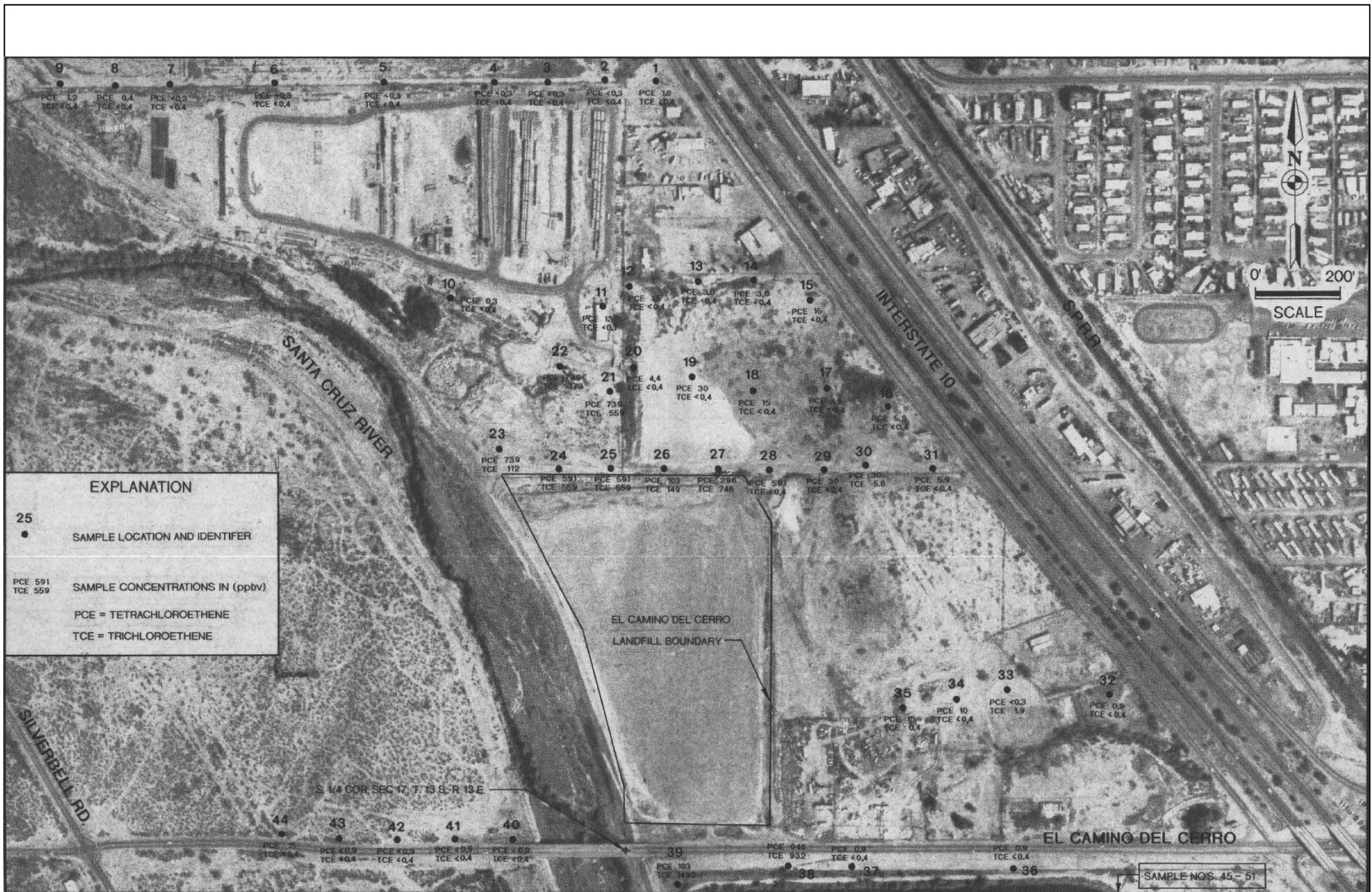


APPENDIX Q  
SUPPLEMENTAL FIGURES



From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill, Harding and Lawson Associates, June 1984  
 Original figure from: Existing Data Report, Malcolm Pirnie, 1996



**Figure 1**  
 1984 PCE and TCE concentrations in near-landfill soil gas  
 Appendix Q



From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill,  
 Harding and Lawson Associates, March 1986  
 Original figure from: Existing Data Report, Malcolm Pirnie, 1996



**Figure 2**  
 1986 PCE and TCE concentrations in near-landfill soil  
 gas  
 Appendix Q

**EXPLANATION**

5

SAMPLE LOCATION  
AND IDENTIFIER

PCE 0.9  
TCE <0.01

SAMPLE CONCENTRATIONS IN (ppbv)  
PCE = TETRACHLOROETHENE  
TCE = TRICHLOROETHENE



From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill, Tracer Research Corporation, September 1990  
Original figure from: Existing Data Report, Malcolm Pirnie, 1996



**Figure 3**  
1990 PCE and TCE concentrations in near-landfill soil gas  
Appendix Q



From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill, Hydro Geo Chem, March 1991  
 Original figure from: Existing Data Report, Malcolm Pirnie, 1996



**Figure 4**  
 1991 PCE and TCE concentrations in near-landfill soil gas  
 Appendix Q



From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill, Tracer Research Corporation, August 1992  
 Original figure from: Existing Data Report, Malcolm Pirnie, 1996



**Figure 5**  
 1992 PCE and TCE concentrations in near-landfill soil gas  
 Appendix Q

Sample Location	PCE		TCE		total 1,2-DCE		1,1-DCE		Vinyl Chloride		TCA		Methane	
	µg/l	ppbv	µg/l	ppbv	µg/l	ppbv	µg/l	ppbv	µg/l	ppbv	µg/l	ppbv	µg/l	percent
1A-5'	1	148	0.9	168	0.7	177	0.05	13	210	82,320	<0.0003	<0.06	33,000	5.1 %
1B-6'	2	296	2	373	2	506	0.05	13	31	12,152	0.9	165	54,000	8.3 %
1C-13'	1	148	1	186	1	253	<0.05	<13	28	10,976	<0.0003	<0.06	46,000	7.0 %
2A-5'	0.01	1.5	<0.004	<0.7	<0.05	<13	<0.05	<13	<0.6	<235	<0.0003	<0.06	<100	<0.01 %
2B-5'	0.008	1.2	<0.004	<0.7	<0.05	<13	<0.05	<13	<0.6	<235	<0.0003	<0.06	<100	<0.01 %
2C-11'	0.7	103	0.3	56	0.7	177	<0.05	<13	2	784	<0.0003	<0.06	67,000	10.3 %
3A-6.5'	0.02	3.0	0.2	37	0.3	76	0.02	5.1	16	6,272	<0.0003	<0.06	48,000	7.4 %
3B-13'	0.008	1.2	0.03	5.6	<0.05	<13	<0.05	<13	37	14,504	<0.0003	<0.06	71,000	10.9 %
3C-19'	2	296	4	746	5	1,264	0.3	76	36	14,112	<0.0003	<0.06	73,000	11.2 %
4A-6'	0.009	1.3	0.04	7.5	<0.05	<13	<0.005	<1.3	1	392	0.0007	0.13	21,000	3.2 %
4B-10'	0.03	4.4	0.07	13	0.07	18	<0.005	<1.3	0.9	353	<0.0003	<0.06	51,000	7.8 %
5-7'	0.006	0.9	<0.0004	<0.07	<0.05	<13	<0.005	<1.3	<0.6	<235	<0.0003	<0.06	<100	<0.01 %
6-13'	0.2	30	0.001	0.2	<0.05	<13	<0.005	<1.3	<0.6	<235	0.002	0.4	<100	<0.01 %
7-12'	0.03	4.4	0.002	0.4	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	560	0.09 %
8-12'	0.2	30	0.009	1.7	<0.05	<13	<0.005	<1.3	0.5	196	0.004	0.7	<100	<0.01 %
9-13'	0.8	118	0.5	93	<0.05	<13	0.01	2.5	<0.6	<235	0.0005	0.09	25,000	3.8 %
10-13'	1	148	0.2	37	1	253	0.005	1.3	<0.6	<235	<0.0003	<0.06	16,000	2.5 %
11-13'	1	148	0.1	19	0.04	10	0.04	10	<0.6	<235	0.001	0.2	1,900	0.3 %
12-6'	0.1	15	0.0008	0.15	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
13-10'	0.2	30	0.002	0.4	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
14-13'	0.3	44	0.002	0.4	<0.05	<13	<0.005	<1.3	<0.6	<235	0.005	0.9	<100	<0.01 %
15-13'	0.4	59	0.003	0.6	<0.05	<13	<0.005	<1.3	<0.6	<235	0.002	0.4	<100	<0.01 %
16-11'	0.09	13	0.002	0.4	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
17-12'	0.09	13	0.0006	0.11	<0.05	<13	<0.005	<1.3	<0.6	<235	0.002	0.4	<100	<0.01 %
18-12'	0.008	1.2	0.004	0.7	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
19-11'	0.03	4.4	0.004	0.7	<0.05	<13	<0.005	<1.3	<0.6	<235	0.0009	0.2	<100	<0.01 %
20-11'	0.0004	0.06	0.005	0.9	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
21-12'	0.003	0.4	0.001	0.2	<0.05	<13	<0.005	<1.3	<0.6	<235	0.0007	0.13	<100	<0.01 %
22-13'	0.005	0.7	0.003	0.6	<0.05	<13	<0.005	<1.3	<0.6	<235	0.0007	0.13	<100	<0.01 %
23-11'	0.003	0.4	0.004	0.7	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
24-9'	0.003	0.4	0.003	0.6	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
25-6'	0.0008	0.1	0.005	0.9	<0.05	<13	<0.005	<1.3	<0.6	<235	0.0007	0.13	<100	<0.01 %
26-11'	5	738	1	186	0.6	152	<0.005	<1.3	1	392	<0.003	<0.6	80,000	12.3 %
27-13'	2	295	0.6	112	0.4	101	0.005	1.3	1	392	0.0006	0.11	110,000	16.8 %
28-12'	4	591	0.8	149	3	759	0.2	51	3	1,176	0.0006	0.11	110,000	16.8 %
29-12'	2	295	0.4	75	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	63,000	9.6 %
30-12'	7	1,034	1	186	2	506	<0.005	<1.3	1	392	<0.003	<0.6	58,000	8.9 %
31-11'	0.1	15	0.003	0.6	<0.05	<13	<0.005	<1.3	<0.6	<235	0.001	0.2	<100	<0.01 %
32-13'	0.2	30	0.003	0.6	<0.05	<13	<0.005	<1.3	<0.6	<235	0.0003	0.06	<100	<0.01 %
33-3'	1	148	0.002	0.4	<0.05	<13	<0.005	<1.3	<0.6	<235	0.002	0.4	<100	<0.01 %
34-12'	0.06	8.9	0.07	13	0.1	25	0.005	1.3	0.9	352	0.0009	0.2	40,000	6.1 %

From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill, Tracer Research Corporation, August 1992  
Original figure from: Existing Data Report, Malcolm Pirnie, 1996



Figure 6  
Table of 1992 VOC concentrations in near-landfill soil gas  
Appendix Q

Shallow (30 – 40 ft bgs) landfill monitoring wells

COMPOUND	MONITOR WELL								
	GS-1	GS-2	GS-3	GS-4-PP <sup>a</sup>	GS-4	GS-5	P-1	P-2	P-3
Acetone	550	370	<10	420	400	350	<10	5500	510
Benzene	500	47	120	290	280	69	<2	50	41
Chlorobenzene	46	17	<1	430	390	15	21	12	24
Chloroethane	240	38	57	95	95	120	220	450	<2
1,1-Dichloroethane	42	<1	19	13	12	91	11	<1	<1
1,1-Dichloroethene	<2	<2	<2	<2	<3	<2	<2	<2	<2
cis-1,2-Dichloroethene	240	18	210	250	240	330	28	50	43
trans-1,2-Dichloroethene	<2	<2	<2	50	48	28	17	<2	<2
Dichloromethane	20	<10	<10	<10	<10	30	<10	<10	<10
Ethylbenzene	55	<2	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene (PCE)	<1	<1	47	130	120	940	16	47	5
Toluene	210	34	29	64	58	27	29	27	37
1,1,1-Trichloroethane (TCA)	<2	<2	90	<2	110	<2	<2	<1	<2
Trichloroethene (TCE)	37	<1	110	130	130	190	8	41	10
Vinyl Chloride	210	170	1200	5600	4700	1700	450	370	930
Total Xylenes	37	8	<2	22	21	<2	<2	<2	<2

NOTE: <sup>a</sup> Prepurge Sample

Deep (70 – 90 ft bgs) landfill monitoring wells

COMPOUND	MONITOR WELL						
	GD-1	GD-2	GD-3	GD-3 <sup>a</sup>	GD-4-PP <sup>b</sup>	GD-4	GD-5
Acetone	800	80	200	140	140	180	130
Benzene	500	85	28	25	20	20	53
Chlorobenzene	3.3	<1	<1	<1	<1	<1	15
Chloroethane	64	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	3.7	<1	94	74	22	27	350
1,1-Dichloroethene	<0.2	<2	<2	<2	12	18	17
cis-1,2-Dichloroethene	<0.2	<2	280	280	53	71	1600
trans-1,2-Dichloroethene	<0.2	<2	<2	<2	<2	<2	53
Dichloromethane	10	<10	320	260	20	20	580
Ethylbenzene	5.8	<2	<2	<2	<2	<2	<2
Tetrachloroethene (PCE)	<0.1	<2	81	83	270	290	2100
Toluene	250	69	29	32	100	80	56
1,1,1-Trichloroethane (TCA)	<0.2	<2	<2	<2	<2	<2	<2
Trichloroethene (TCE)	<0.1	<1	95	100	84	99	350
Trichlorofluoromethane	25	12	<2	<2	<2	<2	96
Trichlorotrifluoroethane	<0.2	<2	<2	<2	9	16	13
Vinyl Chloride	93	<2	510	380	610	790	4300
Total Xylenes	23	<2	<2	<2	<2	<2	5

NOTE: <sup>a</sup> Duplicate Sample

<sup>b</sup> Prepurge Sample

From: LESP Phase 3: Landfill Gas Monitor Well Construction, Malcolm Pirnie 1995



**Figure 7**  
1995 VOC Concentrations in Landfill gas monitoring wells  
Appendix Q

Chemical	LFGP-1				LFGP-2			
	10 ft	25 ft	40 ft	60 ft	10 ft	25 ft	40 ft	60 ft
Benzene	20	280	180	41	530	380	<20	50
Toluene	20	24	21	17	85	180	120	70
Ethylbenzene	7	3	<2	<2	41	<20	<20	<20
Xylenes	28	46	20	<2	670	1,200	<20	<20
Chloromethane	46	190	230	220	230	210	<20	<20
1,1-Dichloroethane	<1	74	180	720	37	190	1,200	1,100
cis-1,2-Dichloroethene	<2	450	1,300	2,800	14	<20	1,800	1,100
Dichloromethane	<10	20	90	600	<10	<100	1,300	1,700
Tetrachloroethene	<1	410	1,500	7,100	38	<10	6,500	2,900
Trichloroethene	<1	87	300	860	<2	80	890	410
Vinyl Chloride	61	1,100	2,700	6,500	400	1,200	6,100	3,800

Chemical	LFGP-3				LFGP-4			
	10 ft	25 ft	40 ft	60 ft	20 ft	35 ft	50 ft	65 ft
Benzene	560	310	ns	<20	300	240	<20	<20
Toluene	480	70	ns	<20	140	120	180	110
Ethylbenzene	5,800	100	ns	<20	<20	3,700	780	120
Xylenes	12,000	120	ns	<20	740	1,500	230	<20
Chloromethane	460	440	ns	<20	<20	<20	<20	<20
1,1-Dichloroethane	<10	240	ns	1,000	<10	<10	520	960
cis-1,2-Dichloroethene	<20	190	ns	530	<20	<20	3,500	5,500
Dichloromethane	<100	<100	ns	1,900	<100	<100	500	1,000
Tetrachloroethene	100	270	ns	1,900	<10	80	1,300	1,800
Trichloroethene	14	130	ns	330	<10	18	200	200
Vinyl Chloride	980	3,400	ns	3,600	1,100	3,300	15,000	20,000

Chemical	LFGP-5					LFGP-6				
	15 ft	30 ft	45 ft	60 ft	75 ft	15 ft	30 ft	45 ft	60 ft	75 ft
Benzene	250	220	700	<2	100	380	300	ns	300	200
Toluene	1,400	610	<20	<2	2,200	2,700	9,600	ns	16,000	14,000
Ethylbenzene	3,900	3,500	78,000	9	10,000	3,200	7,600	ns	15,000	8,300
Xylenes	5,300	2,800	200,000	44	35,000	9,500	32,000	ns	81,000	44,000
Chloromethane	<20	<20	<20	<2	<20	<20	<20	ns	<20	600
1,1-Dichloroethane	<10	<10	<10	<1	20	<10	<10	ns	<10	<10
cis-1,2-Dichloroethene	<20	<20	<20	<2	500	<20	200	ns	400	400
Dichloromethane	<100	<100	<100	<10	<100	<100	<100	ns	<100	<100
Tetrachloroethene	<10	<10	<10	<1	<10	30	100	ns	200	600
Trichloroethene	<10	<10	<10	<1	<10	<10	40	ns	40	90
Vinyl Chloride	<20	<20	<20	<2	700	70	<20	ns	200	600

Chemical	LFGP-7				
	15 ft	30 ft	45 ft	60 ft	75 ft
Benzene	380	440	280	340	<20
Toluene	880	740	290	290	<20
Ethylbenzene	1,800	1,200	480	740	70
Xylenes	1,800	1,700	850	900	<20
Chloromethane	630	1,100	<20	2,200	290
1,1-Dichloroethane	<10	<10	<10	250	370
cis-1,2-Dichloroethene	190	660	2,100	4,500	5,000
Dichloromethane	<100	<100	<100	<100	<100
Tetrachloroethene	80	240	380	1,600	2,100
Trichloroethene	<10	71	120	690	1,400
Vinyl Chloride	2,000	2,600	2,800	7,000	7,900

ns - Not sampled

From: LESP Phase 3: Landfill Gas  
mitigation pilot test report  
Malcolm Pirnie 1995



**Figure 8**  
1995 VOC Concentrations in Landfill  
gas monitoring wells  
Appendix Q

Monitor Well Identifier	Vinyl Chloride			1,1-Dichloroethane			c-1,2-Dichloroethene			Trichloroethene			Tetrachloroethene		
	Minimum (ppbv)	Maximum (ppbv)	Average (ppbv)	Minimum (ppbv)	Maximum (ppbv)	Average (ppbv)	Minimum (ppbv)	Maximum (ppbv)	Average (ppbv)	Minimum (ppbv)	Maximum (ppbv)	Average (ppbv)	Minimum (ppbv)	Maximum (ppbv)	Average (ppbv)
GD-1	<0.5	120	106	<0.2	3.7	3.7	<0.2	<2.0	<2	<0.1	<2.0	<2	<0.1	<10.0	<10
GD-2	<0.5	200	200	<0.2	<2.0	<2	<0.2	<5.0	<5	<0.1	<2.0	<2	<0.5	31	31
GD-3	38	1,100	711	21	140	84	66	660	355	<10.0	180	112	25	160	102
GD-4	610	2,200	1,250	22	120	72	53	350	206	84	450	253	270	1,300	774
GD-5	2,500	7,900	4,402	32	1,000	515	1,300	5,600	2,960	350	1,000	538	2,100	6,500	3,485
GS-1	<20.0	560	385	<20.0	42	35	<20.0	300	270	<1.0	37	37	<1.0	4	4
GS-2	<20.0	440	305	<2.0	<20.0	<20	<20.0	48	33	<1.0	8	4	<1.0	<10.0	<10
GS-3	790	1,700	1,198	17	23	21	<20.0	350	280	<10.0	300	173	<10.0	130	99
GS-4	4,400	7,900	5,400	<5.0	59	26	190	450	296	<10.0	240	173	120	320	218
GS-5	790	1,700	1,298	<1.0	91	80	300	480	390	190	240	218	940	1,400	1,210
P-1	180	450	337	<5.0	11	9	<5.0	28	28	8	19	14	7	16	12
P-2	<10.0	980	675	<1.0	<2.0	<2	<5.0	50	50	<5.0	58	46	<10.0	78	63
P-3	410	930	742	<1.0	<2.0	<2	<5.0	66	58	<2.0	39	27	<5.0	40	27
LFGP-1	61	6,500	2,590	<1.0	720	325	<2.0	2,800	1,517	<1.0	860	416	<1.0	7,100	3,000
LFGP-2	400	3,800	2,875	37	1,100	632	14	1,100	971	<1.0	489	460	38	2,900	1,500
LFGP-3	980	3,600	2,660	<10.0	1,000	620	<20.0	530	360	14	330	158	100	1,900	757
LFGP-4	1,100	20,000	9,850	<10.0	960	480	<20.0	5,500	4,500	<10.0	200	139	<10.0	1,800	1,060
LFGP-5	<20.0	700	700	<10.0	200	200	<20.0	500	500	<10.0	<100	<100	<10.0	<100	<100
LFGP-6	70	600	290	<10.0	<10.0	<10	<20.0	900	333	<10.0	90	57	<10.0	600	233
LFGP-7	2,000	7,900	4,460	<10.0	370	310	190	5,000	2,490	<10.0	1,400	570	80	2,100	880

Notes: ppbv - parts per billion volume

The ranges of VOC concentrations in samples from monitor wells (GD-, GS-, and P-) are based on four sampling events.

The ranges of VOC concentrations in samples from monitor probes (LFGP-) are based on one sampling event at four to five depths.

Averages are of detected values.

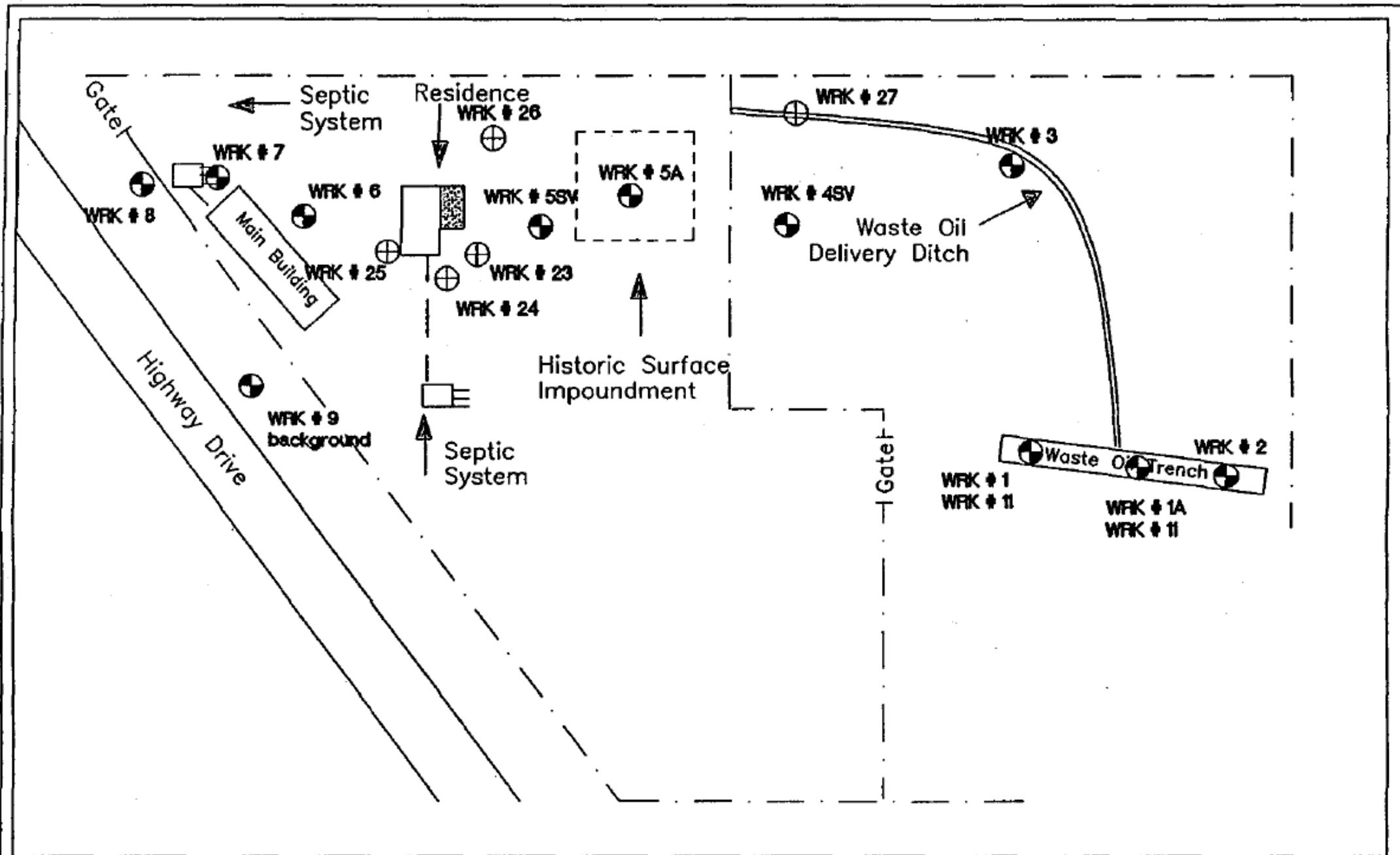
**Analytical Results for Volatile Organic Compounds in Landfill Gas Effluent  
from GW-2D by EPA Methods 8010/8020**

<b>Date Sampled</b>	<b>PCE (ppbv)</b>	<b>TCE (ppbv)</b>	<b><i>cis</i>-1,2-DCE (ppbv)</b>	<b>Vinyl Chloride (ppbv)</b>	<b>Ethylbenzene (ppbv)</b>	<b>Toluene (ppbv)</b>	<b>Xylene (ppbv)</b>
July 10	8,800	2,000	8,900	<3,800	3,700	8,300	8,200
July 11	9,300	2,700	9,900	<3,800	3,700	11,000	7,900
July 12	11,000	3,500	11,000	<3,800	4,100	13,000	9,000
July 13	11,000	4,200	12,000	12,000	4,100	13,000	8,800
July 14	12,000	4,600	13,000	14,000	4,300	13,000	9,400
July 15	14,000	4,600	13,000	18,000	4,300	14,000	9,200
July 16	16,000	4,800	13,000	17,000	4,500	14,000	9,400
July 17	17,000	5,500	16,000	16,000	5,200	16,000	11,000
July 18	17,000	4,900	13,000	17,000	4,800	15,000	11,000
July 19	14,000	4,600	15,000	<15,000	4,500	14,000	9,900

From: Landfill Environmental Studies Program – Phase 3, El Camino Del Cerro Landfill, Landfill Gas Mitigation Pilot Test Report, October 1995, Malcolm Pirnie



**Figure 10**  
Table of VOC concentrations in effluent from CDC Landfill gas mitigation pilot test  
Appendix Q

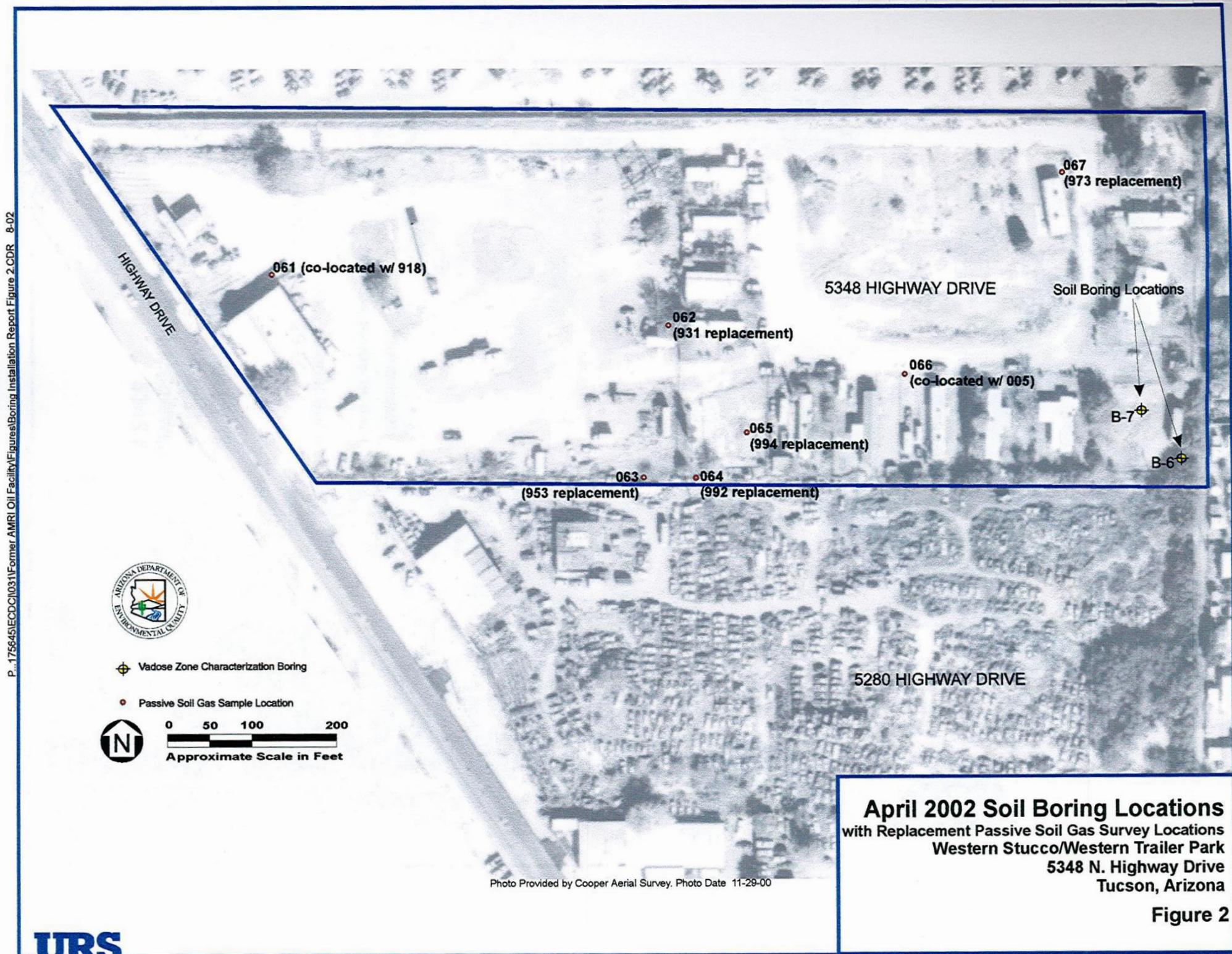


	Source: ADEQ Site Inspection	<b>SCALE:</b>  0 50 100 feet ● Sample Locations ⊕ Additional Sample Locations Concrete Slab	<b>SAMPLE LOCATION MAP</b>	<b>WRECKSPERTS</b>
	Drafted by R.M. 8/10/95		<b>ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY</b>	

From: Preliminary Assessment/Site Inspection Report, Arizona Wrecksperts, August 31, 1995



Figure 11  
1995 Sample Locations, Wrecksperts Property



**April 2002 Soil Boring Locations**  
 with Replacement Passive Soil Gas Survey Locations  
 Western Stucco/Western Trailer Park  
 5348 N. Highway Drive  
 Tucson, Arizona  
**Figure 2**



**TABLE 2**  
**VADOSE ZONE SOIL GAS SAMPLING ANALYTICAL RESULTS (ppbv)**

Boring #	Depth (Feet bgs)	1,2,4 Trichlorobenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Benzene	Chloroform	Chloromethane	Ethylbenzene	m & p Xylenes	o Xylene	Styrene	Tetrachloroethene	Toluene
<b>B-6</b>	30	<4.0	0.52	<0.5	2.9	<0.5	0.71	0.55	1.7	0.85	<0.5	<0.5	4.2
	60	<4.0	28	6.8	4.6	<2.0	<2.0	13	54	<2.0	9	<2.0	49
	90	<4.0	6.4	<2.0	3.9	<2.0	<2.0	15	43	<2.0	13	<2.0	98
	90D	<4.0	33	8.1	10	<2.0	<2.0	19	79	<2.0	13	<8.0	98
	120	<4.0	7.6	<2.0	5.1	7.6	<2.0	18	47	<2.0	23	14	87
<b>B-7</b>	30	5.1	<2.0	<2.0	11	<2.0	<2.0	8.6	25	<2.0	14	2.6	49
	60	<4.0	<2.0	<2.0	3.4	<2.0	<2.0	<2.0	<4.0	<2.0	<2.0	<2.0	3.2
	90	<4.0	<2.0	<2.0	2.2	2.3	<2.0	<2.0	<4.0	<2.0	<2.0	4.9	4.8
	120	<4.0	14	3.9	2.6	9.5	<2.0	3.1	15	6.9	8	<2.0	8.4

**Table 2**  
**SUMMARY**  
**Laboratory Analytical Results VOC - Method 8260B - Soil Sampling (mg/kg)**  
**Former AMRI Facility - Wrecksperts**  
**Tucson, Arizona**

Soil Boring ID	Depth (ft. bgs)	Date Sampled	1,2,4-trimethylbenzene	1,2-dichlorobenzene	1,3,5-trimethylbenzene	1,4-dichlorobenzene	4-isopropyltoluene	4-methyl-2-pentanone	ethylbenzene	m,p-xylene	n-propylbenzene	o-xylene	sec-butylbenzene	tetrachloroethene	toluene	trichloroethene	
WS-SB3	5-6.5	8/23/2007	0.12	<0.043	<0.043	<0.043	<0.043	<0.22	<0.043	<0.087	<0.043	<0.043	<0.043	0.058	<0.043	<0.043	
	10-11.5		0.1	<0.048	<0.048	<0.048	<0.048	<0.24	<0.048	<0.097	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	
WS-SB4	5-6.5	8/24/2007	5.0	0.33	1.4	0.11	0.22	0.47	0.68	2.6	0.63	1.3	0.22	3.5	0.82	<0.050	
WS-SB5	0-1.5		<0.049	<0.049	<0.049	<0.049	<0.049	<0.25	<0.049	<0.099	<0.049	<0.049	<0.049	<0.049	0.1	<0.049	<0.049
WS-SB7	20-21.5		0.27	<0.046	0.061	<0.046	0.051	<0.23	<0.046	<0.092	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	
WS-SB9	5-6.5		0.70	<0.047	0.18	<0.047	0.10	<0.24	<0.047	<0.095	0.051	0.059	<0.047	<0.047	<0.047	<0.047	0.052
	10-11.5		2.9	<0.041	0.75	<0.041	0.44	<0.20	0.079	0.22	0.20	0.22	0.16	<0.041	<0.041	0.12	
	15-16.5	5.3	<0.050	1.4	<0.050	0.78	<0.25	0.17	0.43	0.39	0.44	0.29	<0.050	<0.050	0.37		
WS-SB-10	20-21.5	3.7	<0.047	1.0	<0.047	0.59	<0.23	0.13	0.31	0.28	0.30	0.21	<0.047	<0.047	0.28		
	25-26.5	0.1	<0.044	<0.044	<0.044	<0.044	<0.22	<0.044	<0.088	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044		
WS-SB-10	5-6.5	1.0	<0.045	0.24	<0.045	0.30	<0.23	0.052	<0.090	0.11	0.090	0.12	<0.045	<0.045	0.057		
	10-11.5	0.057	<0.047	<0.047	<0.047	0.095	<0.24	<0.047	<0.094	<0.047	<0.047	<0.047	<0.047	<0.047	<0.047		
<b>Residential SRL 10<sup>-6</sup> Risk - Carcinogen</b>						3.5	NE	NE					0.51		3.0		
<b>Residential SRL 10<sup>-5</sup> Risk - Carcinogen</b>						35	NE	NE					5.1		30		
<b>Residential SRL Non - Carcinogen</b>			52	600*	21		NE	NE	400*	270	240*	270	220*		650*	17	
<b>Non-Residential SRL</b>			170	600*	70	79	NE	NE	400*	420*	240*	420*	220*	13	650*	65	

ADEQ May 2007 Soil Remediation Standards (SRLs)  
 Volatile Organic Compounds (VOC) Analyzed by EPA Method 8260B (mg/Kg)  
 Carcinogen 10<sup>-6</sup> Risk = Residential SRL (mg/kg) for Carcinogen (child care facility or school)  
 Carcinogen 10<sup>-5</sup> Risk = Residential SRL (mg/kg) for Carcinogen  
 Compound Detected  
**BOLD** Exceeds SRL  
 Sample Collection Depth Measured in Feet below ground surface (bgs).  
 NE = Not Established  
 \* = Indicates SRL is based on the chemical-specific saturation level in soil for volatile organic chemicals only.

WESTERN STUCCO, MARCH 2003, SOIL GAS TESTING RESULTS FOR MONITORING WELL W-32  
EL CAMINO DEL CERRO EARLY RESPONSE ACTION EVALUATION

Analyte	WS/WT Soil Gas W-32-30' (ppbv) March 2003	WS/WT Soil Gas W-32-60' (ppbv) March 2003	WS/WT Soil Gas W-32-90' (ppbv) March 2003	WS/WT Soil Gas W-32-120' (ppbv) March 2003
1,2,4-Trichlorobenzene				
1,2,4-Trimethylbenzene				
1,3,5-Trimethylbenzene				
Benzene	22	11	110	12
Chloroform				
Chloromethane				
Ethylbenzene	2.7			
m&p-Xylene				
o-Xylene				
Styrene				
Tetrachloroethene	3.6	24		5.8
Toluene	110		76	9.9
Trichloroethene	7.3	50	19	

**ECDC - WRECKPERTS  
VAPOR WELL SAMPLING  
ANALYTICAL RESULTS  
NOVEMBER 2006**

Sample Location Identification	SW8260 Analytes (ppbv)																												
	Tetrachloroethene	Trichloroethene	1,1 - Dichloroethene	Trichlorofluoromethane	Benzene	Dichlorodifluoromethane	Toluene	Carbon Disulfide	Hexane	Propene (Propylene)	Trichlorotrifluoroethane	1,2,4 - Trimethylbenzene	Chloroform	Heptane	1,3,5 - Trimethylbenzene	4 - Ethyltoluene	Acetone	Ethyl Acetate	Ethylbenzene	m & p Xylene	o-Xylene	2 - Butanone	Bromomethane	Chloromethane	cis - 1,2 - Dichloroethene	2,2,4 - Trimethylpentane	Cyclohexane	Tetrahydrofuran	
SV1-33	220.0	15.0	<2.5	<2.5	<2.5	<2.5	<2.5	10.0	9.00	13.0	9.90	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<10
SV1-53	110.0	46.0	<1.0	<1.0	<1.0	<1.0	1.2	4.2	13.0	1.10	1.70	2.00	1.20	5.00	<1.0	<1.0	<10	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0
SV1-73	52.0	9.8	0.57	1.30	0.83	<0.50	1.7	2.6	4.30	<0.50	3.60	4.20	0.94	2.00	1.20	1.20	9.20	0.97	0.82	3.00	1.20	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
SV1-93	43.0	33.0	<10	<10	<10	48.0	<10	14.0	35.0	450	12.0	<40	<10	11.0	<10	<10	<100	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<40	
SV2-33	24.0	53.0	<0.50	0.63	<0.50	<0.50	1.6	2.6	2.40	<0.50	<0.50	3.90	<0.50	1.00	1.50	2.60	16.0	<0.50	1.00	3.20	1.50	1.90	0.57	1.80	2.00	<0.50	<0.50	<2.0	
SV2-53	12.0	32.0	<10	<10	<10	<10	<10	<10	26.0	370	<10	<10	<10	<10	<10	<100	<10	<10	<20	<10	<20	<10	<10	<10	100.0	32.0	14.0	<40	
SV2-73	11.0	18.0	<5.0	<5.0	<5.0	<5.0	<5.0	24.0	8.00	160	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	15.0	6.1	<5.0	<20	
SV2-93	12.0	24.0	<5.0	<5.0	<5.0	<5.0	<5.0	32.0	13.0	110	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	7.5	<5.0	<5.0	<20	
SV3-33	73.0	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	1.00	<1.0	<1.0	1.80	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	
SV3-53	32.0	4.7	<0.50	1.2	<0.50	<0.50	1.7	3.5	2.40	<0.50	<0.50	2.20	<0.50	0.84	0.66	1.20	8.80	0.64	0.82	1.90	0.69	<1.0	<0.50	<0.50	<0.50	4.6	<0.50	4.8	
SV3-73	28.0	6.1	2.3	1.5	<0.50	<0.50	2.1	1.8	2.60	<0.50	<0.50	2.30	<0.50	1.40	0.69	1.20	15.00	1.60	0.65	1.20	0.75	<1.0	<0.50	<0.50	<0.50	3.8	<0.50	2.8	
SV3-93	23.0	6.4	<0.50	1.5	<0.50	<0.50	3.4	2.8	2.30	<0.50	<0.50	1.80	<0.50	<0.50	<0.50	0.78	8.80	1.20	0.52	<1.0	0.70	<1.0	<0.50	2.4	<0.50	2.7	<0.50	<2.0	

All remaining 8260 analytes below laboratory detection limits  
 ppbv parts per billion by volume <2.5 results below laboratory detection limit of 2.5

Vapor Well Sampling  
Analytical Results  
February 2007

ECDC- Soil Vapor Wells (2/7/2007 - Vapor Analysis)

TO15 Analytes (ppbv)

Sample Location ID	1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,4-Dichlorobenzene	2,2,4-Trimethylpentane	2-Butanone (MEK)	2-Propanol	4-Ethyltoluene	Acetone	Benzene	Carbon disulfide	Chlorobenzene	Chloroform	Chloromethane	cis-1,2-Dichloroethene	Cyclohexane	Dichlorodifluoromethane (F-12)	Dichlorotetrafluoroethane (F-114)	Ethyl Acetate	Ethylbenzene	Heptane	Hexane	m&p-Xylene	Methyl tert-butyl ether	Methylene chloride	o-Xylene	Propene (Propylene)	Tetrachloroethene	Toluene	Trichloroethene	Trichlorofluoromethane (F-11)	Trichlorotrifluoroethane (F-113)	Vinyl chloride	
SV1-33	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<10	<2.5	<2.5	<2.5	7.8	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	14	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<2.5	<2.5	180	3.0	12	<2.5	7.3	<2.5	
SV1-53	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<10	<2.5	<2.5	<2.5	5.3	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<2.5	<2.5	84	<2.5	38	<2.5	<2.5	<2.5	
SV1-73	<1.0	<1.0	3.7	1.7	<1.0	<1.0	<1.0	<2.0	<4.0	<1.0	<1.0	1.9	38	<1.0	<1.0	43	<1.0	<1.0	6.3	<1.0	<1.0	<1.0	4.7	<1.0	4.2	<2.0	<1.0	2.0	10	40	4.8	25	5.0	7.6	<1.0	
SV1-93	<1.0	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<2.0	<4.0	<1.0	<1.0	<1.0	4.0	<1.0	32	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	<2.0	<2.0	<1.0	<1.0	<1.0	64	1.0	12	5.3	3.3	<1.0	
SV2-33	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<4.0	<1.0	<1.0	<1.0	4.9	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0	1.2	13	1.2	28	<1.0	<1.0	<1.0	
SV2-53	<0.50	<0.50	<0.50	0.83	<0.50	1.0	2.7	1.4	<2.0	<0.50	10	<0.50	4.2	<0.50	<0.50	0.64	5.7	1.1	<0.50	<0.50	3.4	<0.50	1.7	3.4	<1.0	<1.0	0.50	<0.50	<0.50	12	2.8	17	<0.50	<0.50	<0.50	
SV2-73	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	7.2	<0.50	<5.0	1.4	<0.50	0.70	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.53	<1.0	<1.0	<0.50	<0.50	<0.50	14	0.60	17	<0.50	1.1	<0.50	
SV2-93	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	<1.0	<2.0	<0.50	11	1.1	4.1	<0.50	0.52	0.92	<0.50	<0.50	7.1	<0.50	5.1	<0.50	1.3	2.4	<1.0	<1.0	<0.50	<0.50	11	13	2.6	20	1.6	2.0	<0.50	
SV3-33	<0.50	<0.50	<0.50	0.63	<0.50	<0.50	<0.50	<1.0	<2.0	<0.50	12	<0.50	2.3	<0.50	<0.50	2.5	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	81	0.52	1.1	<0.50	<0.50	<0.50	
SV3-33-D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	7.3	<1.0	23	<1.0	4.3	<1.0	<1.0	2.0	<1.0	<1.0	<1.0	<1.0	15	<1.0	1.5	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	62	4.8	1.1	<1.0	<1.0	<1.0	
SV3-53	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	<1.0	5.8	<0.50	17	0.81	7.2	<0.50	<0.50	0.89	<0.50	0.58	<0.50	<0.50	14	<0.50	2.1	1.6	<1.0	<1.0	0.93	<0.50	<0.50	23	6.7	2.4	0.81	<0.50	<0.50	
SV3-73	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	0.79	<1.0	<2.0	<0.50	<5.0	0.61	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	0.68	0.71	<1.0	<1.0	<0.50	<0.50	<0.50	26	2.1	3.6	0.97	0.62	<0.50	
SV3-93	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.83	<1.0	2.7	<0.50	17	0.63	5.9	<0.50	<0.50	5.9	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	1.0	0.99	<1.0	<1.0	<0.50	<0.50	<0.50	27	3.8	5.0	1.1	0.70	<0.50	
SR-84-101-20	<0.50	<0.50	<0.50	<0.50	<0.50	0.72	<0.50	<1.0	<2.0	<0.50	6.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	11	0.57	<0.50	0.70	<0.50	<0.50	
SR-84-101-40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<2.0	<0.50	18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	18	0.53	<0.50	1.0	0.76	<0.50	
SR-84-101-60	200	1.1	11	<1.0	<1.0	<1.0	<1.0	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	7.9	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<1.0	<1.0	1.5	58	<1.0	11	5.5	4.5	<1.0	
SR-84-101-75	<2.5	5.0	43	<2.5	<2.5	<2.5	<2.5	<5.0	<10	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	12	<2.5	57	<2.5	10	<2.5	<2.5	<2.5	<5.0	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	75	3.6	37	16	15	5.8
SR-84-201-20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<4.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.0	<1.0	2.4	<1.0	2.2	<1.0	<2.0	<2.0	<1.0	<1.0	<1.0	2.8	110	<1.0	<1.0	<1.0	<1.0	
SR-84-201-40	<0.50	<0.50	<0.50	<0.50	<0.50	7.7	<0.50	<1.0	<2.0	<0.50	<5.0	<0.50	0.76	<0.50	<0.50	<0.50	2.7	1.3	1.5	<0.50	<0.50	0.66	2.1	2.8	1.5	<1.0	<0.50	0.73	<0.50	5.7	1.2	0.54	0.90	0.75	<0.50	
SR-84-201-60	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<1.0	<2.0	<0.50	<5.0	0.52	0.99	<0.50	<0.50	<0.50	2.5	7.7	0.65	<0.50	0.72	3.1	5.0	1.4	<1.0	<0.50	0.76	1.5	8.7	2.2	3.4	3.8	8.8	<0.50		
SR-84-201-75	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	6.6	<1.0	12	<1.0	1.2	<1.0	1.4	<1.0	3.1	23	1.5	26	<1.0	5.1	11	<2.0	3.0	<1.0	<1.0	2.8	10	11	12	7.9	18	<1.0		
SR-84-301-20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<2.0	<0.50	6.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.0	<0.50	4.2	<0.50	0.99	0.92	<1.0	<1.0	0.68	<0.50	<0.50	15	3.1	1.9	<0.50	<0.50	<0.50	
SR-84-301-40	<0.50	<0.50	<0.50	15	6.1	<0.50	1.9	<1.0	7.6	4.4	9.2	3.1	<0.50	<0.50	<0.50	<0.50	1.9	0.94	<0.50	5.9	2.4	2.9	3.0	37	<1.0	0.65	17	0.61	4.1	17	<0.50	0.52	<0.50	<0.50		
SR-84-301-60	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	<0.50	<1.0	2.8	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.5	<0.50	<0.50	<0.50	0.93	1.2	<1.0	<1.0	0.55	<0.50	0.90	2.6	1.7	<0.50	1.7	3.0	<0.50	
SR-84-301-75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<2.0	<0.50	<5.0	<0.50	<5.0	<5.0	<5.0	0.75	<5.0	<5.0	16	2.2	<0.50	<0.50	2.0	3.9	<1.0	<1.0	<0.50	<0.50	2.8	3.6	0.76	<0.50	8.3	14	<0.50	

All remaining TO15 analytes are below laboratory detection limits  
ppbv - parts per billion by volume <2.5 results below laboratory detection limit of 2.5



**URS**

Project#A17564BCDC031/E.C. WINTER/Well Abandonment 2.doc

5238 NORTH  
HIGHWAY DRIVE

CONCRETE  
PAD  
MANUFACTUR-  
ED  
HOME

MANUFACTURED HOME

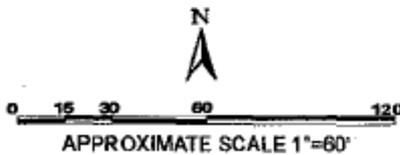
Unregistered Well  
Fence

SINGLE  
FAMILY  
RESIDENCE

3100 WEST  
CURTIS ROAD

ALLEY

CURTIS ROAD



⊕ Unregistered well  
----- Fence

**Figure 2: UNREGISTERED WELL LOCATION**  
*E.C. Winters Early Response Action*  
*3100 West Curtis Road*



From: Well Abandonment Report,  
3100 West Curtis Road, El Camino del  
Cerro WQARF Site, URS, September  
25, 2005



**Figure 18**  
Unregistered well location, E.C Winter  
Appendix Q

Results of Water Analyses at the E.C. Winter Site, April 3 through 8, 2002

Boring 1, April 5-8, 2002	Water Sample Location Depth (feet)	
	129	290
1,1-Dichloroethane	5.1	<1.0
1,1-Dichloroethene	1.3	<1.0
cis-1,2-Dichloroethene	19	<1.0
Dichlorodifluoromethane	3.8	<1.0
Tetrachloroethene	23	<1.0
Trichloroethene	15	<1.0

Concentration in micrograms per liter (µg/L)

Boring 3, April 3, 2002	Water Sample Location Depth (ft)	
	130	
1,1-Dichloroethane	1.3	
1,2-Dichloroethane	2.9	
Chloroform	1.3	
cis-1,2-Dichloroethane	2.8	
Dichlorodifluoromethane	1.0	
Tetrachloroethene	5.4	
Trichloroethene	27	

Concentration in micrograms per liter (µg/L)

Boring 4, April 4, 2002	Water Sample Location Depth (feet)	
	130	
1,1-Dichloroethane	1.0	
1,2-Dichloroethane	2.7	
Chloroform	1.5	
Tetrachloroethene	1.4	
Trichloroethene	26	

Concentration in micrograms per liter (µg/L)

Boring 5, April 5, 2002	Water Sample Location Depth (feet)	
	130	
1,2-Dibromoethane	2.2	
Acetone	46	
Chloroform	1.7	
Tetrachloroethene	1.4	
Trichloroethene	25	

Concentration in micrograms per liter (µg/L)

Results of Soil Vapor Analyses at the E.C. Winter Site

Boring 2 April 1, 2002

	Soil Vapor Sample Location Depth (feet)			
	30	60	90	120
1,1,1-Trichloroethane	560	520	<10	<10
1,1-Dichloroethane	460	800	300	<10
1,1-Dichloroethene	<10	42	210	<10
Chloroform	10	11	220	<10
m&p-Xylene	<20	<20	35	31
o-Xylene	<10	<10	15	12
Styrene	<10	<10	14	<10
Tetrachloroethene	1200	150	34	<10
Toluene	<10	15	42	54
Trichloroethene	960	930	2800	10
Trichlorotrifluoroethane	34	49	180	<10

Concentrations in parts per billion by volume (ppbv)

Boring 5 April 5, 2002

	Soil Vapor Sample Location Depth (feet)			
	30	60	90	120
1,1,1-Trichloroethane	120	64	<2.0	<0.50
1,1-Dichloroethane	140	200	3.3	<0.50
1,1-Dichloroethene	<10	14	<2.0	<0.50
1,2,4-trimethylbenzene	<10	<10	10	1.3
1,3,5-Trimethylbenzene	<10	<10	2.9	<0.50
Benzene	<10	<10	2.2	<0.50
Chloroform	<10	<10	<2.0	<0.50
Chloromethane	<10	<10	<2.0	0.72
Dichlorodifluoromethane	<10	<10	<2.0	0.68
Ethylbenzene	<10	<10	21	<0.50
m&p-Xylene	<10	<10	61	1.7
Methylene Chloride	<20	<20	<2.0	5.1
o-Xylene	<10	<10	<2.0	0.74
Styrene	<10	<10	16	<0.50
Tetrachloroethene	270	14	3.3	<0.50
Toluene	<10	12	110	2.4
Trichloroethene	1000	460	12	1.0
Trichlorotrifluoroethane	19	12	<2.0	2.8

Concentrations in parts per billion by volume (ppbv)

Boring 3 April 3, 2002

	Soil Vapor Sample Location Depth (feet)			
	30	60	90	120
1,1,1-Trichloroethane	100	3	<2.0	<10
1,1-Dichloroethane	120	9.1	<2.0	49
1,1-Dichloroethene	<10	0.54	<2.0	140
1,2,4-trimethylbenzene	<10	3.3	2.8	<20
1,3,5-Trimethylbenzene	<10	0.9	<2.0	<10
1,4-Dichlorobenzene	<10	<0.5	<2.0	<10
Benzene	10	2.1	4.7	<10
Chloroform	<10	<0.5	<2.0	120
Chloromethane	<10	0.91	2	<10
Dichlorodifluoromethane	<10	0.92	<2.0	11
Ethylbenzene	<10	1.3	5.4	<10
m&p-Xylene	<20	5.6	19	<20
Methylene Chloride	<10	<0.5	<2.0	<10
o-Xylene	<10	2	7.3	<10
Styrene	<10	<0.5	4.2	<10
Tetrachloroethene	180	<0.5	3	<40
Toluene	16	7.7	25	20
Trichloroethene	990	27	3.5	900
Trichlorotrifluoroethane	19	0.73	<2.0	140

Concentrations in parts per billion by volume (ppbv)

Boring 4 April 4, 2002

	Soil Vapor Sample Location Depth (feet)			
	30	60	90	120
1,1,1-Trichloroethane	11	210	2.2	<10
1,1-Dichloroethane	18	620	7.4	53
1,1-Dichloroethene	<2	22	<2	120
1,2,4-trimethylbenzene	2.2	<20	22	<10
1,3,5-Trimethylbenzene	<2	<10	6.6	<10
1,4-Dichlorobenzene	<2	<10	6.5	<10
Benzene	4.2	12	4.2	<10
Chloroform	<2	17	<2	140
Chloromethane	<2	<10	<2	<10
Dichlorodifluoromethane	<2	<10	<2	<10
Ethylbenzene	2.4	<10	30	17
m&p-Xylene	11	21	90	52
Methylene Chloride	<2	<10	<2	<10
o-Xylene	4.2	<10	<2	<10
Styrene	<2	<10	23	12
Tetrachloroethene	18	140	4.9	14
Toluene	14	44	140	110
Trichloroethene	130	3500	33	740
Trichlorotrifluoroethane	2.2	37	<2	150

Concentrations in parts per billion by volume (ppbv)

From: Draft Vadose Zone  
Remedial Action Plan Former E.C.  
Winter Facility, URS, August 2002



**Figure 20**  
April 2002 VOCs in soil gas, E.C Winter  
Appendix Q

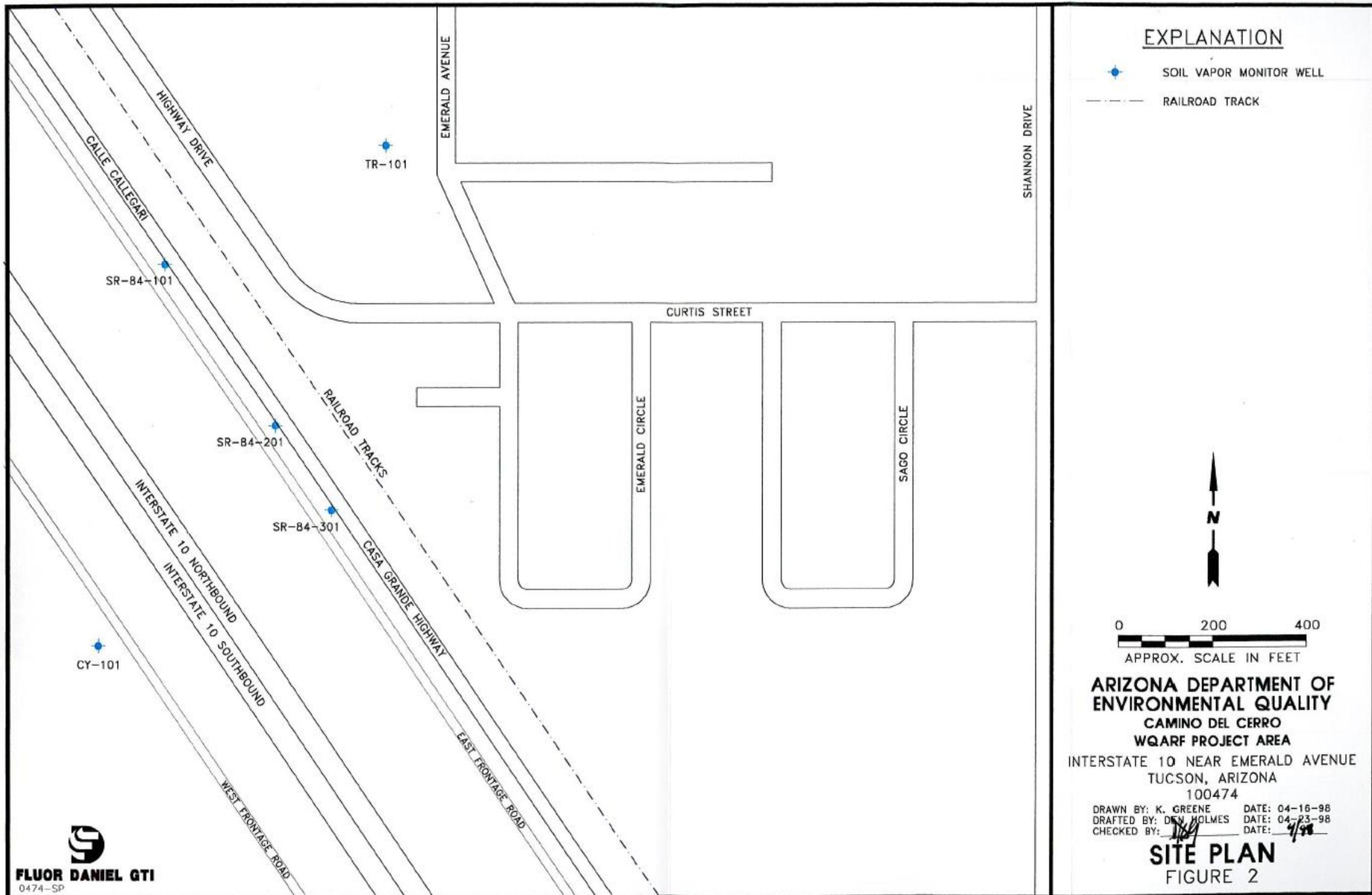


Figure 2. General site plan showing the approximate location of soil vapor monitor wells, Camino del Cerro WQARF Project Area.

**TABLE 3. SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS**

Sample ID	Analyte Concentrations (mg/m <sup>3</sup> )									
	dichlorodifluoromethane	4-ethyltoluene	tetrachloroethylene	toluene	1,2,4 trichlorobenzene	trichloroethylene	trichlorofluoromethane	trichlorotrifluoroethane	1,3,5-trimethylbenzene	m,p-xylene
CY-20	2.2	<0.07	0.19	<0.07	<0.07	<0.07	0.16	<0.07	<0.07	<0.07
CY-40	4.0	<0.07	0.25	0.08	<0.07	<0.07	0.21	<0.07	<0.07	<0.07
CY-60	59	<0.07	3.4	<0.07	<0.07	<0.07	2.6	<0.07	<0.07	<0.07
CY-75	85	<0.07	4.5	<0.07	<0.07	<0.07	3.0	<0.07	<0.07	<0.07
TR-20	<0.07	<0.07	1.3	<0.07	<0.07	41	<0.07	<0.07	<0.07	<0.07
TR-40	<0.07	<0.07	0.92	<0.07	<0.07	26	<0.07	<0.07	<0.07	<0.07
TR-60	<0.07	<0.07	0.12	0.19	<0.07	2.4	<0.07	<0.07	<0.07	0.08
TR-75	<0.07	<0.07	<0.07	0.72	<0.07	0.52	<0.07	<0.07	<0.07	0.12
SR84-1-20	0.12	<0.07	0.07	0.46	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-1-40	0.17	<0.07	0.12	0.08	<0.07	<0.07	<0.07	<0.07	0.09	0.09
SR84-1-60	0.11	<0.07	<0.07	0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-1-75	0.15	0.08	<0.07	0.83	0.08	<0.07	<0.07	0.10	<0.07	0.17
SR84-2-20	0.13	<0.07	0.07	0.08	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-2-40	0.23	<0.07	0.09	0.26	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-2-60	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-2-75	<0.07	<0.07	<0.07	0.25	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-3-20	<0.07	<0.07	<0.07	0.08	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-3-40	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-3-60	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
SR84-3-75	<0.07	<0.07	<0.07	0.16	<0.07	<0.07	<0.07	<0.07	<0.07	0.10

From: Installation and Initial Soil Vapor Sampling Event four Soil vapor Monitoring Probes in the el Camino Del Cerro Water Quality Assurance Revolving Fund (WQARF) Area, Tucson, Arizona, Growth Resources, Inc., June 1997



Figure 22  
May 1997 Soil-Gas Sampling Results, I-10 Corridor and E.C.  
Winter  
Appendix Q

Table 3. Summary of historical soil vapor results, Camino del Cerro WQARF Project Area. Results in ppbv.

Sample ID	Date	FC12	FC11	1,1-DCE	1,1-DCA	TTE	TMB	4-ET	1,1,1-TCA	EB	PCE	R10	TOL	Xylenes	1,2-DCE	TCE
TR-101-20	Jun-97	<14	<12	NA	NA	9	<14	<14	NA	NA	189	NA	<18	<16	NA	7,505
	Jul-97	<40	<35	<50	<49	45	<40	<40	34	<45	189	<31	55	<45	<50	5,674
	Oct-97	<30	<30	<30	70	<30	<30	<30	<30	<30	412	<30	<30	<30	<30	8,410
TR-101-40	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	133	NA	<18	<16	NA	4,759
	Jul-97	<40	<35	<50	180	58	<40	<40	99	<45	232	<31	<52	<45	<50	5,308
	Oct-97	<30	<30	<30	161	39	<30	<30	91	<30	401	<30	<30	<30	<30	6,670
TR-101-60	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	17	NA	50	18	NA	439
	Jul-97	<40	<35	42	292	68	<40	<40	59	<45	142	<31	70	34	<50	3,295
	Oct-97	<30	<30	<30	584	149	<30	<30	74	<30	298	<30	<30	<30	<30	4,760
TR-101-75	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	188	27	NA	95
	Jul-97	<40	<35	323	389	218	<40	<40	<36	<45	232	<31	<52	<45	<50	6,223
	Oct-97	<30	<30	113	202	99	<30	<30	<30	<30	245	<30	<30	<30	<30	6,080
SR84-101-20	Jun-97	24	<12	NA	NA	<9	<14	<14	NA	NA	10	NA	120	<16	NA	<13
	Jul-97	18	<35	<50	<49	6	22	10	<36	7	16	<31	16	34	<50	<37
	Oct-97	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
SR84-101-40	Jun-97	34	<12	NA	NA	<9	18	<14	NA	NA	17	NA	21	20	NA	<13
	Jul-97	<40	<35	<50	<49	<26	<40	<40	<36	<45	<29	<31	<52	<45	<50	<37
	Oct-97	<7	<7	<7	<7	<7	<7	<7	<7	<7	21	<7	<7	<7	<7	<7
SR84-101-60	Jun-97	22	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	18	<16	NA	<13
	Jul-97	99	25	<50	<49	49	<40	<40	<36	<45	20	<31	<52	<45	<50	<37
	Oct-97	<9	<9	<9	<9	40	<9	<9	<9	<9	12	<9	<9	<9	<9	<9
SR84-101-75	Jun-97	30	<12	NA	NA	13	16	16	NA	NA	<10	NA	217	39	NA	<13
	Jul-97	278	61	30	<49	128	10	6	<36	<45	52	5	13	14	<50	<37
	Oct-97	13	<7	<7	<7	65	<7	<7	<7	<7	47	<7	<7	<7	<7	14

Summary of historical soil vapor results, Camino del Cerro WQARF Project Area Continued.

Sample ID	Date	FC12	FC11	1,1-DCE	1,1-DCA	TTE	TMB	4-ET	1,1,1-TCA	EB	PCE	R10	TOL	Xylenes	1,2-DCE	TCE
SR84-201-20	Jun-97	26	<12	NA	NA	<9	<14	<14	NA	NA	10	NA	21	<16	NA	<13
	Jul-97	40	<35	<50	<49	6	<40	<40	<36	<45	38	<31	8	<45	<50	<37
	Oct-97	<7	<7	<7	<7	<7	<7	<7	<7	<7	42	<7	<7	<7	<7	<7
SR84-201-40	Jun-97	46	<12	NA	NA	<9	<14	<14	NA	NA	13	NA	68	<16	NA	<13
	Jul-97	72	7	<50	<49	8	<40	<40	<36	<45	48	<31	8	<45	<50	<37
	Oct-97	<7	<7	<7	<7	<7	<7	<7	<7	<7	35	<7	<7	<7	<7	<7
SR84-201-60	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	<18	<16	NA	<13
	Jul-97	62	7	<50	<49	55	<40	<40	<36	<45	22	<31	10	7	<50	5
	Oct-97	<8	<8	<8	<8	61	<8	<8	<8	<8	13	<8	9	9	<8	<8
SR-84-201-75	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	65	<16	NA	<13
	Jul-97	60	14	<50	<49	128	6	<40	<36	<45	20	<31	13	9	<50	64
	Oct-97	<7	<7	<7	<7	65	<7	<7	<7	<7	23	<7	10	9	<7	44
SR84-301-20	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	21	<16	NA	<13
	Jul-97	<40	<35	<50	<49	<26	78	32	<36	<45	<29	<31	13	45	<50	<37
	Oct-97	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
SR84-301-40	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	<18	<16	NA	<13
	Jul-97	<40	<35	<50	<49	<26	6	<40	<36	<45	<29	<31	10	7	<50	<37
	Oct-97	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
SR84-301-50	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	<18	<16	NA	<13
	Jul-97	<40	<35	<50	<49	13	6	<40	<36	<45	<29	<31	16	9	<50	<37
	Oct-97	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
SR84-301-75	Jun-97	<14	<12	NA	NA	<9	<14	<14	NA	NA	<10	NA	42	23	NA	<13
	Jul-97	44	<35	<50	<49	59	6	6	<36	<45	6	<31	18	9	<50	11
	Oct-97	<7	<7	<7	<7	14	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
CY-101-20	Jun-97	438	28	NA	NA	<9	<14	<14	NA	NA	28	NA	<18	<16	NA	<13
	Jul-97	716	161	<50	<49	12	138	44	<36	36	45	<31	10	109	<50	<37
	Oct-97	<7	8	<7	<7	<7	<7	<7	<7	<7	43	<7	<7	<7	<7	<7

From: Soil Vapor Sampling Report for the Third Fiscal Quarter of 1998, Camino Del Cerro WQARF Project Area, Tucson, Arizona, Fluor Daniel, May 5, 1998



Figure 23 (continued)  
1997 Soil-Gas Sampling Results, I-10 Corridor and E.C. Winter  
Appendix Q

Summary of historical soil vapor results, Camino del Cerro WQARF Project Area Continued.

Sample ID	Date	FC12	FC11	1,1-DCE	1,1-DCA	TTE	TMB	4-ET	1,1,1-TCA	EB	PCE	R10	TOL	Xylenes	1,2-DCE	TCE
CY-101-40	Jun-97	796	37	NA	NA	<9	<14	<14	NA	NA	36	NA	21	<16	NA	<13
	Jul-97	676	151	<50	<49	12	14	6	<36	9	44	<31	<52	<45	<50	<37
CY-101-60	Jun-97	11,736	455	NA	NA	<9	<14	<14	NA	NA	493	NA	<18	<16	NA	<13
	Jul-97	10,144	2,101	<50	<49	116	6	<40	<36	<45	624	<31	13	<45	<50	110
CY-101-75	Jun-97	16,907	525	NA	NA	<9	<14	<14	NA	NA	653	NA	<18	<16	NA	<13
	Jul-97	12,730	2,801	<50	34	167	6	<40	<36	<45	609	<31	<52	<45	10	183

FC12 = Dichlorodifluoromethane (Freon 12)  
 FC11 = Trichlorofluoromethane (Freon 11)  
 1,1-DCE = 1,1-Dichloroethene  
 1,1-DCA = 1,1-Dichloroethane  
 TTE = 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)

TMB = 1,2,4- & 1,3,5-Trimethylbenzene  
 4-ET = 4-Ethyltoluene  
 1,1,1-TCA = 1,1,1-Trichloroethane  
 EB = Ethylbenzene  
 PCE = Tetrachloroethene

R10 = Carbon Tetrachloride  
 TOL = Toluene  
 Xylenes = Total (m,p&o) Xylenes  
 1,2-DCE = cis-1,2-Dichloroethene  
 TCE = Trichloroethene

**NOTE:** June 1997 data collected by Growth Environmental Resources and converted from mg/m<sup>3</sup>  
 July 1997 data collected by EMCON and converted from mg/m<sup>3</sup>.

NA = Data Not Available

Table 2. Summary of soil vapor analytes detected during first quarter, 1998 monitoring. Results in ppbv.

Well ID	Sample ID	Sample Date	Lab ID	FC12	FC11	1,1-DCE	DCM	TTE	1,1-DCA	TCM	1,1,1-TCA	TCE	Toluene	PCE	m&p Xylene
TR-101	TR-101-20	08-Jan-98	184616	<30	<30	<30	<30	<30	58	<30	35	6,610	<30	555	<30
	TR-101-40	08-Jan-98	184615	<30	<30	<30	<30	43	205	57	117	5,260	<30	730	<30
	TR-101-60	08-Jan-98	184614	<30	<30	<30	<30	156	832	49	150	6,000	<30	695	<30
	TR-101-75	08-Jan-98	184613	<30	<30	200	<30	190	483	386	<30	4,430	<30	671	<30
SR84-101	SR84-101-20	07-Jan-98	184604	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	27	<7
	SR84-101-40	07-Jan-98	184603	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	35	<7
	SR84-101-60	07-Jan-98	184602	<8	<8	<8	<8	58	<8	<8	<8	<8	<8	28	<8
	SR84-101-75	07-Jan-98	184601	10	9	7	<6	40	<6	<6	<6	21	<6	73	<6
SR84-201	SR84-201-20	08-Jan-98	184608	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	40	<7
	SR84-201-40	08-Jan-98	184607	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	49	<6
	SR84-201-60	08-Jan-98	184606	<7	<7	<7	<7	97	<7	<7	<7	<7	<7	38	11
	SR84-201-75	08-Jan-98	173780	<7	<7	<7	<7	103	<7	<7	<7	67	<7	41	13
SR84-301	SR84-301-20	07-Jan-98	184600	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
	SR84-301-40	07-Jan-98	184599	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
	SR84-301-60	08-Jan-98	184598	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
	SR84-301-75	07-Jan-98	184597	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
CY-101	CY-101-20	08-Jan-98	184612	<7	15	<7	<7	<7	<7	<7	<7	<7	<7	48	<7
	CY-101-40	08-Jan-98	184611	<7	13	<7	<7	<7	<7	<7	<7	<7	<7	64	<7
	CY-101-60	08-Jan-98	184610	<7	<7	<7	<7	<7	<7	<7	<7	69	<7	1,230	<7
	CY-101-75	08-Jan-98	184609	<7	<7	<7	<7	<7	18	<7	<7	153	<7	817	<7
	EB	08-Jan-98	184617	<1	<1	<1	2	<1	<1	<1	<1	<1	3	<1	1
	BD-00	08-Jan-98	184618	<7	<7	<7	<7	8	<7	<7	<7	76	<7	1,570	<7

FC12 = Dichlorodifluoromethane (Freon 12)  
 FC11 = Trichlorofluoromethane (Freon 11)  
 1,1-DCE = 1,1-Dichloroethene  
 DCM = Dichloromethane (Methylene Chloride)

TTE = 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)  
 1,1-DCA = 1,1-Dichloroethane  
 TCM = Trichloromethane (Chloroform)

1,1,1-TCA = 1,1,1-Trichloroethane  
 TCE = Trichloroethene  
 PCE = Tetrachloroethene

Notes: Sample BD-00 is a blind duplicate sample of sample CY-101-60

**EL CAMINO DEL CERRO WQARF SITE  
SUMMARY OF SOIL GAS ANALYTICAL DATA**

**SECOND QUARTER 2001**

Analyte	Well ID								Well ID								Well ID			
	SR-84-301 (results reported in ppbv)				SR-84-201 (results reported in ppbv)				SR-84-101 (results reported in ppbv)				CY-101 (results reported in ppbv)				TR-101 (results reported in ppbv)			
	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet
1,1,1-TCA	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	37	85	87	14
1,1-DCA	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	46	< 1.0	< 1.0	< 10	42	56	130	440	370
1,1-DCE	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	7.9	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	53	250
1,2,4-TCB	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 10	< 1.0	< 1.0	< 5.0	< 10	< 2.0	< 2.0	< 20	< 20	< 20	< 20	< 20	< 20
1,2,4-TMB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	< 0.50	< 0.50	0.59	1.1	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 10	< 10
Carbon Tetrachloride	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 10	< 10
Chloroform	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 10	230
Chloromethane	< 0.50	< 0.50	< 0.50	0.90	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 10	< 10
c-1,2-DCE	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	16	< 10	< 10	< 10	< 10
Freon 12	4.6	3.9	29	45	6.7	8.9	41	70	17	28	160	260	31	58	930	1,700	74	< 10	< 10	< 10
Freon 114	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	1.6	3.1	52	110	< 10	< 10	< 10	< 10
Ethyl benzene	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.7	1.7	< 5.0	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	< 1.0	< 10	< 10	< 10	< 10	< 10	< 10
Total Xylene	< 1.0	< 1.0	< 1.0	< 1.0	0.74	6.5	5.9	< 10	< 1.0	< 1.0	< 5.0	< 10	< 2.0	< 2.0	< 20	< 20	< 20	< 20	< 20	< 20
PCE	1.5	1.4	2.2	2.1	13	13	12	11	16	21	17	20	7.1	7.6	54	120	180	170	170	260
Toluene	29	3.2	3.3	3.8	1.1	3.3	4.6	< 5.0	1.5	1.0	< 2.5	< 5.0	2.1	1.4	< 10	< 10	< 10	< 10	< 10	< 10
TCE	< 0.50	< 0.50	< 0.50	1.5	< 0.50	< 0.50	1.1	16	< 0.50	6.2	< 2.5	15	< 1.0	< 1.0	39	110	2,000	1,900	3,000	3,500
Freon 11	0.81	0.63	2.2	4.1	1.0	1.3	4.3	7.0	2.9	4.3	19	32	4.4	8.9	170	330	14	< 10	< 10	< 10
Freon 113	0.98	0.81	18	35	2.9	3.6	52	85	4.9	9.8	63	92	1.7	2.6	24	45	28	32	110	180

From: Quarterly report, Second Quarter 2001, El Camino Del Cerro WQARF Site, URS, July 6, 2001



**Figure 25**  
Soil-Gas Sampling Results, Second Quarter 2001, I-10 Corridor  
and E.C. Winter  
Appendix Q

**EL CAMINO DEL CERRO WQARF SITE  
SUMMARY OF SOIL GAS ANALYTICAL DATA**

**THIRD QUARTER 2001**

Analyte	Well ID								Well ID								Well ID			
	SR-84-301 (results reported in ppbv)				SR-84-201 (results reported in ppbv)				SR-84-101 (results reported in ppbv)				CY-101 (results reported in ppbv)				TR-101 (results reported in ppbv)			
	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet
1,1,1-TCA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	28	130	160	18
1,1-DCA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	30	47	230	800	230
1,1-DCE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	7.0	38	<1.0	<1.0	<10	<10	<10	<10	75	100
1,2,4-TCB	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<10	<1.0	<1.0	<5.0	<10	<2.0	<2.0	<20	<20	<20	<20	<20	<20
1,2,4-TMB	<0.50	<0.50	<0.50	<0.50	0.59	2.1	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
1,3,5-TMB	<0.50	<0.50	<0.50	<0.50	0.56	0.86	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
Benzene	<0.50	<0.50	<0.50	0.86	<0.50	<0.50	1.1	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
Chloroform	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	11	31	96
Chloromethane	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
c-1,2-DCE	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
Freon 12	3.1	2.6	17	13	5.2	8.4	13	46	14	16	150	270	25	42	640	1,200	<10	<10	<10	<10
Freon 114	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	3.1	5.6	1.1	2.0	31	71	<10	<10	<10	<10
Ethyl benzene	<0.50	<0.50	<0.50	<0.50	<0.50	1.7	<1.0	<5.0	<0.50	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
Total Xylene	<1.0	<1.0	<1.0	<1.0	0.66	4.8	<2.0	<10	<1.0	<1.0	<5.0	<10	<2.0	<2.0	<20	<20	<20	<20	<20	<20
Methylene chloride	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	1.1	<2.5	<5.0	<1.0	<1.0	<10	<10	25	<10	<10	<10
PCE	1.7	0.99	1.8	0.96	12	13	4.0	7.6	11	13	15	20	5.8	7.2	41	20	220	340	400	170
Toluene	0.61	30	0.56	1.4	<0.50	2.2	2.7	<5.0	0.54	<0.50	<2.5	<5.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10
TCE	<0.50	<0.50	<0.50	<0.50	9.2	1.7	12	8.6	<0.50	6.1	<2.5	13	1.8	<1.0	23	42	5,900	5,200	7,300	3,400
Freon 11	0.60	<0.50	1.3	1.0	0.81	1.3	1.2	<5.0	2.0	2.4	17	30	3.1	5.8	100	230	<10	<10	<10	<10
Freon 113	0.76	0.52	10	6.1	2.4	3.4	8.0	51	4.2	5.9	58	90	1.1	1.7	16	35	22	53	140	110
Vinyl chloride	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50	<0.50	<2.5	5.5	<1.0	<1.0	<10	<10	<10	<10	<10	<10

From: Quarterly report, Third Quarter 2001, El Camino Del Cerro WQARF Site, URS, December 7, 2001



**Figure 26**  
Soil-Gas Sampling Results, Third Quarter 2001, I-10 Corridor  
and E.C. Winter  
Appendix Q

**EL CAMINO DEL CERRO WQARF SITE  
SUMMARY OF SOIL GAS ANALYTICAL DATA**

**FOURTH QUARTER 2001**

Analyte	Well ID											
	SR-84-101 (results reported in ppbv)				SR-84-201 (results reported in ppbv)				SR-84-301 (results reported in ppbv)			
	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet
1,1,1-TCA	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,1-DCA	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,1-DCE	< 0.50	< 0.50	12	59	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-TCB	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	1.2	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-TMB	< 0.50	< 0.50	< 2.5	< 5.0	0.53	1.6	< 1.0	< 5.0	< 0.50	0.73	< 0.50	< 0.50
1,3,5-TMB	< 0.50	< 0.50	< 2.5	< 5.0	0.58	0.66	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Benzene	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	0.60
Carbon Tetrachloride	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Chloromethane	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
c-1,2-DCE	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Freon 12	14	24	170	310	6.3	8.6	49	86	4.4	3.5	19	59
Freon 114	< 0.50	0.55	3.4	6.3	< 0.50	< 0.50	1.0	< 5.0	< 0.50	< 0.50	< 0.50	1.4
Ethyl benzene	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	1.4	1.9	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Total Xylene	< 1.0	< 0.50	< 5.0	< 10	0.75	6.0	7.3	< 10	< 1.0	1.2	< 1.0	< 1.0
Methylene chloride	< 0.50	< 1.0	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
PCE	18	32	31	62	13	12	17	22	3.1	2.5	2.6	2.4
Toluene	< 0.50	< 0.50	< 2.5	< 5.0	0.62	2.8	3.0	< 5.0	0.82	0.80	0.94	1.4
TCE	< 0.50	< 0.50	3.6	30	< 0.50	< 0.50	2.0	21	< 0.50	< 0.50	< 0.50	1.2
Freon 11	2.0	3.3	19	32	0.87	1.1	4.1	7.6	0.67	0.54	1.4	4.2
Freon 113	4.6	7.7	65	99	2.5	3.3	57	80	1.2	0.65	12	34
Vinyl chloride	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50

From: Quarterly report, Fourth Quarter 2001, El Camino Del Cerro WQARF Site, URS, February 27, 2002



**Figure 27**  
Soil-Gas Sampling Results, Fourth Quarter 2001, I-10 Corridor  
and E.C. Winter  
Appendix Q

**EL CAMINO DEL CERRO WQARF SITE  
SUMMARY OF SOIL GAS ANALYTICAL DATA**

**FIRST QUARTER 2002**

Analyte	Well ID											
	SR-84-101 (results reported in ppbv)				SR-84-201 (results reported in ppbv)				SR-84-301 (results reported in ppbv)			
	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet	20 Feet	40 Feet	60 Feet	75 Feet
1,1,1-TCA	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,1-DCA	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,1-DCE	< 0.50	< 0.50	11	36	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-TCB	< 1.0	< 1.0	< 5.0	< 10	< 1.0	< 1.0	< 2.0	< 10	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-TMB	< 0.50	< 0.50	< 2.5	< 5.0	0.73	0.73	1.0	< 5.0	< 0.50	< 0.50	< 0.50	4.0
1,3,5-TMB	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	1.1
Benzene	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	0.83
Carbon Tetrachloride	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Chloroform	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	0.53	< 0.50	< 0.50	0.61
Chloromethane	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
c-1,2-DCE	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
Freon 12	10	15	140	250	4.1	6.5	42	70	2.2	2.8	16	49
Freon 114	< 0.50	< 0.50	3.0	5.6	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	1.2
Ethyl benzene	< 0.50	< 0.50	< 2.5	< 5.0	< 1.0	1.2	1.5	< 5.0	< 0.50	< 0.50	< 0.50	0.84
Total Xylene	< 1.0	< 1.0	< 5.0	< 10	< 1.0	4.3	6.5	< 10	< 1.0	< 1.0	< 1.0	6.8
Methylene chloride	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50
PCE	11	19	19	23	7.2	9.4	14	13	1.3	2.7	1.7	2.1
Toluene	< 0.50	< 0.50	< 2.5	< 5.0	< 0.50	1.4	2.4	< 5.0	< 0.50	< 0.50	0.63	4.2
TCE	< 0.50	< 0.50	< 2.5	17	< 0.50	< 0.50	2.3	18	< 0.50	< 0.50	< 0.50	0.89
Freon 11	1.7	2.5	18	32	0.63	0.95	4.5	6.9	< 0.50	< 0.50	1.2	3.7
Freon 113	3.3	4.9	50	84	1.6	2.7	45	62	< 0.50	0.58	9.8	28
Vinyl chloride	< 0.50	< 0.50	< 2.5	6.4	< 0.50	< 0.50	< 1.0	< 5.0	< 0.50	< 0.50	< 0.50	< 0.50

From: Quarterly report, First Quarter 2002, El Camino Del Cerro WQARF Site, URS, April 26, 2002



**Figure 28**  
Soil-Gas Sampling Results, First Quarter 2002, I-10 Corridor  
and E.C. Winter  
Appendix Q

Analyte	Sample Date	E.C. WINTER B2-30 (ppbv)	E.C. WINTER B2-80 (ppbv)	E.C. WINTER B5-30 (ppbv)	E.C. WINTER B5-60 (ppbv)	Analyte Maximum (ppbv)	Analyte Maximum (ug/L)
Acetone	2/20/2003	290	14	100	59	290	0.69
	10/13/2005	ND(50)	ND(10)	16	ND(500)		
1,1-Dichloroethane *	4/17/2002	340	150	250	340	770	3.1
	2/20/2003	92	120	310	770		
	5/28/2003	69	11	17	600		
	2/11/2004	95	82	16	69		
	10/13/2005	35	ND(1.0)	7.2	180		
1,1-Dichloroethene *	4/17/2002	76	49	25	46	76	0.30
	2/20/2003	12	4.7	60	66		
	5/28/2003	28	36	13	13		
	2/11/2004	10	ND(1.0)	ND(1.0)	ND(50)		
	10/13/2005	10	ND(1.0)	ND(1.0)	ND(50)		
Chloroform *	4/17/2002	46	52	18	30	59	0.29
	2/20/2003	19	6.4	59	32		
	5/28/2003	40	41	2.6	31		
	2/11/2004	15	ND(1.0)	1.2	<10		
	10/13/2005	15	ND(1.0)	1.2	ND(50)		
Tetrachloroethene *	4/17/2002	1100	230	1100	350	1800	12
	2/20/2003	4	1800	510	7.9		
	5/28/2003	1100	580	800	220		
	2/11/2004	770	500	240	400		
	10/13/2005	370	70	140	1800		
Trichloroethene *	4/17/2002	1300	1400	1800	2400	4100	22
	2/20/2003	260	550	840	660		
	5/28/2003	640	400	360	4100		
	2/11/2004	1000	1100	210	600		
	10/13/2005	490	44	84	1900		
1,1,1-Trichloroethane *	4/17/2002	240	39	200	79	240	1.3
Trichlorofluoromethane(F-11)	4/17/2002	24	36	26	38	38	0.21
Trichlorotrifluoroethane(F-113)	2/20/2003	1			17	18	0.14
	5/28/2003	11					
	2/11/2004	18					
	10/13/2005	5.2	ND(1.0)	ND(1.0)	ND(50)		
Dichlorodifluoromethane(F-12)	2/20/2003	1.9		1.1	1.3	1.9	0.0094
	10/13/2005	ND(5.0)	ND(1.0)	1	ND(50)		
Methylene chloride *	2/20/2003	1.8		1.1		68	0.24
	10/13/2005	ND(5.0)	ND(1.0)	ND(1.0)	68		
Total VOC Concentration							40.3
Total HAP Concentration							39.2

ppbv - parts per billion by volume

µg/L - micrograms per liter

ND - No detectable concentration above the laboratory method detection limit

\* Indicates Constituent is a Hazardous Air Pollutant (HAP)

From: 30% Design Submittal Soil  
Vapor Extraction unit Former E.C.  
Winter Site, URS, February 2006



**Figure 29**  
E.C. Winter Soil Vapor monitoring  
Summary Table  
Appendix Q

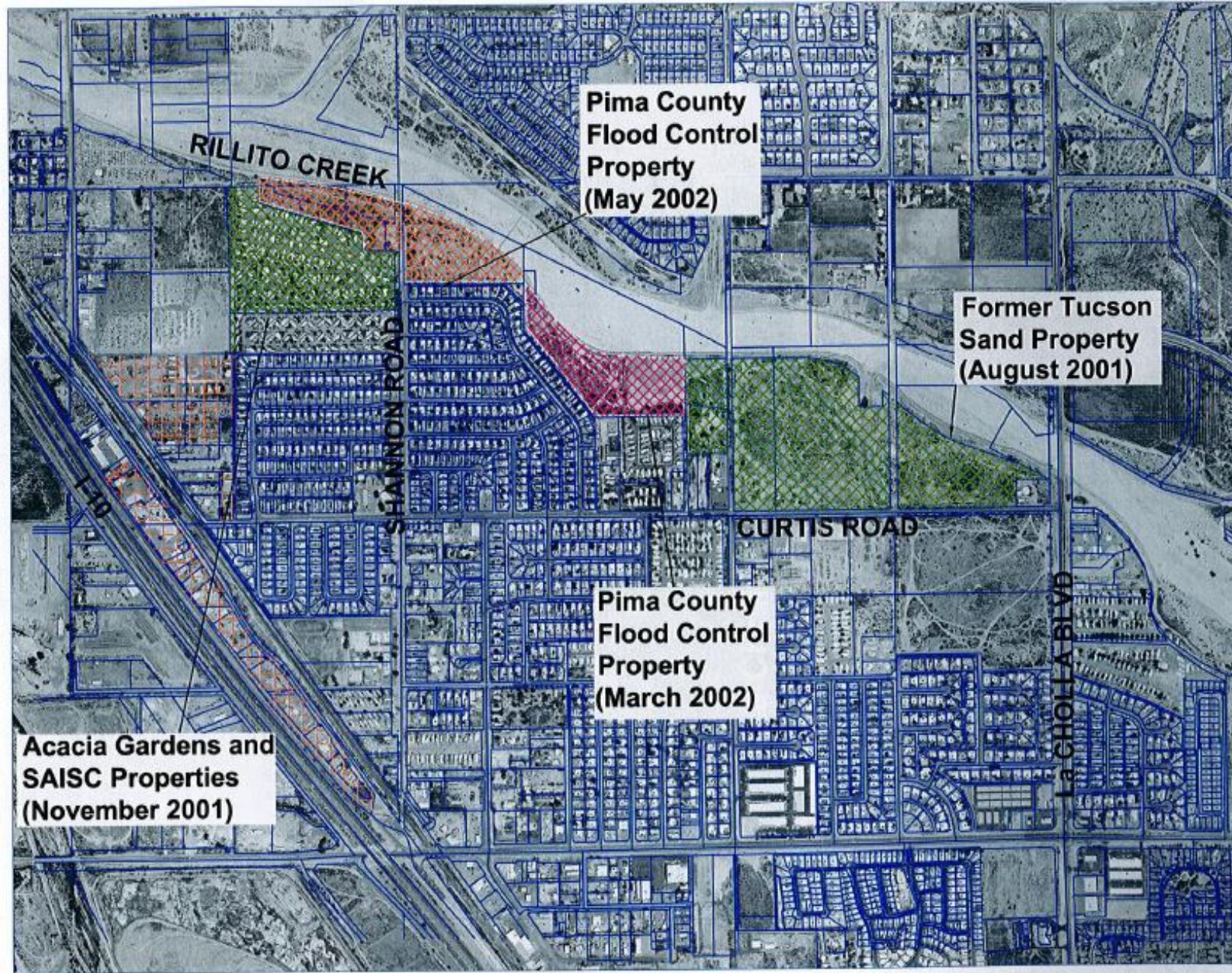


From: Vapor Trace® Shallow Soil Gas Investigation, LESP 3 Site, Tracer Research Corp. 1995



**Figure 30**  
1995 PCE/TCE in soil shallow soil gas, I-10 corridor  
Appendix Q

Engineering project/04111 Survey Map Aug. 2002



900' 450' 0 450' 900'  
SCALE--(APPROXIMATE)

**LEGEND**

-  Tax Assessors Parcel Boundaries (Approximately)
-  Completed Passive Soil Gas Survey Area
-  URS Passive Soil Gas Survey Areas

Arizona Department of Environmental Quality  
Shannon Road Rillito Creek WQARF Site  
Tucson, Arizona

**PASSIVE SOIL GAS SURVEY AREAS**

PLATE

**1**



PROJECT NUMBER 52-1641-01

September 2002

From: Rillito Creek – South Bank Passive Soil gas Survey Summary Report, Kleinfelder, October 2002



**Figure 31**  
Passive Soil Gas Survey Areas, South Bank of Rillito Creek  
2001-2002  
Appendix Q



Approximate Scale  
 1 inch = 200 Feet  
 0 200 400  
 Note: All boundaries and locations are approximate

**LEGEND**

- Tucson Sand Property Line
- Passive Soil Gas Point; No Chlorinated Volatile Organic Compounds Detected
- No Data; Sorber Module Not Recovered.
- Detection with concentration in micrograms  
 ( PCE= TETRACHLOROETHENE  
 TCE= TRICHLOROETHENE  
 CHCl3= TRICHLOROMETHANE )

Reference : Pima Association of Governments,  
 Digital Area Photograph, 1998



Arizona Department Of Environmental Quality  
 Shannon Road Rillito Creek WQARF Site  
 Tucson, Arizona  
**SOIL GAS SURVEY RESULTS**  
**PIMA COUNTY FLOOD CONTROL**  
**PROPERTY MARCH 2002**

FIGURE  
**4**

KLEINFELDER  
 Project Number 02-1641-01 September 2002

From: Rillito Creek – South Bank Passive Soil Gas Survey Summary Report, Kleinfelder, October 2002



Figure 32  
 Soil-Gas Survey Results, Pima County Flood Control Property, March, 2002  
 Appendix Q

# RILLITO CREEK



Approximate Scale  
1 Inch = 200 Feet  
0 200 400  
Note: All boundaries and locations are approximate

### LEGEND

- Approximate Parcel Boundaries
- Passive Soil Gas Point; No Chlorinated Volatile Organic Compounds Detected
- X No Data; Sorber Module Not Recovered.
- Detection with concentration in micrograms  
( PCE- TETRACHLOROETHENE  
TCE- TRICHLOROETHENE  
CHCl3- TRICHLOROMETHANE )

Reference : Pima Association of Governments,  
Digital Area Photograph, 1998

Arizona Department of Environmental Quality Shanon Road Rillito Creek WQARF Site Tucson, Arizona	<b>FIGURE</b> <b>5</b>
<b>SOIL GAS SURVEY RESULTS</b> <b>PIMA COUNTY FLOOD CONTROL</b> <b>PROPERTY- MAY 2002</b>	
Project Number 82-1941-01	September 2002





Reference : Pima Association of Governments,  
Digital Area Photograph, 1998



Approximate Scale  
1 inch = 200 Feet  
0 200 400  
Note: All boundaries and locations are approximate

**LEGEND**

- Tucson Sand Property Line
- Passive Soil Gas Point; No Chlorinated Volatile Organic Compounds Detected
- No Data: Sorber Module Not Recovered.
- Detection with concentration in micrograms  
( PCE= TETRACHLOROETHENE  
TCE=TRICHLOROETHENE  
CHC13=TRICHLOROMETHANE )



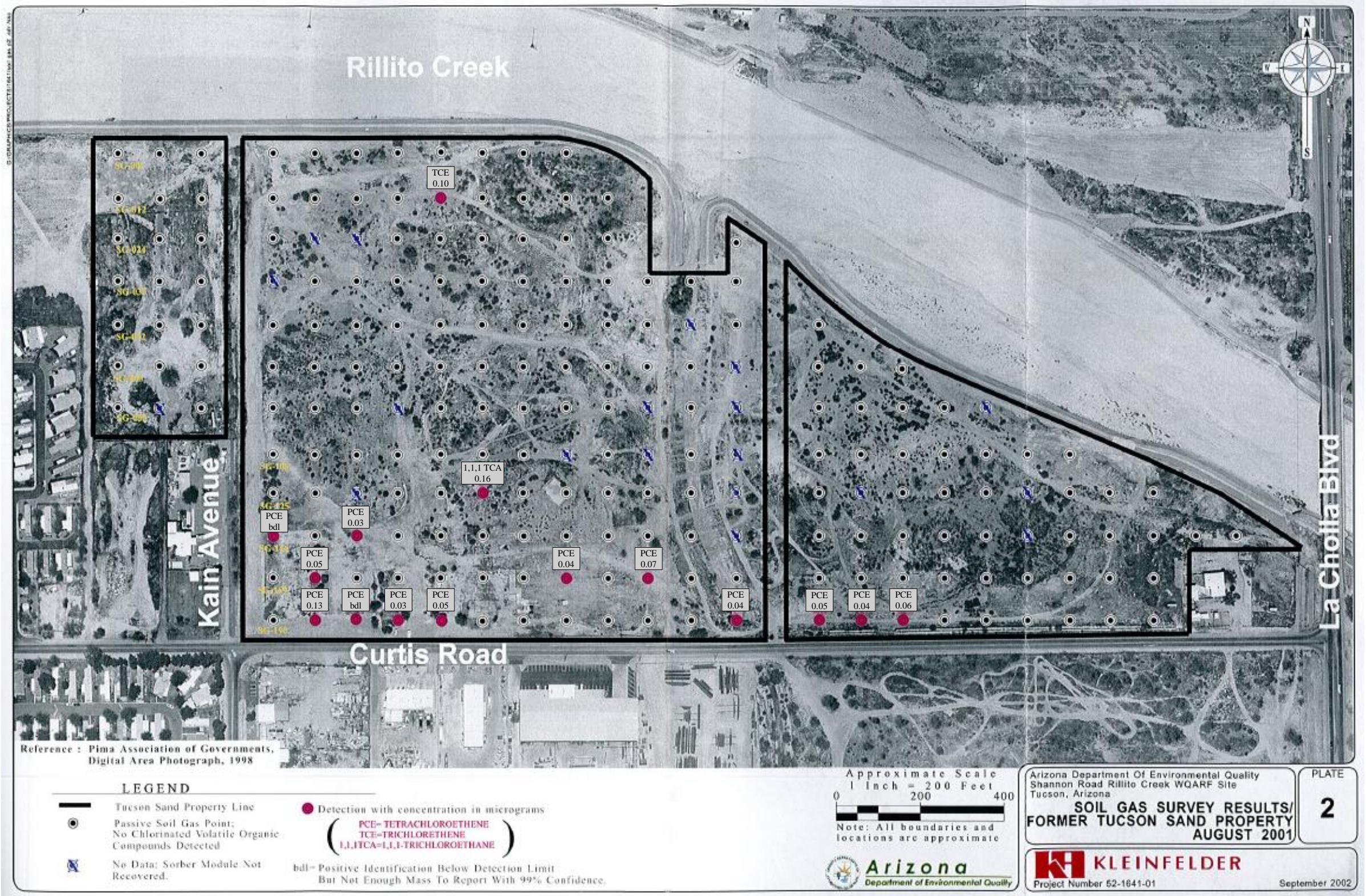
Arizona Department Of Environmental Quality  
Shannon Road Rillito Creek WQARF Site  
Tucson, Arizona  
**SOIL GAS SURVEY RESULTS**  
Acacia Gardens and SAISC Properties  
November 2001

PLATE  
**3**



Project Number 52-1841-01

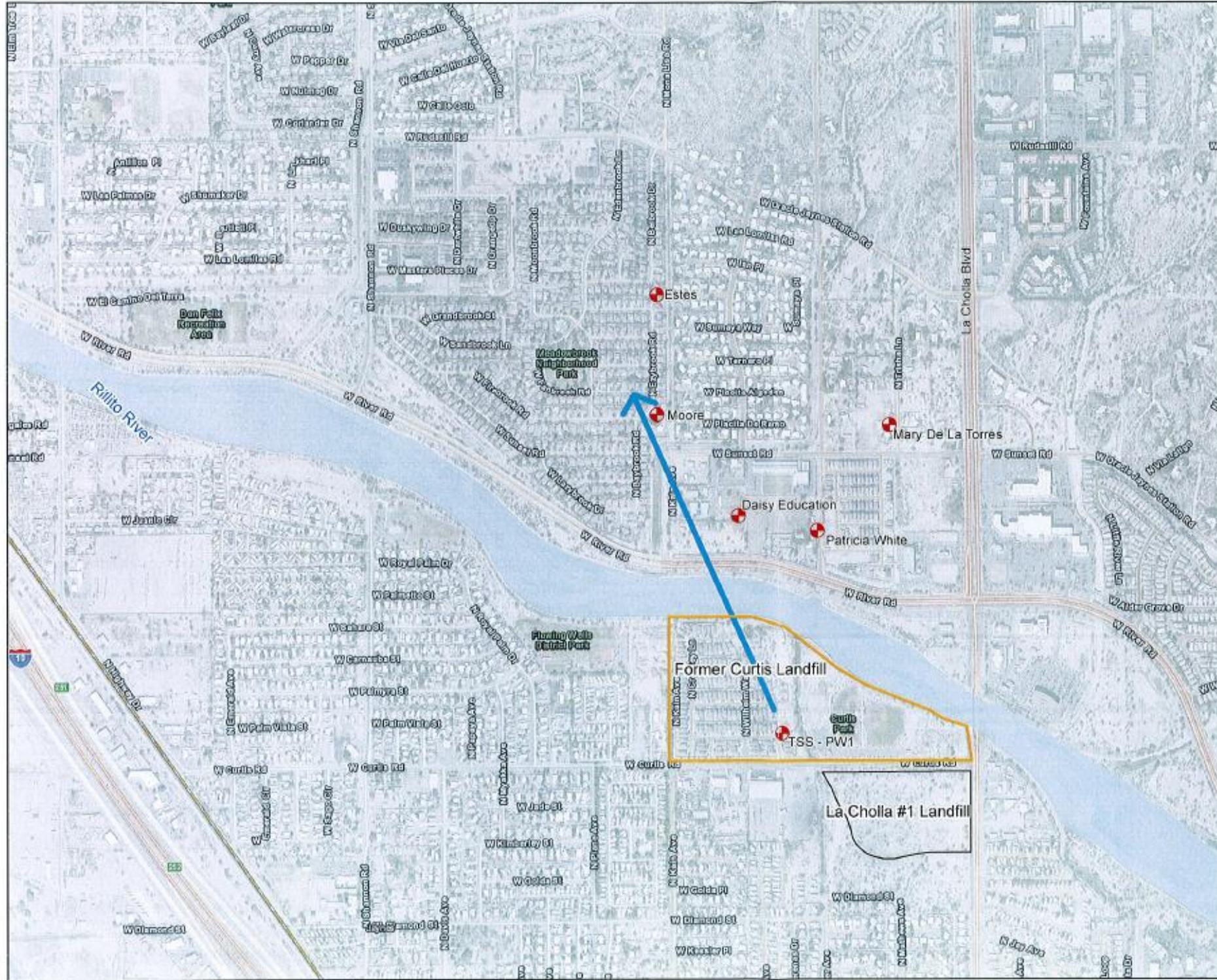
September 2002



From: Rillito Creek – South Bank Passive Soil Gas Survey Summary Report, Kleinfelder, October 2002

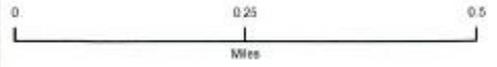


Figure 35  
Soil-Gas Survey Results, Former Tucson Sand Property, August 2001  
Appendix Q



**Figure 1**  
**Well Location**  
**Curtis Landfill**

- Approximate Well Locations
- La Cholla #1 Landfill
- Former Curtis Landfill
- Approximate Groundwater Flow Direction



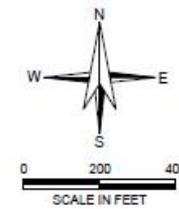
**URS**



MAP SOURCE: GOOGLE EARTH (MARCH 2014)

- LEGEND:**
- W14 APPROXIMATE MONITORING WELL LOCATION
  - TPAC APPROXIMATE DOMESTIC WELL LOCATION
  - PEX2 APPROXIMATE REMEDIATION WELL LOCATION
  - (HS) - SAMPLED USING HYDRASLEEVE™ SAMPLING DEVICE
  - (DRY) - WELL IS DRY
  - (OOC) - DAMAGED WELL / PUMP INOPERABLE
  - (NS) - NOT SAMPLED, PUMP WAS REMOVED

**NOTE:**  
THE "OOC" PREFIX FOR WELL NAMES HAS BEEN REMOVED FROM EACH NAME FOR BREVITY.



**HALEY & ALDRICH** EL CAMINO DEL CERRO LANDFILL  
PIMA COUNTY, ARIZONA

WELL STATUS AND LOCATION MAP  
DECEMBER 2014

SCALE: AS SHOWN  
DECEMBER 2014

FIGURE 1

From: Status of the El Camino del Cerro Groundwater Remediation Project, Pima County, Arizona. Letter from Mark B. Groseclose, R.G., Senior Project Manager, Haley & Aldrich, January 6, 2015.



Figure 37  
El Camino Del Cerro Landfill Well Status and Location Map  
December 2014  
Appendix Q