichloroethene	08.04.91	477	145	140	85	ug/L	109

NR = Spike Out of Range
(relative to high sample concentration)

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT
PH-Volatile/BTEX					
Benzene	08.01.91	162	0.36	0.5	ug/L
Ethylbenzene	08.01.91	162	0	0.5	ug/L
Toluene	08.01.91	162	0.22	0.5	ug/L
Total Xylene Isomers	08.01.91	162	1.1	0.5	ug/L
C6 to C12 Hydrocarbons	08.01.91	162	5.2	50	ug/L
halocarbons (EPA 601)					
1,1,1-Trichloroethane	08.02.91	475	0	0.5	ug/L
1,1,2,2-Tetrachloroethane	08.02.91	475	0	0.5	ug/L
1,1,2-Trichloroethane	08.02.91	475	0	0.5	ug/L
1,1-Dichloroethane	08.02.91	475	0	0.5	ug/L
1,1-Dichloroethene	08.02.91	475	0	0.5	ug/L
1,2-Dichloroethane	08.02.91	475	0	0.5	ug/L
1,2-Dichlorobenzene	08.02.91	475	0	0.5	ug/L
1,2-Dichloroethene (Total)	08.02.91	475	0	0.5	ug/L
1,2-Dichloropropane	08.02.91	475	0	0.5	ug/L
1,3-Dichlorobenzene	08.02.91	475	0	0.5	ug/L
1,4-Dichlorobenzene	08.02.91	475	0	0.5	ug/L
2-Chloroethylvinylether	08.02.91	475	0	0.5	ug/L
Bromodichloromethane	08.02.91	475	0	0.5	ug/L
Bromomethane	08.02.91	475	0	0.5	ug/L
Bromoform	08.02.91	475	0	0.5	ug/L
Chlorobenzene	08.02.91	475	0	0.5	ug/L
Carbon Tetrachloride	08.02.91	475	0	0.5	ug/L
Chloroethane	08.02.91	475	0	0.5	ug/L
Chloroform	08.02.91	475	0	0.5	ug/L
Chloromethane	08.02.91	475	0	0.5	ug/L
Dibromochloromethane	08.02.91	475	0	0.5	ug/L
Dichlorodifluoromethane	08.02.91	475	0	0.5	ug/L
Freon 113	08.02.91	475	0	0.5	ug/L
Methylene chloride	08.02.91	475	0	0.5	ug/L
Trichloroethene	08.02.91	475	0	0.5	ug/L
Trichlorofluoromethane	08.02.91	475	0	0.5	ug/L
Tetrachloroethene	08.02.91	475	0	0.5	ug/L
Vinyl chloride	08.02.91	475	0	0.5	ug/L
cis-1,2-Dichloroethene	08.02.91	475	0	0.5	ug/L
cis-1,3-Dichloropropene	08.02.91	475	0	0.5	ug/L
trans-1,2-Dichloroethene	08.02.91	475	0	0.5	ug/L
trans-1,3-Dichloropropene	08.02.91	475	0	0.5	ug/L

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METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT
Halocarbons (EPA 601)					
1,1,1-Trichloroethane	08.04.91	477	0	0.5	ug/L
1,1,2,2-Tetrachloroethane	08.04.91	477	0	0.5	ug/L
1,1,2-Trichloroethane	08.04.91	477	0	0.5	ug/L
1,1-Dichloroethane	08.04.91	477	0	0.5	ug/L
1,1-Dichloroethene	08.04.91	477	0	0.5	ug/L
1,2-Dichloroethane	08.04.91	477	0	0.5	ug/L
1,2-Dichlorobenzene	08.04.91	477	0	0.5	ug/L
1,2-Dichloroethene (Total)	08.04.91	477	0	0.5	ug/L
1,2-Dichloropropane	08.04.91	477	0	0.5	ug/L
1,3-Dichlorobenzene	08.04.91	477	0	0.5	ug/L
1,4-Dichlorobenzene	08.04.91	477	0	0.5	ug/L
2-Chloroethylvinylether	08.04.91	477	0	0.5	ug/L
Bromodichloromethane	08.04.91	477	0	0.5	ug/L
Bromomethane	08.04.91	477	0	0.5	ug/L
Bromoform	08.04.91	477	0	0.5	ug/L
Chlorobenzene	08.04.91	477	0	0.5	ug/L
Carbon Tetrachloride	08.04.91	477	0	0.5	ug/L
Chloroethane	08.04.91	477	0	0.5	ug/L
Chloroform	08.04.91	477	0	0.5	ug/L
Chloromethane	08.04.91	477	0	0.5	ug/L
Dibromochloromethane	08.04.91	477	0	0.5	ug/L
Dichlorodifluoromethane	08.04.91	477	0	0.5	ug/L
Freon 113	08.04.91	477	0	0.5	ug/L
Methylene chloride	08.04.91	477	0	0.5	ug/L
Trichloroethene	08.04.91	477	0	0.5	ug/L
Trichlorofluoromethane	08.04.91	477	0	0.5	ug/L
Tetrachloroethene	08.04.91	477	0	0.5	ug/L
Vinyl chloride	08.04.91	477	0	0.5	ug/L
cis-1,2-Dichloroethene	08.04.91	477	0	0.5	ug/L
cis-1,3-Dichloropropene	08.04.91	477	0	0.5	ug/L
trans-1,2-Dichloroethene	08.04.91	477	0	0.5	ug/L
trans-1,3-Dichloropropene	08.04.91	477	0	0.5	ug/L

CHAIN OF CUSTODY RECORD

BCA Log Number 9107711

Client name CH2M HILL	Project or PO# SFO28830.A1
Address 6425 CHRISTIE	Phone # 652-2426
City, State, Zip EMERYVILLE, CA	Report attention LARRY ANDERSON

Analyses required										
601	602	603	604	605	606	607	608	609	610	611
Hazardous sample Special handling required										
Remarks										

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by LARRY ANDERSON	Number of containers
-1 MW-7	7/31/91		GW	Groundwater Qtrly. sample	3
-2 MW-8	↓		GW	u u u	3
-3 MW-9	↓		GW	Groundwater Qtrly. sample	3
-4 MW-10	↓		GW	u u u	3
-5 MW-11	↓		GW	Groundwater Qtrly. sample	3

Signature	Print Name	Company	Date	Time
Relinquished by <i>Larry Anderson</i>	LARRY ANDERSON	CH2M HILL	7/31/91	3:04pm
Received by <i>Kathy Flores</i>	KATHI FLORES	BCA	7/31/91	15:04pm
Relinquished by				
Received by				
Relinquished by				
Received by Laboratory				

B C ANALYTICAL
 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
 1200 Pacific Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

*KEY: AQ—Aqueous NA—Nonaqueous SL—Sludge
 GW—Groundwater SO—Soil OT—Other PE—Petroleum

Disposal arrangements: _____