

TABLES

TABLE 1
SOIL ANALYTICAL DATA
 ConocoPhillips Station No. 3713
 1503 Carlson Boulevard, Richmond, California

Sample ID	Date	Sample Depth (feet)	TPH-G (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	DIPE (mg/kg)	Ethanol (mg/kg)	Lead (mg/kg)
SB-1	11/10/2003	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.9
SB-2	11/10/2003	15	ND<1.0	ND<0.005	ND<0.005	ND<0.005	0.007	0.12	ND<0.01	ND<0.005	ND<0.005	ND<0.01	ND<0.01	NA
SB-3	11/10/2003	5	45	0.2	0.18	0.86	5.1	ND<0.025	ND<0.05	ND<0.025	ND<0.025	ND<0.05	ND<0.05	NA
SB-4	11/10/2003	10	6.6	0.073	0.36	0.13	0.6	0.066	ND<0.05	ND<0.025	ND<0.025	ND<0.05	ND<0.05	NA
SW1 (UST Basin)	3/21/1997	10	34	1	0.23	0.86	0.55	ND	NA	NA	NA	NA	NA	NA
SW2 (UST Basin)	3/21/1997	10	2.1	0.45	0.016	0.019	0.015	0.38	NA	NA	NA	NA	NA	NA
SW3 (UST Basin)	3/21/1997	10	670	5.8	32	16	85	1.6	NA	NA	NA	NA	NA	NA
SW4 (UST Basin)	3/21/1997	10	1,100	8.5	79	28	160	ND	NA	NA	NA	NA	NA	NA
BTM1 (UST Basin)	3/21/1997	18	ND	ND	ND	ND	0.019	ND	NA	NA	NA	NA	NA	NA
BTM2 (UST Basin)	3/21/1997	18	ND	ND	ND	ND	ND	0.083	NA	NA	NA	NA	NA	NA
P1 (Pump Island)	4/1/1997	3.75	330	1.3	0.37	5.5	20	ND	NA	NA	NA	NA	NA	NA
P2 (Pump Island)	4/1/1997	3.5	7.1	0.63	0.0051	0.65	0.0076	0.93	NA	NA	NA	NA	NA	NA
P2 (Pump Island)	4/1/1997	4.5	17	0.28	0.15	0.41	0.54	4.9	NA	NA	NA	NA	NA	NA
P3 (Pump Island)	4/1/1997	3.5	14	0.33	0.13	0.24	0.04	2.9	NA	NA	NA	NA	NA	NA
P3 (Pump Island)	4/1/1997	4.5	21	0.2	0.079	0.33	0.54	2.8	NA	NA	NA	NA	NA	NA
D1 (Dispenser)	4/1/1997	4	9.7	0.15	0.027	0.29	0.097	0.66	NA	NA	NA	NA	NA	NA
D2 (Dispenser)	4/1/1997	4	180	0.48	9.6	3.1	27	2.7	NA	NA	NA	NA	NA	NA
D3 (Dispenser)	4/1/1997	4	ND	ND	ND	ND	ND	0.057	NA	NA	NA	NA	NA	NA
D4 (Dispenser)	4/1/1997	4	12	0.17	0.054	0.27	0.27	1.1	NA	NA	NA	NA	NA	NA
WO1 (Waste Oil Basin)	7/23/1993	9.5	4.3	0.53	0.056	0.2	0.49	NA	NA	NA	NA	NA	NA	NA
MW-3 d5.5	5/13/2005	5.5	540	1.8	42	38	240	ND<1.0	ND<5.0	ND<1.0	ND<1.0	ND<2.0	NA	NA
MW-3 d9.5	5/13/2005	9.5	ND<1.0	ND<0.0050	0.0065	0.0077	0.037	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.010	NA	NA
MW-4 d5.5	5/13/2005	5.5	71	0.2	0.046	0.17	1.0	0.0055	0.025	ND<0.005	ND<0.005	ND<0.010	NA	NA
MW-4 d9.5	5/13/2005	9.5	10	ND<0.50	ND<0.50	0.78	2.4	ND<0.50	ND<2.5	ND<0.50	ND<0.50	ND<1.0	NA	NA
MW-5 d5.5	5/12/2005	5.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5 d9.5	5/12/2005	9.5	4.8	ND<0.50	ND<0.50	ND<0.50	1.5	ND<0.50	ND<2.50	ND<0.50	ND<0.50	ND<1.0	NA	NA
MW-6 d5.5	5/12/2005	5.5	47	ND<0.024	ND<0.024	0.42	2.2	ND<0.024	ND<0.049	ND<0.024	ND<0.024	ND<0.049	NA	NA
MW-6 d9.5	5/12/2005	9.5	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.010	NA	NA
MW-7@5.5'	10/27/2006	5.5	350	ND<0.12	ND<0.12	0.62	0.46	ND<0.12	ND<5.0	ND<0.025	ND<0.025	ND<0.12	ND<25	NA
MW-7@9.5'	10/27/2006	9.5	17	ND<0.0050	ND<0.0050	0.42	0.049	0.0057	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-8@6'	10/27/2006	6	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-8@9.5'	10/27/2006	9.5	190	0.027	ND<0.010	0.74	3.6	0.053	ND<0.40	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-9@5'	2/9/2007	5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.010	ND<2.0	NA
MW-9@10'	2/9/2007	10	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-9@12'	2/9/2007	12	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-10@5'	2/8/2007	5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-10@10'	2/8/2007	10	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-10@12'	2/8/2007	12	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-11@5.5'	1/25/2007	5.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.023	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-11@10.5'	1/25/2007	10.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.040	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-11@15.5'	1/25/2007	15.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.067	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-11@20.0'	1/25/2007	20	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.0068	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-11@25.0'	1/25/2007	25	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-11@30.0'	1/25/2007	30	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-12@5.5'	1/25/2007	5.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-12@10.5'	1/25/2007	10.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.011	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-12@15.5'	1/25/2007	15.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-12@20.5'	1/25/2007	20.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	0.0068	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-13@7.5'	10/27/2006	7.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	7.4
MW-13@11.5'	10/27/2006	11.5	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-14@6'	10/27/2006	6	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
MW-14@10'	10/27/2006	10	ND<1.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	ND<0.20	ND<0.0010	ND<0.0010	ND<0.0050	ND<1.0	NA
IW-1@20'	9/25/2007	20	<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	NA	NA	NA	NA	NA	NA
IW-1@25'	9/25/2007	25	<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	NA	NA	NA	NA	NA	NA
IW-1@30'	9/25/2007	30	<0.20	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.010	ND<0.0050	NA	NA	NA	NA	NA	NA
IW-1@35'	9/25/2007	35	0.41	0.019	0.062	0.017	0.076	ND<0.0050	NA	NA	NA	NA	NA	NA
IW-1@40'	9/25/2007	40	0.55	0.029	0.012	0.029	0.14	ND<0.0050	NA	NA	NA	NA	NA	NA

TPH-G = total petroleum hydrocarbons with gasoline distinction by EPA Method 8260B
 BTEX = benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B
 MTBE = methyl tertiary butyl ether by EPA Method 8260B
 TBA = tertiary butyl alcohol by EPA Method 8260B
 ETBE = ethyl tertiary butyl ether by EPA Method 8260B
 DIPE = di-isopropyl ether by EPA Method 8260B
 TAME = tertiary amyl methyl ether by EPA Method 8260B

Ethanol was analyzed by EPA Method 8260B
 Lead was analyzed by EPA Method 6010
 mg/kg = milligrams per kilogram
 --- = not analyzed
 ND = not detected above the laboratory detection limit
Bold = detected compound concentration

TABLE 2

GROUNDWATER ANALYTICAL DATA
 ConocoPhillips Station No. 3713
 1503 Carlson Boulevard, Richmond, California

Sample ID	Date	Sample Depth / Depth to Water (feet)	TPH-G (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	ETBE (µg/L)	TAME (µg/L)	DIPE (µg/L)	Ethanol (µg/L)
Groundwater													
SB-1	11/10/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-2	11/10/2003	NA	500	0.69	4.3	29	140	120	ND<100	ND<2.0	ND<2.0	ND<2.0	ND<500
SB-3	11/10/2003	NA	77,000	100	2,800	5,200	26,000	ND<400	ND<20,000	ND<400	ND<400	ND<400	ND<100,000
SB-4	11/10/2003	NA	120,000	10,000	30,000	5,500	26,000	ND<2,000	ND<100,000	ND<2,000	ND<2,000	ND<2,000	ND<50,000
MW-1	11/11/2003	NA	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	12	ND<100	ND<2.0	ND<2.0	ND<2.0	ND<500
MW-2	11/11/2003	NA	ND<50	ND<0.50	0.52	ND<0.50	ND<1.0	2.9	ND<100	ND<2.0	ND<2.0	ND<2.0	ND<500
MW-1	10/17/2008	4.49	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-2	10/17/2008	3.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-3	10/17/2008	4.05	1,500	3.9	ND<0.50	53	130	28	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-4	10/17/2008	6.68	12,000	1,400	1,100	490	1,500	310	3,700	ND<5.0	ND<5.0	ND<5.0	ND<2,500
MW-5	10/17/2008	6.44	81,000	7,400	9,200	3,000	13,000	410	ND<500	ND<25	ND<25	ND<25	ND<12,000
MW-6	10/17/2008	5.07	200	ND<0.50	ND<0.50	ND<0.50	ND<1.0	2	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-7	10/17/2008	6.52	7,900	7.6	ND<2.5	280	80	87	ND<50	ND<2.5	ND<2.5	ND<2.5	ND<1,200
MW-8	10/17/2008	6.96	15,000	800	ND<5.0	1,400	1,300	690	ND<100	ND<5.0	ND<5.0	ND<5.0	ND<2,500
MW-9	10/17/2008	6.31	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.7	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-10	10/17/2008	6.01	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-11	10/17/2008	5.35	500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	450	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-12	10/17/2008	5.8	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	21	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-13	10/17/2008	4.56	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	21	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-14	10/17/2008	6.15	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-15	10/17/2008	6.4	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
MW-16	10/17/2008	6.94	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	3.0	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
B-1	9/11/2008	10	74,000	4,400	15,000	3,100	17,000	480	ND<100	ND<5.0	ND<5.0	ND<5.0	ND<2,500
B-1	9/11/2008	33	ND<50	0.51	0.60	ND<0.50	1.2	3.3	ND<10	ND<0.50	ND<0.50	ND<0.50	ND<250
IW-1	9/25/2007	30	830	22	5.5	36	150	5.3	NA	NA	NA	NA	NA
IW-1	9/25/2007	40	15,000	890	350	770	3,500	120	NA	NA	NA	NA	NA

TPH-G = total purgeable petroleum hydrocarbons by EPA Method 8260B	Ethanol was analyzed by EPA Method 8260B
BTEX = benzene, toluene, ethylbenzene, total xylenes by EPA Method 8260B	µg/L = micrograms per liter
MTBE = methyl tertiary butyl ether by EPA Method 8260B	ND = not detected above the laboratory detection limit
TBA = tertiary butyl alcohol by EPA Method 8260B	Bold = detected compound concentration
ETBE = ethyl tertiary butyl ether by EPA Method 8260B	NA = Not Analyzed / Not Applicable
DIPE = di-isopropyl ether by EPA Method 8260B	
TAME = tertiary amyl methyl ether by EPA Method 8260B	

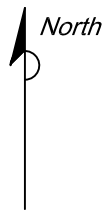
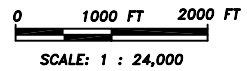
TABLE 3

SOIL GAS ANALYTICAL DATA
 ConocoPhillips Station No. 3713
 1503 Carlson Boulevard, Richmond, California

Sample ID	Date	Sample Time	Purge Volume	Sample Depth (feet)	TPH-G	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylene	MTBE	1,1 Difluoroethane (Leak Check)	Methane	Oxygen	Carbon Dioxide
			(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)	(ug/m ³)
Soil Gas																
Probe Blank	10/22/2008	9:43	NA	NA	ND<10000	ND<100	ND<200	ND<200	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
Probe Blank	10/23/2008	8:48	NA	NA	ND<10000	ND<100	ND<200	ND<200	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-FB	10/22/2008	9:43	3	0.5	ND<10000	ND<100	ND<200	ND<200	210	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-1B	10/22/2008	12:46	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-1B-3	10/22/2008	14:40	3	3.0	ND<10000	ND<100	ND<200	ND<100	220	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-2B	10/22/2008	10:51	1	0.5	ND<10000	ND<100	ND<200	ND<100	250	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-2B	10/22/2008	11:11	3	0.5	ND<10000	ND<100	ND<200	ND<100	220	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-2B	10/22/2008	11:33	7	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-2B-3	10/22/2008	14:18	3	3.0	11000	ND<100	350	ND<100	260	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-3B	10/22/2008	12:05	3	0.5	ND<10000	ND<100	ND<200	ND<100	220	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-3B-3	10/22/2008	13:53	3	3.0	860000	230	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-4B	10/22/2008	12:27	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	470000	NA	NA	NA
SV-4B	10/22/2008	13:30	3	0.5	ND<10000	ND<100	ND<200	ND<100	240	ND<100	NA	ND<100	100000	NA	NA	NA
SV-4B-3	10/22/2008	15:03	3	3.0	250000	490	ND<200	460	210	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-4B-3 dup	10/22/2008	15:03	3	3.0	260000	520	ND<200	470	290	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-4B	10/23/2008	9:36	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-5B	10/23/2008	10:03	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-5B-3	10/23/2008	11:27	3	3.0	28000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-6B	10/23/2008	10:24	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-6B-3	10/23/2008	11:50	3	3.0	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-7B	10/23/2008	10:45	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-7B-3	10/23/2008	12:14	3	3.0	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-8B	10/23/2008	11:08	3	0.5	ND<10000	ND<100	ND<200	ND<100	ND<200	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SV-8B-3	10/23/2008	12:37	3	3.0	58000	ND<100	ND<200	ND<100	240	ND<100	NA	ND<100	ND<10000	NA	NA	NA
SG-3	12/17/2007	10:20	1	4.5	21,000,000	<100	<200	<100	NA	NA	<300	<100	NA	19	<5.0	2.2
SG-5	12/17/2007	10:43	1	4.5	37,000	<100	<200	<100	NA	NA	<300	<100	NA	<0.005	20	<1.0
SG-5	12/17/2007	11:03	3	4.5	40,000	<100	<200	<100	NA	NA	<300	<100	NA	NA	NA	NA
SG-5	12/17/2007	11:22	7	4.5	51,000	<100	<200	<100	NA	NA	<300	<100	NA	NA	NA	NA
SG-7	12/17/2007	11:52	3	4.5	23,000	<100	<200	<100	NA	NA	<300	<100	NA	<0.005	17	<1.0
SG-8	12/17/2007	12:33	3	4.5	18,000,000	6,500	<200	<100	NA	NA	<300	<100	NA	38	<5.0	4.2
SG-8 dup	12/17/2007	13:31	3	4.5	18,000,000	6,400	<200	<100	NA	NA	<300	<100	NA	41	<5.0	4.1
SG-9	12/17/2007	13:10	3	4.5	12,000	<100	<200	<100	NA	NA	<300	140	NA	<0.005	11	<1.0
Probe Blank	12/17/2007	8:40	NA	na	<10000	<100	<200	<100	NA	NA	<300	<100	NA	<0.005	21	<1.0
SV-1	7/5/2006	10:50	NA	3	27395.98	ND	371.73	1997.87	6773.40	2901.91	NA	ND	NA	NA	NA	NA
SV-2	7/5/2006	10:54	NA	3	903.98	ND	23.39	135.61	392.98	160.53	NA	ND	NA	NA	NA	NA
SV-3	7/5/2006	10:58	NA	3	431.81	ND	12.65	ND	6.54	4.55	NA	ND	NA	NA	NA	NA
SV-4	7/5/2006	11:02	NA	3	5182.16	5.47	510.12	1827.87	4753.69	2130.95	NA	ND	NA	NA	NA	NA
SV-5	7/5/2006	11:06	NA	3	89734.21	5.82	2.87	6.17	19.93	12.93	NA	ND	NA	NA	NA	NA
SV-6	7/5/2006	11:10	NA	3	10668.32	1.28	ND	ND	ND	ND	NA	BDL	NA	NA	NA	NA
SV-7	7/5/2006	11:14	NA	3	112669.12	930.18	8438.25	6271.07	44192.77	17832.58	NA	ND	NA	NA	NA	NA
SV-8	7/5/2006	11:19	NA	3	88.22	ND	ND	9.14	39.66	13.92	NA	ND	NA	NA	NA	NA
SV-9	7/5/2006	11:22	NA	3	7551.18	4.09	7.90	4.04	14.32	11.77	NA	ND	NA	NA	NA	NA
SV-10	7/5/2006	11:26	NA	3	33993.85	92.98	1.68	10.23	472.14	34.37	NA	BDL	NA	NA	NA	NA
SV-11	7/5/2006	11:30	NA	3	36435.40	126.36	BDL	121.78	171.54	12.99	NA	BDL	NA	NA	NA	NA
SV-12	7/5/2006	11:33	NA	3	41506.38	161.84	7.32	9.17	201.64	80.42	NA	BDL	NA	NA	NA	NA
SV-13	7/5/2006	11:37	NA	3	21471.90	26.34	BDL	3.78	12.27	9.15	NA	BDL	NA	NA	NA	NA
SV-14	7/5/2006	11:43	NA	3	10882.24	6.80	BDL	4.05	12.58	6.03	NA	115.41	NA	NA	NA	NA
SV-15	7/5/2006	11:47	NA	3	3746.22	6.12	3.87	6.79	22.88	11.63	NA	2.77	NA	NA	NA	NA
Trip Blank	7/5/2006	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	ND	NA	NA	NA	NA

TPH-G total purgeable petroleum hydrocarbons by EPA Method 8260B
 MTBE methyl tertiary butyl ether by EPA Method 8260B
 ug/M³ micrograms per cubic meter
 ND-, ND not detected above the laboratory detection limit
 BDL Below Detection Limit
 NA not analyzed
Bold detected compound concentration

FIGURES



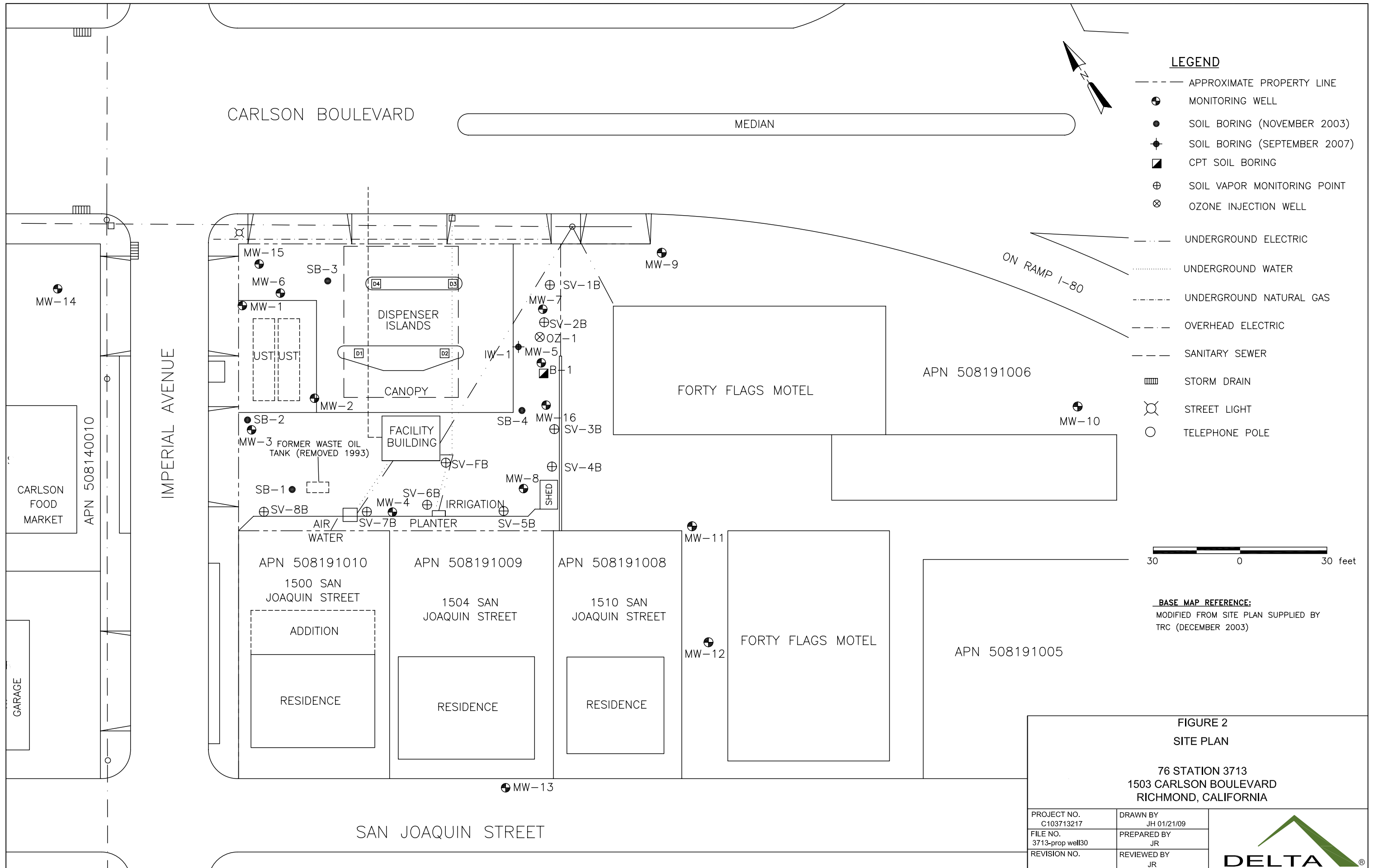
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, RICHMOND QUADRANGLE, 1967

FIGURE 1
SITE LOCATION MAP

76 SERVICE STATION NO. 3713
1503 CARLSON BOULEVARD
RICHMOND, CALIFORNIA

PROJECT NO. C103-713	DRAWN BY JH 01/19/09
FILE NO. Site Locator 3713	PREPARED BY JH
REVISION NO. 1	REVIEWED BY





LEGEND

- APPROXIMATE PROPERTY LINE
- ⊕ MONITORING WELL
- SOIL BORING (NOVEMBER 2003)
- ◆ SOIL BORING (SEPTEMBER 2007)
- CPT SOIL BORING
- ⊕ SOIL VAPOR MONITORING POINT
- ⊗ OZONE INJECTION WELL
- UNDERGROUND ELECTRIC
- UNDERGROUND WATER
- UNDERGROUND NATURAL GAS
- OVERHEAD ELECTRIC
- SANITARY SEWER
- ▤ STORM DRAIN
- ⊗ STREET LIGHT
- TELEPHONE POLE



BASE MAP REFERENCE:
 MODIFIED FROM SITE PLAN SUPPLIED BY
 TRC (DECEMBER 2003)

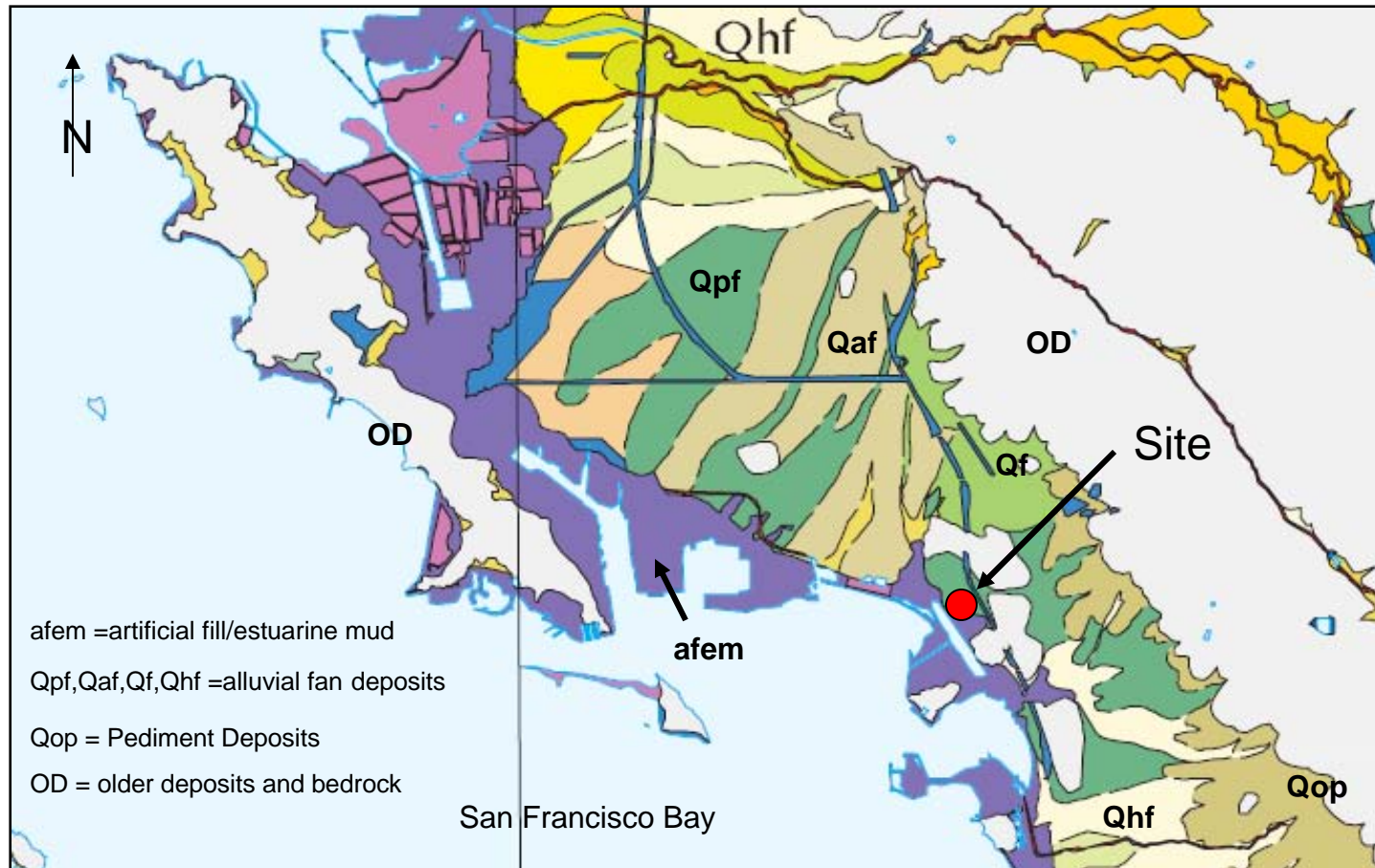
**FIGURE 2
 SITE PLAN**

76 STATION 3713
 1503 CARLSON BOULEVARD
 RICHMOND, CALIFORNIA

PROJECT NO. C103713217	DRAWN BY JH 01/21/09
FILE NO. 3713-prop well30	PREPARED BY JR
REVISION NO.	REVIEWED BY JR



**Figure 3 – Regional Geologic Map
COP Station 3713; Richmond, CA**



QUATERNARY DEPOSITS

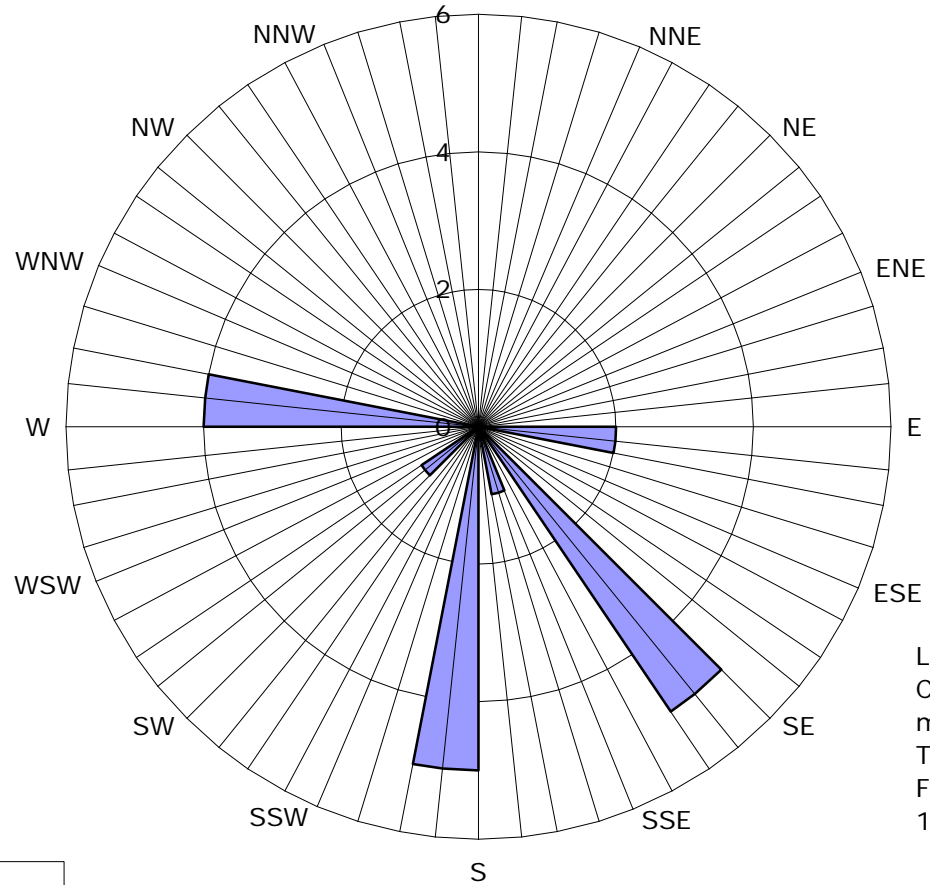
geology by

Robert C. Witter, Keith L. Knudsen, Janet M. Sowers, Carl M. Wentworth, Richard D. Koehler, and Carolyn E. Randolph

digital database by

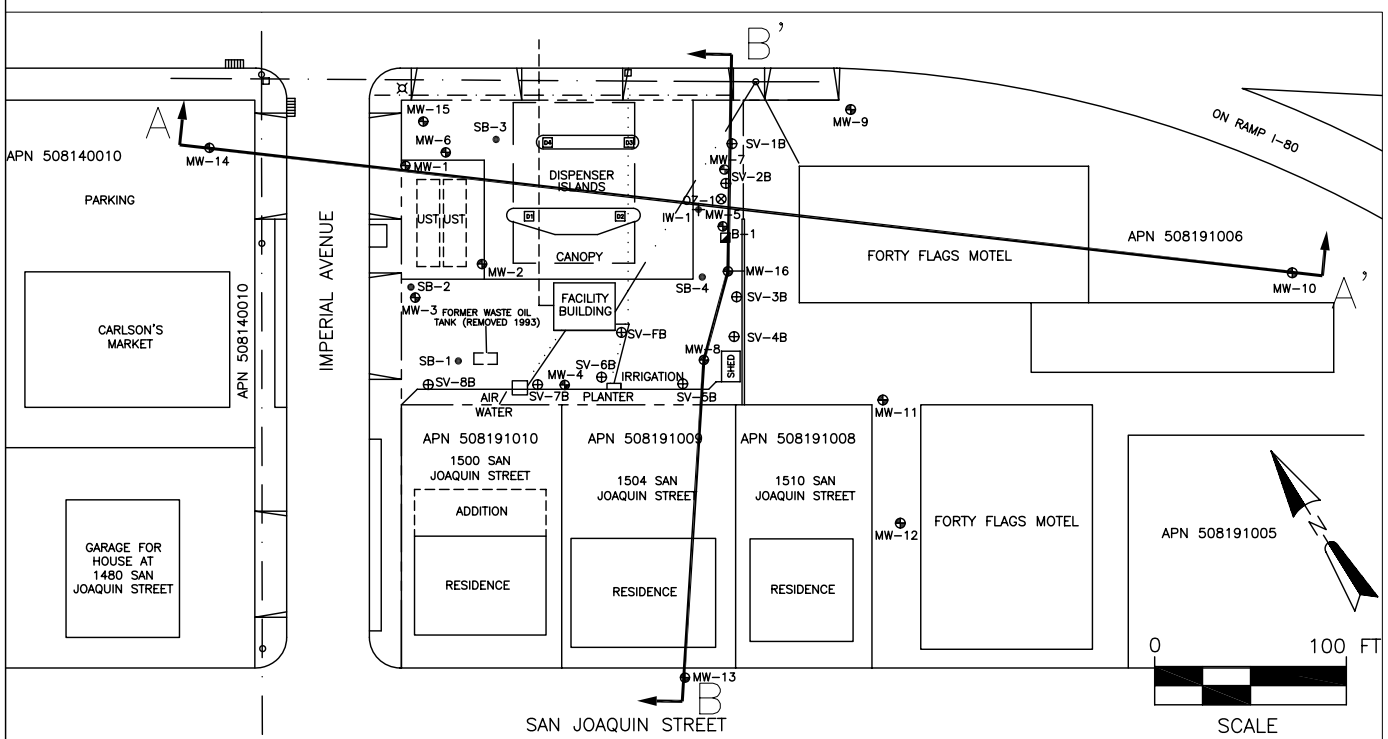
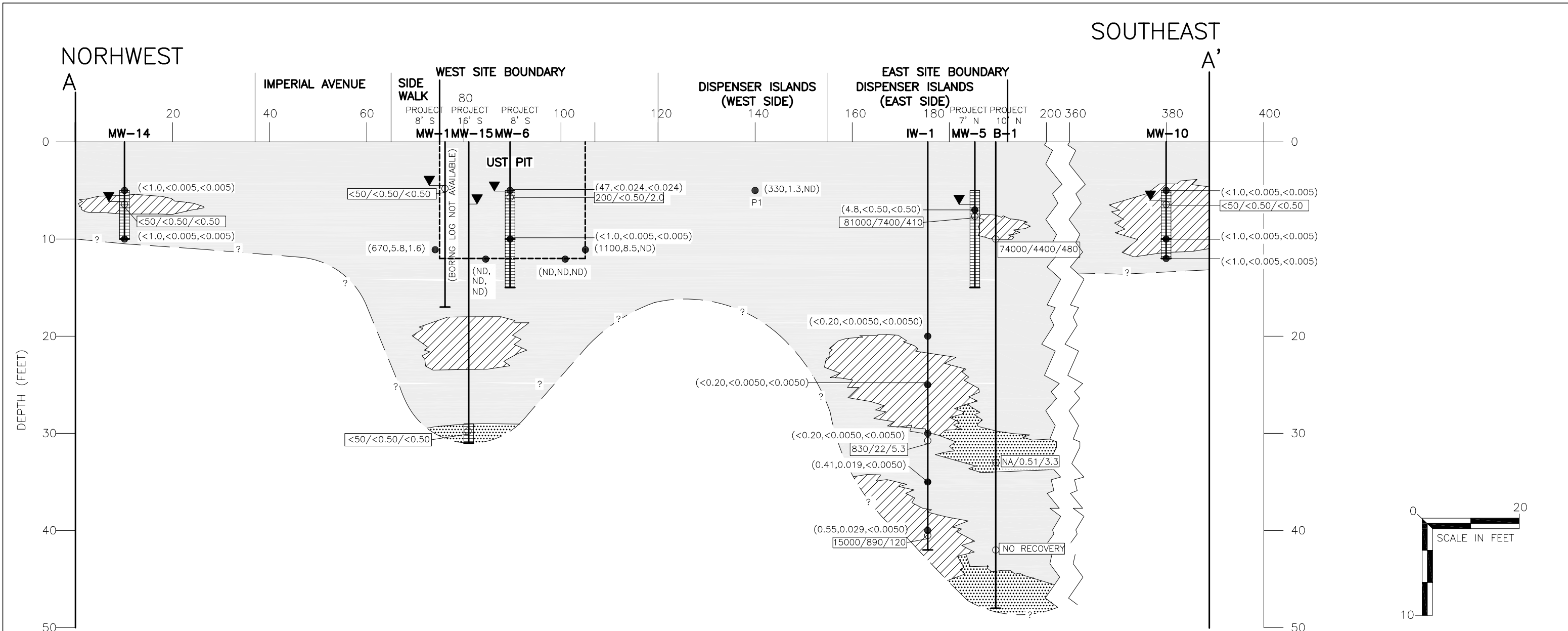
Carl M. Wentworth, Suzanna K. Brooks, and Kathleen D. Gans

Figure 4
Historic Groundwater Flow Directions
ConocoPhillips Site No. 3713
 1503 Carlson Boulevard
 Richmond, California



Legend
 Concentric circles represent quarterly
 monitoring events
 Third Quarter 2005 through
 Fourth Quarter 2008
 18 data points shown

■ Groundwater Flow Direction



LEGEND

- MONITORING WELL/BORING NAME
- WELL CASING/EXPLORATORY BORING
- SOIL SAMPLE LOCATION
- WELL SCREEN
- DEPTH TO STATIC GROUNDWATER
- SOIL SAMPLE LOCATION WITH ANALYTICAL DATA: TPHg, BENZENE, MTBE (mg/kg)
- GROUNDWATER SAMPLE LOCATION WITH ANALYTICAL DATA: TPHg, BENZENE, MTBE (ug/L)
- LOW PERMEABILITY CLAY, SILT (CL, ML, CH)
- MEDIUM PERMEABILITY SAND/GRAVEL WITH CLAY/SILT (GC, SM, SC)
- HIGH PERMEABILITY SANDS AND GRAVELS (SP, GW)
- APPROXIMATE STRATIGRAPHIC BOUNDARY

- NOTES:**
- 1) ND<0.050=NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
NA=NOT ANALYZED
TPHg=TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
MTBE=METHYL TERT BUTYL ETHER
mg/kg=MILLIGRAMS PER KILOGRAM
ug/L=MICROGRAMS PER LITER
 - 2) STRATIGRAPHY BETWEEN BORINGS IS INTERPRETIVE.

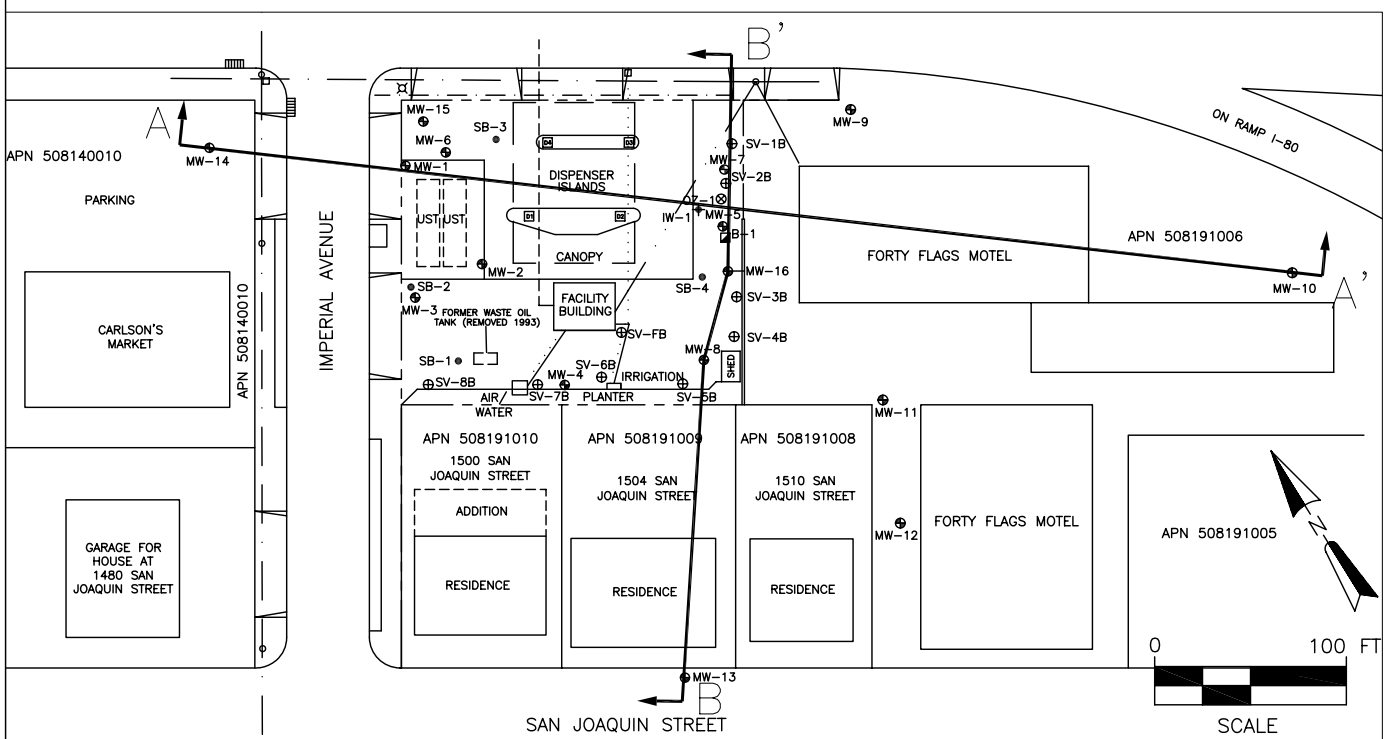
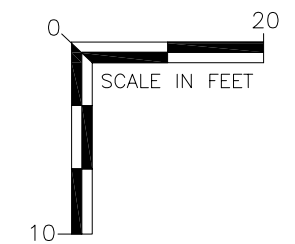
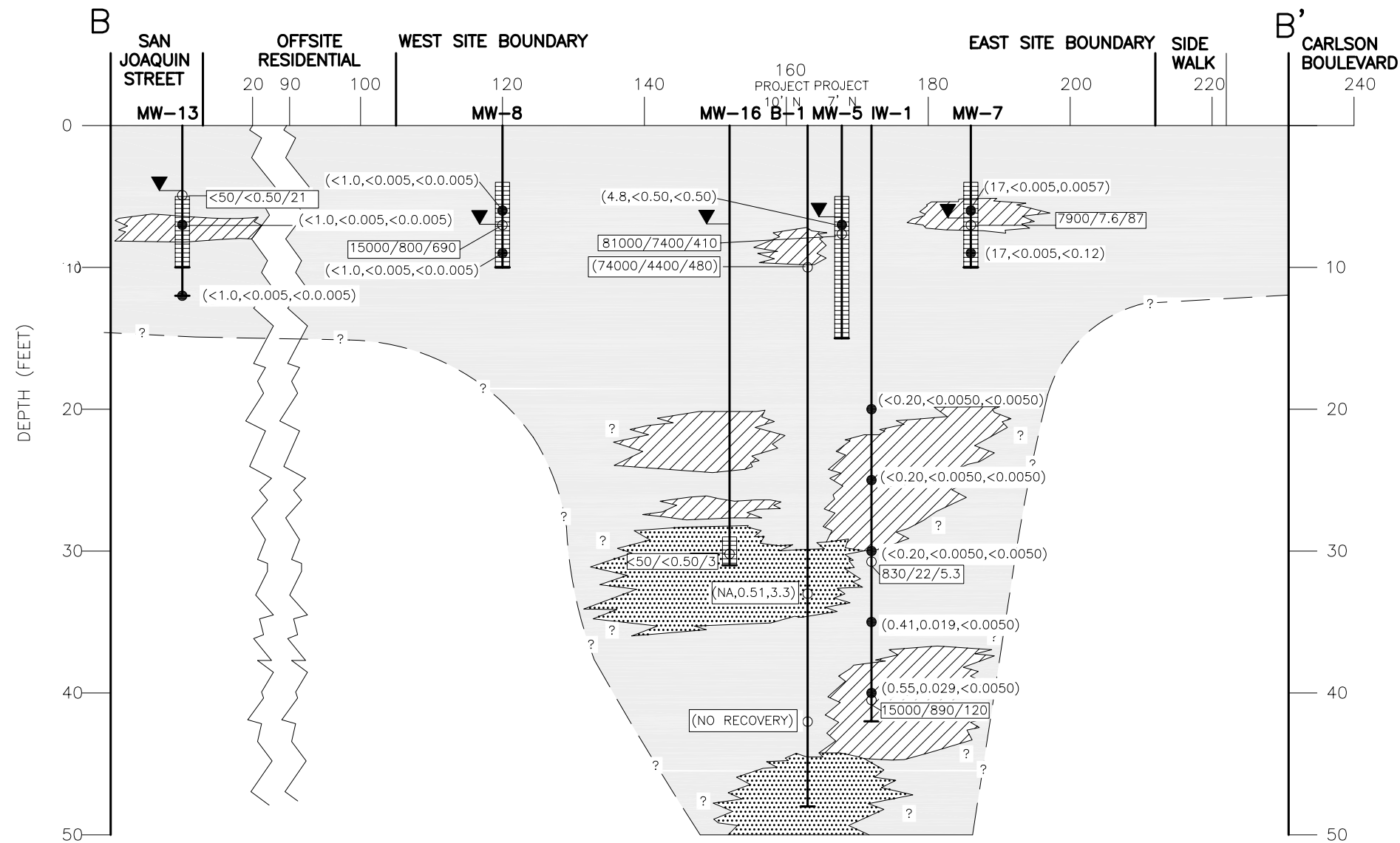
FIGURE 5
GEOLOGIC CROSS SECTION A-A'

76 SERVICE STATION NO. 3713
1503 CARLSON AVENUE
RICHMOND, CALIFORNIA

PROJECT NO. C103713	PREPARED BY MC	DRAWN BY JH	
DATE 01/23/09	REVIEWED BY LD	FILE NAME 3713-prop well30	

SOUTHWEST

NORTHEAST



LEGEND

- MONITORING WELL/BORING NAME
- WELL CASING/EXPLORATORY BORING
- SOIL SAMPLE LOCATION
- WELL SCREEN
- DEPTH TO STATIC GROUNDWATER
- SOIL SAMPLE LOCATION WITH ANALYTICAL DATA: TPHg, BENZENE, MTBE (mg/kg)
- GROUNDWATER SAMPLE LOCATION WITH ANALYTICAL DATA: TPHg, BENZENE, MTBE (ug/L)
- LOW PERMEABILITY CLAY, SILT (CL, ML, CH)
- MEDIUM PERMEABILITY SAND/GRAVEL WITH CLAY/SILT (GC, SM, SC)
- HIGH PERMEABILITY SANDS AND GRAVELS (SP, GW)
- APPROXIMATE STRATIGRAPHIC BOUNDARY


- NOTES:
- 1) ND<0.050=NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
 NA=NOT ANALYZED
 TPHg=TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
 MTBE=METHYL TERT BUTYL ETHER
 mg/kg=MILLIGRAMS PER KILOGRAM
 ug/L=MICROGRAMS PER LITER
 - 2) STRATIGRAPHY BETWEEN BORINGS IS INTERPRETIVE.


FIGURE 6
 GEOLOGIC CROSS SECTION B-B'
 76 SERVICE STATION NO. 3713
 1503 CARLSON AVENUE
 RICHMOND, CALIFORNIA

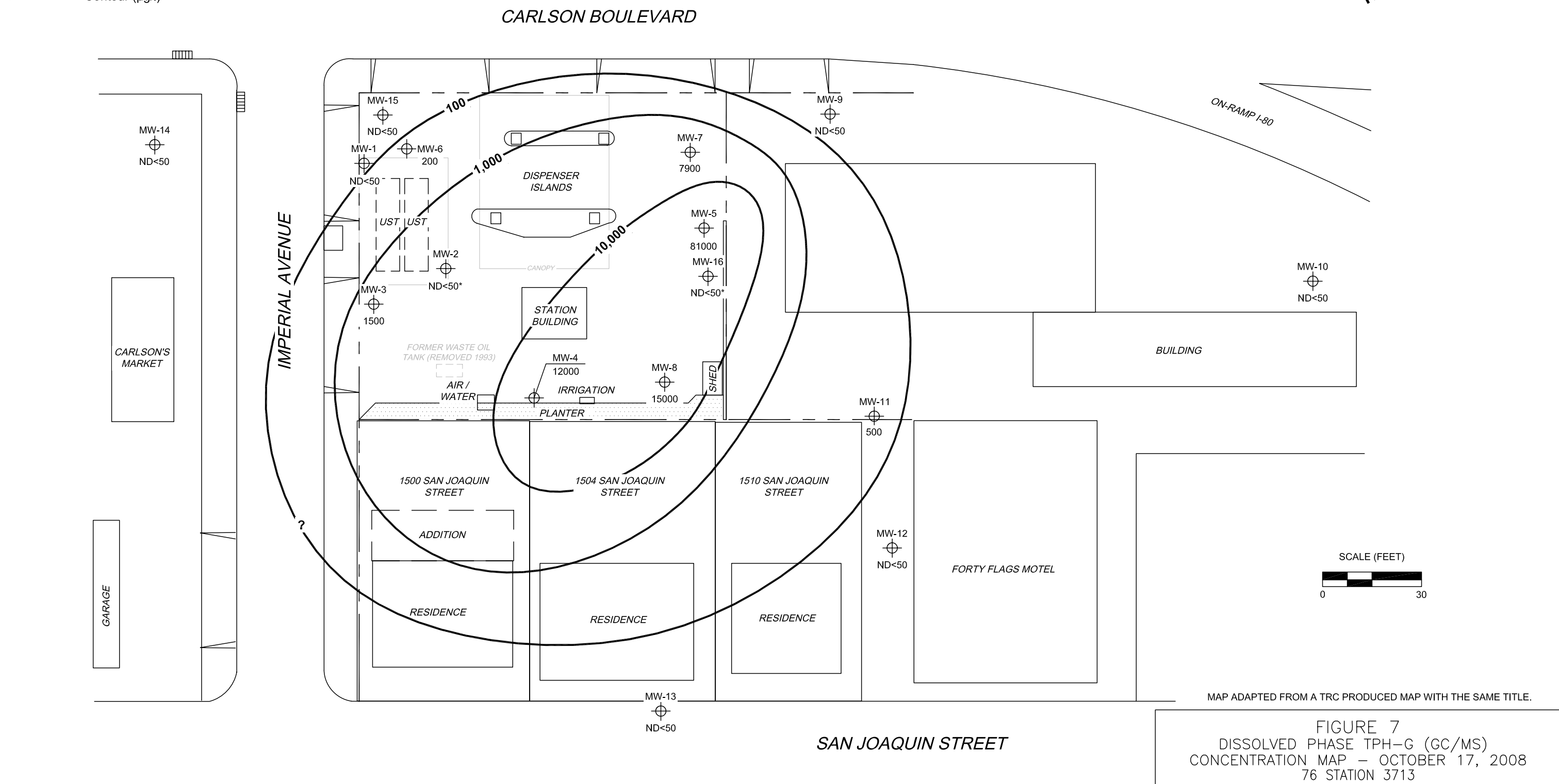
PROJECT NO. C103713	PREPARED BY MC	DRAWN BY JH
DATE 01/15/09	REVIEWED BY LD	FILE NAME 3713-prop well30



LEGEND

MW-16  Monitoring Well with Dissolved-Phase TPH-G (GC/MS) Concentration (µg/l)

 10,000 Dissolved-Phase TPH-G (GC/MS) Contour (µg/l)




NOTES:
 Contour lines are interpretive and based on laboratory analysis results of groundwater samples.
 TPH-G (GC/MS) = total petroleum hydrocarbons with gasoline distinction utilizing EPA Method 8260B.
 µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report.
 * = not included in contour interpretation. UST = underground storage tank.


MAP ADAPTED FROM A TRC PRODUCED MAP WITH THE SAME TITLE.


FIGURE 7
 DISSOLVED PHASE TPH-G (GC/MS)
 CONCENTRATION MAP – OCTOBER 17, 2008
 76 STATION 3713
 1503 CARLSON BOULEVARD
 RICHMOND, CALIFORNIA

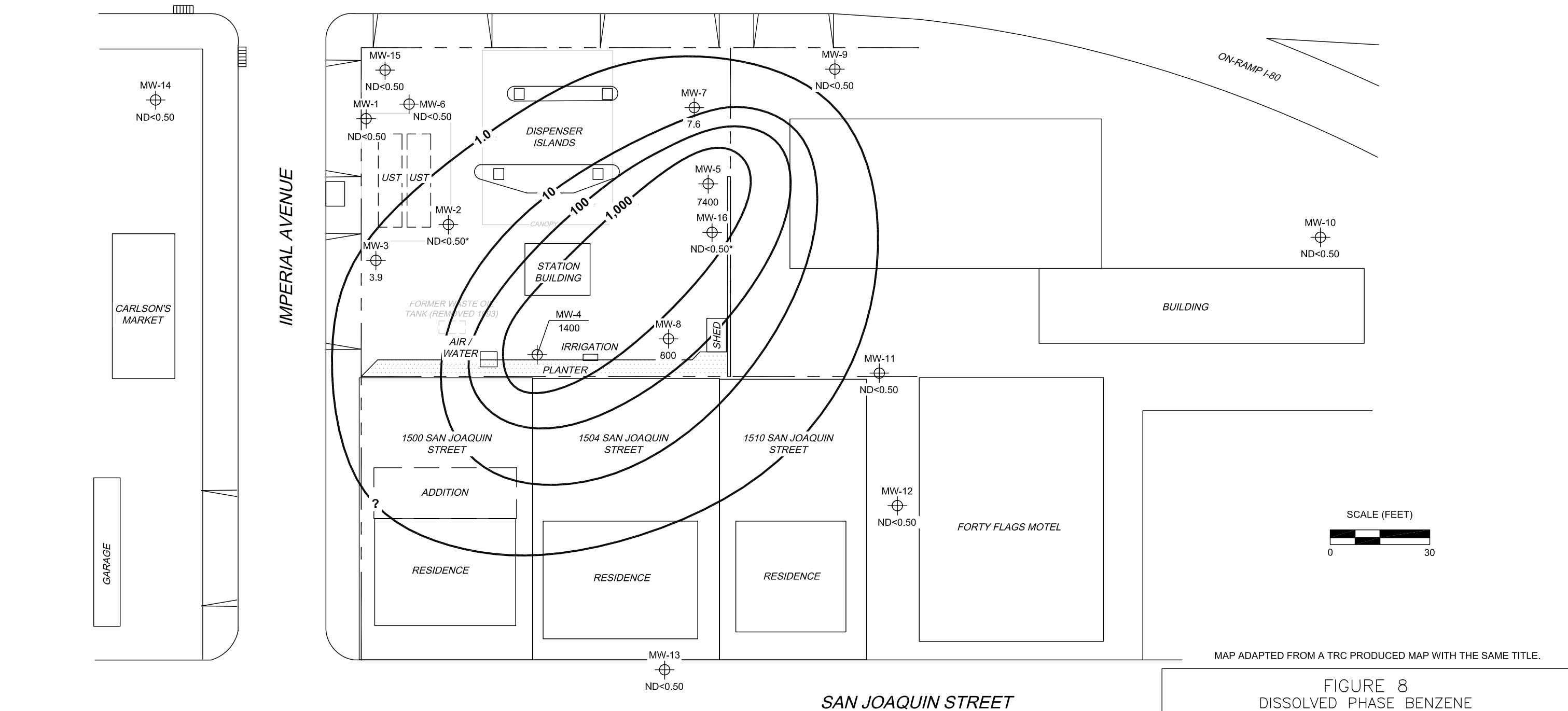
PROJECT NO. C103713	PREPARED BY MC	DRAWN BY JH
DATE 01/22/09	REVIEWED BY LD	FILE NAME 3713_QMS(NEW)



LEGEND

MW-16  Monitoring Well with Dissolved-Phase Benzene Concentration (µg/l)

 1,000 Dissolved-Phase Benzene Contour (µg/l)




MAP ADAPTED FROM A TRC PRODUCED MAP WITH THE SAME TITLE.



FIGURE 8
DISSOLVED PHASE BENZENE
CONCENTRATION MAP – OCTOBER 17, 2008
76 STATION 3713
1503 CARLSON BOULEVARD
RICHMOND, CALIFORNIA

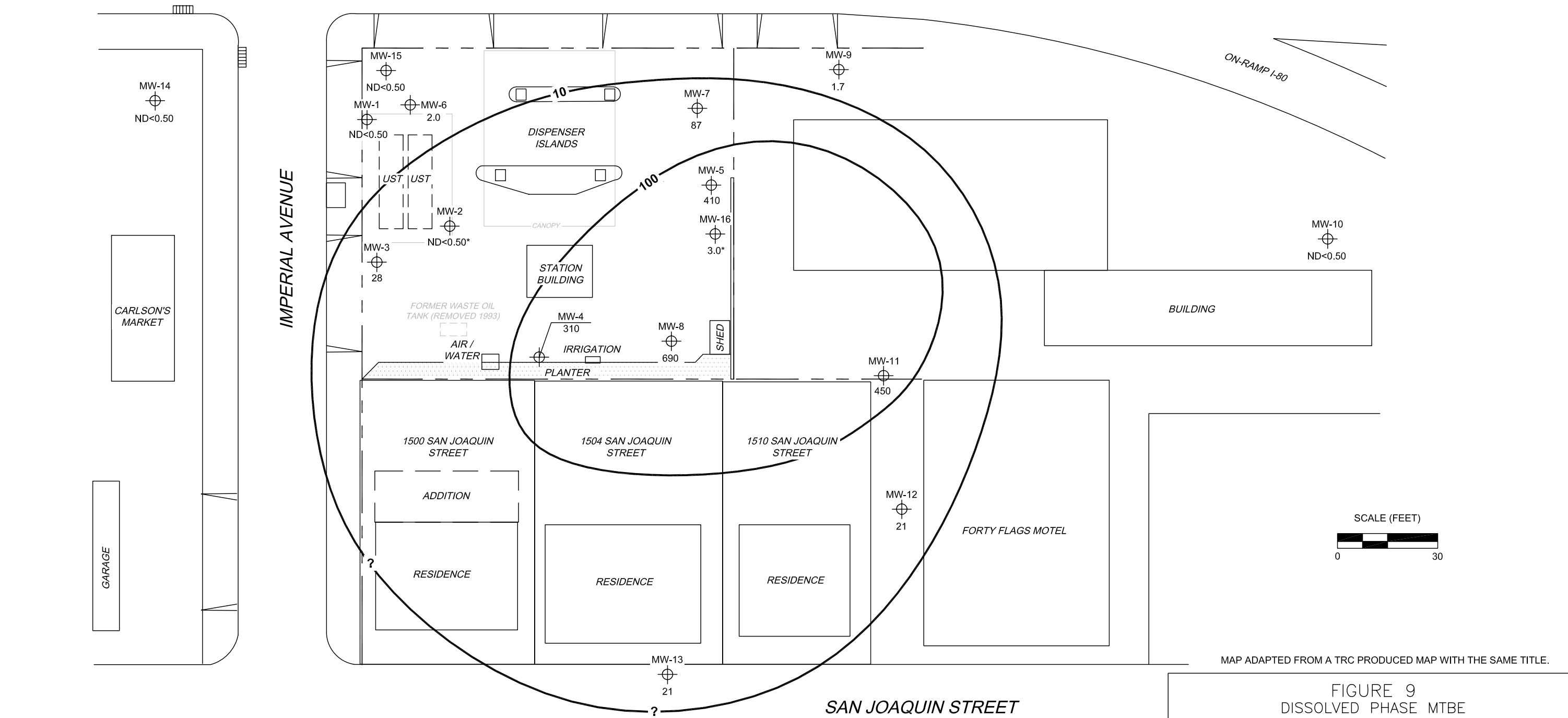
NOTES:

Contour lines are interpretive and based on laboratory analysis results of groundwater samples.
µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report.
* = not included in contour interpretation. UST = underground storage tank.

PROJECT NO. C103713	PREPARED BY MC	DRAWN BY JH	
DATE 01/22/09	REVIEWED BY LD	FILE NAME 3713_QMS(NEW)	

LEGEND

- MW-16  Monitoring Well with Dissolved-Phase MTBE Concentration (µg/l)
-  100 — Dissolved-Phase MTBE Contour (µg/l)




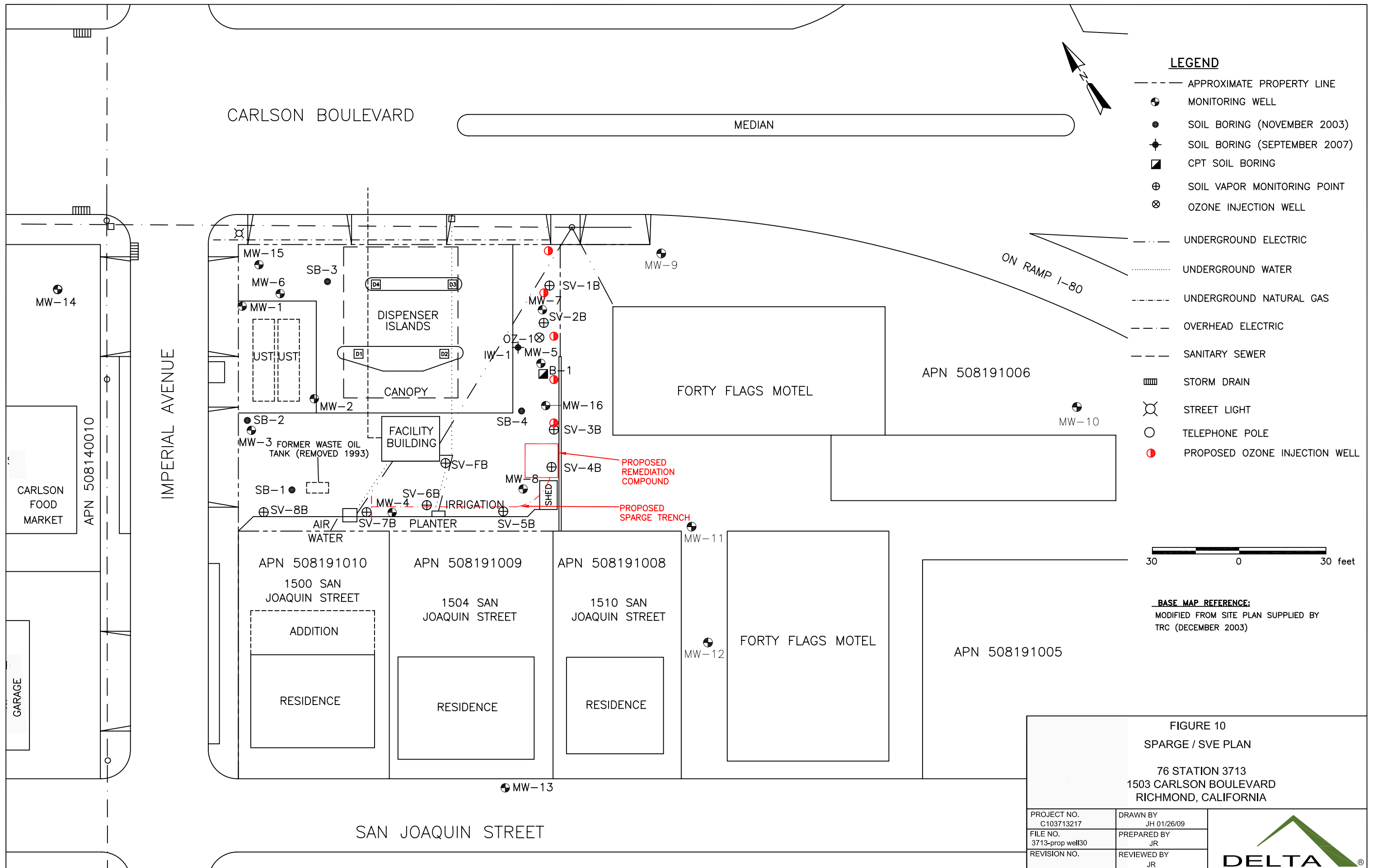
NOTES:

Contour lines are interpretive and based on laboratory analysis results of groundwater samples. MTBE = methyl tertiary butyl ether. µg/l = micrograms per liter. ND = not detected at limit indicated on official laboratory report. * = not included in contour interpretation. UST = underground storage tank. Results obtained using EPA Method 8260B.

MAP ADAPTED FROM A TRC PRODUCED MAP WITH THE SAME TITLE.

FIGURE 9
 DISSOLVED PHASE MTBE
 CONCENTRATION MAP – OCTOBER 17, 2008
 76 STATION 3713
 1503 CARLSON BOULEVARD
 RICHMOND, CALIFORNIA

PROJECT NO. C103713	PREPARED BY MC	DRAWN BY JH	
DATE 01/22/09	REVIEWED BY LD	FILE NAME 3713_QMS(NEW)	



LEGEND

- APPROXIMATE PROPERTY LINE
- ⊕ MONITORING WELL
- SOIL BORING (NOVEMBER 2003)
- ⊕ SOIL BORING (SEPTEMBER 2007)
- CPT SOIL BORING
- ⊕ SOIL VAPOR MONITORING POINT
- ⊗ OZONE INJECTION WELL
- UNDERGROUND ELECTRIC
- ⋯ UNDERGROUND WATER
- UNDERGROUND NATURAL GAS
- OVERHEAD ELECTRIC
- SANITARY SEWER
- ▤ STORM DRAIN
- ⊗ STREET LIGHT
- TELEPHONE POLE
- PROPOSED OZONE INJECTION WELL

30 0 30 feet

BASE MAP REFERENCE:
MODIFIED FROM SITE PLAN SUPPLIED BY
TRC (DECEMBER 2003)

FIGURE 10
SPARGE / SVE PLAN

76 STATION 3713
1503 CARLSON BOULEVARD
RICHMOND, CALIFORNIA

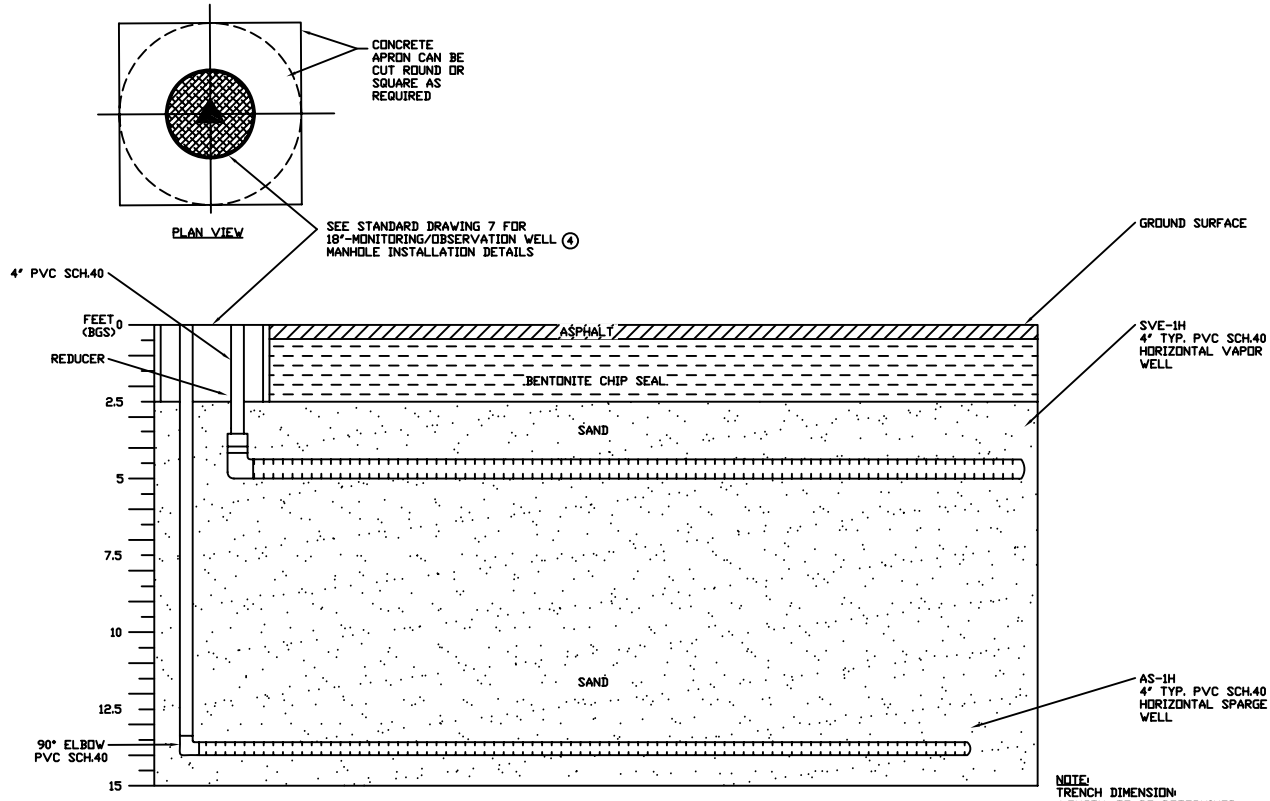
PROJECT NO. C103713217	DRAWN BY JH 01/26/09
FILE NO. 3713-prop well30	PREPARED BY JR
REVISION NO.	REVIEWED BY JR

PROJECT NUMBER C103713021

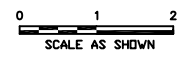
APPROVED BY

CHECKED BY

DRAWN BY J.F.F.



NOTE:
TRENCH DIMENSION
LENGTH TO BE DETERMINED
WIDTH 1'
DEPTH 6'



DELTA CONSULTANTS

CONOCOPHILLIPS
76 STATION 3713
RICHMOND, CALIFORNIA

FIGURE 11
SPARGE / SVE TRENCH DETAIL

1503 CARLSON BOULEVARD
RICHMOND, CALIFORNIA

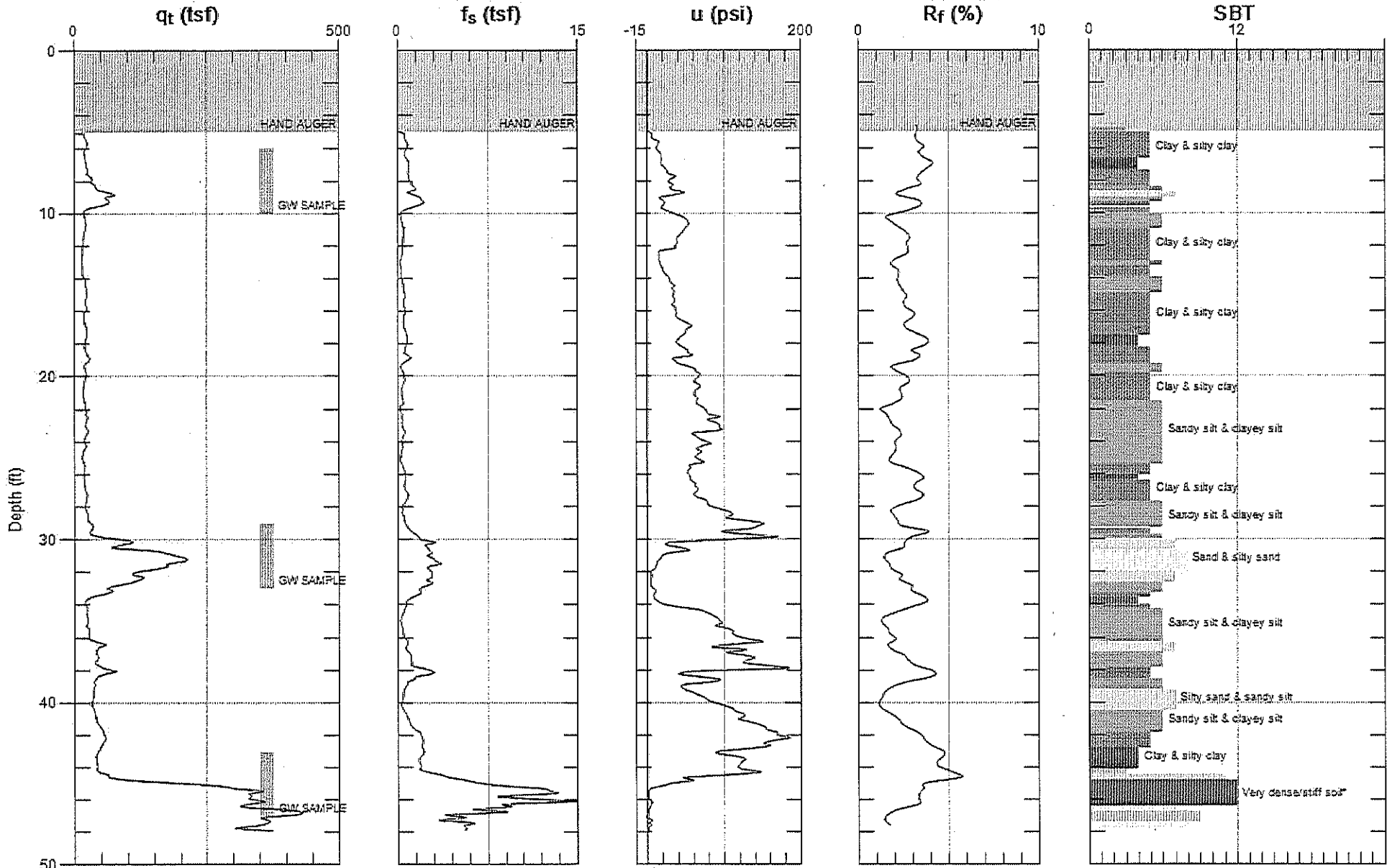
APPENDIX A
Boring Logs



DELTA CONSULTANTS

Site: 76 SERVICE STATION
Sounding: CPT-B1

Engineer: C.STREIG
Date: 9/11/2008 08:56



Max. Depth: 47.900 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

Delta

Consultants

Project No: C103713 Client: ConocoPhillips
 Logged By: Courtney Streig Location: 1503 Carlson Blvd., Richmond, CA
 Driller: Gregg Drilling Date Drilled: 10/8/08 - 10/9/08
 Drilling Method: Mud Rotary Hole Diameter: 14" to 21"; 8" to 31"
 Sampling Method: Split Spoon Hole Depth: 31 feet
 Casing Type: SCH 40 PVC Well Diameter: 2 inches
 Slot Size: 0.010 Well Depth: 31 feet
 Gravel Pack: # 2/12 Sand Casing Slickup: -

Well No: MW-15

Page 1 of 2

Location Map

Please see site map

▽ = First Water

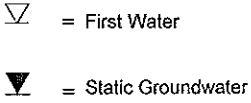
▼ = Static Groundwater

Elevation Latitude Longitude

Well Completion			Well Details	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing	Backfill									
			neat cement								Concrete
							Water Knife	1.0		CL	Lean Clay: dark brown, medium plasticity
								2.0			
								3.0			
								4.0			
								5.0			As above: with dark green coloring
								6.0			
								7.0			
								8.0			
								9.0			
								10.0		CL	Lean Clay with Sand: light brown with traces of grey
					1.8	4		11.0		CL	lenses and orange iron oxide staining, 15-25% sand, 75-85% clay, medium plasticity, hydrocarbon odor
						3		12.0			Lean Clay: light brown with traces of grey lenses and orange iron oxide staining, 90-95% clay, sand fines, medium plasticity, hydrocarbon odor
						3		13.0			
								14.0			
								15.0		CL	Lean Clay: tan with abundant orange and red iron oxide staining (40-50%) and organic black debris, 85-95% clay, 5-15% gravel fines (sandstone), low plasticity, no hydrocarbon odor
					1.3	4		16.0			
						6		17.0			
						8		18.0			
								19.0			
			centralizer					20.0		CL	Poorly Graded Sand with Gravel: (see next page)
					1.2	4					
						6					

Delta

Consultants

Project No: C103713	Client: ConocoPhillips	Well No: MW-15
Logged By: Courtney Streig	Location: 1503 Carlson Blvd., Richmond, CA	Page 2 of 2
Driller: Gregg Drilling	Date Drilled: 10/8/08 - 10/9/08	Location Map Please see site map 
Drilling Method: Mud Rotary	Hole Diameter: 14" to 21'; 8" to 31'	
Sampling Method: Split Spoon	Hole Depth: 31 feet	
Casing Type: SCH 40 PVC	Well Diameter: 2 inches	
Slot Size: 0.010	Well Depth: 31 feet	
Gravel Pack: # 2/12 Sand	Casing Stickup: -	

Elevation	Latitude	Longitude
-----------	----------	-----------

Well Completion			Well Details	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing	Backfill									
			bottom of conductor casing			0.03	9	21.0		CL	Sandy Lean Clay: dark tan with brown and abundant orange iron oxide staining and black organic debris, 45-55% sand, 45-55% clay, fines, medium plasticity, very loose, no hydrocarbon odor
			neat cement			0.2	5 9 12				
			bentonite			0.1	4 3	23.0		SC	Clayey Sand: brown, 25-35% clay, 65-75% sand, non-plastic
			# 2/12 sand			0.2	4 4	24.0		CL	
			centralizer			0.1	5 6	25.0			Sandy Lean Clay: brown and tan with orange iron oxide staining, 20-30% sand, 70-80% clay, organic black fines, medium plasticity
			well screen			0.2	5 7	26.0			
						0.3	10 5 7 12	27.0 28.0			Lean Clay: brown with tan and orange iron oxide staining, light brown clay lenses with black organic debris, low plasticity
						0.2	11 15	29.0		GW	
						0.3	12 10	30.0			Lean Clay with Sand: brown with orange iron oxide staining lenses and black organic debris, 15-25% sand, 75-85% clay, medium plasticity
						0.2	11 15	29.0		GW	
						0.3	12 10	30.0			Well Graded Gravel: subangular gravels consist of chert, sandstone, greenstone and quartz
						0.2	11 15	29.0		GW	
								31.0			Boring terminated at 31 feet below ground surface (bgs).
								32.0			
								33.0			
								34.0			
								35.0			
								36.0			
								37.0			
								38.0			
								39.0			
								40.0			

Delta Consultants

Project No: C103713 Client: ConocoPhillips
 Logged By: Courtney Streig Location: 1503 Carlson Blvd., Richmond, CA
 Driller: Gregg Drilling Date Drilled: 10/7/08 - 10/9/08
 Drilling Method: Mud Rotary Hole Diameter: 14" to 21"; 8" to 31"
 Sampling Method: Split Spoon Hole Depth: 31 feet
 Casing Type: SCH 40 PVC Well Diameter: 2 inches
 Slot Size: 0.010 Well Depth: 31 feet
 Gravel Pack: # 2/12 Sand Casing Stickup: -

Well No: MW-16

Page 1 of 2

Location Map

Please see site map

▽ = First Water

▼ = Static Groundwater

Elevation Latitude Longitude

Well Completion		Well Details	Static Water Level	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing									
		neat cement								Asphalt
							1.0		CL	Lean Clay
							2.0			
							3.0			
							4.0			
					0.4		5.0		CL	Lean Clay: grey/green and light brown, 90-95% clay, fines, medium plasticity, hydrocarbon odor
							6.0			
							7.0			
							8.0			
							9.0			
							10.0		CL	Lean Clay with Sand: light brown with light grey lenses and green lenses throughout, traces of root holes
					0.2	4	11.0			
						6				
						7				90-95% clay, gravelly fines, medium plasticity, hard to break, hydrocarbon odor
							12.0			
							13.0			
							14.0			
							15.0		CL	Lean Clay: light brown with orange iron oxide lenses throughout, 90-95% clay, gravel fines, medium plasticity, hard to break, no hydrocarbon odor
						5	16.0			
						5				
						7				
							17.0			
							18.0			
							19.0			
		centralizer					20.0			
		bottom of conductor casing			0.2	5			CL	Lean Clay: light brown with orange iron oxide staining and black organic debris, low plasticity, soft, breaks very easy, no hydrocarbon odor
						5				

Delta Consultants

Project No: **C103713**
 Logged By: **Cathy Trujillo**
 Driller: **Gregg Drilling**
 Drilling Method: **H.S.A.**
 Sampling Method: **Split Spoon**

Client: **ConocoPhillips**
 Location: **1503 Carlson Blvd.,
 Richmond, CA**
 Hole Diameter: **8 Inches**
 Hole Depth: **42 Feet**
 First Water Depth: **22.5 Feet**
 Static Water Depth: **Not Measured**

Boring No: **IW-1**
 Date Drilled: **9/25/2007**
 Page 1 of 2

∇ = First Water

Elevation Northing Easting

Boring Completion	Penetration (blows/5')	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION	
										Backfill
Neat Cement					Air-Knife	1			Asphalt - 4"	
						2			CH Fat Clay with Sand; Olive green with brown mottling; 15-25% fine sand; 65-75% fines; high plasticity; moderate to high toughness; dry; moderate to strong odor; trace medium sand.	
						3				
						4				
						5				
				Dry			6			Sandy Fat Clay; olive green with grey mottling; 25-35% fine sand; 55-65% fines; high plasticity; moderate toughness; dry; strong odor.
							7			Lens
							8			
				Moist			9			
							10			
				Moist			11			Fat Clay with Sand; olive green with brown/grey mottling; 15-25% fine sand; 65-75% fines; low toughness; high plasticity; trace medium sand; moist; strong odor.
							12			
				Moist			13			
							14			
				Moist			15			Sandy Fat Clay; brown with orange mottling; 25-35% fine and medium sand; 55-65% fines; high plasticity; moderate toughness; moist; strong odor.
							16			
							17			
				Moist		1.3	18			Same as above; 35-45% fine sand, trace medium and coarse sand; moist.
		5					19			
		7					20			Hydropunch 20-22 feet; no water encountered.
		8					21			
							22			
	3	∇	Wet							

Delta Consultants

Project No: **C103713**
 Logged By: **Cathy Trujillo**
 Driller: **Gregg Drilling**
 Drilling Method: **H.S.A.**
 Sampling Method: **Split Spoon**

Client: **ConocoPhillips**
 Location: **1503 Carlson Blvd.,
 Richmond, CA**
 Hole Diameter: **8 Inches**
 Hole Depth: **42 Feet**
 First Water Depth: **22.5 Feet**
 Static Water Depth: **Not Measured**

Boring No: **IW-1**
 Date Drilled: **9/25/2007**
 Page 2 of 2

∇ = First Water

Elevation Northing Easting

Boring Completion	Penetration (blows/ft)	Static Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement	3					23	X	SP	Poorly Graded Sand; brown; 100% fine sand; wet; low odor.
	9					24	X		
	3					25	X		
	3					26	X		
	6					27	X		
	3					28	X		
	4					29	X		
	12					30	X		
	14					31	X		
	4					32	X		
	5				23			CH	Fat Clay with Sand; brown with orange mottling; 15-25% fine sand; 65-75% fines; high plasticity; moderate to high toughness; wet; low odor. Hydropunch 30-32 feet; water encountered.
	18				24				
	4				25				
	7				26				
	10				27				
	7				28				
	25				29				
	30				30				
	6				31				
	13				32				
	16				23			SC	Sandy Fat Clay; brown with olive green mottling; 5-15% coarse sand, 15-25% fine and medium sand; 50-60% fines, high plasticity; moderate toughness; wet; low odor. Clayey Sand; orange-brown with maroon mottling; 5-15% coarse sand; 35-45% medium and fine sand; 30-40% fines; patches of maroon and orange fine sand; wet. Hydropunch 40-42 feet; water encountered.
	10				24				
	20				25				
	20				26				
	9				27				
	22				28				
	30				29				
	5				30				
	12				31				
	16				32				
					23			Bottom at 42 feet. Destroyed 9/25/2007; Filled with neat cement.	
					24				
					25				
					26				
					27				
					28				
					29				
					30				
					31				
					32				
					23			Bottom at 42 feet. Destroyed 9/25/2007; Filled with neat cement.	
					24				
					25				
					26				
					27				
					28				
					29				
					30				
					31				
					32				

Delta Consultants

Project No: **C103713071**

Client: **ConocoPhillips**

Well No: **MW-9**

Logged By: **Ben Wright**

Location: **40 Flags Motel**

Date Drilled: **2/9/07**

Driller: **Gregg Drilling & Testing**

1505 Carlson Blvd, Richmond

Page 1 of 1

Drilling Method: **HSA/Rhino**

Hole Diameter: **8"**

▼ = First Groundwater

Sampling Method: **SSS**

Hole Depth: **12'**

Casing Type: **PVC Sch 40**

Well Diameter: **2"**

Slot Size: **0.020**

Well Depth: **12'**

Gravel Pack: **2/12**

First Groundwater Depth: **5'**

Elevation

Northing

Easting

Well Completion	Groundwater Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill Casing								
Well Box								
Neat Cement		moist		Air-Knife	1			Asphalt - 6"
Bentonite					2			Road base - 6"
2/12 sand		wet			3			ML Silt dark brown; medium plasticity; soft; moist; no odor (0,0,100)
	▼				4			CL Clay yellowish brown; medium plasticity; medium soft; moist to wet; no odor (0,0,100)
			0	MW-9 @5' 8:55	5			
		sat			6			
					7			SM Silty sand reddish brown; fine to medium grained; medium dense; saturated; no odor (10,60,30)
0.02 screen					8			
		sat	0	MW-9 @10' 9:00	10			CL Clay brown; medium plasticity; medium soft; saturated; no odor (0,0,100)
					11			
End Cap			0	MW-9 @12' 9:05	12			
					13			Total Depth = 12 feet bgs
					14			
					15			
					16			
					17			
					18			
					19			
					20			
					21			
					22			

Delta Consultants

Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA/Rhino**
 Sampling Method: **SSS**
 Casing Type: **PVC Sch 40**
 Slot Size: **0.020**
 Gravel Pack: **2/12**

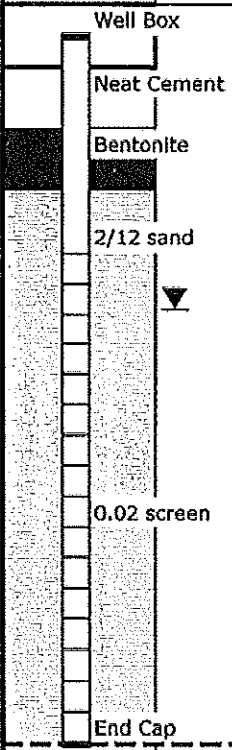
Client: **ConocoPhillips**
 Location: **40 Flags Motel**
1505 Carlson Blvd, Richmond
 Hole Diameter: **8"**
 Hole Depth: **12'**
 Well Diameter: **2"**
 Well Depth: **12'**
 First Groundwater Depth: **5'**

Well No: **MW-10**
 Date Drilled: **2/8/07**
 Page 1 of 1

▼ = First Groundwater

Elevation Northing Easting

Well Completion		Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Backfill	Casing							
								Asphalt - 4"
		wet		Air-Knife	1			----- Road base - 4'
					2			ML Silt dark brown; medium to low plasticity; soft; wet; no odor (0,0,100)
					3			
		wet			4			CL Clay yellowish brown; medium plasticity; medium soft; wet; no odor (0,0,100)
			0	MW-10 @5' 12:25	5			SM Silty sand reddish brown; fine to medium grained; medium dense; saturated; no odor (10,70,20)
		sat			6			
					7			
					8			
		sat	0	MW-10 @10' 12:30	10			
					11			
			0	MW-10 @12' 12:35	12			CL Clay brown; medium plasticity; medium soft; saturated; no odor (0,0,100)
					13			Total Depth = 12 feet bgs
					14			
					15			
					16			
					17			
					18			
					19			
					20			
					21			
					22			



Delta Consultants

Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA/Rhino**
 Sampling Method: **Direct Push**
 Casing Type: **PVC Sch 40**
 Slot Size: **0.020**
 Gravel Pack: **2/12**

Client: **ConocoPhillips**
 Location: **40 Flags Motel**
1505 Carlson Blvd, Richmond
 Hole Diameter: **8"**
 Hole Depth: **32'**
 Well Diameter: **2'**
 Well Depth: **15'**
 Static Groundwater Depth: **7.5'**

Well No: **MW-11**
 Date Drilled: **2/8/07**
 Page 1 of 2

▽ = Static Groundwater

Note: MW-11 logged, sampled and grouted on 1/25/07, then overdrilled on 2/8/07 to construct monitoring well

Well Completion		Elevation			Northing		Easting		LITHOLOGY / DESCRIPTION
Backfill	Casing	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Recovery Interval	Soil Type		
	Well Box				1			Asphalt - 3"	
	Neat Cement				2			Road Base - 6"	
	Bentonite				3			ML Silt dark brown; medium to low plasticity; soft; moist; no odor (0,0,100)	
	2/12 sand				4			CL Clay yellowish brown; medium plasticity; medium toughness; moist; soft; no odor (0,0,100)	
	0.02 screen	moist	0	MW-11 @5.5' 9:05	5				
	▽				6			SM Silty sand reddish brown; fine to medium grained; well graded; medium dense; moist; no odor (0,80,20)	
	End Cap				7			CL Clay brown; medium plasticity; medium soft to stiff; moist; no odor (0,0,100)	
		moist	0	MW-11 @10.5' 9:10	8				
					9				
					10				
					11				
					12				
					13				
					14				
		moist	0	MW-11 @15.5' 9:20	15			ML Silt brown; low plasticity; soft; moist; no odor (0,0,100)	
					16			CL Clay brown; medium plasticity; medium soft to stiff; moist; no odor (0,0,100)	
					17				
					18			ML Silt brown; low to medium plasticity; soft; moist; no odor (0,0,100)	
					19				
		moist	0	MW-11 @20' 9:25	20			CL Clay brown; medium plasticity; medium soft to stiff; moist; no odor (0,0,100)	
					21				
					22				



Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA/Rhino**
 Sampling Method: **Direct Push**
 Casing Type: **PVC Sch 40**
 Slot Size: **0.020**
 Gravel Pack: **2/12**

Client: **ConocoPhillips**
 Location: **40 Flags Motel**
1505 Carlson Blvd, Richmond
 Hole Diameter: **8"**
 Hole Depth: **32'**
 Well Diameter: **2'**
 Well Depth: **15'**
 Static Groundwater Depth: **7.5'**

Well No: **MW-11**
 Date Drilled: **2/8/07**
 Page 2 of 2

▽ = Static Groundwater

Note: MW-11 logged, sampled and grouted on 1/25/07, then overdrilled on 2/8/07 to construct monitoring well

Well Completion		Elevation			Northing		Easting	LITHOLOGY / DESCRIPTION
Backfill	Casing	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	
Groundwater Level	Groundwater Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	
Neat Cement					23			
					24			
		moist	0	MW-11 @25' 10:00	25			
					26			
					27			ML Silt brown; low to medium plasticity; soft; moist; no odor (0,0,100)
					28			
					29			CL Clay brown; medium plasticity; medium soft to stiff; moist; no odor (0,0,100)
		moist	0	MW-11 @30' 10:10	30			
					31			ML Silt brown; low to medium plasticity; soft; moist; no odor (0,0,100)
					32			
					33			Total Depth = 32 feet bgs
					34			
					35			
					36			
					37			
					38			
					39			
					40			
					41			
					42			
					43			
					44			

Delta Consultants

Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA/Rhino**
 Sampling Method: **Direct Push**
 Casing Type: **PVC SCH 40**
 Slot Size: **0.020**
 Gravel Pack: **2/12**

Client: **ConocoPhillips**
 Location: **40 Flags Motel**
1505 Carlson Blvd, Richmond
 Hole Diameter: **8"**
 Hole Depth: **35'**
 Well Diameter: **2"**
 Well Depth: **35'**
 Static Groundwater Depth: **12'**

Well No: **MW-12**
 Date Drilled: **1/25/07**
 Page 1 of 2

▽ = Static Groundwater

Elevation Northing Easting

Well Completion Backfill Casing	Groundwater Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
Well Box								Asphalt - 5" Road Base - 4"
Neat Cement				Air-Knife	1			
					2		ML	Silt dark brown; medium plasticity; low toughness; moist; very soft; no odor (0,0,100)
					3			
					4		CL	Clay yellowish brown; medium plasticity; medium toughness; moist; soft; no odor (0,0,100)
		moist	0	MW-12 @5.5' 11:20	5			
					6		SM	Silty sand reddish brown; fine to medium grained; well graded; medium dense; moist; no odor (0,80,20)
					7			
					8		CL	Clay light brown; medium plasticity; medium soft to stiff; moist; no odor (0,0,100)
					9			
		moist	0	MW-12 @10.5' 11:25	10		CL	Same as above; brown
					11			
					12		CL	Same as above; trace sand (0,5,95)
					13			
					14		CL	Clay brown; medium plasticity; stiff; moist; no odor (0,0,100)
		moist	0	MW-12 @15.5' 11:30	15			
					16		ML	Silt brown; low plasticity; soft; moist; no odor (0,0,100)
					17			
					18		CL	Clay brown; medium plasticity; stiff; moist; no odor (0,0,100)
					19			
					20		CL	Same as above; with gravel
		moist	0	MW-12 @20.5' 11:35	20		ML	Silt brown; low plasticity; soft; moist; no odor (0,0,100)
					21			
					21		CL	Clay brown; medium plasticity; stiff; moist; no odor (0,0,100)
					22			



Delta Consultants

Project No: **C103713071**

Logged By: **Ben Wright**

Driller: **Gregg Drilling & Testing**

Drilling Method: **HSA/Rhino**

Sampling Method: **Direct Push**

Casing Type: **PVC SCH 40**

Slot Size: **0.020**

Gravel Pack: **2/12**

Client: **ConocoPhillips**

Location: **40 Flags Motel**

1505 Carlson Blvd, Richmond

Hole Diameter: **8"**

Hole Depth: **35'**

Well Diameter: **2"**

Well Depth: **35'**

Static Groundwater Depth: **12'**

Well No: **MW-12**

Date Drilled: **1/25/07**

Page 2 of 2

▽ = Static Groundwater

Elevation

Northing

Easting

Well Completion Backfill Casing	Groundwater Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery Interval	Soil Type	LITHOLOGY / DESCRIPTION
					23	[Sample Recovery Interval]	[Soil Type]	ML Silt brown; low plasticity; soft; moist; no odor (0,0,100)
					24			Stopped direct push and soil sampling at 24'
					25			
					26			
					27			
					28			
					29			
					30			
					31			
					32			
					33			
					34			
					35			
					36			
					37			
					38			
					39			
					40			
					41			
					42			
					43			
					44			

Total Depth = 35 feet bgs

Delta Consultants

Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA**
 Sampling Method: **SSS**
 Casing Type: **PVC SCH 40**
 Slot Size: **0.02"**
 Gravel Pack: **#2/12**

Client: **ConocoPhillips**
 Location: **1503 Carlson Blvd**
Richmond, CA
 Hole Diameter: **8.25" O.D.**
 Hole Depth: **10'**
 Well Diameter: **2"**
 Well Depth: **10'**
 Static Groundwater Depth: **7'**

Boring/Well No: **MW-7**
 Date Drilled: **10/27/06**
 Page 1 of 1

▽ = Static Groundwater

Well Completion		Elevation		Northing		Easting		LITHOLOGY / DESCRIPTION
Backfill	Casing	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type	
	Well Box							Asphalt
	Neat Cement				1			
	Bentonite				2			
		Moist		Air-Knife	3			CL Clay greenish brown; medium plasticity; medium soft; moist; slight odor (0,10,90)
					4			
	Sand	Sat	184	4	5			
					6			SW/SC Well graded sand with clay greenish gray; loose; saturated; odor (0,60,40)
	▽		44		7			
		Moist			8			CL Clay greenish gray; medium plasticity; medium soft; moist; odor (0,10,90)
			134		9			
	End Cap				10			
					11			Total Depth = 10 feet bgs
					12			
					13			
					14			
					15			
					16			
					17			
					18			
					19			
					20			
					21			
					22			

Delta Consultants

Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA**
 Sampling Method: **SSS**
 Casing Type: **PVC SCH 40**
 Slot Size: **0.02"**
 Gravel Pack: **#2/12**

Client: **ConocoPhillips**
 Location: **1503 Carlson Blvd**
Richmond, CA
 Hole Diameter: **8.25" O.D.**
 Hole Depth: **10'**
 Well Diameter: **2"**
 Well Depth: **10'**
 Static Groundwater Depth: **8'**

Boring/Well No: **MW-8**
 Date Drilled: **10/27/06**
 Page 1 of 1

▽ = Static Groundwater

Well Completion		Elevation			Northing		Easting		LITHOLOGY / DESCRIPTION
Backfill	Casing	Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type		
		Moist		Air-Knife	1		Asphalt		
					2				
					3		CL Clay greenish grayish brown; medium to high plasticity; stiff; moist; no odor (0,5,95)		
					4				
					5				
		Sat	5	6	6		CL Clay greenish grayish brown; medium plasticity, some sand lens; medium soft to stiff; saturated; odor (0,20,80)		
					7				
			94	11	8				
		Moist		12	9		CL Same as above; less sand; odor (0,10,90)		
			154	16	10		Total Depth = 10 feet bgs		
				7	11				
				8	12				
				8	13				
				4	14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				

Delta Consultants

Project No: C103713071
 Logged By: Ben Wright
 Driller: Gregg Drilling & Testing
 Drilling Method: HSA
 Sampling Method: SSS
 Casing Type: PVC SCH 40
 Slot Size: 0.02"
 Gravel Pack: #2/12

Client: ConocoPhillips
 Location: 1504 San Joaquin St.
 Richmond, CA
 Hole Diameter: 8.25" O.D.
 Hole Depth: 12'
 Well Diameter: 2"
 Well Depth: 10'
 Static Groundwater Depth: 4.5'

Boring/Well No: MW-13
 Date Drilled: 10/27/06
 Page 1 of 1

▽ = Static Groundwater

Well Completion		Static Water Level	Elevation			Northing		Easting		LITHOLOGY / DESCRIPTION
Backfill	Casing		Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Sample Recovery Interval	Soil Type		
									Asphalt Fill	
			Moist		Air-Knife	1				
			Moist			2			CH Fat Clay greenish gray; high plasticity; stiff; moist; no odor (0,0,100)	
			Moist			3				
			Moist			4			CL Clay with Sand brown; fine to coarse sand; low plasticity; medium soft; moist; no odor (0,30,70)	
			Moist / Sat	0		5			CL Clay brown; medium plasticity; stiff; moist; no odor (0,0,100)	
			Moist / Sat	0		6			SW/SC Well Graded Sand with Clay brown; fine to coarse; well graded; moist to saturated; no odor (0,70,30)	
			Moist	0		7				
			Moist	0		8			CL Clay brown; medium plasticity; stiff to very stiff; moist; no odor (0,0,100)	
			Moist	0		9				
			Moist	0		10				
			Moist	0		11				
			Moist	0		12				
						13			Total Depth = 12 feet bgs	
						14				
						15				
						16				
						17				
						18				
						19				
						20				
						21				
						22				

Delta Consultants

Project No: **C103713071**
 Logged By: **Ben Wright**
 Driller: **Gregg Drilling & Testing**
 Drilling Method: **HSA**
 Sampling Method: **SSS**
 Casing Type: **PVC SCH 40**
 Slot Size: **0.02"**
 Gravel Pack: **#2/12**

Client: **ConocoPhillips**
 Location: **1481 Carlson Blvd**
Richmond, CA
 Hole Diameter: **8.25" O.D.**
 Hole Depth: **10'**
 Well Diameter: **2"**
 Well Depth: **10'**
 Static Groundwater Depth: **6'**

Boring/Well No: **MW-14**
 Date Drilled: **10/27/06**
 Page 1 of 1

▽ = Static Groundwater

Well Completion		Static Water Level	Elevation			Northing		Easting		LITHOLOGY / DESCRIPTION
Backfill	Casing		Moisture Content	PID Reading (ppm)	Penetration (blows/6")	Depth (feet)	Recovery Interval	Soil Type		
Well Box									Asphalt	
	Neat Cement				1				Fill	
	Bentonite	Moist		Air-Knife	2				CH Fat Clay greenish grayish brown; high plasticity; stiff; moist; no odor (0,0,100)	
	Sand	Moist			3				CL Clay with Sand brown; medium plasticity; fine to coarse sand; medium soft; moist; no odor (0,15,85)	
	End Cap	Sat	0		4				SW/SC Well Graded Sand with Clay brown; well graded; fine to coarse; saturated; no odor (0,60,40)	
		Moist	0		5				CL Clay brown; medium plasticity; medium soft; moist to saturated; no odor (0,0,100)	
					6					
					7					
					8					
					9					
					10					
Total Depth = 10 feet bgs										
					11					
					12					
					13					
					14					
					15					
					16					
					17					
					18					
					19					
					20					
					21					
					22					

WELL CONSTRUCTION RECORD: MW-3



ATC Associates, Inc.
 8602 Owens Drive Suite 100
 Pleasanton, California 94588
 Phone: (925) 225-5300 Fax: (925) 226-2559

SITE: Union 76 Station 3713
 DATE: 5/12/2005
 CLIENT: ConocoPhillips Company
 DRILLING CO.: Resonate Sonic
 DRILLING METHOD: Air Knife 0 - 5 feet / HSA 5 feet to TD
 SAMPLER METHOD: Grab (<5' bgs); Split Spoon (>5' bgs)
 CASING DIAMETER: 2-inch

WELL/BORING NO.: MW-3
 WEATHER:
 ATC INSPECTOR: Brian Duce
 SURFACE ELEVATION:
 DEPTH TO WATER: 9.0 feet
 ATC Project Number: 75.75118.4642
 Task Number: 75A03

Sample No.	Recovery/ Penetration (in/in)	Blow Counts (per 6")	PID Readings (ppm)	Depth (feet)	Soil Log	Materials Description (color, density, size, major and minor constituents, moisture)	Well Construction
				1 2 3 4 5	CL SWL	Air knife and hand auger to 5.0 feet bgs Light gray CLAY, medium stiff, moist	CEMENT SEAL: 0.0' - 3.0' NATURAL FILL: NA BENTONITE SEA: 3.0' - 4.0' FILTER SAND: 4.0' - 15.0' SOLID PVC RISE: 0.0' - 5.0' PVC SCREEN: 5.0' - 14.5'
MW-3 d5.5	1.5 / 1.5	9 / 14 / 10	354	6 7 8 9	IWL	5.0 - 6.5 feet Olive - brown CLAY with minor silt, stiff, moist, slight hydrocarbon odor	<p>Flush Road box 8" Road Box Concrete 2" Sch 40 PVC Risor Sand 2" sch 40 PVC 0.010-inch slot scr</p> <p>Note: Not to Scale</p>
MW-3 d10	1.5 / 1.5	7 / 8 / 11	35.7	10		9.0 - 10.5 feet Olive - brown CLAY with minor silt, soft, wet	
MW-3 d15-16	1.0 / 1.5	8 / 15	17	11 12 13 14 15	CL	15 - 16 feet Brown CLAY with silt, medium stiff, wet boring terminus 16 feet bgs	

COMMENTS:
 Air knife 0'-5' depth.

GRANULAR SOILS COHESIVENESS DENSITY
 0-4 Very Loose
 5-8 Loose
 10-29 Medium Dense
 30-49 Dense
 50+ Very Dense

PLASTIC SOILS COHESIVE DENSITY
 0-2 Very Soft
 3-4 Soft
 5-8 Medium Stiff
 9-15 Stiff
 16-30 Very Stiff
 31+ Hard

PROPORTIONS USED
 Trace 0-10%
 Little 10-20%
 Some 20-35%
 And 35-50%

LEGEND:
 ND = Not Detected
 NA = Not Applicable
 GS = Ground Surface
 NM = Not Measured

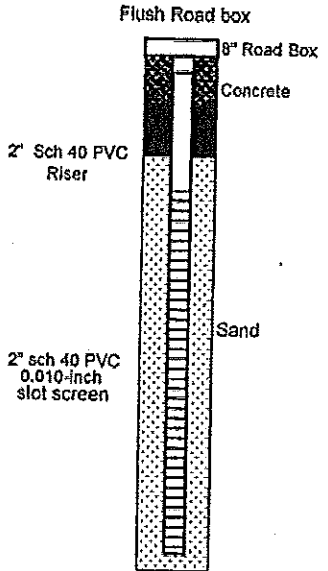
WELL CONSTRUCTION RECORD: MW-5



ATC Associates, Inc.
 6602 Owens Drive Suite 100
 Pleasanton, California 94588
 Phone: (925) 225-5300 Fax: (925) 225-2559

SITE: Union 76 Station 3713
DATE: 5/12/2005
CLIENT: ConocoPhillips Company
DRILLING CO.: Resonate Sonic
DRILLING METHOD: Air Knife 0 - 5 feet / HSA 5 feet to TD
SAMPLER METHOD: Grab (<5' bgs); Split Spoon (>5' bgs)
CASING DIAMETER: 2-inch

WELL/BORING NO.: MW-5
WEATHER:
ATC INSPECTOR: Brian Duce
SURFACE ELEVATION:
DEPTH TO WATER: 9.0 feet
ATC Project Number: 75.75118.4642
Task Number: 75A03

Sample No.	Recovery/ Penetration (ft/in)	Blow Counts (per 6")	PID Readings (ppm)	Depth (feet)	Soil Log	Materials Description (color, density, size, major and minor constituents, moisture)	Well Construction
				1	CL SWL ▽	Air knife and hand auger to 5.0 feet bgs Light gray CLAY, medium stiff, moist	CEMENT SEAL: <u>0.0' - 3.0'</u> NATURAL FILL <u>NA</u> BENTONITE SEA <u>3.0' - 4.0'</u> FILTER SAND <u>4.0' - 15.0'</u> SOLID PVC RISE <u>0.0' - 5.0'</u> PVC SCREEN <u>5.0' - 14.5'</u>  Note: Not to Scale
				2			
				3			
				4			
				5			
MW-5 d5.5	1.5 / 1.5	12 / 19 / 25	0.9	6	IWL ▽	5.0 - 6.0 feet Olive - brown CLAY with minor silt, stiff, moist	
MW-5 d9.3	1.5 / 1.5	7 / 11 / 21	1486	9		9.0 - 10.5 feet Olive - brown with dark gray CLAY with minor silt, stiff, wet Anat:	
MW-5 d11				11	CL	10.5 - 12.0 feet Olive - brown CLAY with silt and fine sand, slight hydrocarbon odor, wet	
MW-5 d12.5		9 / 14 / 18		12		12.0 - 13.5 feet Brown CLAY with silt and fine sand, wet, slight hydrocarbon odor.	
				13			
				14			
				15			
			353				
						Boring terminus at 15 feet bgs	

COMMENTS:
 Air knife 0'-5' depth.

GRANULAR SOILS COHESIVENESS DENSITY
 0-4 Very Loose
 5-9 Loose
 10-29 Medium Dense
 30-49 Dense
 50+ Very Dense

PLASTIC SOILS COHESIVE DENSITY
 0-2 Very Soft
 3-4 Soft
 5-8 Medium Stiff
 9-15 Stiff
 16-30 Very Stiff
 31+ Hard

PROPORTIONS USED
 Trace 0-10%
 Little 10-20%
 Some 20-35%
 And 35-50%

LEGEND:
 ND = Not Detected
 NA = Not Applicable
 GS = Ground Surface
 NM = Not Measured

WELL CONSTRUCTION RECORD: MW-4



ATC Associates, Inc.
 8602 Owens Drive Suite 100
 Pleasanton, California 94588
 Phone: (925) 225-5300 Fax: (925) 225-2559

SITE: Union 76 Station 3713
 DATE: 5/10/2005
 CLIENT: ConocoPhillips Company
 DRILLING CO.: Resonate Sonic
 DRILLING METHOD: Air Knife 0 - 5 feet / HSA 5 feet to TD
 SAMPLER METHOD: Grab (<5' bgs); Split Spoon (>5' bgs)
 CASING DIAMETER: 2-inch

WELL/BORING NO.: MW-4
 WEATHER:
 ATC INSPECTOR: Brian Duce
 SURFACE ELEVATION:
 DEPTH TO WATER: 9.0 feet
 ATC Project Number: 75.75118.4642
 Task Number: 75A03

Sample No.	Recovery/ Penetration (in/min)	Blow Counts (per 6")	PID Readings (ppm)	Depth (feet)	Soil Log	Materials Description (color, density, size, major and minor constituents, moisture)	Well Construction
				1 2 3 4 5	CL	Air knife and hand auger to 5.0 feet bgs Light gray CLAY, medium stiff, moist	CEMENT SEAL: 0.0' - 3.0' NATURAL FILL: NA BENTONITE SEAL: 3.0' - 4.0' FILTER SAND: 4.0' - 15.0' SOLID PVC RISE: 0.0' - 5.0' PVC SCREEN: 5.0' - 14.5'
MW-4 d5.5	1.5 / 1.5	10 / 10 / 15	88.8	6	SWL	5.0 - 6.5 feet Brown CLAY with minor silt, medium stiff, moist, hydrocarbon odor	<p>Flush Road box 8" Road Box Concrete 2" Sch 40 PVC Riser Sand 2" sch 40 PVC 0.010-inch slot screen Note: Not to Scale</p>
MW-4 d9.5	1.5 / 1.5	4 / 8 / 10	673	9	IWL		
				11 12 13 14 15	CL		
MW-4 d15.5	1.5 / 1.5	9 / 13 / 13	19.2	16		15 - 16.5 feet Brown CLAY with silt and sand, medium stiff, wet Boring terminates at 16.5 feet bgs	
COMMENTS:						<p>Air knife 0'-5' depth.</p> <p>GRANULAR SOILS COHESIVENESS DENSITY 0-4 Very Loose 5-9 Loose 10-29 Medium Dense 30-49 Dense 50+ Very Dense</p> <p>PROPORTIONS USED Trace 0-10% Little 10-20% Some 20-35% And 35-50%</p> <p>PLASTIC SOILS COHESIVE DENSITY 0-2 Very Soft 3-4 Soft 5-8 Medium Stiff 9-15 Stiff 16-30 Very Stiff 31+ Hard</p> <p>LEGEND: ND = Not Detected NA = Not Applicable GS = Ground Surface NM = Not Measured</p>	

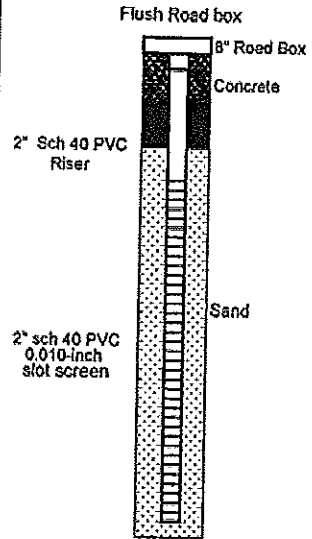
WELL CONSTRUCTION RECORD: MW-6



ATC Associates, Inc.
 6602 Owens Drive Suite 100
 Pleasanton, California 94588
 Phone: (925) 225-5300 Fax: (925) 225-2559

SITE: Union 76 Station 3713
DATE: 5/10/2005
CLIENT: ConocoPhillips Company
DRILLING CO.: Resonate Sonic
DRILLING METHOD: Air Knife 0 - 5 feet / HSA 5 feet to TD
SAMPLER METHOD: Grab (<5' bgs); Split Spoon (>5' bgs)
CASING DIAMETER: 2-inch

WELL/BORING NO.: MW-6
WEATHER:
ATC INSPECTOR: Brian Duce
SURFACE ELEVATION:
DEPTH TO WATER: 9.0 feet
ATC Project Number: 75.75118.4642
Task Number: 75A03

Sample No.	Recovery/ Penetration (in/ft)	Blow Counts (per 6")	PID Readings (ppm)	Depth (feet)	Soil Log	Materials Description (color, density, size, major and minor constituents, moisture)	Well Construction
				1	CL SWL	Air knife and hand auger to 5.0 feet bgs Light gray CLAY, medium stiff, moist	CEMENT SEAL: 0.0' - 3.0' NATURAL FILL: NA BENTONITE SEAL: 3.0' - 4.0' FILTER SAND: 4.0' - 15.0' SOLID PVC RISE: 0.0' - 5.0' PVC SCREEN: 5.0' - 14.5'  Note: Not to Scale
				2			
				3			
				4			
				5			
MW-6-d5.5	1.5 / 1.5	9 / 10 / 10	14.9	6	IWL	5.0 - 6.5 feet Olive brown (dark) CLAY with minor silt, stiff, moist, slight hydrocarbon odor	
				7			
				8			
MW-6-d9.5	1.5 / 1.5	6 / 9 / 11	27.9	9			
				10			
				11		14 - 16.5 feet Brown CLAY with sand and rock fragments, stiff, wet	
				12			
				13			
MW-6-d14.5	1.5 / 1.5	7 / 8 / 12	8.8	14			
				15			
				16	Boring terminates at 15.5 feet bgs		

COMMENTS:
 Air knife 0'-5' depth.

GRANULAR SOILS COHESIVENESS DENSITY
 0-4 Very Loose
 5-9 Loose
 10-29 Medium Dense
 30-49 Dense
 50+ Very Dense

PROPORTIONS USED
 Trace 0-10%
 Little 10-20%
 Some 20-35%
 And 35-50%

PLASTIC SOILS COHESIVE DENSITY
 0-2 Very Soft
 3-4 Soft
 5-8 Medium Stiff
 9-15 Stiff
 16-30 Very Stiff
 31+ Hard

LEGEND:
 ND = Not Detected
 NA = Not Applicable
 GS = Ground Surface
 NM = Not Measured

PROJECT NO.: 42-0105-01
 CLIENT: ConocoPhillips
 LOCATION: 76 Service Station #3713
 1503 Carlson Boulevard, Richmond, California

DATE DRILLED: 11/10/03
 LOGGED BY: P. Kelleher
 APPROVED BY: B.A. Moed, RG
 DRILLING CO.: Woodward

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger	USCS	LITHOLOGY	BORING BACKFILL DETAIL
					SAMPLER TYPE: 2-inch Split Spoon			
				0	Hand augered to 5'. CLAY (CL): Greenish-gray (GLE Y 1 4/10 Y), 10 % silt, 90 % clay, soft, damp, slight hydrocarbon odor.			
163	10 10 11	1.5/ 1.5		5				
94	10 10 12	1.0/ 1.5		10	SILTY CLAY (CL): Greenish gray (GLE Y 5/10 Y) with brown mottling, 50 % silt, 50 % clay, soft, damp.	CL		
108	7 8 8	0.5/ 1.5		15	CLAY WITH SILT (CL): Brown (10 Y R 4/4), 20 % silt, 80 % clay, soft.			
350	5 8 7	1.5/ 1.5		20	SILT (ML): Brownish yellow (10 Y R 5/4), 90 % silt, 10 % clay, soft, damp.			
253	10 6 6	1.5/ 1.5		25		ML		
				30				
				35				
				40				



LOG OF EXPLORATORY BORING

PROJECT NO.: 42-0105-01
 CLIENT: ConocoPhillips
 LOCATION: 76 Service Station #3713
 1503 Carlson Boulevard, Richmond, California

DATE DRILLED: 11/10/03
 LOGGED BY: P. Kelleher
 APPROVED BY: B.A. Moed, RG
 DRILLING CO.: Woodward

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger	USCS	LITHOLOGY	BORING BACKFILL DETAIL
					SAMPLER TYPE: 2-inch Split Spoon			
				0	Hand augered to 5'.			
335	9 10 11	1.5/ 1.5		5	SILT (ML): Greenish gray (GLE Y1 4/10Y), 90 % silt, 10% clay, soft, damp, hydrocarbon odor.			
254	8 9 11	1.5/ 1.5		10	SILT (ML): Greenish gray (GLE Y1 4/10Y) with brown mottling, 100% silt, soft, damp, hydrocarbon odor.			
436	10 12 14	1.5/ 1.5		15	- @ 14': color change to yellowish brown (10YR 5/4), medium soft.	ML		
94	10 11 12	1.5/ 1.5		20	SILT WITH SAND (ML): Yellowish brown (10YR 5/4), 80 % silt, 20% fine sand, soft, moist.			
145	10 12 15	1.5/ 1.5		25				
				30				
				35				
				40				



LOG OF EXPLORATORY BORING

PROJECT NO.: 42-0105-01
 CLIENT: ConocoPhillips
 LOCATION: 76 Service Station #3713
 1503 Carlson Boulevard, Richmond, California

DATE DRILLED: 11/10/03
 LOGGED BY: P. Kelleher
 APPROVED BY: B.A. Moed, RG
 DRILLING CO.: Woodward

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger	USCS	LITHOLOGY	BORING BACKFILL DETAIL
					SAMPLER TYPE: 2-inch Split Spoon			
105	8 10 11	1.0/ 1.5		0 5	Hand augered to 5'. SILT (ML): Greenish gray (GLE Y1 4/56Y), 100 % silt, medium soft, damp, slight odor.	ML		0 5 10 15 20 25 30 35 40
90	9 11 7	1.5/ 1.5		10	SANDY SILT (ML): Brownish yellow (10YR 5/3), 60 % silt, 40% fine sand, soft, wet, no odor.			



LOG OF EXPLORATORY BORING

PROJECT NO.: 42-0105-01

CLIENT: ConocoPhillips

LOCATION: 76 Service Station #3713

1503 Carlson Boulevard, Richmond, California

DATE DRILLED: 11/10/03

LOGGED BY: P. Kelleher

APPROVED BY: B.A. Moed, RG

DRILLING CO.: Woodward

PID/FID (ppm)	BLOWS PER 6 INCHES	RECOVERY	SAMPLE	DEPTH (feet below grade)	DRILLING METHOD: 8-inch Hollow-Stem Auger	USCS	LITHOLOGY	BORING BACKFILL DETAIL
					SAMPLER TYPE: 2-inch Split Spoon			
86	10 11 12	1.0/ 1.5		0 5	Hand augered to 5'. SILT (ML): Greenish gray (GLEYS 4/56Y), 100 % silt, soft, damp.			0 5 10 15 20 25 30 35 40
94	7 7 9	1.5/ 1.5		10	SANDY SILT (ML): Greenish gray (GLEYS 4/10Y), 70 % silt, 30% fine sand, soft, wet.	ML		Grout

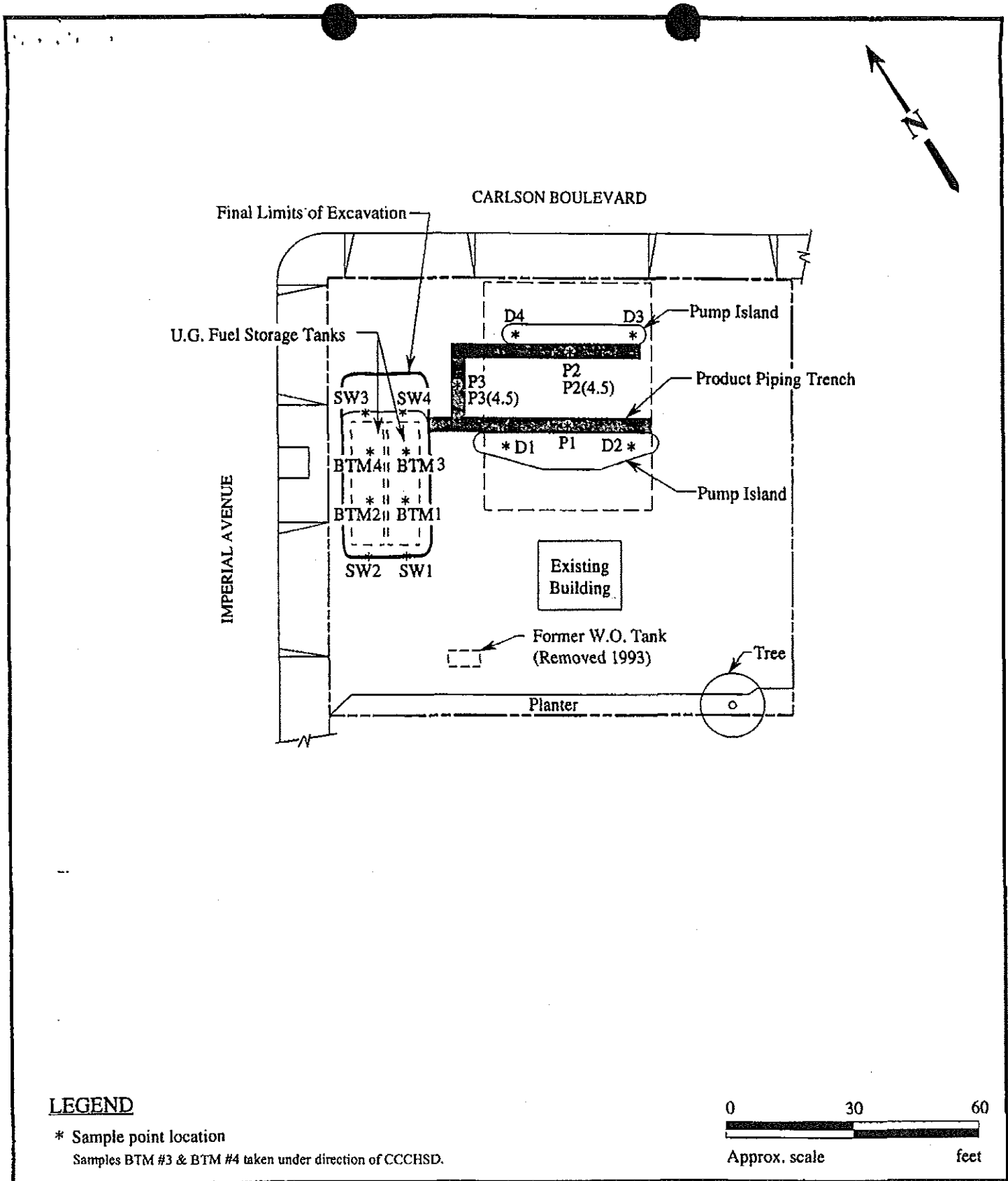


LOG OF EXPLORATORY BORING

SB-4

PAGE 1 OF 1

APPENDIX B
Historic Soil Analytical Data



SAMPLE POINT LOCATION MAP

**UNOCAL SERVICE STATION #3713
 1503 CARLSON BOULEVARD
 RICHMOND, CALIFORNIA**

**FIGURE
 2**

KEI-P93-0701.R3
April 9, 1997

TABLE 1
SUMMARY OF LABORATORY ANALYSES
SOIL

<u>Date</u>	<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl- benzene</u>	<u>Xylenes</u>	<u>MTBE</u>
3/21/97	SW1	10.0	34	1.0	0.23	0.86	0.55	ND
	SW2	10.0	2.1	0.45	0.016	0.019	0.015	0.38
	SW3	10.0	670	5.8	32	16	85	1.6
	SW4	10.0	1,100	8.5	79	28	160	ND
	BTM1	18.0	ND	ND	ND	ND	0.019	ND
	BTM2	18.0	ND	ND	ND	ND	ND	0.083
	4/01/97	P1	3.75	330	1.3	0.37	5.5	20
P2		3.5	7.1	0.63	0.0051	0.65	0.0076	0.93
P2(4.5)		4.5	17	0.28	0.15	0.41	0.54	4.9
P3		3.5	14	0.33	0.13	0.24	0.040	2.9
P3(4.5)		4.5	21	0.20	0.079	0.33	0.54	2.8
D1		4.0	9.7	0.15	0.027	0.29	0.097	0.66
D2		4.0	180	0.48	9.6	3.1	27	2.7
D3		4.0	ND	ND	ND	ND	ND	0.057
D4		4.0	12	0.17	0.054	0.27	0.27	1.1

ND = Non-detectable.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kapreallan Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 307-0821

Sampled: Jul 20, 1993
Received: Jul 20, 1993
Reported: Jul 22, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 307-0821 W01	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	3.4	
Benzene	0.005	0.53	
Toluene	0.005	0.056	
Ethyl Benzene	0.005	0.20	
Total Xylenes	0.005	0.49	
Chromatogram Pattern:		Gasoline	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	7/21/93	7/21/93
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	108	101

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Alan B. Kemp
Project Manager



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc. 2401 Starwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond Sample Matrix: Soil Analysis Method: EPA 3550/8015 First Sample #: 307-0821	Sampled: Jul 20, 1993 Received: Jul 20, 1993 Reported: Jul 22, 1993
---	--	---

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 307-0821 WO1*	Sample I.D. Matrix Blank
Extractable Hydrocarbons	1.0	4.6	

Chromatogram Pattern: Diesel & Non-Diesel Mixture (<C14)

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	7/21/93	7/21/93
Date Analyzed:	7/22/93	7/22/93
Instrument Identification:	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Alan B. Kemp
Project Manager

Please Note: * Non Diesel Mixture (<C14) is probably gasoline.



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond Matrix Descript: Soil Analysis Method: SM 5520 E&F (Gravimetric) First Sample #: 307-0821	Sampled: Jul 20, 1993 Received: Jul 20, 1993 Extracted: Jul 20, 1993 Analyzed: Jul 20, 1993 Reported: Jul 22, 1993
---	--	--

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
307-0821	WO1	N.D.

Detection Limits:

50

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL


Alan B. Kemp
Project Manager

3070821.KEI <3>



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kapreallan Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond Sample Descript: Soil; WO1 Analysis Method: EPA 5030/8010 Lab Number: 307-0821	Sampled: Jul 20, 1993 Received: Jul 20, 1993 Analyzed: Jul 21, 1993 Reported: Jul 22, 1993
---	---	---

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	50	N.D.
Bromoform.....	50	N.D.
Bromomethane.....	100	N.D.
Carbon tetrachloride.....	50	N.D.
Chlorobenzene.....	50	N.D.
Chloroethane.....	100	N.D.
2-Chloroethylvinyl ether.....	100	N.D.
Chloroform.....	50	N.D.
Chloromethane.....	100	N.D.
Dibromochloromethane.....	50	N.D.
1,2-Dichlorobenzene.....	50	N.D.
1,3-Dichlorobenzene.....	50	N.D.
1,4-Dichlorobenzene.....	50	N.D.
1,1-Dichloroethane.....	50	N.D.
1,2-Dichloroethane.....	50	N.D.
1,1-Dichloroethene.....	50	N.D.
cis-1,2-Dichloroethene.....	50	N.D.
trans-1,2-Dichloroethene.....	50	N.D.
1,2-Dichloropropane.....	50	N.D.
cis-1,3-Dichloropropene.....	50	N.D.
trans-1,3-Dichloropropene.....	50	N.D.
Methylene chloride.....	500	N.D.
1,1,2,2-Tetrachloroethane.....	50	N.D.
Tetrachloroethene.....	50	N.D.
1,1,1-Trichloroethane.....	50	N.D.
1,1,2-Trichloroethane.....	50	N.D.
Trichloroethane.....	50	N.D.
Trichlorofluoromethane.....	50	N.D.
Vinyl chloride.....	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Alan B. Kemp
Project Manager



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kapreallan Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedassian

Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond
Matrix: Soil

QC Sample Group: 307-0821

Reported: Jul 22, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel	Oil & Grease
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015	SM 5520
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer	D.Newcomb
Conc. Spiked:	0.40	0.40	0.40	1.2	10	5000
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	1LCS072193	1LCS072193	1LCS072193	1LCS072193	BLK072093	BLK072093
Date Prepared:	7/21/93	7/21/93	7/21/93	7/21/93	7/20/93	7/20/93
Date Analyzed:	7/21/93	7/21/93	7/21/93	7/21/93	7/21/93	7/20/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	N/A
LCS % Recovery:	93	94	97	99	106	84
Control Limits:	70-130	70-130	70-130	70-130	80-120	80-120

MS/MSD Batch #:	3070842	3070842	3070842	3070842	3070748	3070748
Date Prepared:	7/21/93	7/21/93	7/21/93	7/21/93	7/20/93	7/20/93
Date Analyzed:	7/21/93	7/21/93	7/21/93	7/21/93	7/21/93	7/20/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	N/A
Matrix Spike % Recovery:	85	90	95	98	113	88
Matrix Spike Duplicate % Recovery:	85	90	95	98	111	90
Relative % Difference:	0.0	0.0	0.0	0.0	1.8	2.2

SEQUOIA ANALYTICAL


Alan B. Kemp
Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedesslan

Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond
Matrix: Soil

QC Sample Group: 307-0821

Reported: Jul 23, 1993

QUALITY CONTROL DATA REPORT

ANALYTE:	1,1-Dichloro-ethene	Trichloroethene	Chloro-Benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.N.	K.N.	K.N.
Conc. Spiked:	10	10	10
Units:	µg/L	µg/L	µg/L
LCS Batch#:	LCS072193	LCS072193	LCS072193
Date Prepared:	7/21/93	7/21/93	7/21/93
Date Analyzed:	7/21/93	7/21/93	7/21/93
Instrument I.D.#:	HP-5890/7	HP-5890/7	HP-5890/7
LCS % Recovery:	91	99	91
Control Limits:	70-130	70-130	70-130

MS/MSD Batch #:	3070711	3070711	3070711
Date Prepared:	7/21/93	7/21/93	7/21/93
Date Analyzed:	7/21/93	7/21/93	7/21/93
Instrument I.D.#:	HP-5890/7	HP-5890/7	HP-5890/7
Matrix Spike % Recovery:	84	100	100
Matrix Spike Duplicate % Recovery:	84	100	100
Relative % Difference:	0.0	0.0	0.0

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL

Alan B. Kemp
Project Manager



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedassian

Client Project ID: Unocal #3713,1503 Carlson Blvd., Richmond

QC Sample Group: 307-0821

Reported: Jul 21, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015
Analyst:	K.Wimer	K.Wimer
Reporting Units:	mg/Kg	mg/Kg
Date Analyzed:	Jul 21, 1993	Jul 21, 1993
Sample #:	307-0821	Blank

Surrogate		
% Recovery:	115	117

SEQUOIA ANALYTICAL

Alan B. Kemp
Alan B. Kemp
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Client Project ID: Unocal #3713, 1503 Carlson Blvd., Richmond

QC Sample Group: 307-0821

Reported: Jul 21, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8010	EPA 8010
Analyst:	K.Nill	K.Nill
Reporting Units:	µg/Kg	µg/Kg
Date Analyzed:	Jul 21, 1993	Jul 21, 1993
Sample #:	307-0821	Blank

Surrogate #1		
% Recovery:	112	82

Surrogate #2		
% Recovery:	73	75

SEQUOIA ANALYTICAL


Alan B. Kemp
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

APPENDIX C

Historic Groundwater Analytical Data

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
May 2005 Through July 2008
76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground-water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8260B)	Comments
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-1												
5/16/05	--	--	--	--	--	--	--	--	--	--	--	
8/12/05	--	7.81	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.2	
12/1/05	--	4.02	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.1	
1/31/06	--	3.98	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
5/26/06	--	3.81	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
8/8/06	--	4.31	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/6/06	--	4.35	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	
1/23/07	15.08	4.14	0.00	10.94	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/31/07	15.08	3.99	0.00	11.09	0.15	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.56	
8/16/07	15.08	4.15	0.00	10.93	-0.16	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.67	
10/19/07	15.08	3.74	0.00	11.34	0.41	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.6	
1/8/08	15.08	3.05	0.00	12.03	0.69	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
2/13/08	15.08	3.10	0.00	11.98	-0.05	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
5/22/08	15.08	4.25	0.00	10.83	-1.15	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
7/11/08	15.08	4.29	0.00	10.79	-0.04	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
MW-2												
5/16/05	--	--	--	--	--	--	--	--	--	--	--	
8/24/05	--	4.11	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	Gauged and sampled on 8/24/05
12/1/05	--	3.49	0.00	--	--	ND<50	2.2	ND<0.50	ND<0.50	1.4	2.4	
1/31/06	--	2.92	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	0.73	
5/26/06	--	3.32	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
8/8/06	--	3.83	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/6/06	--	3.86	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
 May 2005 Through July 2008
 76 Station 3713

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-water Elevation (feet)	Change in Elevation (feet)	TPH-G (8015M) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8260B) (µg/l)	Comments
MW-2 continued												
1/23/07	--	3.63	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/31/07	--	3.50	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
8/16/07	--	3.74	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/19/07	--	3.28	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/8/08	--	2.36	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	0.96	
2/13/08	--	2.50	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	0.68	
5/22/08	--	3.74	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
7/11/08	--	3.81	0.00	--	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
MW-3												
5/16/05	14.45	4.01	0.00	10.44	--	9300	46	260	420	1400	59	
8/12/05	14.45	4.03	0.00	10.42	-0.02	16000	150	560	880	3600	29	
12/1/05	14.45	4.07	0.00	10.38	-0.04	5900	48	7.2	310	830	17	
1/31/06	14.45	4.03	0.00	10.42	0.04	8400	58	46	260	500	39	
5/26/06	14.45	3.38	0.00	11.07	0.65	4600	38	9.1	310	510	26	
8/8/06	14.45	3.73	0.00	10.72	-0.35	3800	28	11	190	360	18	
10/6/06	14.45	3.97	0.00	10.48	-0.24	3900	26	ND<2.5	200	430	17	
1/23/07	14.45	5.06	0.00	9.39	-1.09	4700	27	ND<2.5	200	440	25	
5/31/07	14.47	3.48	0.00	10.99	1.60	4000	17	ND<2.5	170	360	32	
8/16/07	14.47	3.61	0.00	10.86	-0.13	1400	24	ND<2.5	220	440	55	
10/19/07	14.47	3.43	0.00	11.04	0.18	2500	9.8	ND<2.5	120	280	16	
1/8/08	14.47	5.02	0.00	9.45	-1.59	2500	23	6.2	150	270	52	
2/13/08	14.47	2.95	0.00	11.52	2.07	8800	51	5.8	700	2000	39	
5/22/08	14.47	3.75	0.00	10.72	-0.80	2500	17	1.6	250	440	32	
7/11/08	14.47	3.83	0.00	10.64	-0.08	2700	8.7	ND<0.50	120	310	25	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
May 2005 Through July 2008
76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8260B)	Comments
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-4												
5/16/05	15.20	5.64	0.00	9.56	--	19000	1600	3100	460	3600	140	
8/12/05	15.20	6.06	0.00	9.14	-0.42	17000	2200	1700	870	3300	180	
12/1/05	15.20	5.02	0.00	10.18	1.04	12000	1500	600	620	2400	190	
1/31/06	15.20	5.01	0.00	10.19	0.01	17000	910	670	220	820	190	
5/26/06	15.20	5.62	0.00	9.58	-0.61	25000	2300	1900	860	3100	320	
8/8/06	15.20	6.23	0.00	8.97	-0.61	14000	2300	580	730	2000	310	
10/6/06	15.20	6.22	0.00	8.98	0.01	15000	2200	570	750	2100	300	
1/23/07	15.20	6.04	0.00	9.16	0.18	19000	1800	1400	690	2200	350	
5/31/07	15.12	5.88	0.00	9.24	0.08	17000	1900	490	700	1900	500	
8/16/07	15.12	6.24	0.00	8.88	-0.36	14000	2300	650	660	2300	670	
10/19/07	15.12	5.94	0.00	9.18	0.30	10000	1700	470	520	1600	720	
1/8/08	15.12	5.36	0.00	9.76	0.58	9200	1000	620	300	1400	600	
2/13/08	15.12	5.31	0.00	9.81	0.05	21000	2100	3300	730	3000	780	
5/22/08	15.12	5.99	0.00	9.13	-0.68	10000	2100	1400	670	1900	880	
7/11/08	15.12	6.42	0.00	8.70	-0.43	12000	1900	930	590	1300	700	
MW-5												
5/16/05	15.22	5.56	0.00	9.66	--	73000	8400	6400	3100	14000	870	
8/12/05	15.22	5.81	0.00	9.41	-0.25	110000	13000	10000	4300	24000	990	
12/1/05	15.22	5.68	0.00	9.54	0.13	82000	2500	1900	3100	13000	950	
1/31/06	15.22	5.65	0.00	9.57	0.03	93000	4700	3600	3400	18000	910	
5/26/06	15.22	5.58	0.00	9.64	0.07	100000	8600	9700	3200	17000	800	
8/8/06	15.22	6.13	0.00	9.09	-0.55	90000	10000	10000	3500	17000	610	
10/6/06	15.22	6.03	0.00	9.19	0.10	97000	11000	12000	4100	19000	590	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
 May 2005 Through July 2008
 76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground-water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8260B)	Comments
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-5 continued												
1/23/07	15.22	5.93	0.00	9.29	0.10	95000	6700	7600	2300	10000	410	
5/31/07	15.26	5.83	0.00	9.43	0.14	110000	ND<50	12000	3300	15000	610	
8/16/07	15.26	5.83	0.00	9.43	0.00	71000	7700	6400	2900	13000	690	
10/19/07	15.26	5.91	0.00	9.35	-0.08	62000	7400	8300	2700	13000	500	
1/8/08	15.26	5.32	0.00	9.94	0.59	67000	7000	8900	2600	12000	500	
2/13/08	15.26	5.43	0.00	9.83	-0.11	58000	4500	8000	1900	10000	450	
5/22/08	15.26	5.95	0.00	9.31	-0.52	51000	5000	6900	2000	11000	490	
7/11/08	15.26	6.23	0.00	9.03	-0.28	86000	8400	11000	3400	16000	420	
MW-6												
5/16/05	15.43	4.88	0.00	10.55	--	2300	2	5	5	88	ND<1.0	
8/12/05	15.43	5.91	0.00	9.52	-1.03	350	5.6	0.75	3.0	2.3	5.1	
12/1/05	15.43	5.07	0.00	10.36	0.84	170	3.6	ND<0.50	ND<0.50	1.8	4.8	
1/31/06	15.43	5.05	0.00	10.38	0.02	130	0.67	ND<0.50	0.72	ND<1.0	2.7	
5/26/06	15.43	4.94	0.00	10.49	0.11	1200	0.61	ND<0.50	14	13	ND<0.50	
8/8/06	15.43	5.18	0.00	10.25	-0.24	550	ND<0.50	ND<0.50	3.2	6.1	0.90	
10/6/06	15.43	5.25	0.00	10.18	-0.07	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.2	
1/23/07	15.43	5.18	0.00	10.25	0.07	330	ND<0.50	ND<0.50	0.82	2.3	1.4	
5/31/07	15.37	5.02	0.00	10.35	0.10	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.2	
8/16/07	15.37	5.24	0.00	10.13	-0.22	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.2	
10/19/07	15.37	4.92	0.00	10.45	0.32	64	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.4	
1/8/08	15.37	4.48	0.00	10.89	0.44	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
2/13/08	15.37	4.65	0.00	10.72	-0.17	150	ND<0.50	ND<0.50	ND<0.50	ND<1.0	0.99	
5/22/08	15.37	5.10	0.00	10.27	-0.45	140	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.7	
7/11/08	15.37	5.21	0.00	10.16	-0.11	190	ND<0.50	ND<0.50	ND<0.50	ND<1.0	2.2	

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HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
May 2005 Through July 2008
76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground-water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8260B)	Comments
	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-7												
1/23/07	15.38	5.84	0.00	9.54	--	17000	ND<5.0	ND<5.0	650	270	59	
5/31/07	15.38	6.05	0.00	9.33	-0.21	15000	ND<5.0	ND<5.0	690	360	66	
8/16/07	15.38	6.20	0.00	9.18	-0.15	12000	ND<2.5	ND<2.5	600	250	49	
10/19/07	15.38	6.13	0.00	9.25	0.07	13000	ND<5.0	ND<5.0	630	230	56	
1/8/08	15.38	5.80	0.00	9.58	0.33	8700	2.5	ND<0.50	330	110	36	
2/13/08	15.38	5.52	0.00	9.86	0.28	6200	27	3.8	240	180	62	
5/22/08	15.38	6.07	0.00	9.31	-0.55	7400	16	ND<10	560	230	57	
7/11/08	15.38	6.26	0.00	9.12	-0.19	9900	12	ND<5.0	340	110	56	
MW-8												
1/23/07	15.53	6.45	0.00	9.08	--	20000	460	ND<10	1300	1700	460	
5/31/07	15.53	6.15	0.00	9.38	0.30	14000	430	ND<10	1100	340	560	
8/16/07	15.53	6.55	0.00	8.98	-0.40	14000	760	ND<6.2	1300	900	820	
10/19/07	15.53	5.99	0.00	9.54	0.56	12000	580	ND<10	1300	850	550	
1/8/08	15.53	6.06	0.00	9.47	-0.07	9100	370	ND<5.0	660	400	410	
2/13/08	15.53	5.81	0.00	9.72	0.25	7400	250	ND<5.0	620	500	270	
5/22/08	15.53	6.40	0.00	9.13	-0.59	8400	480	ND<5.0	980	580	380	
7/11/08	15.53	6.73	0.00	8.80	-0.33	13000	600	ND<6.2	1200	1300	510	
MW-9												
3/2/07	15.11	5.50	0.00	9.61	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.1	
5/31/07	15.11	5.62	0.00	9.49	-0.12	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.0	
8/16/07	15.11	5.90	0.00	9.21	-0.28	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.3	
10/19/07	15.11	5.91	0.00	9.20	-0.01	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.0	
1/8/08	15.11	5.23	0.00	9.88	0.68	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.6	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
 May 2005 Through July 2008
 76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground-water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8260B)	Comments
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-9 continued												
2/13/08	15.11	5.43	0.00	9.68	-0.20	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.6	
5/22/08	15.11	5.86	0.00	9.25	-0.43	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.5	
7/11/08	15.11	6.03	0.00	9.08	-0.17	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1.7	
MW-10												
3/2/07	14.69	5.36	0.00	9.33	-	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/31/07	14.69	5.61	0.00	9.08	-0.25	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
8/16/07	14.69	5.81	0.00	8.88	-0.20	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/19/07	14.69	5.67	0.00	9.02	0.14	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
1/8/08	14.69	5.07	0.00	9.62	0.60	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
2/13/08	14.69	5.33	0.00	9.36	-0.26	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
5/22/08	14.69	5.78	0.00	8.91	-0.45	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
7/11/08	14.69	5.94	0.00	8.75	-0.16	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
MW-11												
3/2/07	14.03	4.66	0.00	9.37	--	410	ND<0.50	ND<0.50	ND<0.50	ND<0.50	410	
5/31/07	14.03	4.69	0.00	9.34	-0.03	510	ND<0.50	ND<0.50	ND<0.50	ND<0.50	420	
8/16/07	14.03	5.22	0.00	8.81	-0.53	390	ND<2.5	ND<2.5	ND<2.5	ND<2.5	480	
10/19/07	14.03	5.25	0.00	8.78	-0.03	360	ND<0.50	ND<0.50	ND<0.50	ND<0.50	480	
1/8/08	14.03	4.84	0.00	9.19	0.41	320	ND<0.50	ND<0.50	ND<0.50	ND<1.0	440	
2/13/08	14.03	4.64	0.00	9.39	0.20	280	ND<0.50	ND<0.50	ND<0.50	ND<1.0	400	
5/22/08	14.03	5.18	0.00	8.85	-0.54	250	ND<0.50	ND<0.50	ND<0.50	ND<1.0	490	
7/11/08	14.03	5.25	0.00	8.78	-0.07	460	ND<0.50	ND<0.50	ND<0.50	ND<1.0	480	
MW-12												
3/2/07	13.75	5.14	0.00	8.61	--	64	ND<0.50	ND<0.50	ND<0.50	ND<0.50	71	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
May 2005 Through July 2008
76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground-water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8260B)	Comments
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-12 continued												
5/31/07	13.75	4.90	0.00	8.85	0.24	58	ND<0.50	ND<0.50	ND<0.50	ND<0.50	50	
8/16/07	13.75	5.22	0.00	8.53	-0.32	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	44	
10/19/07	13.75	5.50	0.00	8.25	-0.28	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	33	
1/8/08	13.75	3.92	0.00	9.83	1.58	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	46	
2/13/08	13.75	4.04	0.00	9.71	-0.12	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	55	
5/22/08	13.75	5.10	0.00	8.65	-1.06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	21	
7/11/08	13.75	5.31	0.00	8.44	-0.21	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	26	
MW-13												
1/23/07	12.17	4.42	0.00	7.75	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.0	
5/31/07	12.17	4.10	0.00	8.07	0.32	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	5.3	
8/16/07	12.17	4.71	0.00	7.46	-0.61	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.0	
10/19/07	12.17	4.45	0.00	7.72	0.26	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.4	Resampled on 10/26/07
1/8/08	12.17	4.11	0.00	8.06	0.34	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	7.6	
2/13/08	12.17	3.53	0.00	8.64	0.58	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	8.3	
5/22/08	12.17	4.15	0.00	8.02	-0.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	7.0	
7/11/08	12.17	4.17	0.00	8.00	-0.02	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	16	
MW-14												
1/23/07	15.48	5.98	0.00	9.50	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
5/31/07	15.48	5.98	0.00	9.50	0.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
8/16/07	15.48	5.83	0.00	9.65	0.15	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	
10/19/07	15.48	5.85	0.00	9.63	-0.02	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	Resampled on 10/24/07
1/8/08	15.48	5.85	0.00	9.63	0.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
2/13/08	15.48	4.93	0.00	10.55	0.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	

Table 2
HISTORIC FLUID LEVELS AND SELECTED ANALYTICAL RESULTS
May 2005 Through July 2008
76 Station 3713

Date Sampled	TOC Elevation	Depth to Water	LPH Thickness	Ground- water Elevation	Change in Elevation	TPH-G (8015M)	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE (8260B)	Comments
(feet)	(feet)	(feet)	(feet)	(feet)	(feet)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	
MW-14 continued												
5/22/08	15.48	6.05	0.00	9.43	-1.12	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	
7/11/08	15.48	5.87	0.00	9.61	0.18	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	

Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
76 Station 3713

Date Sampled	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Chromium VI (µg/l)	Chromium (total) (µg/l)	Iron (µg/l)	Ferron (µg/l)	Field Conductivity (µS/cm)	Field pH (pH unit)	Field Temp (deg. C)	Pre-purge Dissolved Oxygen (mg/l)	Pre-purge ORP (mV)
MW-1																
8/12/05	ND<5.0	ND<50	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
12/1/05	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/31/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/26/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/8/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/6/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/23/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<10	ND<100	155.6	7.25	14.1	3.59	163	
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<10	ND<100	172.0	8.30	14.0	1.29	108	
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	143.3	7.67	20.5	3.19	84	
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	182.5	6.90	20.0	5.29	142	
MW-2																
8/24/05	ND<10	ND<1000	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
12/1/05	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/31/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/26/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/8/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/6/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/23/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<10	ND<100	173.5	8.75	14.8	7.84	147	

Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
 76 Station 3713

Date Sampled	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Chromium VI (µg/l)	Chromium (total) (µg/l)	Iron Ferrous (µg/l)	Field Con- ductivity (µS/cm)	Field pH (pH unit)	Field Temp (deg. C)	Pre-purge Dissolved Oxygen (mg/l)	Pre-purge ORP (mV)
MW-2 continued															
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<10	ND<100	205.4	9.09	14.0	0.96	61
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	136.1	8.36	21.8	3.36	126
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	119.1	6.78	20.1	4.87	143
MW-3															
5/16/05	ND<50	--	--	--	ND<50	ND<50	ND<5.0	--	--	--	--	--	--	--	--
8/12/05	ND<130	ND<1300	--	--	ND<13	ND<13	ND<13	--	--	--	--	--	--	--	--
12/1/05	ND<120	ND<3100	--	--	ND<6.2	ND<6.2	ND<6.2	--	--	--	--	--	--	--	--
1/31/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
5/26/06	ND<100	ND<2500	--	--	ND<5.0	ND<5.0	ND<5.0	--	--	--	--	--	--	--	--
8/8/06	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
10/6/06	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
1/23/07	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
5/31/07	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
8/16/07	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
10/19/07	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
1/8/08	ND<50	ND<1200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.0	ND<10	770	240.5	8.80	13.7	7.60	148
2/13/08	ND<20	ND<500	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<10	1000	398.7	6.95	14.9	1.56	-14
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	616.8	6.86	20.6	1.79	-63
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	483.3	6.61	21.1	2.21	-19
MW-4															
5/16/05	ND<20	--	--	--	ND<20	ND<20	ND<20	--	--	--	--	--	--	--	--
8/12/05	ND<250	ND<2500	--	--	ND<25	ND<25	ND<25	--	--	--	--	--	--	--	--
12/1/05	ND<500	ND<12000	--	--	ND<25	ND<25	ND<25	--	--	--	--	--	--	--	--
1/31/06	ND<500	ND<12000	--	--	ND<25	ND<25	ND<25	--	--	--	--	--	--	--	--
5/26/06	ND<1000	ND<25000	--	--	ND<50	ND<50	ND<50	--	--	--	--	--	--	--	--
8/8/06	ND<250	ND<6200	--	--	ND<12	ND<12	ND<12	--	--	--	--	--	--	--	--

Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
 76 Station 3713

Date Sampled	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Chromium VI (µg/l)	Chromium (total) (µg/l)	Iron (µg/l)	Ferrous (µg/l)	Field Con- ductivity (µS/cm)	Field pH (pH unit)	Field Temp (deg. C)	Pre-purge Dissolved Oxygen (mg/l)	Pre-purge ORP (mV)
MW-4 continued																
10/6/06	ND<250	ND<6200	--	--	ND<12	ND<12	ND<12	--	--	--	--	--	--	--	--	--
1/23/07	ND<250	ND<6200	--	--	ND<12	ND<12	ND<12	--	--	--	--	--	--	--	--	--
5/31/07	ND<200	ND<5000	--	--	ND<10	ND<10	ND<10	--	--	--	--	--	--	--	--	--
8/16/07	ND<250	ND<6200	--	--	ND<12	ND<12	ND<12	--	--	--	--	--	--	--	--	--
10/19/07	ND<250	ND<6200	--	--	ND<12	ND<12	ND<12	--	--	--	--	--	--	--	--	--
1/8/08	ND<200	ND<5000	ND<10	ND<10	ND<10	ND<10	ND<10	ND<2.0	13	4100	181.6	6.57	13.8	4.03	119	
2/13/08	160	ND<3100	ND<6.2	ND<6.2	ND<6.2	ND<6.2	ND<6.2	ND<2.0	ND<10	2400	1921	6.46	14.1	1.08	43	
5/22/08	ND<100	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	--	--	1796	7.03	20.1	1.75	-50	
7/11/08	ND<200	ND<5000	ND<10	ND<10	ND<10	ND<10	ND<10	--	--	--	1760	6.41	18.8	1.09	-56	
MW-5																
5/16/05	ND<100	--	--	--	ND<100	ND<100	ND<100	--	--	--	--	--	--	--	--	--
8/12/05	200	ND<1000	--	--	ND<10	ND<10	ND<10	--	--	--	--	--	--	--	--	--
12/1/05	ND<500	ND<12000	--	--	ND<25	ND<25	ND<25	--	--	--	--	--	--	--	--	--
1/31/06	ND<1000	ND<25000	--	--	ND<50	ND<50	ND<50	--	--	--	--	--	--	--	--	--
5/26/06	ND<1000	ND<25000	--	--	ND<50	ND<50	ND<50	--	--	--	--	--	--	--	--	--
8/8/06	ND<2500	ND<62000	--	--	ND<120	ND<120	ND<120	--	--	--	--	--	--	--	--	--
10/6/06	ND<2000	ND<50000	--	--	ND<100	ND<100	ND<100	--	--	--	--	--	--	--	--	--
1/23/07	360	ND<5000	--	--	ND<10	ND<10	ND<10	--	--	--	--	--	--	--	--	--
5/31/07	ND<1000	ND<25000	--	--	ND<50	ND<50	ND<50	--	--	--	--	--	--	--	--	--
8/16/07	ND<1000	ND<25000	--	--	ND<50	ND<50	ND<50	--	--	--	--	--	--	--	--	--
10/19/07	ND<1000	ND<25000	--	--	ND<50	ND<50	ND<50	--	--	--	--	--	--	--	--	--
1/8/08	ND<1000	ND<25000	ND<50	ND<50	ND<50	ND<50	ND<50	ND<2.0	210	11000	913.4	6.65	15.2	4.50	105	
2/13/08	ND<1000	ND<25000	ND<50	ND<50	ND<50	ND<50	ND<50	ND<2.0	110	9600	1017	6.70	15.7	0.98	10	
5/22/08	ND<200	ND<5000	ND<10	ND<10	ND<10	ND<10	ND<10	--	--	--	1092	6.96	20.2	2.12	-92	
7/11/08	ND<1000	ND<25000	ND<50	ND<50	ND<50	ND<50	ND<50	--	--	--	827.1	6.70	19.8	0.99	-70	

MW-6
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Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
 76 Station 3713

Date Sampled	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	Chromium VI	Chromium (total)	Iron	Ferrous	Field Conductivity	Field pH	Field Temp	Pre-purge Dissolved Oxygen	Pre-purge ORP
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µS/cm)	(pH unit)	(deg. C)	(mg/l)	(mV)
MW-6 continued																
5/16/05	ND<1.0	--	--	--	ND<1.0	--	ND<1.0	--	--	--	--	--	--	--	--	--
8/12/05	ND<5.0	ND<50	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
12/1/05	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/31/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/26/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/8/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/6/06	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/23/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	29	110	298.7	6.76	13.1	7.88	159	
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	31	360	343.5	7.63	14.1	6.18	139	
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	311.5	7.78	19.8	2.75	94	
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	247.6	6.72	20.3	3.40	143	
MW-7																
1/23/07	ND<100	ND<2500	--	--	ND<5.0	ND<5.0	ND<5.0	--	--	--	--	--	--	--	--	--
5/31/07	ND<100	ND<2500	--	--	ND<5.0	ND<5.0	ND<5.0	--	--	--	--	--	--	--	--	--
8/16/07	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--	--
10/19/07	ND<100	ND<2500	--	--	ND<5.0	ND<5.0	ND<5.0	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.77	ND<2.0	14	4700	845.3	6.69	14.3	5.73	151	
2/13/08	ND<50	ND<1200	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.5	ND<2.0	ND<10	1800	852.6	6.87	15.5	1.07	138	
5/22/08	ND<200	ND<5000	ND<10	ND<10	ND<10	ND<10	ND<10	--	--	--	890.6	6.40	20.4	1.29	29	
7/11/08	ND<100	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	--	--	835.9	6.39	20.5	0.80	30	
MW-8																
1/23/07	ND<200	ND<5000	--	--	ND<10	ND<10	ND<10	--	--	--	--	--	--	--	--	--

Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
76 Station 3713

Date Sampled	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	Chromium VI	Chromium (total)	Iron	Ferrous	Field Conductivity	Field pH	Field Temp	Pre-purge Dissolved Oxygen	Pre-purge ORP
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µS/cm)	(pH unit)	(deg. C)	(mg/l)	(mV)
MW-8 continued																
5/31/07	ND<200	ND<5000	--	--	ND<10	ND<10	ND<10	--	--	--	--	--	--	--	--	--
8/16/07	190	ND<3100	--	--	ND<6.2	ND<6.2	ND<6.2	--	--	--	--	--	--	--	--	--
10/19/07	ND<200	ND<5000	--	--	ND<10	ND<10	ND<10	--	--	--	--	--	--	--	--	--
1/8/08	130	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<2.0	33	3700	145.4	6.82	14.1	6.83	69	
2/13/08	ND<100	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<2.0	36	4300	1482	6.81	14.5	3.76	95	
5/22/08	ND<100	ND<2500	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	--	--	--	1520	6.88	17.8	1.99	-70	
7/11/08	ND<120	ND<3100	ND<6.2	ND<6.2	ND<6.2	ND<6.2	ND<6.2	--	--	--	1475	6.56	19.5	1.04	-79	
MW-9																
3/2/07	ND<10	ND<250	±	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	62	500	1021	7.39	16.2	--	--	
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	21	890	986.2	7.95	15.3	2.16	143	
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	926.0	7.19	22.6	2.71	72	
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	958.9	7.13	21.2	1.33	176	
MW-10																
3/2/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	200	14000	867.4	7.82	13.6	--	--	
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	140	4600	1222	7.38	14.1	0.69	160	
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	1192	7.10	23.5	1.84	76	
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	1332	7.41	19.4	0.96	180	

Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
76 Station 3713

Date Sampled	TBA	Ethanol (8260B)	Ethylene-dibromide (EDB)	1,2-DCA (EDC)	DIPE	ETBE	TAME	Chromium VI	Chromium (total)	Iron Ferrous	Field Conductivity	Field pH	Field Temp	Pre-purge Dissolved Oxygen	Pre-purge ORP
	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µg/l)	(µS/cm)	(pH unit)	(deg. C)	(mg/l)	(mV)
MW-11															
3/2/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	0.88	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	1.0	--	--	--	--	--	--	--	--
8/16/07	ND<50	ND<1200	--	--	ND<2.5	ND<2.5	ND<2.5	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	1.1	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	17	67	100	550.2	9.12	11.2	--	--
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.76	49	100	500	579.8	8.26	14.2	2.61	132
5/22/08	48	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.92	--	--	--	455.5	9.04	21.7	2.22	-16
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.2	--	--	--	488.8	7.96	21.3	1.48	144
MW-12															
3/2/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.1	17	ND<100	760.8	7.94	14.2	--	--
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	3.3	25	570	741.1	7.76	14.3	1.46	147
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	3257	7.61	21.5	3.01	61
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	656.8	7.19	20.0	1.86	171
MW-13															
1/23/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	12	ND<100	428.5	7.91	13.7	--	--
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	13	230	603.3	7.73	13.0	2.20	150
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	229.1	7.30	22.8	1.70	19


Table 2 a
ADDITIONAL HISTORIC ANALYTICAL RESULTS
 76 Station 3713

Date Sampled	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene-dibromide (EDB) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Chromium VI (µg/l)	Chromium (total) (µg/l)	Iron (µg/l)	Ferrous (µg/l)	Field Conductivity (µS/cm)	Field pH (pH unit)	Field Temp (deg. C)	Pre-purge Dissolved Oxygen (mg/l)	Pre-purge ORP (mV)
MW-13 continued																
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	194.5	7.71	19.8	3.93	155
MW-14																
1/23/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
5/31/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
8/16/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
10/19/07	ND<10	ND<250	--	--	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	--	--	--	--	--
1/8/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	22	200	--	833.3	7.91	14.8	--	--
2/13/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.6	36	540	--	439.7	8.11	14.7	4.96	140
5/22/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	770.3	7.26	22.5	2.86	154
7/11/08	ND<10	ND<250	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	--	--	793.8	8.48	20.4	3.03	149

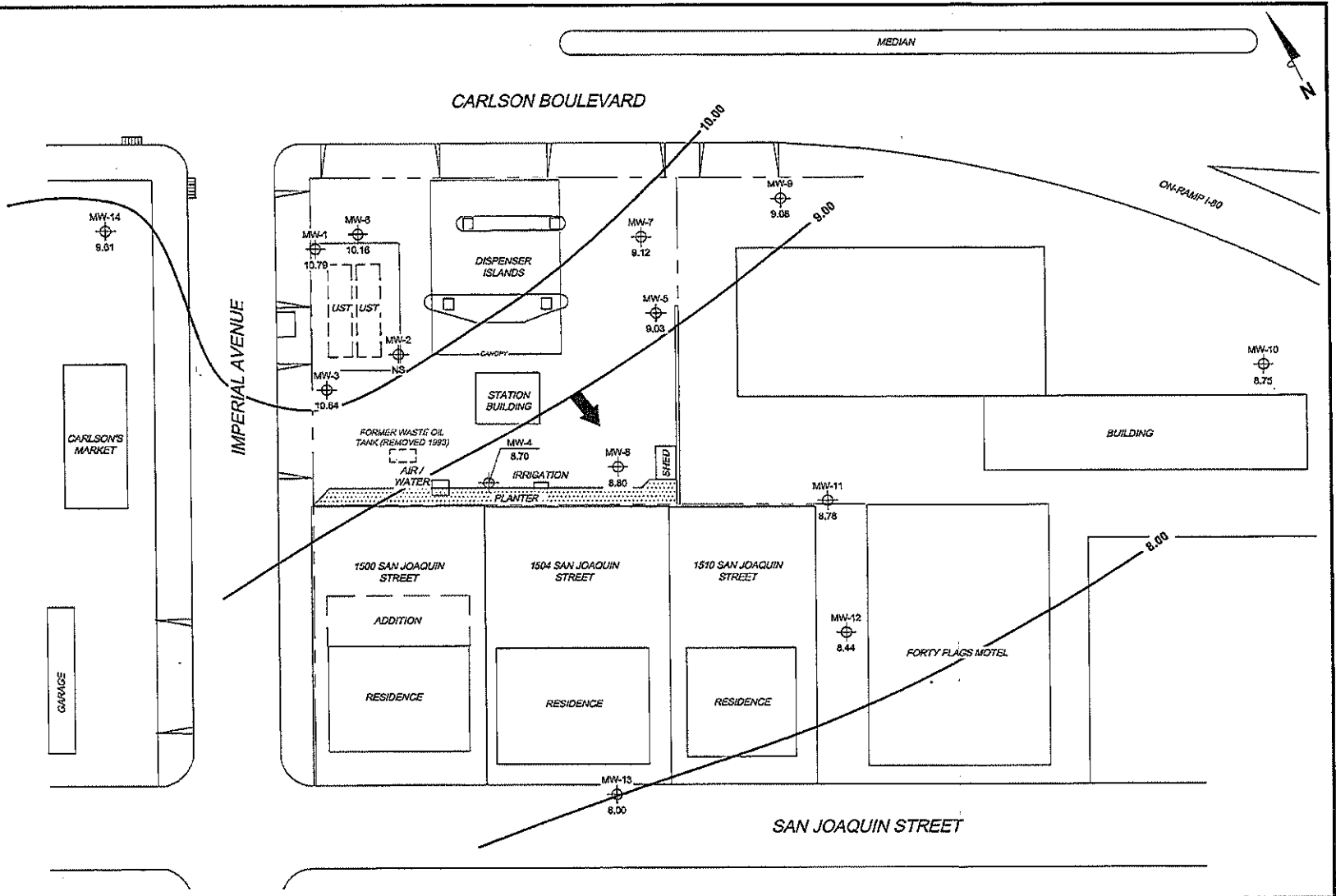
LEGEND

MW-14  Monitoring Well with Groundwater Elevation (feet)

10.00  Groundwater Elevation Contour

 General Direction of Groundwater Flow

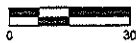
MS-111 3713-003 L:\c\p\gis\GIS NORTH\3713-003-3713\3713_CMS\NEW\DWG - JUL 28, 2008 - 12:13pm.dwg



NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. NS = not surveyed. UST = underground storage tank.

SCALE (FEET)



PROJECT: 154771
 FACILITY:
 76 STATION 3713
 1503 CARLSON BOULEVARD
 RICHMOND, CALIFORNIA

GROUNDWATER ELEVATION
 CONTOUR MAP
 July 11, 2008

FIGURE 2

APPENDIX D

Well Development Data – Wells MW-15 and MW-16



Project: 3713
Date: 10/15/08 Time: 7:30
Weather: Clear
Recorded By: E. Weyers

Waste Generation

Drums (# of): 1

Date: 10/15/08

Contents: Purge Water

Notes: Arrived onsite at 7:30, conducted

tailgate Safety Meeting with Gregg Drilling and moved to MW-15. Water at 4.5 flog.

TD of well 31.54 at 8:15 began surging

the well, upon completion will purge approx. 46 gallons from the well. Pump not working, calling Gregg's office to try and

get another one out here. Talked to John (Delta) going to haul Bail approx. 10 to 15 gallons

out of the well. PH - 6.97, EC .686

Turbidity 747

Temp 17.2 Salinity 0.02

@ 10 g. purged

Purge - total of 12 gal. out of MW-15

6.96 pH, .676 EC, 749 Turbidity

17.1 Temp, 0.02 Salinity

9:45 - Clean up and move to next location MW-16.

10:03 - open up MW-16, water about 6" below top of casing. TD - 31.25

10:13 - began surging the well in order to clean the screen and the gravel pack

10:30 - finish surge, begin purging well with the Bailor

10:45 - 10.5 gallons purged - sample for readings

6.89 pH, .610 EC, 731 Turbidity, 20.1 Temp, 0.03 sal.

10:49 - 11.5 gal. purged

6.87 pH, .601 EC, 752 Turb., 20.3 Temp, 0.03 sal.

Pack up and leave site at:

APPENDIX E

Well Sampling Data – Wells MW-15 and MW-16

GROUNDWATER SAMPLING FIELD NOTES

Technician: Andrew Valeros

Site: 3113

Project No: 154711

Date: 10/17/08

Well No. MW-15

Purge Method: Sub

Depth to Water (feet): 6.40

Depth to Product (feet): —

Total Depth (feet) 31.50

LPH & Water Recovered (gallons): —

Water Column (feet): 25.10

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 11.42

1 Well Volume (gallons): 5

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
PRE	PURGE			816.5	20.6	7.10	1.49	162	
0811			5	817.2	18.7	8.01	0.66	103	
			10	839.9	19.4	7.97	0.70	99	
	0817		15	833.3	19.6	7.95	0.66	100	
Static at Time Sampled		Total Gallons Purged			Sample Time				
6.40		15			0945				
Comments:									

Well No. MW-16

Purge Method: Sub

Depth to Water (feet): 6.94

Depth to Product (feet): —

Total Depth (feet) 31.23

LPH & Water Recovered (gallons): —

Water Column (feet): 24.29

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 11.80

1 Well Volume (gallons): 5

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (uS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
PRE	PURGE			784.4	20.5	7.74	1.34	165	
0755			5	797.8	17.9	7.89	1.28	120	
			10	735.1	18.8	7.91	0.40	112	
	0803		15	713.1	19.1	7.99	1.02	106	
Static at Time Sampled		Total Gallons Purged			Sample Time				
6.95		15			0938				
Comments:									



APPENDIX F

Well Location and Elevation Data – Wells MW-15 and MW-16

FIELD_PT_NAME	XY_SURVEY_DATE	LATITUDE	LONGITUDE	XY_METHOD	XY_DATUM	XY_ACC_VAL	XY_SURVEY_ORG	GPS_EQUIP_TYPE	XY_SURVEY_DESC
MW-1		37.9114373	-122.3186907	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-2		37.9113256	-122.3186802	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-3		37.9113342	-122.3187656	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-4		37.9111947	-122.3186773	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-5		37.9112353	-122.3184300	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-6		37.9114268	-122.3186457	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-7		37.9113691	-122.3173168	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-8		37.9112208	-122.3174723	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-9		37.9113314	-122.3171720	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-10		37.9110647	-122.3169474	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-11		37.9111105	-122.3173303	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-12		37.9109933	-122.3173887	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-13		37.9109508	-122.3177326	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-14		37.9116311	-122.3178051	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-15	11/12/2008	37.9114417	-122.3186418	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
MW-16	11/12/2008	37.9112013	-122.3184715	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-1		37.9112650	-122.3187626	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-2		37.9113442	-122.3187630	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-3		37.9114113	-122.3185904	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-4		37.9112551	-122.3184652	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-5		37.9113642	-122.3186315	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-6		37.9113489	-122.3186425	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-7		37.9113386	-122.3186529	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SB-8		37.9113276	-122.3186618	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-1B	11/12/2008	37.9112939	-122.3183792	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-2B	11/12/2008	37.9112717	-122.3183973	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-3B	11/12/2008	37.9112184	-122.3184443	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-4B	11/12/2008	37.9111735	-122.3184827	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-5B	11/12/2008	37.9111376	-122.3185712	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-6B	11/12/2008	37.9111744	-122.3186441	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-7B	11/12/2008	37.9112110	-122.3187139	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-8B	11/12/2008	37.9112604	-122.3188007	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX
SV-FB	11/12/2008	37.9111992	-122.3185998	CGPS	NAD83	30	MORROW SURVEYING, DAVID TRIPLETT, LS 4650	LEG	TOP OF BOX

APPENDIX G

Groundwater Laboratory Analytical Report – Wells MW-15 and MW-16



Laboratories, Inc.

Environmental Testing Laboratory Since 1949



Date of Report: 10/24/2008

Anju Farfan

TRC

21 Technology Drive
Irvine, CA 92618

RE: 3713

BC Work Order: 0813845

Invoice ID:

Enclosed are the results of analyses for samples received by the laboratory on 10/17/2008. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers

Client Service Rep

Authorized Signature



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			Receive Date:	Sampling Date:	Sample Depth:	Sample Matrix:	Delivery Work Order:
0813845-15	COC Number:	---		10/17/2008 22:30	10/17/2008 09:45	---	Water	Global ID: T0601300483
	Project Number:	3713						Matrix: W
	Sampling Location:	MW-15						Sample QC Type (SACode): CS
	Sampling Point:	MW-15						Cooler ID:
	Sampled By:	TRCI						
0813845-16	COC Number:	---		10/17/2008 22:30	10/17/2008 09:38	---	Water	Global ID: T0601300483
	Project Number:	3713						Matrix: W
	Sampling Location:	MW-16						Sample QC Type (SACode): CS
	Sampling Point:	MW-16						Cooler ID:
	Sampled By:	TRCI						

TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID:	0813845-15												
Client Sample Name:	3713, MW-15, MW-15, 10/17/2008 9:45:00AM												
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Benzene	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Methyl t-butyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Toluene	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Total Xylenes	ND	ug/L	1.0		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
t-Butyl alcohol	ND	ug/L	10		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Ethanol	ND	ug/L	250		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591	ND	
1,2-Dichloroethane-d4 (Surrogate)	102	%	76 - 114 (LCL - UCL)		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591		
Toluene-d8 (Surrogate)	96.1	%	88 - 110 (LCL - UCL)		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591		
4-Bromofluorobenzene (Surrogate)	99.9	%	86 - 115 (LCL - UCL)		EPA-8260	10/24/08	10/24/08 12:18	KEA	MS-V12	1	BRJ1591		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	0813845-15	Client Sample Name:	3713, MW-15, MW-15, 10/17/2008 9:45:00AM										
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		Luft	10/23/08	10/24/08 10:44	JJH	GC-V4	1	BRJ1620	ND	
a,a,a-Trifluorotoluene (FID Surrogate)	96.6	%	70 - 130 (LCL - UCL)		Luft	10/23/08	10/24/08 10:44	JJH	GC-V4	1	BRJ1620		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 0813845-16	Client Sample Name: 3713, MW-16, MW-16, 10/17/2008 9:38:00AM
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	Prep		Run		Instru- ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
						Date	Date/Time	Analyst						
Benzene	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
1,2-Dibromoethane	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
1,2-Dichloroethane	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Ethylbenzene	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Methyl t-butyl ether	3.0	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Toluene	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Total Xylenes	ND	ug/L	1.0		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
t-Amyl Methyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
t-Butyl alcohol	ND	ug/L	10		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Diisopropyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Ethanol	ND	ug/L	250		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
Ethyl t-butyl ether	ND	ug/L	0.50		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591	ND	
1,2-Dichloroethane-d4 (Surrogate)	104	%	76 - 114 (LCL - UCL)		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591		
Toluene-d8 (Surrogate)	95.9	%	88 - 110 (LCL - UCL)		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591		
4-Bromofluorobenzene (Surrogate)	97.6	%	86 - 115 (LCL - UCL)		EPA-8260	10/24/08	10/24/08 11:54	KEA		MS-V12	1	BRJ1591		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	0813845-16	Client Sample Name:	3713, MW-16, MW-16, 10/17/2008 9:38:00AM										
Constituent	Result	Units	PQL	MDL	Method	Prep Date	Run Date/Time	Analyst	Instru-ment ID	Dilution	QC Batch ID	MB Bias	Lab Quals
Gasoline Range Organics (C4 - C12)	ND	ug/L	50		Luft	10/23/08	10/24/08 11:12	JJH	GC-V4	1	BRJ1620	ND	
a,a,a-Trifluorotoluene (FID Surrogate)	96.3	%	70 - 130 (LCL - UCL)		Luft	10/23/08	10/24/08 11:12	JJH	GC-V4	1	BRJ1620		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits	
										RPD	Percent Recovery
Benzene	BRJ1591	Matrix Spike	0813569-36	0	22.710	25.000	ug/L		90.8		70 - 130
		Matrix Spike Duplicate	0813569-36	0	24.220	25.000	ug/L	6.5	96.9	20	70 - 130
Toluene	BRJ1591	Matrix Spike	0813569-36	0	23.860	25.000	ug/L		95.4		70 - 130
		Matrix Spike Duplicate	0813569-36	0	25.150	25.000	ug/L	5.7	101	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	BRJ1591	Matrix Spike	0813569-36	ND	10.180	10.000	ug/L		102		76 - 114
		Matrix Spike Duplicate	0813569-36	ND	10.530	10.000	ug/L		105		76 - 114
Toluene-d8 (Surrogate)	BRJ1591	Matrix Spike	0813569-36	ND	9.7100	10.000	ug/L		97.1		88 - 110
		Matrix Spike Duplicate	0813569-36	ND	9.5600	10.000	ug/L		95.6		88 - 110
4-Bromofluorobenzene (Surrogate)	BRJ1591	Matrix Spike	0813569-36	ND	9.9600	10.000	ug/L		99.6		86 - 115
		Matrix Spike Duplicate	0813569-36	ND	10.240	10.000	ug/L		102		86 - 115



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Batch ID	QC Sample Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
										RPD	Percent Recovery	
Gasoline Range Organics (C4 - C12)	BRJ1620	Matrix Spike	0811604-99	0	933.44	1000.0	ug/L	4.1	93.3	20	70 - 130	
		Matrix Spike Duplicate	0811604-99	0	972.28	1000.0			97.2			
a,a,a-Trifluorotoluene (FID Surrogate)	BRJ1620	Matrix Spike	0811604-99	ND	42.142	40.000	ug/L		105		70 - 130	
		Matrix Spike Duplicate	0811604-99	ND	41.221	40.000			103			



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Benzene	BRJ1591	BRJ1591-BS1	LCS	22.110	25.000	0.50	ug/L	88.4		70 - 130		
Toluene	BRJ1591	BRJ1591-BS1	LCS	22.650	25.000	0.50	ug/L	90.6		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BRJ1591	BRJ1591-BS1	LCS	9.6300	10.000		ug/L	96.3		76 - 114		
Toluene-d8 (Surrogate)	BRJ1591	BRJ1591-BS1	LCS	9.4500	10.000		ug/L	94.5		88 - 110		
4-Bromofluorobenzene (Surrogate)	BRJ1591	BRJ1591-BS1	LCS	10.130	10.000		ug/L	101		86 - 115		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	Batch ID	QC Sample ID	QC Type	Result	Spike Level	PQL	Units	Percent Recovery	RPD	Control Limits		Lab Quals
										Percent Recovery	RPD	
Gasoline Range Organics (C4 - C12)	BRJ1620	BRJ1620-BS1	LCS	1004.4	1000.0	50	ug/L	100		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	BRJ1620	BRJ1620-BS1	LCS	42.448	40.000		ug/L	106		70 - 130		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Benzene	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
Ethylbenzene	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
Toluene	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
Total Xylenes	BRJ1591	BRJ1591-BLK1	ND	ug/L	1.0		
t-Amyl Methyl ether	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
t-Butyl alcohol	BRJ1591	BRJ1591-BLK1	ND	ug/L	10		
Diisopropyl ether	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
Ethanol	BRJ1591	BRJ1591-BLK1	ND	ug/L	250		
Ethyl t-butyl ether	BRJ1591	BRJ1591-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane-d4 (Surrogate)	BRJ1591	BRJ1591-BLK1	102	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BRJ1591	BRJ1591-BLK1	97.7	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BRJ1591	BRJ1591-BLK1	102	%	86 - 115 (LCL - UCL)		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Draft: Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	Batch ID	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
Gasoline Range Organics (C4 - C12)	BRJ1620	BRJ1620-BLK1	ND	ug/L	50		
a,a,a-Trifluorotoluene (FID Surrogate)	BRJ1620	BRJ1620-BLK1	97.5	%	70 - 130 (LCL - UCL)		



TRC
21 Technology Drive
Irvine, CA 92618

Project: 3713
Project Number: [none]
Project Manager: Anju Farfan

Reported: 10/24/2008 15:01

Notes And Definitions

- MDL Method Detection Limit
- ND Analyte Not Detected at or above the reporting limit
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference

APPENDIX H

Soil Vapor Sampling Data



17 January 2008

Mr. Dennis Dettloff
Delta Environmental Consultants, Inc.
3164 Gold Camp Drive, Suite 200
Rancho Cordova, CA 95670

**SUBJECT: DATA REPORT - Delta Environmental Consultants, Inc. Project # C103713191
1503 Carlson Boulevard, Richmond, California**

TEG Project # 71217D

Mr. Dettloff:

Please find enclosed a data report for the samples analyzed from the above referenced project for Delta Environmental Consultants, Inc. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 20 analyses on 8 soil vapor samples.

- 8 analyses on soil vapors for aromatic volatile hydrocarbons (BTEX), fuel oxygenate MtBE, and total petroleum hydrocarbons-gasoline by EPA method 8260B.
- 6 analyses on soil vapors for methane by EPA method 8015m.
- 6 analyses on soil vapors for oxygen and carbon dioxide by GC/TCD.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and calibration data are included in the tables.

1,1 difluoroethane was used as a leak check compound around the probe rods during the soil vapor sampling. No 1,1 difluoroethane was detected in any of the vapor samples reported at or above the DTSC recommended leak check compound reporting limit of 10 µg/L of vapor.

TEG appreciates the opportunity to have provided analytical services to Delta Environmental Consultants, Inc. on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak
Director, TEG-Northern California



Delta Environmental Consultants, Inc. Project # C103713191
 1503 Carlson Boulevard, Richmond, California

TEG Project #71217D

BTEX, MtBE, & TPH-gasoline (EPA method 8260B) Analyses of SOIL VAPOR in ug/L of Vapor
 Methane (EPA 8015m) in ppmV, and Oxygen and Carbon Dioxide in percent by Volume

SAMPLE NUMBER:	Probe	SG-3	SG-5	SG-5	SG-5	SG-7	SG-8	SG-8	SG-9	
	Blank							dup		
SAMPLE DEPTH (feet):		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
PURGE VOLUME:		1	1	3	7	3	3	3	3	
COLLECTION DATE:	12/17/07	12/17/07	12/17/07	12/17/07	12/17/07	12/17/07	12/17/07	12/17/07	12/17/07	
COLLECTION TIME:	08:40	10:20	10:43	11:03	11:22	11:52	12:33	13:31	13:10	
DILUTION FACTOR (VOCs):	1	10	1	1	1	1	10	10	1	
	RL									
Benzene	0.10	nd	nd	nd	nd	nd	nd	6.5	6.4	nd
Toluene	0.20	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.10	nd	nd	nd	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.20	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-Xylene	0.10	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methyl-t-butyl ether (MtBE)	0.10	nd	nd	nd	nd	nd	nd	nd	nd	0.14
TPH (gasoline range)	10	nd	21000	37	40	51	23	18000	18000	12
Methane	500	nd	190000	nd	--	--	nd	380000	410000	nd
Oxygen	5.0	21	nd	20	--	--	17	nd	nd	11
Carbon Dioxide	1.0	nd	2.2	nd	--	--	nd	4.2	4.1	nd
1,1 Diflouroethane (leak check)	10	nd	nd	nd	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		109%	99%	101%	103%	104%	104%	98%	100%	103%
Surrogate Recovery (1,4-BFB)		120%	121%	122%	125%	121%	121%	123%	125%	124%

'RL' Indicates reporting limit at a dilution factor of 1
 'nd' Indicates not detected at listed reporting limits
 '--' Analysis not requested

Analyses performed in TEG-Northern California's lab
 Analyses performed by: Mr. Leif Jonsson



Delta Environmental Consultants, Inc. Project # C103713191
1503 Carlson Boulevard, Richmond, California

TEG Project #71217D

CALIBRATION STANDARDS - Initial Calibration / LCS

Instrument: Agilent 5973N MSD

COMPOUND	INITIAL CALIBRATION		LCS	
	RF	%RSD	RF	%DIFF
Benzene	1.103	12.6%	0.984	10.8%
Toluene	0.668	10.9%	0.637	4.6%
Ethylbenzene	0.564	7.8%	0.528	6.4%
m,p-Xylene	0.634	8.0%	0.632	0.3%
o-Xylene	0.618	11.6%	0.586	5.2%
Methyl-t-butyl ether (MtBE)	0.604	4.5%	0.629	4.1%
Acceptable Limits		20.0%		15.0%



24 November 2008

Mr. John Reay
Delta Consultants
11050 White Rock Road, Suite 110
Rancho Cordova, CA 95670

**SUBJECT: DATA REPORT - Delta Consultants Project # C103713
1503 Carlson Boulevard, Richmond, California**

TEG Project # 81022D

Mr. Reay:

Please find enclosed a data report for the samples analyzed from the above referenced project for Delta Consultants. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 22 analyses on 22 soil vapor samples.

-- 22 analyses on soil vapors for aromatic volatile hydrocarbons (BTEX), fuel oxygenate MtBE, and total petroleum hydrocarbons-gasoline by EPA method 8260B.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and calibration data are included in the tables.

1,1 difluoroethane was used as a leak check compound around the probe rods during the soil vapor sampling. No 1,1 difluoroethane was detected in any of the soil vapor samples reported at or above the DTSC recommended leak check compound reporting limit of 10 µg/L of vapor, except for sample SV-4B. Vapor point SV-4B was sampled twice on 22 October with 1,1 difluoroethane values reported both times. Vapor point SV-4B was reset the following day, 23 October, and the analytical results were non-detect for 1,1 difluoroethane.

TEG appreciates the opportunity to have provided analytical services to Delta Consultants on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak
Director, TEG-Northern California



Delta Consultants, Inc Project# C103713
 1503 Carlson Boulevard, Richmond, California

TEG Project #81022D

BTEX, MtBE & TPH-gasoline (EPA method 8260B) Analyses of SOIL VAPOR in ug/L of Vapor

SAMPLE NUMBER:	Probe Blank	Probe Blank	SV-FB	SV-1B	SV-1B-3	SV-2B
SAMPLE DEPTH (feet):			0.5	0.5	3.0	0.5
PURGE VOLUME:			3	3	3	1
COLLECTION DATE:	10/22/08	10/23/08	10/22/08	10/22/08	10/22/08	10/22/08
COLLECTION TIME:	09:43	08:48	13:09	12:46	14:40	10:51
DILUTION FACTOR (VOCs):	1	1	1	1	1	1
RL						
Benzene	0.10	nd	nd	nd	nd	nd
Toluene	0.20	nd	nd	nd	nd	nd
Ethylbenzene	0.10	nd	nd	nd	nd	nd
m,p-Xylene	0.20	nd	nd	0.21	nd	0.22
o-Xylene	0.10	nd	nd	nd	nd	nd
Methyl-t-butyl ether (MtBE)	0.10	nd	nd	nd	nd	nd
TPH (gasoline range)	10	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		92%	94%	93%	93%	93%
Surrogate Recovery (1,2-DCA-d4)		91%	97%	94%	94%	93%

'RL' Indicates reporting limit at a dilution factor of 1
 'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
 Analyses performed by: Mr. Leif Jonsson

page 1



Delta Consultants, Inc Project# C103713
 1503 Carlson Boulevard, Richmond, California

TEG Project #81022D

BTEX, MtBE & TPH-gasoline (EPA method 8260B) Analyses of SOIL VAPOR in ug/L of Vapor

SAMPLE NUMBER:		SV-2B	SV-2B	SV-2B-3	SV-3B	SV-3B-3	SV-4B
SAMPLE DEPTH (feet):		0.5	0.5	3.0	0.5	3.0	0.5
PURGE VOLUME:		3	7	3	3	3	3
COLLECTION DATE:		10/22/08	10/22/08	10/22/08	10/22/08	10/22/08	10/22/08
COLLECTION TIME:		11:11	11:33	14:18	12:05	13:53	12:27
DILUTION FACTOR (VOCs):		1	1	1	1	1	1
	RL						
Benzene	0.10	nd	nd	nd	nd	0.23	nd
Toluene	0.20	nd	nd	0.35	nd	nd	nd
Ethylbenzene	0.10	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.20	0.22	nd	0.26	0.22	nd	nd
o-Xylene	0.10	nd	nd	nd	nd	nd	nd
Methyl-t-butyl ether (MtBE)	0.10	nd	nd	nd	nd	nd	nd
TPH (gasoline range)	10	nd	nd	11	nd	860	nd
1,1 Difluoroethane (leak check)	10	nd	nd	nd	nd	nd	470
Surrogate Recovery (DBFM)		93%	94%	93%	93%	93%	94%
Surrogate Recovery (1,2-DCA-d4)		94%	95%	93%	93%	106%	94%

'RL' Indicates reporting limit at a dilution factor of 1
 'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
 Analyses performed by: Mr. Leif Jonsson

page 2



Delta Consultants, Inc Project# C103713
 1503 Carlson Boulevard, Richmond, California

TEG Project #81022D

BTEX, MtBE & TPH-gasoline (EPA method 8260B) Analyses of SOIL VAPOR in ug/L of Vapor

SAMPLE NUMBER:	SV-4B	SV-4B'	SV-4B-3	SV-4B-3 dup	SV-5B	SV-5B-3	
SAMPLE DEPTH (feet):	0.5	0.5	3.0	3.0	0.5	3.0	
PURGE VOLUME:	3	3	3	3	3	3	
COLLECTION DATE:	10/22/08	10/23/08	10/22/08	10/22/08	10/23/08	10/23/08	
COLLECTION TIME:	13:30	09:36	15:03	15:03	10:03	11:27	
DILUTION FACTOR (VOCs):	1	1	1	1	1	1	
	RL						
Benzene	0.10	nd	nd	0.49	0.52	nd	nd
Toluene	0.20	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.10	nd	nd	0.46	0.47	nd	nd
m,p-Xylene	0.20	0.24	nd	0.29	0.21	nd	nd
o-Xylene	0.10	nd	nd	nd	nd	nd	nd
Methyl-t-butyl ether (MtBE)	0.10	nd	nd	nd	nd	nd	nd
TPH (gasoline range)	10	nd	nd	250	260	nd	28
1,1 Difluoroethane (leak check)	10	100	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		93%	93%	93%	94%	94%	92%
Surrogate Recovery (1,2-DCA-d4)		93%	93%	103%	101%	94%	94%

'RL' Indicates reporting limit at a dilution factor of 1
 'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
 Analyses performed by: Mr. Leif Jonsson

page 3



Delta Consultants, Inc. Project# C103713
 1503 Carlson Boulevard, Richmond, California

TEG Project #81022D

BTEX, MtBE & TPH-gasoline (EPA method 8260B) Analyses of SOIL VAPOR in ug/L of Vapor

SAMPLE NUMBER:	SV-6B	SV-6B-3	SV-7B	SV-7B-3	SV-8B	SV-8B-3	
SAMPLE DEPTH (feet):	0.5	3.0	0.5	3.0	0.5	3.0	
PURGE VOLUME:	3	3	3	3	3	3	
COLLECTION DATE:	10/23/08	10/23/08	10/23/08	10/23/08	10/23/08	10/23/08	
COLLECTION TIME:	10:24	11:50	10:45	12:14	11:08	12:37	
DILUTION FACTOR (VOCs):	1	1	1	1	1	1	
	RL						
Benzene	0.10	nd	nd	nd	nd	nd	
Toluene	0.20	nd	nd	nd	nd	nd	
Ethylbenzene	0.10	nd	nd	nd	nd	nd	
m,p-Xylene	0.20	nd	nd	nd	nd	0.24	
o-Xylene	0.10	nd	nd	nd	nd	nd	
Methyl-t-butyl ether (MtBE)	0.10	nd	nd	nd	nd	nd	
TPH (gasoline range)	10	nd	nd	nd	nd	58	
1,1 Difluoroethane (leak check)	10	nd	nd	nd	nd	nd	
Surrogate Recovery (DBFM)		94%	95%	93%	94%	95%	94%
Surrogate Recovery (1,2-DCA-d4)		93%	95%	94%	92%	94%	92%

'RL' Indicates reporting limit at a dilution factor of 1
 'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
 Analyses performed by: Mr. Leif Jonsson

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Delta Consultants, Inc Project# C103713
1503 Carlson Boulevard, Richmond, California

TEG Project #81022D

CALIBRATION STANDARDS - Initial Calibration / LCS

Instrument: Agilent 5973N MSD

COMPOUND	INITIAL CALIBRATION		LCS	
	RF	%RSD	RF	%DIFF
Benzene	1.006	10.4%	1.078	7.2%
Toluene	0.715	19.4%	0.627	12.3%
Ethylbenzene	0.529	13.3%	0.604	14.2%
m,p-Xylene	0.641	18.2%	0.729	13.7%
o-Xylene	0.595	18.6%	0.678	13.9%
Methyl-t-butyl ether (MtBE)	0.512	5.8%	0.558	9.0%
TPH (gasoline range)	1.050	14.9%	1.093	4.1%
Acceptable Limits		20.0%		15.0%

Soil Gas Sampling Procedures

Probe Construction and Insertion

TEG's hydraulically or manually driven soil vapor probes are constructed of either 1.0 or 1.5 inch outside diameter steel probe rods and equipped with a hardened drop-off steel tip. The probes are nominally 4 feet long and threaded together to reach multiple depths. The probe rod is driven into the subsurface with TEG's *Strataprobe*[™] direct-push system, or by an electric rotary hammer. Once inserted to the desired depth, an inert 1/8 inch Nylaflow tube is connected to a stainless steel "PRT" fitting and threaded down the center of the probe rod and connected to a sampling port just above the drop-off tip. This internal, disposable sample tubing design eliminates any contact between the probe rod and the soil vapor sample. A 20 to 60 cubic centimeter (cc) syringe is connected to the 1/8 inch Nylaflow tubing at the surface via an on-off valve. The probe is retracted slightly to expose the vapor sampling port. The probe rod is sealed at the surface with granular and hydrated bentonite and allowed to equilibrate for a minimum of 20 minutes before sampling. After a sample is obtained the tubing is removed and the probe rod advanced to the next sampling depth or removed. This design prevents clogging of the sampling port and cross-contamination from soils during insertion.

Soil Gas Sampling

Soil vapor is withdrawn from the end of the inert Nylaflow tubing that runs from the sampling tip to the surface using a 20 to 60 cubic centimeter (cc) syringe connected via an on-off valve. The probe tip and sampling tubing is nominally purged of three internal dead volumes, or based upon a pre-determined purge volume as established by a purge volume test as described below. A sample of in-situ soil vapor is then withdrawn and immediately transferred to the mobile lab for analysis within minutes of collection. The use of small calibrated syringes allows for careful monitoring of purge and sample volumes. This procedure ensures adequate sample flow is obtained without excessive pumping of air or introduction of surface air into the sample.

For off-site analysis, samples are collected in canisters or in Tedlar bags when allowed. Samples collected in Tedlar bags for VOC analysis are either analyzed on the same day or transferred to a canister.

Purge Volume Test

If required, a site-specific purge volume test is conducted at the beginning of the soil gas survey to purge ambient air from the sampling system. Three different volumes are sampled (nominally 1, 3, 7 purge volumes) and analyzed immediately to determine the volume amount with the highest concentration. Therefore, the optimum purge volume is achieved and used during the entire site investigation.

Use of Tracer Compound to Ensure Probe Seal Integrity

A tracer compound, typically difluoroethane, iso-propanol, or butane, is used to test for leaks around the probe rod at the ground surface and in the sampling system. The tracer is placed around the base of the probe rod and at the top of the probe rod during sample collection. If the tracer is detected per CA-EPA advisory specifications, another sample is collected.

Sample Flow Rate

Sample collection is timed so that the flow rate does not exceed 200 milliliters per minute. This is accomplished by withdrawing the plunger on the syringe at a constant rate of 3 milliliters per second. The collector notes the collection time on a log sheet, and also records any resistance to sample flow that is felt on the syringe during collection.

Field Records

The field technician maintains a log sheet summarizing:

- Sample identification
- Probe location
- Date and time of sample collection
- Sampling depth
- Identity of samplers
- Weather conditions
- Sampling methods and devices
- Soil gas purge volumes
- Volume of soil gas extracted
- Observation of soil or subsurface characteristics (any condition that affects sample integrity)
- Apparent moisture content (dry, moist or saturated etc.) of the sampling zone
- Chain of custody protocols and records used to track samples from sampling point to analysis.

Analytical Methodology

The following typical analytical protocols fulfill both the CA-EPA advisory (2003) and LA-RWQCB soil gas analytical guidelines (1997) (the advisory documents).

Operating Conditions and Instrumentation

Volatile Organic Compounds (VOCs) by EPA 8260

Instrument: Hewlett-Packard 6850/5973N or 6850/5975N GCMS

Column: 25 meter HP-624, 0.20mm x 1.0u. capillary.

Carrier flow: Helium at 1.0 ml/min.

Detectors: Quadrupole MS, full scan mode or SIM

Concentrator: Tekmar 3000/Archon or Tekmar 3100/Archon

Fixed and Biogenic Gases (O₂, CO₂, & Methane)

Instrument: SRI 8610 or Carle AGC 311 Gas Chromatograph

Column: 6 foot CTR

Carrier flow: Helium at 15 ml/min.

Detectors: Thermo conductivity (TCD) for O₂ & CO₂.

Detectors: Flame ionization detector (FID) for methane.

Standard Preparation

Primary (stock) standards: Made from certified neat components or from traceable standards purchased from certified suppliers.

Secondary (working) Standards: Made by diluting primary standard. Typical concentrations are 1ug/ml, 10 ug/ml, and 50 ug/ml.

Laboratory Check Samples are prepared at the midpoint concentration from a standard purchased from a source different than the primary standards.

Lot numbers and preparations of all standards are recorded on a log sheet and kept in the mobile laboratory.

Initial Multi-Point Calibration Curve

An initial calibration curve of multiple points as per the individual method requirements, is performed either:

- At the start of the project.
- When the GC column or operating conditions have changed
- When the daily mid-point calibration check cannot meet the requirements as specified below.

Calibration curves for each target component are prepared by analyzing low, mid, and high calibration standards covering the expected concentration range. The lowest standard concentration will not exceed 5 times the reporting limit for each compound.

A linearity check of the calibration curve for each compound is performed by computing a correlation coefficient and an average response factor. If a correlation coefficient of 0.990 or a percent relative standard deviation (%RSD) of $\pm 20\%$ to 30% is obtained, as per the advisory documents, an average response factor is used over the entire calibration range. If the linearity criteria are not obtained, quantitation for that analyte is performed using a calibration curve.

After each initial multi-point calibration, the validity of the curve is further verified with a laboratory control standards (LCS) prepared at the mid-point of the calibration range. The LCS includes all target compounds and the response factor (RF) must fall within $\pm 15\%$ to 25% , as per the advisory documents, of the factor from the initial calibration curve.

Continuing Calibration (Daily Mid-point Calibration Check)

Continuing calibration standards prepared from a traceable source are analyzed at the beginning of each day. Acceptable continuing calibration agreement is set at $\pm 20\%$ to the average response factor from the calibration curve, except for freon, chloroethane, and vinyl chloride when a 25% agreement is required. When calibration checks fall outside this acceptable range for analytes detected on the site, corrective action, consisting of verification of the standard and/or a new calibration curve for the analytes out of specifications is performed by the on-site chemist.

The continuing calibration includes all compounds expected or detected at the site in addition to any specific compounds designated in the project workplan.

Detection Limits

Reporting limits for this program are defined as 5 times lower than the lowest concentration standard of the calibration curve, as follows:

Compound	Detector	Report Limit
VOCs by 8260B	Mass Spec	0.1 ug/l-vapor
Methane	FID	500 ppmv
Fixed Gases	TCD	1% by vol

Injection of Soil Gas Samples

Vapor samples from the probe sampling syringe are injected with surrogates into a purge & trap instrument for VOC analysis. Separate aliquots are directly injected into gas chromatographs for fixed gases and methane analysis

Laboratory Data Logs

The field chemist maintains injection and sample analysis records including date and time of analysis, sampler's name, chemist's name, sample ID number, concentrations of compounds detected, calibration data, and any unusual conditions.

Quality Control Procedures

Compliance With Standards

Sampling and analytical procedures complied with the American Society for Testing and Materials' *Standard Guide for Soil Gas Monitoring in the Vadose Zone* (ASTM D5314-93), the CAL-EPA DTSC / LA-RWQCB *Advisory – Active Soil Gas Investigations* (January 2003), the LA-RWQCB Soil Gas Guidelines (Feb 1997 version), and the San Diego County SAM Soil Gas Guidelines (October, 2001).

Sampling Quality Control

Method Blanks

Prior to sampling each day, all components of the sampling system are checked for contamination by drawing ambient air from above ground through the sampling equipment, and injecting a sample into a gas chromatograph. The analysis results are compared to that of the ambient air and recorded in the data tables as blanks.

Sample Quality Control

Each sample is given a unique identification number specifying location and depth. Purge and sample volumes are monitored closely using small calibrated syringes to assure a proper flow of soil gas. This ensures a representative sample is obtained from the sample zone without excessive pumping, which could result in sampling of surface air.

Decontamination Procedures

To minimize the potential for cross-contamination between sites, all external soil vapor probe parts are wiped or washed cleaned of excess dirt and moisture with solvents or de-ionized water as appropriate. The probe's internal Nylaflow tubing is purged with clean air between sampling locations or replaced as necessary. Sampling syringes are flushed with clean air after each use or replaced.

Corrective Action

Corrective action is taken when unexpected contaminant levels are detected. First duplicate samples are taken to verify the initial detection of petroleum hydrocarbons. If contamination is suspected, then the sample probes are disassembled, wiped cleaned of excess dirt and moisture, rinsed with deionized water, washed with Alconox and water, and rinsed again with deionized water. The sample tubing in the probe is replaced. Contaminated sampling syringes are discarded.

Analytical Quality Control

Method Blanks

Method blanks are performed at the start of each day by drawing clean air through the sampling equipment and analyzing. These blanks verify all components of the sampling and analytical system are free of contamination. Additional blanks are performed more often as appropriate depending upon the measured concentrations, generally at a minimum 1 every 20 samples. Blank analyses are typically recorded in the data tables. If a blank shows a measurable amount of any target compound, the on-site chemist will investigate and determine the source, and resolve the contamination problem prior to analyzing any samples.

Duplicate Samples

Duplicate (repetitive) analysis of a sample is performed when inconsistent data are observed, but typically at least one every 20 samples. Because soil vapor duplicates can vary widely, nominal relative percent difference (RPD) acceptance criteria is \pm a factor of 2.

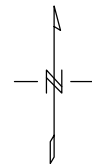
Continuing Calibration (Daily Mid-point Calibration Check)

As described earlier, continuing calibration standards prepared from a traceable source are analyzed at the beginning of each day.

The continuing calibration includes all compounds expected or detected at the site and any specific compounds designated in the project workplan.

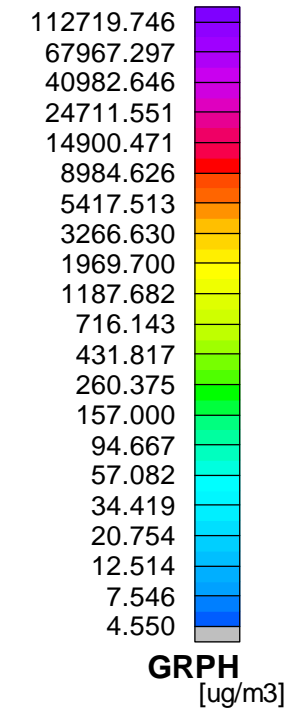
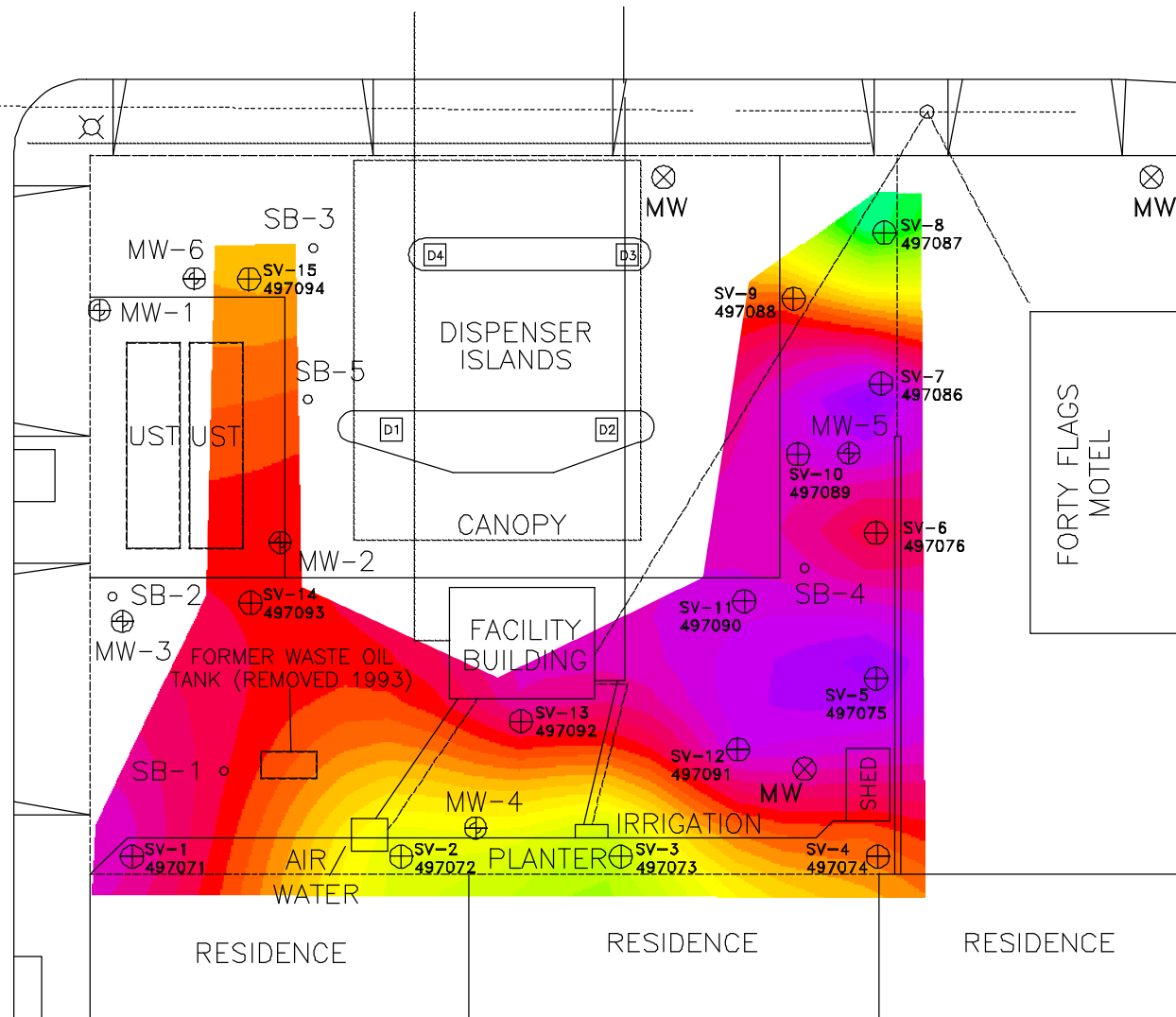
Laboratory Check Samples (LCS)

Laboratory check samples, prepared at the lowpoint concentration from a standard purchased from a source different than the calibration standards, are analyzed at the end of each day if all samples are below detection. Acceptance criteria is a minimum recovery of 50% from the true value, as per the advisory documents. If the LCS falls outside this acceptance range for analytes detected on site, corrective action, consisting of verification of the standard and/or a new calibration curve for the analytes out of specifications, is performed.



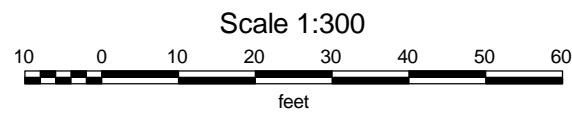
CARLSON BOULEVARD

IMPERIAL AVENUE



GORE(TM) Module Location
SV-12 ⊕
497091

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GORE™ Surveys for Environmental Site Assessment

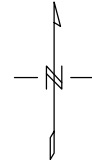


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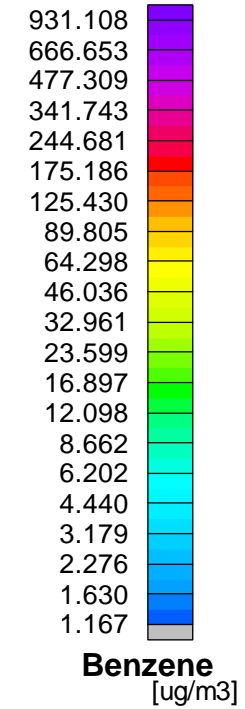
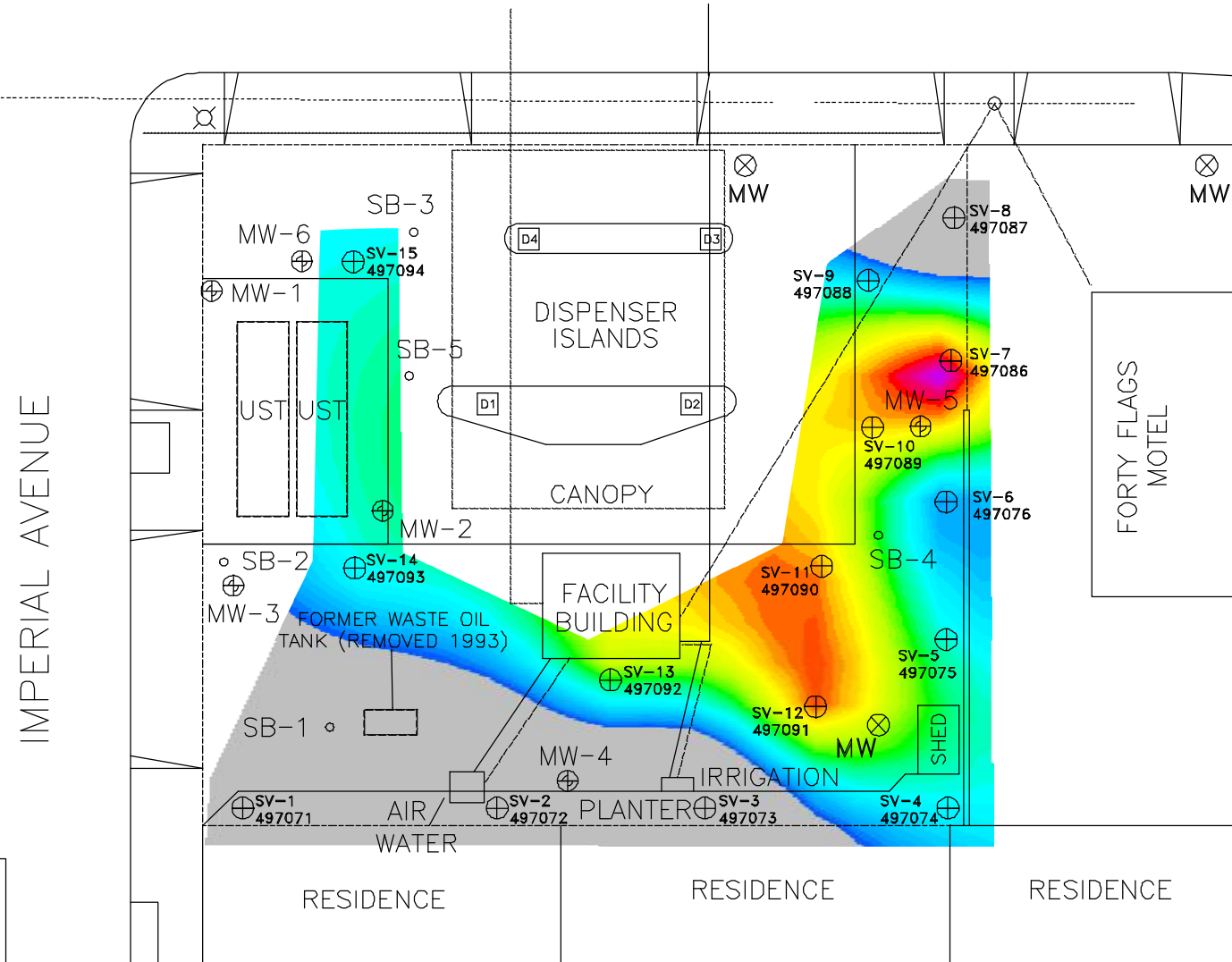
100 CHESAPEAKE BOULEVARD
ELKTON, MD, USA 21921
USA
(410) 392-7600

Delta Environmental Consultants, Ranch Cordova, CA
Conoco Phillips Station No. 3713, Richmond, CA
Estimated Soil Gas Concentrations
Gasoline-Range Petroleum Hydrocarbons

DATE DRAWN: 24 July 2006	DRAWN BY: JW	ORIG. CAD: 3713...DWG	SITE CODE: DIO
REV. DATE:	REV. #:	PROJECT NUMBER: 12755858	



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GORE™ Surveys for Environmental Site Assessment



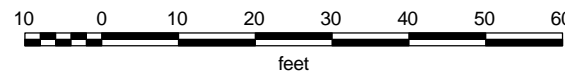
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USA
(410) 392-7600

Delta Environmental Consultants, Ranch Cordova, CA
Conoco Phillips Station No. 3713, Richmond, CA
Estimated Soil Gas Concentrations

Benzene

Scale 1:300



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DATE DRAWN: 2 Aug 2006

DRAWN BY: JW

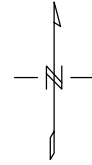
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SITE CODE: DIO

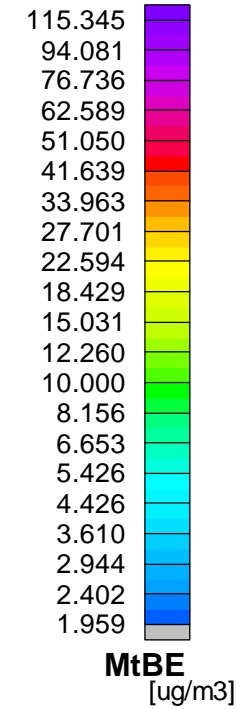
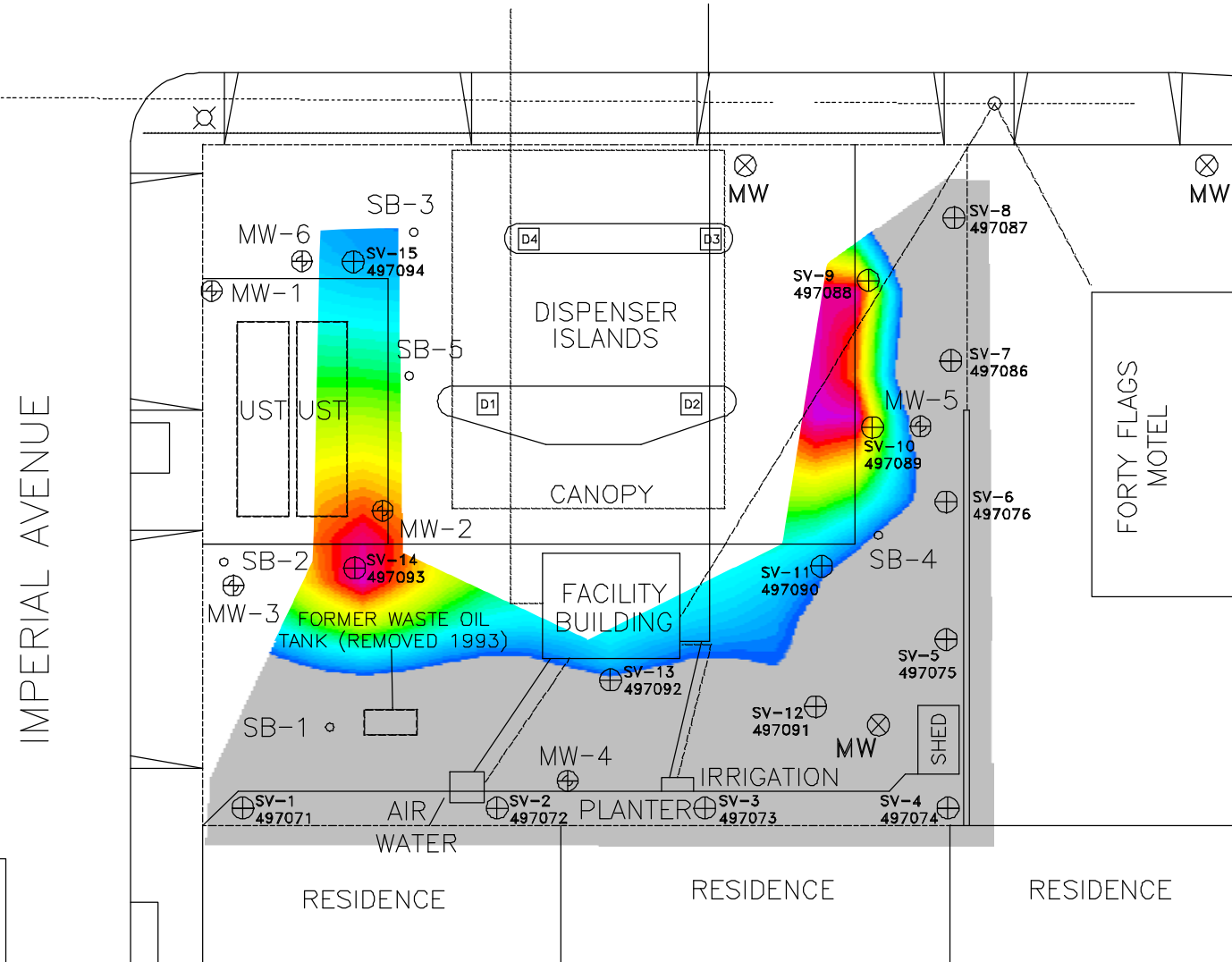
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REV. #:

PROJECT NUMBER: 12755858



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GORE™ Surveys for Environmental Site Assessment

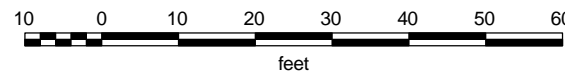


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Delta Environmental Consultants, Ranch Cordova, CA
Conoco Phillips Station No. 3713, Richmond, CA
Estimated Soil Gas Concentrations
Methyl tert-Butyl Ether

Scale 1:300



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REV. DATE:	REV. #:	PROJECT NUMBER: 12755858	

APPENDIX I

DTSC Soil Vapor Model

DATA ENTRY SHEET

SG-SCREEN
PA Version 2.0; 04/

DTSC
Vapor Intrusion Guidance
InterIm Final 12/04
(last modified 1/21/05)

Reset to
Defaults

Soil Gas Concentration Data				
ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_a ($\mu\text{g}/\text{m}^3$)	OR	ENTER Soil gas conc., C_a (ppmv)	Chemical
71432	5.00E+02			Benzene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L_f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_s ($^{\circ}\text{C}$)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	92	20			1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
S	1.66	0.375	0.054	5

MORE
↓

ENTER Averaging time for carcinogens, AT_c (yrs)	ENTER Averaging time for noncarcinogens, AT_{Nc} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	8.25	250

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_C ($^\circ\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
8.80E-02	9.80E-06	5.54E-03	25	7,342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu\text{g}/\text{m}^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
77	0.321	#N/A	#N/A	#N/A	1.00E-08	4,000	5.00E+02	6.80E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm- m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_v^{eff} (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	8,019	4.39E-03	1.83E-01	1.78E-04	1.42E-02	77

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu\text{g}/\text{m}^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu\text{g}/\text{m}^3$)
15	5.00E+02	1.25	8.33E+01	1.42E-02	5.00E+03	1.22E+05	8.45E-04	4.22E-01

Unit risk factor, URF ($\mu\text{g}/\text{m}^3$) ⁻¹	Reference conc., RfC (mg/m^3)
2.9E-05	3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
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9.9E-07	2.7E-03
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MESSAGE SUMMARY BELOW:

END

VLOOKUP TABLES

Soil Properties Lookup Table										
SCS Soil Type	K_s (cm/h)	α_1 (1/cm)	N (unitless)	M (unitless)	n (cm ³ /cm ³)	θ_r (cm ³ /cm ³)	Mean Grain Diameter (cm)	Bulk Density (g/cm ³)	θ_w (cm ³ /cm ³)	SCS Soil Name
C	0.61	0.01496	1.253	0.2019	0.459	0.098	0.0092	1.43	0.215	Clay
CL	0.34	0.01581	1.416	0.2938	0.442	0.079	0.016	1.48	0.168	Clay Loam
L	0.50	0.01112	1.472	0.3207	0.399	0.061	0.020	1.59	0.148	Loam
LS	4.38	0.03475	1.746	0.4273	0.390	0.049	0.040	1.62	0.076	Loamy Sand
S	26.78	0.03524	3.177	0.6852	0.375	0.053	0.044	1.66	0.054	Sand
SC	0.47	0.03342	1.208	0.1722	0.385	0.117	0.025	1.63	0.197	Sandy Clay
SCL	0.55	0.02109	1.330	0.2481	0.384	0.063	0.029	1.63	0.146	Sandy Clay Loam
SI	1.82	0.00658	1.679	0.4044	0.489	0.050	0.0046	1.35	0.167	Silt
SIC	0.40	0.01622	1.321	0.2430	0.481	0.111	0.0039	1.38	0.216	Silty Clay
SICL	0.46	0.00839	1.521	0.3425	0.482	0.090	0.0056	1.37	0.198	Silty Clay Loam
SIL	0.76	0.00506	1.663	0.3987	0.439	0.065	0.011	1.49	0.180	Silt Loam
SL	1.60	0.02667	1.449	0.3099	0.387	0.039	0.030	1.62	0.103	Sandy Loam

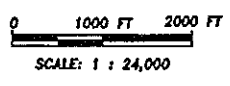
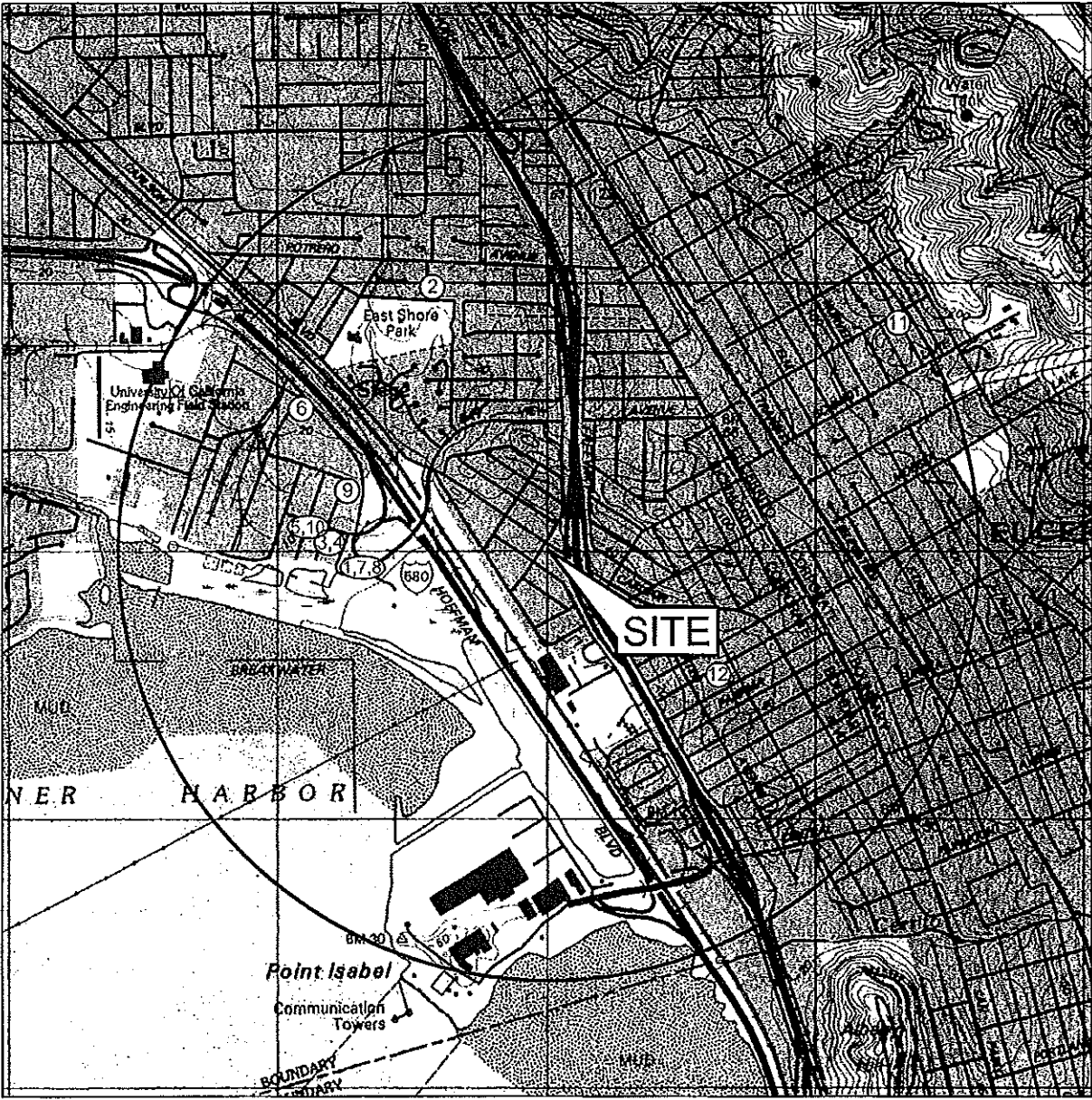
Chemical Properties Lookup Table													CalEPA Toxicity Criteria in bold (last updated 1/21/05 DTSC/HERD)				Original EPA Values				CalEPA / USEPA Potency Ratio
CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm ² /g)	Diffusivity in air, D_a (cm ² /s)	Diffusivity in water, D_w (cm ² /s)	Pure component water solubility, S (mg/L)	Henry's law constant, H ⁱ (unitless)	Henry's law constant at reference temperature, H (atm-m ³ /mol)	Henry's law constant reference temperature, T _R (°C)	Normal boiling point, T _B (°K)	Critical temperature, T _C (°K)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Unit risk factor, URF (µg/m ³) ⁻¹	Reference conc., RfC (mg/m ³)	Molecular weight, MW (g/mol)	URF extrapolated (X)	RfC extrapolated (X)	Unit risk factor, URF (µg/m ³) ⁻¹	Reference conc., RfC (mg/m ³)	URF extrapolated (X)	RfC extrapolated (X)	
56235	Carbon tetrachloride	1.74E+02	7.80E-02	8.80E-06	7.93E+02	1.24E+00	3.03E-02	25	349.90	556.60	7,127	4.2E-05	4.0E-02	1.54E+02			1.5E-05	0.0E+00			2.80
57749	Chlordane	1.20E+05	1.18E-02	4.37E-06	5.60E-02	1.99E-03	4.85E-05	25	624.24	885.73	14,000	3.4E-04	7.0E-04	4.10E+02			1.0E-04	7.0E-04			3.40
58899	gamma-HCH (Lindane)	1.07E+03	1.42E-02	7.34E-06	7.30E+00	5.73E-04	1.40E-05	25	596.55	839.36	15,000	3.1E-04	1.1E-03	2.91E+02	?		3.7E-04	1.1E-03	X	X	0.84
60297	Ethyl ether	5.73E+00	7.82E-02	8.61E-06	5.68E+04	1.35E+00	3.29E-02	25	307.50	466.74	6,338	0.0E+00	7.0E-01	7.41E+01		X	0.0E+00	7.0E-01			NC
60571	Dieldrin	2.14E+04	1.25E-02	4.74E-06	1.95E-01	6.18E-04	1.51E-05	25	613.32	842.25	17,000	4.6E-03	1.8E-04	3.81E+02		X	4.6E-03	1.8E-04			1.00
67641	Acetone	5.75E-01	1.24E-01	1.14E-05	1.00E+06	1.59E-03	3.87E-05	25	329.20	508.10	6,955	0.0E+00	3.5E-01	5.81E+01		X	0.0E+00	3.5E-01			NC
67663	Chloroform	3.98E+01	1.04E-01	1.00E-05	7.92E+03	1.50E-01	3.66E-03	25	334.32	536.40	6,988	5.3E-06	3.0E-01	1.19E+02			2.3E-05	0.0E+00			0.23
67721	Hexachloroethane	1.78E+03	2.50E-03	6.80E-06	5.00E+01	1.59E-01	3.88E-03	25	458.00	695.00	9,510	1.1E-05	3.5E-03	2.37E+02		X	4.0E-06	3.5E-03		X	2.75
71432	Benzene	5.89E+01	8.80E-02	9.80E-06	1.79E+03	2.27E-01	5.54E-03	25	353.24	562.16	7,342	2.9E-05	3.0E-02	7.81E+01			7.8E-06	0.0E+00			3.72
71556	1,1,1-Trichloroethane	1.10E+02	7.80E-02	8.80E-06	1.33E+03	7.03E-01	1.72E-02	25	347.24	545.00	7,136	0.0E+00	1.0E+00	1.33E+02			0.0E+00	2.2E+00			NC
72435	Methoxychlor	9.77E+04	1.58E-02	4.46E-06	1.00E-01	6.46E-04	1.58E-05	25	651.02	848.49	16,000	0.0E+00	1.8E-02	3.46E+02		X	0.0E+00	1.8E-02		X	NC
72559	DDE	4.47E+06	1.44E-02	5.87E-06	1.20E-01	8.59E-04	2.09E-05	25	636.44	860.38	15,000	9.7E-05	0.0E+00	3.18E+02	?		9.7E-05	0.0E+00	X		1.00
74839	Methyl bromide	1.05E+01	7.28E-01	1.21E-05	1.52E+04	2.55E-01	6.22E-03	25	276.71	467.00	5,714	0.0E+00	5.0E-03	9.49E+01			0.0E+00	5.0E-03			NC
74873	Methyl chloride (chloromethane)	2.12E+00	1.26E-01	6.50E-06	5.33E+03	3.61E-01	8.80E-03	25	249.00	416.25	5,115	1.0E-06	9.0E-02	5.05E+01			1.0E-06	9.0E-02			1.00
74908	Hydrogen cyanide	3.80E+00	1.93E-01	2.10E-05	1.00E+06	5.44E-03	1.33E-04	25	299.00	456.70	6,676	0.0E+00	3.0E-03	2.70E+01			0.0E+00	3.0E-03			NC
74953	Methylene bromide	1.26E+01	4.30E-02	8.44E-06	1.19E+04	3.52E-02	8.59E-04	25	370.00	583.00	7,888	0.0E+00	3.5E-02	1.74E+02		X	0.0E+00	3.5E-02		X	NC
75003	Chloroethane (ethyl chloride)	4.40E+00	2.71E-01	1.15E-05	5.68E+03	3.61E-01	8.80E-03	25	285.30	460.40	5,879	8.3E-07	1.0E+01	6.45E+01	X		8.3E-07	1.0E+01	X		1.00
75014	Vinyl chloride (chloroethene)	1.86E+01	1.06E-01	1.23E-05	8.80E+03	1.10E+00	2.69E-02	25	259.25	432.00	5,250	7.8E-05	1.0E-01	6.25E+01			8.8E-06	1.0E-01			8.86
75058	Acetonitrile	4.20E+00	1.28E-01	1.66E-05	1.00E+06	1.42E-03	3.45E-05	25	354.60	545.50	7,110	0.0E+00	6.0E-02	4.11E+01			0.0E+00	6.0E-02			NC
75070	Acetaldehyde	1.06E+00	1.41E-01	1.41E-05	1.00E+06	3.23E-03	7.87E-05	25	293.10	466.00	6,157	2.7E-06	9.0E-03	4.41E+01			2.2E-06	9.0E-03			1.23
75092	Methylene chloride	1.17E+01	1.01E-01	1.17E-05	1.30E+04	8.96E-02	2.18E-03	25	313.00	510.00	6,706	1.0E-06	4.0E-01	8.49E+01			4.7E-07	3.0E+00			2.13
75150	Carbon disulfide	4.57E+01	1.04E-01	1.00E-05	1.19E+03	1.24E+00	3.02E-02	25	319.00	552.00	6,391	0.0E+00	7.0E-01	7.61E+01			0.0E+00	7.0E-01			NC
75218	Ethylene oxide	1.33E+00	1.04E-01	1.45E-05	3.04E+05	2.27E-02	5.54E-04	25	283.60	469.00	6,104	8.8E-05	3.0E-02	4.41E+01			1.0E-04	0.0E+00			0.88
75252	Bromoform	8.71E+01	1.49E-02	1.03E-05	3.10E+03	2.41E-02	5.88E-04	25	422.35	696.00	9,479	1.1E-06	7.0E-02	2.53E+02		X	1.1E-06	7.0E-02		X	1.00
75274	Bromodichloromethane	5.50E+01	2.98E-02	1.06E-05	6.74E+03	6.54E-02	1.80E-03	25	363.15	585.85	7,800	3.7E-05	7.0E-02	1.84E+02	?	X	1.8E-05	7.0E-02	X	X	2.09
75296	2-Chloropropane	9.14E+00	8.88E-02	1.01E-05	3.73E+03	5.93E-01	1.45E-02	25	308.70	485.00	6,286	0.0E+00	1.0E-01	7.85E+01			0.0E+00	1.0E-01			NC
75343	1,1-Dichloroethane	3.16E+01	7.42E-02	1.05E-05	5.06E+03	2.30E-01	5.61E-03	25	330.55	523.00	6,895	1.6E-06	5.0E-01	9.90E+01			0.0E+00	5.0E-01			CalEPA only
75354	1,1-Dichloroethylene	5.89E+01	9.00E-02	1.04E-05	2.25E+03	1.07E+00	2.80E-02	25	304.75	576.05	6,247	0.0E+00	7.0E-02	9.69E+01			0.0E+00	2.0E-01			NC
75456	Chlorodifluoromethane	4.79E+01	1.01E-01	1.28E-05	2.00E+00	1.10E+00	2.70E-02	25	232.40	369.30	4,836	0.0E+00	5.0E+01	8.65E+01			0.0E+00	5.0E+01			NC
75694	Trichlorofluoromethane	4.97E+02	8.70E-02	9.70E-06	1.10E+03	3.97E+00	9.68E-02	25	296.70	471.00	5,999	0.0E+00	7.0E-01	1.37E+02			0.0E+00	7.0E-01			NC
75718	Dichlorodifluoromethane	4.57E+02	6.65E-02	9.92E-06	2.80E+02	1.40E+01	3.42E-01	25	243.20	384.95	9,421	0.0E+00	2.0E-01	1.21E+02			0.0E+00	2.0E-01			NC
76131	1,1,2-Trichloro-1,2,2-trifluoroether	1.11E+04	7.80E-02	8.20E-06	1.70E+02	1.97E+01	4.80E-01	25	320.70	487.30	6,463	0.0E+00	3.0E+01	1.87E+02			0.0E+00	3.0E+01			NC
76448	Heptachlor	1.41E+06	1.12E-02	5.69E-06	1.80E-01	6.05E+01	1.48E+00	25	603.69	846.31	13,000	1.6E-03	1.8E-03	3.73E+02		X	1.3E-03	1.8E-03		X	1.23
77474	Hexachlorocyclopentadiene	2.00E+05	1.61E-02	7.21E-06	1.80E+00	1.10E+00	2.69E-02	25	512.15	746.00	10,931	0.0E+00	2.0E-04	2.73E+02			0.0E+00	2.0E-04			NC
78831	Isobutanol	2.59E+00	8.60E-02	9.30E-06	8.50E+04	4.83E-04	1.18E-05	25	381.04	547.78	10,936	0.0E+00	1.1E+00	7.41E+01		X	0.0E+00	1.1E+00		X	NC
78875	1,2-Dichloropropane	4.37E+01	7.82E-02	8.73E-06	2.80E+03	1.15E-01	2.79E-03	25	369.52	572.00	7,590	1.0E-05	4.0E-03	1.13E+02	?		1.9E-05	4.0E-03	X		0.52
78933	Methylethylketone (2-butanone)	2.30E+00	8.08E-02	9.80E-06	2.23E+05	2.29E-03	5.58E-05	25	352.60	536.78	7,481	0.0E+00	5.0E+00	7.21E+01			0.0E+00	1.0E+00			NC
79005	1,1,2-Trichloroethane	5.01E+01	7.80E-02	8.80E-06	4.42E+03	3.73E-02	9.11E-04	25	386.15	602.00	8,322	1.6E-05	1.4E-02	1.33E+02			1.6E-05	1.4E-02		X	1.00
79016	Trichloroethylene	1.66E+02	7.90E-02	9.10E-06	1.47E+03	4.21E-01	1.03E-02	25	360.36	544.20	7,505	2.0E-06	6.0E-01	1.31E+02	?		1.1E-04	4.0E-02	X		0.02
79209	Methyl acetate	3.26E+00	1.04E-01	1.00E-05	2.00E+03	4.84E-03	1.18E-04	25	329.80	506.70	7,260	0.0E+00	3.5E+00	7.41E+01		X	0.0E+00	3.5E+00		X	NC
79345	1,1,2,2-Tetrachloroethane	9.33E+01	7.10E-02	7.90E-06	2.96E+03	1.41E-02	3.44E-04	25	419.60	661.15	8,996	5.8E-05	2.1E-01	1.68E+02		X	5.8E-05	2.1E-01		X	1.00
79469	2-Nitropropane	1.17E+01	9.23E-02	1.01E-05	1.70E+04	5.03E-03	1.23E-04	25	393.20	594.00	8,383	2.7E-03	2.0E-02	8.91E+01			2.7E-03	2.0E-02			1.00
80626	Methylmethacrylate	6.98E+00	7.70E-02	8.60E-06	1.50E+04	1.38E-02	3.36E-04	25	373.50	567.00	8,975	0.0E+00	7.0E-01	1.00E+02			0.0E+00	7.0E-01			NC
83329	Acenaphthene	7.08E+03	4.21E-02	7.69E-06	3.57E+00	6.34E-03	1.55E-04	25	550.54	803.15	12,155	0.0E+00	2.1E-01	1.54E+02		X	0.0E+00	2.1E-01		X	NC
86737	Fluorene	1.38E+04	3.63E-02	7.88E-06	1.98E+00	2.60E-03	6.34E-05	25	570.44	870.00	1										

VLOOKUP TABLES

96333 Methyl acrylate	4.53E+00	9.76E-02	1.02E-05	6.00E+04	7.68E-03	1.87E-04	25	353.70	536.00	7,749	0.0E+00	1.1E-01	8.61E+01	X	0.0E+00	1.1E-01	X	NC
97632 Ethylmethacrylate	2.95E+01	6.53E-02	8.37E-06	3.67E+03	3.44E-02	8.40E-04	25	390.00	571.00	10,957	0.0E+00	3.2E-01	1.14E+02	X	0.0E+00	3.2E-01	X	NC
98066 tert-Butylbenzene	7.71E+02	5.65E-02	8.02E-06	2.95E+01	4.87E-01	1.19E-02	25	442.10	1220.00	8,980	0.0E+00	1.4E-01	1.34E+02	X	0.0E+00	1.4E-01	X	NC
98828 Cumene	4.89E+02	6.50E-02	7.10E-06	6.13E+01	4.74E+01	1.16E+00	25	425.66	631.10	10,335	0.0E+00	4.0E-01	1.20E+02	X	0.0E+00	4.0E-01	X	NC
98862 Acetophenone	5.77E+01	6.00E-02	8.73E-06	6.13E+03	4.38E-04	1.07E-05	25	475.00	709.50	11,732	0.0E+00	3.5E-01	1.20E+02	X	0.0E+00	3.5E-01	X	NC
98953 Nitrobenzene	6.46E+01	7.60E-02	8.60E-06	2.09E+03	9.82E-04	2.39E-05	25	483.95	719.00	10,566	0.0E+00	2.0E-03	1.23E+02	X	0.0E+00	2.0E-03	X	NC
100414 Ethylbenzene	3.63E+02	7.50E-02	7.80E-06	1.69E+02	3.22E-01	7.86E-03	25	409.34	617.20	8,501	0.0E+00	1.0E+00	1.06E+02	X	0.0E+00	1.0E+00	X	NC
100425 Styrene	7.76E+02	7.10E-02	8.00E-06	3.10E+02	1.12E-01	2.74E-03	25	418.31	636.00	8,737	0.0E+00	9.0E-01	1.04E+02	X	0.0E+00	1.0E+00	X	NC
100447 Benzylchloride	6.14E+01	7.50E-02	7.80E-06	5.25E+02	1.70E-02	4.14E-04	25	452.00	685.00	8,773	4.9E-05	0.0E+00	1.27E+02	X	4.9E-05	0.0E+00	X	1.00
100527 Benzaldehyde	4.59E+01	7.21E-02	9.07E-06	3.30E+03	9.73E-04	2.37E-05	25	452.00	695.00	11,658	0.0E+00	3.5E-01	1.06E+02	X	0.0E+00	3.5E-01	X	NC
103651 n-Propylbenzene	5.62E+02	6.01E-02	7.83E-06	6.00E+01	4.37E-01	1.07E-02	25	432.20	630.00	9,123	0.0E+00	1.4E-01	1.20E+02	X	0.0E+00	1.4E-01	X	NC
104518 n-Butylbenzene	1.11E+03	5.70E-02	8.12E-06	2.00E+00	5.38E-01	1.31E-02	25	456.46	660.50	9,290	0.0E+00	1.4E-01	1.34E+02	X	0.0E+00	1.4E-01	X	NC
106423 p-Xylene	3.89E+02	7.89E-02	8.44E-06	1.85E+02	3.13E-01	7.84E-03	25	411.52	616.20	8,525	0.0E+00	1.0E-01	1.06E+02	X	0.0E+00	1.0E-01	X	NC
106467 1,4-Dichlorobenzene	6.17E+02	6.90E-02	7.90E-06	7.90E+01	9.82E-02	2.39E-03	25	447.21	684.75	9,271	1.1E-05	8.0E-01	1.47E+02	X	0.0E+00	8.0E-01	X	NC
106934 1,2-Dibromoethane (ethylene dibr	2.50E+01	2.17E-02	1.19E-05	4.18E+03	3.04E-02	7.41E-04	25	404.60	583.00	8,310	7.1E-05	8.0E-04	1.88E+02	X	6.0E-04	9.0E-03	X	0.12
106990 1,3-Butadiene	1.91E+01	2.49E-01	1.08E-05	7.35E+02	3.01E+00	7.34E-02	25	268.60	425.00	5,370	1.7E-04	2.0E-03	5.41E+01	X	3.0E-05	0.0E+00	X	5.67
107028 Acrolein	2.76E+00	1.05E-01	1.22E-05	2.13E+05	4.99E-03	1.22E-04	25	325.60	506.00	6,731	0.0E+00	2.0E-05	5.61E+01	X	0.0E+00	2.0E-05	X	NC
107062 1,2-Dichloroethane	1.74E+01	1.04E-01	9.90E-06	8.52E+03	4.00E-02	9.77E-04	25	356.65	561.00	7,643	2.1E-05	4.0E-01	9.90E+01	X	2.6E-05	0.0E+00	X	0.81
107131 Acrylonitrile	5.90E+00	1.22E-01	1.34E-05	7.40E+04	4.21E-03	1.03E-04	25	350.30	519.00	7,786	2.9E-04	2.0E-03	5.31E+01	X	6.8E-05	2.0E-03	X	4.26
108054 Vinyl acetate	5.25E+00	8.50E-02	9.20E-06	2.00E+04	2.09E-02	5.10E-04	25	345.65	519.13	7,800	0.0E+00	2.0E-01	8.61E+01	X	0.0E+00	2.0E-01	X	NC
108101 Methylisobutylketone (4-methyl-2-	9.06E+00	7.50E-02	7.80E-06	1.90E+04	5.64E-03	1.38E-04	25	389.50	571.00	8,243	0.0E+00	8.0E-02	1.00E+02	X	0.0E+00	8.0E-02	X	NC
108383 m-Xylene	4.07E+02	7.00E-02	7.80E-06	1.61E+02	3.00E-01	7.32E-03	25	412.27	617.05	8,523	0.0E+00	1.0E-01	1.06E+02	X	0.0E+00	1.0E-01	X	NC
108678 1,3,5-Trimethylbenzene	1.35E+03	6.02E-02	8.67E-06	2.00E+00	2.41E-01	5.87E-03	25	437.89	637.25	9,321	0.0E+00	6.0E-03	1.20E+02	X	0.0E+00	6.0E-03	X	NC
108872 Methylcyclohexane	7.85E+01	7.35E-02	8.52E-06	1.40E+01	4.22E+00	1.03E-01	25	373.90	572.20	7,474	0.0E+00	3.0E+00	9.82E+01	X	0.0E+00	3.0E+00	X	NC
108883 Toluene	1.82E+02	8.70E-02	8.60E-06	5.26E+02	2.72E-01	6.62E-03	25	383.78	591.79	7,930	0.0E+00	3.0E-01	9.21E+01	X	0.0E+00	4.0E-01	X	NC
108907 Chlorobenzene	2.19E+02	7.30E-02	8.70E-06	4.72E+02	1.51E-01	3.69E-03	25	404.87	632.40	8,410	0.0E+00	1.0E+00	1.13E+02	X	0.0E+00	6.0E-02	X	NC
109693 1-Chlorobutane	1.72E+01	8.26E-02	1.00E-05	1.10E+03	6.93E-01	1.69E-02	25	351.60	542.00	7,263	0.0E+00	1.4E+00	9.26E+01	X	0.0E+00	1.4E+00	X	NC
110009 Furan	1.86E+01	1.04E-01	1.22E-05	1.00E+04	2.21E-01	5.39E-03	25	304.60	490.20	6,477	0.0E+00	3.5E+00	6.81E+01	X	0.0E+00	3.5E+00	X	NC
110543 Hexane	4.34E+01	2.00E-01	7.77E-06	1.24E+01	6.82E+01	1.66E+00	25	341.70	508.00	6,895	0.0E+00	2.0E-01	8.62E+01	X	0.0E+00	2.0E-01	X	NC
111444 Bis(2-chloroethyl)ether	1.55E+01	6.92E-02	7.53E-06	1.72E+04	7.36E-04	1.80E-05	25	451.15	659.79	10,803	7.1E-04	0.0E+00	1.43E+02	X	3.3E-04	0.0E+00	X	2.15
115297 Endosulfan	2.14E+03	1.15E-02	4.55E-06	5.10E-01	4.58E-04	1.12E-05	25	674.43	942.94	14,000	0.0E+00	2.1E-02	4.07E+02	X	0.0E+00	2.1E-02	X	NC
118741 Hexachlorobenzene	5.50E+04	5.42E-02	5.91E-06	5.00E-03	5.40E-02	1.32E-03	25	582.55	825.00	14,447	5.1E-04	2.8E-03	2.85E+02	X	4.6E-04	2.8E-03	X	1.11
120821 1,2,4-Trichlorobenzene	1.78E+03	3.00E-02	8.23E-06	4.88E+01	5.81E-02	1.42E-03	25	486.15	725.00	10,471	0.0E+00	2.0E-01	1.81E+02	X	0.0E+00	2.0E-01	X	NC
123739 Crotonaldehyde (2-butenal)	4.82E+00	9.56E-02	1.07E-05	3.69E+04	7.99E-04	1.95E-05	25	375.20	568.00	9	5.4E-04	0.0E+00	7.01E+01	X	5.4E-04	0.0E+00	X	1.00
124481 Chlorodibromomethane	6.31E+01	1.96E-02	1.05E-05	2.60E+03	3.20E-02	7.81E-04	25	416.14	678.20	5,900	2.7E-05	7.0E-02	2.08E+02	X	2.4E-05	7.0E-02	X	1.13
126987 Methacrylonitrile	3.58E+01	1.12E-01	1.32E-05	2.54E+04	1.01E-02	2.46E-04	25	363.30	554.00	7,600	0.0E+00	7.0E-04	6.71E+01	X	0.0E+00	7.0E-04	X	NC
126998 2-Chloro-1,3-butadiene (chloropre	6.73E+01	8.58E-02	1.03E-05	2.12E+03	4.91E-01	1.20E-02	25	332.40	525.00	8,075	0.0E+00	7.0E-03	8.85E+01	X	0.0E+00	7.0E-03	X	NC
127184 Tetrachloroethylene	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.53E-01	1.84E-02	25	394.40	620.20	8,288	5.9E-06	3.5E-02	1.66E+02	X	3.0E-06	0.0E+00	X	1.97
129000 Pyrene	1.05E+05	2.72E-02	7.24E-06	1.35E+00	4.50E-04	1.10E-05	25	667.95	936	14370	0.0E+00	1.1E-01	2.02E+02	X	0.0E+00	1.1E-01	X	NC
132649 Dibenzofuran	5.15E+03	2.38E-02	6.00E-06	3.10E+00	5.15E-04	1.26E-05	25	560	824	66400	0.0E+00	1.4E-02	1.68E+02	X	0.0E+00	1.4E-02	X	NC
135988 sec-Butylbenzene	9.68E+02	5.70E-02	8.12E-06	3.94E+00	5.68E-01	1.39E-02	25	446.5	679	88730	0.0E+00	1.4E-01	1.34E+02	X	0.0E+00	1.4E-01	X	NC
141786 Ethylacetate	6.44E+00	7.32E-02	9.70E-06	8.03E+04	5.64E-03	1.38E-04	25	350.26	523.3	7633.66	0.0E+00	3.2E+00	8.81E+01	X	0.0E+00	3.2E+00	X	NC
156592 cis-1,2-Dichloroethylene	3.55E+01	7.36E-02	1.13E-05	3.50E+03	1.67E-01	4.07E-03	25	333.65	544	7192	0.0E+00	3.5E-02	9.69E+01	X	0.0E+00	3.5E-02	X	NC
156805 trans-1,2-Dichloroethylene	5.25E+01	7.07E-02	1.19E-05	6.30E+03	3.84E-01	9.36E-03	25	320.85	516.5	6717	0.0E+00	7.0E-02	9.69E+01	X	0.0E+00	7.0E-02	X	NC
205992 Benzo(b)fluoranthene	1.23E+06	2.26E-02	5.56E-06	1.50E-03	4.54E-03	1.11E-04	25	715.9	969.27	17000	1.1E-04	0.0E+00	2.52E+02	X	2.1E-04	0.0E+00	X	0.53
218019 Chrysene	3.98E+05	2.48E-02	6.21E-06	6.30E-03	3.87E-03	9.44E-05	25	714.15	979	16455	1.1E-05	0.0E+00	2.28E+02	X	2.1E-06	0.0E+00	X	5.26
309002 Aldrin	2.45E+06	1.32E-02	4.86E-06	1.70E-02	6.95E-03	1.70E-04	25	603.01	839.37	15000	4.9E-03	1.1E-04	3.65E+02	X	4.9E-03	1.1E-04	X	1.00
319846 alpha-HCH (alpha-BHC)	1.23E+03	1.42E-02	7.34E-06	2.00E+00	4.34E-04	1.06E-05	25	598.55	839.36	15000	7.7E-04	0.0E+00	2.91E+02	X	1.8E-03	0.0E+00	X	0.43
541731 1,3-Dichlorobenzene	1.98E+03	6.92E-02	7.86E-06	1.34E+02	1.27E-01	3.09E-03	25	446	684	9230.18	0.0E+00	1.1E-01	1.47E+02	X	0.0E+00	1.1E-01	X	NC
542756 1,3-Dichloropropene	4.57E+01	6.26E-02	1.00E-05	2.80E+03	7.24E-01	1.77E-02	25	381.15	587.38	7900	1.6E-05	2.0E-02	1.11E+02	X	4.0E-06	2.0E-02	X	4.00
630206 1,1,1,2-Tetrachloroethane	1.16E+02	7.10E-02	7.90E-06	1.10E+03	9.90E-02	2.41E-03	25	403.5	624	9768.282525	7.4E-06	1.1E-01	1.68E+02	X	7.4E-06	1.1E-01	X	1.00
1634044 MTBE	7.28E+00	1.02E-01	1.05E-05	5.10E+04	2.56E-02	6.23E-04	25	328.3	497.1	6677.66	2.6E-07	3.0E+00	8.82E+01	X	0.0E+00	3.0E+00	X	NC
7439976 Mercury (elemental)	5.20E+01	3.07E-02	6.30E-06	2.00E+01	4.40E-01	1.07E-02	25	629.88	1750	14127	0.0E+00	9.0E-05	2.01E+02	X	0.0E+00	3.0E-04	X	NC

APPENDIX J

Well Survey Information



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, RICHMOND QUADRANGLE, 1967

FIGURE 1
SITE LOCATOR SENSITIVE RECEPTOR
MAP

76 SERVICE STATION NO. 3713
 1503 CARLSON BOULEVARD
 RICHMOND, CALIFORNIA

PROJECT NO. C103-713	DRAWN BY JH 12/13/06
FILE NO.	PREPARED BY JH
REVISION NO.	REVIEWED BY

Table 1
 One-Mile Agency Receptor Survey
 ConocoPhillips Station No.3713
 1503 Carlson Boulevard, Richmond, California

	DWR ¹ Well No.	Address	City	State	Zip	Owner	Well Type	Distance from Site (miles)	Direction Relative to Site
1-	1N/4W-20	51st St. at Channel St.	Richmond	CA		Steve Smith	Domestic	0.5	W
2-	1N/4W-20G	S. 49th St., 204' south of Portrero Ave.	Richmond	CA		PG&E	Cathodic protection	0.7	NW
3-	1N/4W-20P	5000 Seaport Ave.	Richmond	CA		Stan Teaderman	Industrial	0.5	W
4-	1N/4W-20P	Seaport Ave. at S. 50th St.	Richmond	CA		Poinelli Electric	Domestic	0.5	W
5-	1N/4W-20J	1380 South 49th St.	Richmond	CA		Donald E. Peckham	Industrial	0.6	NW
6-	1N/4W-20M	1200 S. 47th St	Richmond	CA		Stauffer Chemical	Stock	0.7	NW
7-	1N/4W-20P	Channel Ave	Richmond	CA		Chevron USA Inc.	Recovery	0.5	W
8-	1N/4W-20P	Channel Ave	Richmond	CA		Chevron USA Inc.	Other	0.5	W
9-	1N/4W-20P	E. 50th St., 200' from E. Montgomery Ave	Richmond	CA		Nick Marzetta	Industrial	0.5	NW
10-	1N/4W-20P	49th St. at Seaport Ave.	Richmond	CA		Pyxis New Warehouse & Office	Industrial	0.6	NW
11-	1N/4W-21G	Lawrence St. north of Manila slightly	El Cerrito	CA		PG&E	Other	1.0	NE
12-	1N/4W-28C	north side of Santa Cruz, 100' E of S/C	Richmond	CA		PG&E	Cathodic protection	0.44-0.64	SE

DWR: Department of Water Resources

¹ Well Locations shown on Figure 1.