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MCAS EL TORO
SSIC # 5090.3

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CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT

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FROM: D. K. Cowser, Project Manager

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MEETING MINUTES

Meeting Subject: BCT Briefing MCAS El Toro	**Meeting Date:** 30 January 1997 **Meeting Time:** 1000 **Meeting Place:** Building 304, MCAS El Toro **Meeting Notes Prepared By:** Patrick Brooks

Attendees:

SWDIV	CLEAN II	Other
Bernie Lindsey	Patrick. Brooks	Glenn Kistner, U.S. EPA
	Craig Carlisle	Tayseer Mahmoud, DTSC
	Dimitri Hallerbach	Roy Yemen, DTSC
	Tim Latas	Larry Vitale, RWQCB
		Hooshang Nezafati, CLEAN I
		Major Frank Baynard, El Toro
		Lt. Hope Katcharian, El Toro
		Joseph Joyce, El Toro
		David Crawley, El Toro
		Bill Sedlak, OHM
		Jay Neuhaus, OHM
		Guijan Hu, OHM

Additional Distribution: Lynn Hornecker, SWDIV
El Toro File
BNI Document Control

The meeting was opened with a discussion of the Base Closure Plan.

BCP UPDATE

"Last call" for inputs made. No additional comments were submitted to BNI. D. Hallerbach asked if Cal-EPA or US EPA received/reviewed the inputs from SWDIV that BNI had summarized in meeting minutes from 16 January 1997. They had not. D. Hallerbach brought two issues from the meeting minutes, to which all BCT members agreed:

1. Changing area types for the three IRP sites where removal actions are planned (Sites 2, 17, and 19) from Area Type 6 to Area Type 5, and
2. Changing the area types for the fuel supply lines from Area Type 7 to Area Type 2.

During the meeting, Cal-EPA and US EPA were given sets of the aforementioned meeting minutes.

DTSC and US EPA requested copies of the 1996 BCP Guidebook. B. Lindsey agreed to send copies to DTSC and US EPA.

US EPA's position on lead-based paint is that chips and/or dust in soil surrounding structures constitute a CERCLA release. Cal-EPA (DTSC) brought this up in their comments on the Draft BCP. Navy policy does not currently address this type of release. Because the BCP is a "living" document, immediate resolution of this issue is not a requirement for the issuance of the final BCP. However, the BCT agreed that they would address this issue at a later date.

D. Hallerbach confirmed with the BCT the following comment resolution process: formal responses to comments will only be provided for Cal-EPA, US EPA, and Local Redevelopment Authority (LRA) comments. The final BCP will serve as the comment resolution document for all other comments.

Distribution of the Final BCP will be coordinated by BNI through B. Lindsey and J. Joyce. Requests for additional copies of the document should be made to Joseph or Bernie.

The signature page of the Final BCP will be signed at the 6 February 1997 BCT meeting at El Toro. B. Lindsey has the signature page.

ONE-DAY SOIL VAPOR EXTRACTION PILOT TESTS

Jay Neuhaus presented the results of the one-day soil vapor extraction tests conducted by OHM. Testing was conducted at 20 SVE wells installed during the Phase II RI at Site 24. Both the deep and intermediate soil zones were tested. No SVE wells were installed in the shallow soil zone. Data collected included extraction flow rate, applied vacuum, remote vacuum, and VOC concentration in the effluent soil gas. The radius of influence was estimated using remote vacuum data. Jay explained that not all of the SVE wells tested had a monitoring well near enough to record a remote vacuum; this precluded estimation of a radius of influence using the distance-pressure relationship.

In general, many of the wells had a radius of influence of 200-250 feet. The major VOCs detected in the soil gas samples included TCE, Freon 113, 1,1-DCE, and PCE. Based on VOC analytical data and measured flow rates from the SVE wells, a VOC mass removal rate of >186 pounds per day was estimated. Approximately 66 percent of the mass was due to Freon 113 and 32 percent for TCE. Most of the Freon 113 came from well 24SVE10.

The highest VOC concentrations were reported from samples collected at SVE wells 24SVE1, 24SVE3, 24SVE9, and 24SVE10. These are the wells to be considered for long-term testing. A long-term test is ongoing at well 24SVE1. Pat added that it was important to begin the test at 24SVE10 next to reduce soil gas concentrations in the area prior to beginning the groundwater remediation pilot test. A low background soil gas concentration would make it easier to determine the contribution of the dewatered vacuum-enhanced groundwater extraction well proposed for that area. In general, the one-day pilot testing was successful. Pat and Jay agreed to continue working together during the future testing.

SITE 2 BOUNDARIES

Site 2 Boundaries - OU-2B

Bernie presented the a summary of the Navy reevaluation of the Site 2 boundaries which had been presented in the Phase II draft Final RI and draft FS reports. Based on a review of the interviews, trenching activities conducted by OHM (RAC contractor), and a detailed review of aerial photographs, the IRP Site 2 boundary will be illustrated as the area encompassing Areas A and B (as shown in the draft FS) which was the Marine Corps Operational landfill. The FS will show that Areas C1, C2, and D2 are areas of unauthorized dumping but as a "housekeeping" effort, these areas will be consolidated into Areas A and B as part of the remedial action at the

site. Area D1 occurs off-Station and the source of these wastes appears to be series of dumping events that occurred on the Orange County and Irvine Company properties.

The FS will still indicate that the TCE/PCE groundwater contamination will be remediated by natural attenuation and will be part of the long-term monitoring proposed for Site 2.

Bernie asked Tim Latas to discuss specifics of the research. Tim indicated that the details for the conclusions are presented on the handouts along with copies of the aerial photographs which illustrate the dumping in Areas D1. Most of the dumping in Areas C1 and D2 occurred sporadically and apparently in low volumes. Area C2 appears to have been constructed in the early 1960s with the hill between Site 2 and 17 was used for a borrow source. Equipment can be seen in several aerial photographs over time parked on Area C2. Occasional disturbances are also visible over the streambank of Area C2. Equipment maintenance in Area C2 may be a source of the TCE in groundwater and oil filters uncovered by OHM trenching supports the idea that the area was used for equipment maintenance.

At the end of the discussion, the BCT members concurred that the new boundary for Site 2 is acceptable and that Area D1 (off-Station) is not the responsibility of the Navy.

FUTURE MEETINGS AND AGENDAS

A BCT Briefing was scheduled for February 6, 1997 at El Toro. David Crawley agreed to reserve a room for the meeting.

PRELIMINARY RESULTS ONE-DAY SOIL VAPOR EXTRACTION TESTS

SITE 24, MCAS, EL TORO

January 27, 1997

OHM Remediation Services Corp.

Well Identification	Well Diameter (in.)	Screen Interval (ft bgs)	Extraction Flowrate (cfm)	Applied Vacuum (" H_2O)	Radius of Influence (ft.)	Vapor Concentration (µg/L)				Estimated Mass Removal Rate (lb/day)				Subtotal Mass Removal by Well (lb/day)
						1,1-DCE	TCE*	PCE	Freon	1,1-DCE	TCE	PCE	Freon	
24SVE1	4	91-109	225	42	250-300	40	340 (ND)	ND	ND	0.81	6.9	-	-	7.7
24SVE2	2	80-105	130	90	200-250	35	160 (4.6)	5	17	0.41	1.9	0.06	0.20	2.5
24SVE2A	2	40-70	35	90	200-250	51	150 (1.7)	4.4	9.1	0.16	0.47	0.01	0.03	0.7
24SVE3	2	80-105	22	100	200-250	77	1100 (100)	19.0	17	0.15	2.2	0.04	0.03	2.4
24SVE3A	2	45-60	20	100	200-250	8	130 (14)	ND	ND	0.01	0.23	-	-	0.2
24SVE4	2	85-105	>131	55	200-250	26	280 (65)	ND	29	>0.3	>3.3	-	>0.34	>3.9
24SVE5	2	68-88	27	120	<200	ND	220 (77)	ND	400	-	0.53	-	0.97	1.5
24SVE5A	2	41.5-56.5	65	100	<200	13	360 (ND)	ND	950	0.08	2.1	-	5.5	7.7
24SVE6	4	85-109.5	131	30	200-250	40	440 (35)	ND	12	>0.47	>5.2	-	>0.14	>5.8
24SVE7	2	80-110	180	100	200-250	3.9	54 (12)	0.6	1.1	0.06	0.87	0.01	0.02	1.0
24SVE7A	2	63-74	27	100	<200	2.2	30 (ND)	ND	0.6	0.01	0.07	-	0.00	0.1
24SVE8	2	83-113	30	105	<200	28	100 (ND)	ND	23	0.08	0.27	-	0.06	0.4
24SVE8A	2	50-78	70	100	<200	16	45 (ND)	ND	1.0	0.10	0.28	-	0.01	0.4
24SVE9	2	81-111	40	90	200-250	ND	550 (190)	ND	2200	-	2.0	-	7.9	9.9
24SVE9A	2	55-85	20	120	<200	ND	36 (190)	ND	290	-	0.06	-	0.52	0.6
24SVE10	4	79-109	250	55	180-200	ND	1400 (59)	ND	4700	-	31.4	-	106	137
24SVE11	2	79-109	60	100	<200	ND	300 (33)	ND	270	-	1.6	-	1.5	3.1
24SVE11A	2	43-73	27	120	<200	ND	0.14 (150)	ND	0.14	-	0.00	-	0.00	0.0
24SVE13	2	79-109	20	100	<200	ND	4.1 (24)	130	ND	-	-	-	-	0.0
24SVE14	2	78-108	120	125	200-250	3.3	110 (12)	2.3	4.4	0.04	1.2	0.02	0.05	1.3
		Subtotal flowrate	1610 cfm				Mass Removal Subtotal (lb/day)			2.7	60	0.15	>123	Total >186
							Weighted Mass Removal Percentage**			1.5%	32.2%	0.3%	66.0%	100%

Notes: Vacuum Data are corrected for background soil vapor pressure (0.5 in. of water) to estimate the radius of influence,

*Values in parenthesis are TCE concentrations in soil reported in µg/kg. (BNI, 2/5/96),

** *Calculation including only the four listed compounds;*

bgs = below ground surface,

1,1-DCE = 1,1-Dichloroethene, TCE = Trichloroethene, PCE = Tetrachloroethene, Freon = 1,1,2-Trichloro-1,2,2-Trifluoroethane

ND: non-detected

Summary of SVE Test Data
Site 24, MCAS El Toro

		Evacuated @ Well 24SVE-7						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE1	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE8	24SVE8A	24SVE7A	24SVE14
10/31/96	9:30		180	125			85	0.7	0.5	0.5	0.75	0.75	-	-	-	0.5
10/31/96	10:30		180	135				0.66	0.55	0.53	0.63	0.65	-	-	-	0.5
10/31/96	11:30		-	102			0	0.63	0.55	0.52	0.60	0.65	-	-	-	0.5
10/31/96	13:00		180	90			30	0.65	0.5	0.5	0.5	0.51	-	-	-	0.5
12/3/96	10:00		-	125		140	62.3	0.7	0.50	0.50	0.50	0.55	0.50	0.55	12.00	-
12/3/96	10:30		-	100		140	53.4	0.5	0.55	0.60	0.60	0.50	0.55	0.55	11.50	-
12/3/96	11:00		-	90		140	33.6	0.65	0.65	0.60	0.75	0.70	0.65	0.65	11.00	-
Distance From Extraction Well (ft)								196	180	180	350	230	214	214	-	292

		Evacuated @ Well 24SVE-7A						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE7	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE8	24SVE8A	24SVE1	
11/1/96	8:00	1300	28	125	2		11.3	5	-	-	0.55	0.5	0.5	0.5	0.5	
11/1/96	9:30	1300	28	121	2		11.6	5	0.25	0.36	0.25	0.48	0.30	0.30	0.25	
11/1/96	11:00	1300	28	110	2		9.2	5	0.25	0.35	0.17	0.25	0.15	0.10	0	
11/1/96	12:30	1250	27	100	2		12.2	2	0.15	0.40	0.12	*0.10*	0.10	0.10	*0.2*	
11/1/96	13:30	1000	22	90	2		11.6	-	0.20	0.30	*0.05*	*0.05*	0.25	0.20	*0.1*	
								** Values in Italic are positive pressures*								
Distance From Extraction Well (ft)								-	180	180	350	230	214	214	196	

		Evacuated @ Well 24SVE3						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE1	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE8	24SVE8A	24SVE14	
11/4/96	8:45	1250	27	108	2		380	0.35	-	1.45	0.35	0.35	-	-	0.45	
11/4/96	10:30	1000	22	108	2		220	0.3	-	1.55	0.25	0.22	-	-	0.45	
11/4/96	11:45	1000	22	100	2		370	0.05	-	1.35	0.05	0	-	-	0.35	
11/4/96	13:00	800	17	80	2		419	0.2	-	0.8	*0.1*	*0.15*	-	-	0.35	
11/4/96	13:30	800	17	70	2		422	0.15	-	0.4	*0.1*	*0.1*	-	-	0.35	
								* Values in Italic are positive pressures								
Distance From Extraction Well (ft)								314	-	-	281	291	374	374	210	

		Evacuated @ Well 24SVE3A						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE1	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE8	24SVE8A	24SVE14	
11/5/96	8:15	1250	27	120	2		70	0.8	0.5	-	0.8	0.8	-	-	0.6	
11/5/96	10:15	1250	27	115	2		61.5	0.35	0.6	-	0.45	0.5	-	-	0.45	
11/5/96	11:45	1010	22	115	2		55.1	0.9	0.8	-	0.15	0.1	-	-	0.3	
11/5/96	12:30	900	20	100	2		55.8	1.0	0.65	-	0.05	0.05	-	-	0.3	
11/5/96	13:30	750	16	90	2		-	0.9	0.65	-	0.15	0.15	-	-	0.3	
Distance From Extraction Well (ft)								314	-	-	281	291	374	374	210	

		Evacuated @ Well 24SVE14						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE2	24SVE2A	24SVE3	24SVE3A	24SVE7	24SVE7A	24SVE8	24SVE8A	
11/7/96	8:30	5500	120	124	2		107	0.73	0.80	0.65	0.75	0.55	0.52	0.70	0.75	
11/7/96	9:30	5500	120	124	2		80.3	0.55	0.59	0.60	0.60	0.55	0.50	0.60	0.62	
11/7/96	10:15	5500	120	125	2		-	-	-	-	-	-	-	-	-	
11/7/96	12:15	5500	120	120	2		84.9	0.20	0.15	0.20	0.25	0.25	0.4	0.25	0.20	
11/7/96	12:45	-	-	100	2		105	0.20	0.15	0.15	0.25	0.30	0.4	0.25	0.20	
11/7/96	13:40	5800	126.5	90	2		99.2	0.30	0.30	0.35	0.30	0.45	0.45	0.25	0.25	
								** Values in Italic are positive pressures*								
Distance From Extraction Well (ft)								265	265	210	210	292	292	450	450	

Summary of SVE Test Data
Site 24, MCAS El Toro

		Evacuated @ Well 24SVE2						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE2A	24SVE3	24SVE3A	24SVE4	24SVE7	24SVE7A	24SVE14		
11/11/96	8:00	4400	96	115	2		128	1	0.55	0.6	0.75	0.5	0.5	0.4		
11/11/96	9:30	5000	109	109	2		132	1.35	0.75	0.7	0.2	0.4	0.4	0.65		
11/11/96	11:30	6000	131	100	2		75	1.55	0.5	0.5	0.4	0.5	0.5	0.5		
11/11/96	12:30	6000	131	90	2		75	1.6	0.45	0.5	0.25	0.45	0.45	0.5		
11/11/96	13:30	5000	109	80	2		83	1.35	0.5	0.5	0.25	0.5	0.5	0.5		
Distance From Extraction Well (ft)								-	220	220	349	396	396	265		

		Evacuated @ Well 24SVE2A						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE2	24SVE3	24SVE3A	24SVE4	24SVE7	24SVE7A	24SVE14		
11/13/96	8:00	1600	35	90	2			2.6	0.65	0.6	0.7	0.5	0.5	0.55		
11/13/96	9:30	1600	35	90	2			3.1	0.65	0.55	0.55	0.5	0.5	0.5		
11/13/96	11:15	2000	44	86	2			2.9	0.4	0.4	0.25	0.55	0.45	0.5		
11/13/96	12:45	2000	44	80	2			2.6	0.35	0.35	0.1	0.45	0.45	0.45		
11/13/96	13:30	1700	37	70	2			2.4	0.4	0.4	0.15	0.45	0.45	0.45		
Distance From Extraction Well (ft)								-	220	220	349	396	396	265		

		Evacuated @ Well 24SVE4				Vacuum Response @ Monitoring Wells (in H_2O)										
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	24SVE1	24SVE2	24SVE2A	24SVE3	24SVE3A	24SVE6	24SVE7	24SVE7A	24SVE8	24SVE8A	24SVE14
11/14/96	8:00	>6000	>131	55	2	0.7	0.5	0.5	0.55	0.55	1.15	0.5	0.5	0.5	0.5	0.5
11/14/96	9:30	>6000	>131	55	2	0.9	0.5	0.5	0.65	0.6	1.55	0.5	0.5	0.5	0.5	0.5
11/14/96	11:15	>6000	>131	55	2	0.75	0.3	0.5	0.5	0.5	1.4	0.5	0.5	0.35	0.3	0.35
11/14/96	12:30	>6000	>131	45	2	0.35	0.15	0.3	0.30	0.35	1	0.4	0.55	0.15	0.1	0.35
11/14/96	13:40	>6000	>131	35	2	0.35	0.15	0.2	0.35	0.35	0.95	0.4	0.45	0.15	0.15	0.35
Distance From Extraction Well (ft)						319	349	349	281	281	319	350	350	518	518	483

		Evacuated @ Well 24SVE5						Vacuum Response @ Monitoring Wells (in H_2O)								
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE1	24SVE9	24SVE9A	24SVE10	24SVE11	24SVE11A	24SVE14		
11/18/96	9:10	1250	27	120	2			-	0.45	0.5	0.45	0.5	0.5	-		
11/18/96	10:00	1250	27	120	2			-	0.45	0.5	0.45	0.45	0.5	-		
11/18/96	11:00	1250	27	120	2			-	0.25	0.5	0.35	0.25	0.45	-		
11/18/96	12:45	1250	27	110	2			-	0.2	0.5	0.25	0.25	0.45	-		
11/18/96	13:30	-	-	100	2			-	0.25	0.5	0.35	0.25	0.45	-		
Distance From Extraction Well (ft)								-	416	416	158	335	335	-		

Summary of SVE Test Data
Site 24, MCAS El Toro

		Evacuated @ Well 24SVE5A						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE1	24SVE5	24SVE9	24SVE9A	24SVE10	24SVE11	24SVE11A	24SVE14
11/20/96	9:30	-	60	105	-			-	-	0.50	0.50	0.55	0.50	0.50	-
11/20/96	10:30	-	65	100	-			-	-	0.35	0.50	0.40	0.35	0.50	-
11/20/96	11:30	-	70	100	-			-	1.05	0.25	0.50	0.40	0.25	0.45	-
11/20/96	12:45	-	74	90	-			-	0.50	0.25	0.50	0.45	0.25	0.45	-
11/20/96	13:30	-	65	80	-			-	1.25	0.35	0.50	0.5	0.32	0.47	-
								* Values in italic are positive pressures							
Distance From Extraction Well (ft)								-	-	416	416	158	335	335	-

		Evacuated @ Well 24SVE9						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE5	24SVE5A	24SVE9	24SVE9A	24SVE10	24SVE11	24SVE11A	24SVE14
11/21/96	9:20	-	40	90	-			0.50	0.50	-	-	0.50	0.50	0.50	-
11/21/96	10:20	-	40	90	-			0.50	0.45	-	-	0.50	0.47	0.40	-
11/21/96	12:30	-	60	95	-			0.35	0.35	-	-	0.40	0.25	0.50	-
11/21/96	13:35	-	40	80	-			0.40	0.40	-	-	0.40	0.30	0.45	-
11/21/96	13:30							0.50	0.45	-	-	0.45	0.40	0.45	-
								** Values in italic are positive pressures*							
Distance From Extraction Well (ft)								416	416	-	-	238	338	338	-

		Evacuated @ Well 24SVE9A						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE5	24SVE5A	24SVE9	24SVE9A	24SVE10	24SVE11	24SVE11A	24SVE14
11/22/96	8:30	-	20	120	-			0.70	0.70	1.0	-	0.70	0.85	0.65	-
11/22/96	9:45	-	20	120	-			0.55	0.60	1.0	-	0.60	0.70	0.55	-
11/22/96	11:15	-	20	120	-			0.45	0.45	0.30	-	0.45	0.45	0.50	-
11/22/96	12:45	-	20	110	-			0.30	0.35	0.50	-	0.30	0.25	0.45	-
11/22/96	13:30	-	20	110	-			0.35	0.35	0.45	-	0.35	0.35	0.50	-
Distance From Extraction Well (ft)								416	416	-	-	238	338	338	-

		Evacuated @ Well 24SVE11						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE5	24SVE5A	24SVE9	24SVE9A	24SVE10	24SVE11	24SVE11A	24SVE14
11/25/96	9:00	-	65	100	-			0.45	0.40	0.45	0.45	0.40	-	1.0	-
11/25/96	10:00	-	60	100	-			0.45	0.40	0.35	0.45	0.40	-	1.0	-
11/25/96	11:00	-	55	100	-			0.40	0.40	0.30	0.45	0.35	-	75	-
11/25/96	12:45	-	25	90	-			0.35	0.35	0.20	0.40	0.35	-	69	-
11/25/96	13:30	-	20	80	-			0.40	0.40	0.25	0.40	0.40	-	50	-
Distance From Extraction Well (ft)								335	335	338	338	300	-	-	-

		Evacuated @ Well 24SVE11A						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE5	24SVE5A	24SVE9	24SVE9A	24SVE10	24SVE11	24SVE11A	24SVE14
11/26/96	9:00	1250	27	120	2			0.50	0.55	0.55	0.50	0.55	1.15	-	-
11/26/96	10:00	1250	27	115	2			0.25	0.30	0.40	0.50	0.35	1.05	-	-
11/26/96	11:00	1250	27	115	2			0.45	0.45	0.40	0.50	0.40	1.05	-	-
11/26/96	12:45	1100	24	105	2			0.35	0.30	0.40	0.50	0.40	1.00	-	-
11/26/96	13:30	1000	22	95	2			0.40	0.45	0.45	0.50	0.50	95	-	-
								** Values in italic are positive pressures*							
Distance From Extraction Well (ft)								335	335	338	338	300	-	-	-

Summary of SVE Test Data
Site 24, MCAS El Toro

		Evacuated @ Well 24SVE1						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE7	24SVE7A	24SVE8	24SVE8A
12/2/96	9:00		225	42		80	282	0.60	0.55	0.80	3.00	0.55	0.50	0.65	0.70
12/2/96	9:35		125	30		80	290	0.55	0.55	0.95	2.40	0.70	0.55	0.85	0.80
12/2/96	10:07		40	22		80	285	0.55	0.52	0.80	1.70	0.75	0.60	0.95	0.85
Distance From Extraction Well (ft)								314	314	319	110	196	196	236	236

		Evacuated @ Well 24SVE6						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE1	24SVE3	24SVE3A	24SVE4	24SVE7	24SVE7A	24SVE8	24SVE8A
11/8/96	8:00	>6000	>131	30	2		242	3.9	0.55	0.65	2.15	0.7	0.55	0.7	0.7
11/8/96	9:30	>6000	>131	30	2		168	4.9	0.75	7	2.4	0.85	0.7	0.85	0.85
11/8/96	11:00	>6000	>131	29	2		225	4.5	0.6	0.6	2.25	0.75	0.6	0.8	0.75
11/8/96	13:00	>6000	>131	20	2		250	2.9	0.5	0.5	-	0.6	0.55	0.55	0.55
11/8/96	13:30	>6000	>131	15	2		239	2.75	0.5	0.5	1.4	0.58	0.53	0.55	0.55
Distance From Extraction Well (ft)								110	314	314	319	230	230	338	338

		Evacuated @ Well 24SVE8A						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE7	24SVE7A	24SVE1	24SVE8
12/3/96	8:15	-	70	100	2	125	45	0.60	0.60	0.80	0.80	0.50	0.50	0.90	6.50
12/3/96	8:45	-	50	75	2	125	42	0.55	0.50	0.70	0.70	0.50	0.50	0.90	5.70
12/3/96	9:15	-	30	50	2	110	37	0.55	0.52	0.65	0.65	0.50	0.50	0.80	3.70
Distance From Extraction Well (ft)								394	394	518	338	214	214	236	-

		Evacuated @ Well 24SVE8						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE3	24SVE3A	24SVE4	24SVE6	24SVE7	24SVE7A	24SVE1	24SVE8A
12/2/96	12:40	-	30	115	2	150	-	*0.40*	*0.40*	-	0.50	0.50	0.50	0.50	2.70
12/2/96	13:30	-	30	105	2	150	-	*0.40*	*0.40*	-	0.50	0.50	0.50	*0.45*	0.26
12/2/96	14:00	-	25	95	2	150	55.5	*0.40*	*0.40*	-	0.50	0.50	0.50	*0.45*	2.45
								* *Values in italic are positive pressures*							
Distance From Extraction Well (ft)								394	394	518	338	214	214	236	-

		Evacuated @ Well 24SVE10						Vacuum Response @ Monitoring Wells (in H_2O)							
Date	Time	Vapor Velocity (ft/min)	Flow Rate (cfm)	Wellhead Vacuum ("H_2O)	Piping Size (in)	Vapor Temperature (°F)	PID (ppmv)	24SVE5	24SVE5A	24SVE9	24SVE9A	24SVE11	24SVE11A		
12/6/96	10:00	-	250	55	-	100	258	0.75	0.65	0.65	0.55	0.55	0.55		
12/6/96	10:30	-	165	40	-	100	255	1.00	0.80	0.60	0.55	0.55	0.55		
12/6/96	11:30	-	85	30	-	100	245	0.75	0.70	0.50	0.50	0.50	0.50		
Distance From Extraction Well (ft)								158	158	238	238	300	300		

EXPLANATION

- 313 — BUILDING OR PAD
- STREAMS OR WASH
- IMPROVED ROADS
- RAILROAD
- PHASE II UNIT BOUNDARY
- FENCE
- BASE BOUNDARY

APPROXIMATE SAMPLING LOCATIONS

- 24SVE1 — PHASE II SOIL VAPOR EXTRACTION WELL
- PROPOSED SOIL VAPOR EXTRACTION WELLS

TCE SOIL GAS CONCENTRATIONS

- 1.0 TO 5.0 ug/L
- 6.0 TO 60.0 ug/L
- 50.0 TO 500.0 ug/L
- GREATER THAN 500.0 ug/L
- ESTIMATED RADIUS OF INFLUENCE BASED ON LIMITED DATA AND SIMPLIFIED PORTRAYAL OF SUBSURFACE CONDITION

GRAPHIC SCALE

500 0 250 500

(IN FEET)

REVISIONS			
REV No.	DESCRIPTION	DATE	APPROVED

CONTRACT NAME	SWDIV
DRAWN BY	J. VASQUEZ
DATE	01/29/97
CHECKED BY	
DATE	
APPROVED BY	
DATE	
PROJECT MANAGER	
DATE	
AUTOCAD FILE No.	18793007.DWG
SCALE	1"=500'
SHEET	1
OF	1
DOCUMENT CONTROL No.	
OHM PROJECT No.	18793
DRAWING No.	FIG 1

OHM Remediation Services Corp.
A Subsidiary of OHM Corporation
SAN DIEGO, CA

SOIL VAPOR EXTRACTION WELL LOCATIONS DEEP SOIL GAS HORIZON (70-100 FT. DEEP)

MCAS
EL TORO, CALIFORNIA

RO 00:56:2 1/29/97 10:28:26 K:\PROJECTS\18793\18793007

EXPLANATION

- 313 — BUILDING OR PAD
- STREAMS OR WASH
- IMPROVED ROADS
- RAILROAD
- PHASE II UNIT BOUNDARY
- FENCE
- BASE BOUNDARY

APPROXIMATE SAMPLING LOCATIONS

- 24SVE1A — PHASE II SOIL VAPOR EXTRACTION WELL
- PROPOSED SOIL VAPOR EXTRACTION WELLS

TCE SOIL GAS CONCENTRATIONS

- 10 TO 50 ug/L
- 50 TO 500 ug/L
- 500 TO 5000 ug/L
- GREATER THAN 5000 ug/L

ESTIMATED RADIUS OF INFLUENCE BASED ON LIMITED DATA AND SIMPLIFIED PORTRAYAL OF SUBSURFACE CONDITION.

GRAPHIC SCALE

500 0 250 500

(IN FEET)

REVISIONS			
REV No.	DESCRIPTION	DATE	APPROVED

CONTRACT NAME	SWDIV
DRAWN BY	J. VASQUEZ — DATE 01/29/97
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT MANAGER	DATE
AUTOCAD FILE No.	18793006.DWG

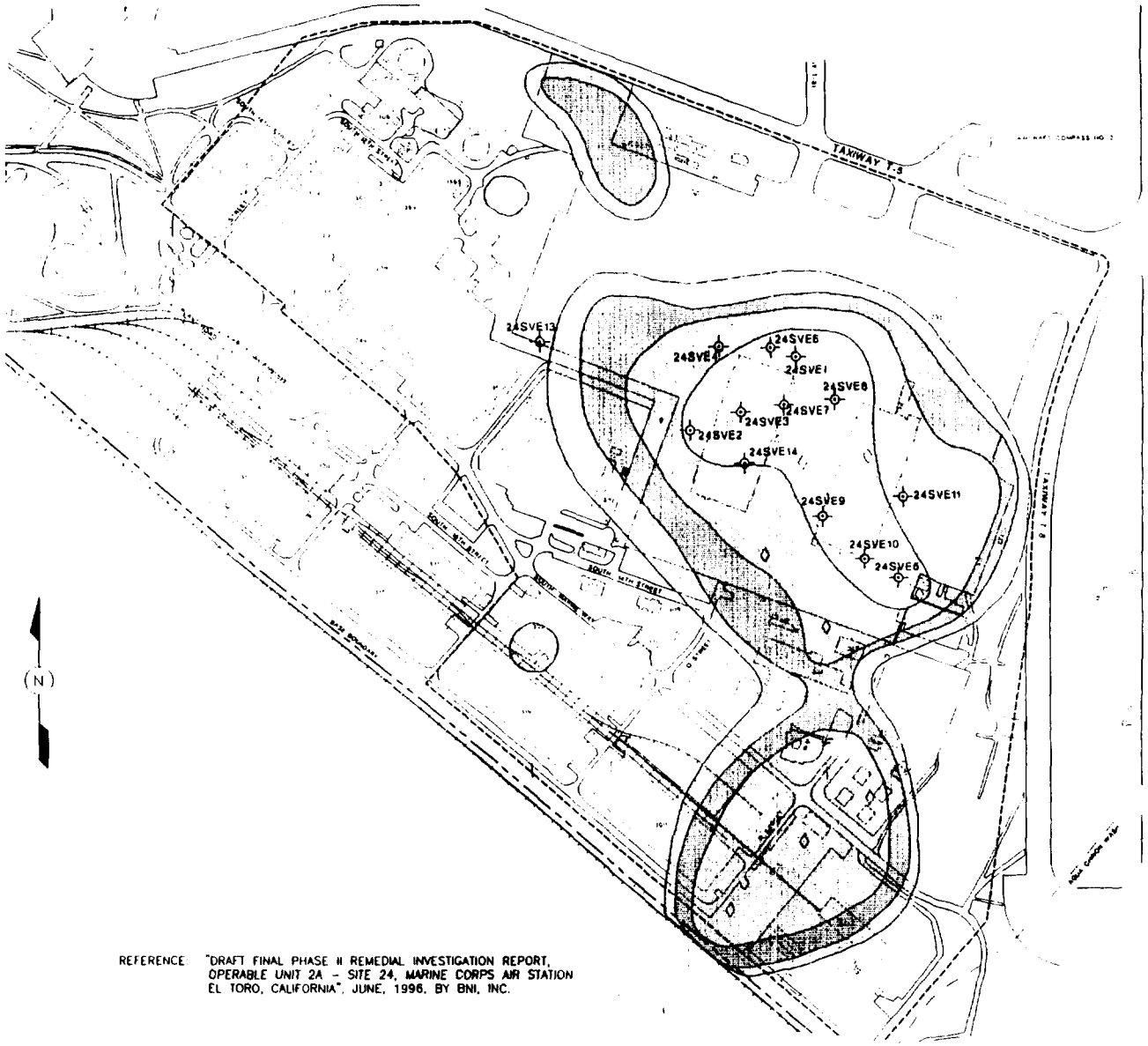
OHM Remediation Services Corp.
A Subsidiary of OHM Corporation
SAN DIEGO, CA

SOIL VAPOR EXTRACTION WELL LOCATIONS INTERMEDIATE SOIL GAS HORIZON (40-70 FT. DEEP)

MCAS
EL TORO, CALIFORNIA

SCALE	SHEET	OF	DOCUMENT CONTROL No.	OHM PROJECT No.	DRAWING No.
1"=500'	1	1		18793	FIG 2

RO 01:54:57 1/29/97 9:50:21 K:\PROJECTS\18793\18793006



REFERENCE: "DRAFT FINAL PHASE II REMEDIAL INVESTIGATION REPORT, OPERABLE UNIT 2A - SITE 24, MARINE CORPS AIR STATION EL TORO, CALIFORNIA", JUNE, 1996, BY BNI, INC.

LEGEND

- BUILDING OR PAD
- STREAMS OR WASH
- IMPROVED ROADS
- RAILROAD
- PHASE II UNIT BOUNDARY
- FENCE
- BASE BOUNDARY

APPROXIMATE SAMPLING LOCATIONS

- 24SVE1 — PHASE II SOIL VAPOR EXTRACTION WELL
- PROPOSED SOIL VAPOR EXTRACTION WELLS

TCE SOIL GAS CONCENTRATIONS

- 1.0 TO 8.0 µg/L
- 8.0 TO 50.0 µg/L
- 50.0 TO 500.0 µg/L
- GREATER THAN 500.0 µg/L

GRAPHIC SCALE

450 0 225 450

(IN FEET)

PROJECT: SWDIV				OHM Remediation Services Corp. A Subsidiary of OHM Corporation IRVINE, CA		
DRAWN BY: B. COHEN	DATE: 10/10/96			SOIL VAPOR EXTRACTION WELL LOCATIONS AND DEEP SOIL GAS PLUME (70-100 FEET DEEP)		
CHECKED BY:	DATE: 10/11/96					
APPROVED BY:	DATE:					
PROJECT MANAGER:	DATE: 10/11/96			SITE 24		
AUTOCAD FILE NO.: D DAVE1.DWG				MCAS EL TORO, CALIFORNIA		
SCALE: NONE	SHEET: 1	OF: 1	DOCUMENT CONTROL No.: SW2362	OHM PROJECT No.: 18793	DRAWING No.: FIG 2-2	REVISION: A

RO 1:2:16:36 10/10/96 14:22:48 C:\PROJECTS\18793\D.DAVE1

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 1	AMBIENT	10/23/96	ACETONE	0.027	11
24SVE 1	AMBIENT	10/23/96	TOLUENE	0.020	5.4
24SVE 1	15 MIN - INF	10/23/96	1,1-DICHLOROETHENE	110	27000
24SVE 1	15 MIN - INF	10/23/96	TRICHLOROETHENE	990	180000
24SVE 1	30 MIN - INF	10/23/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	17	2200
24SVE 1	30 MIN - INF	10/23/96	1,1-DICHLOROETHENE	120	30000
24SVE 1	30 MIN - INF	10/23/96	TRICHLOROETHENE	910	170000
24SVE 1	60 MIN - INF	10/23/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	16	2100
24SVE 1	60 MIN - INF	10/23/96	1,1-DICHLOROETHENE	120	29000
24SVE 1	60 MIN - INF	10/23/96	TRICHLOROETHENE	1000	190000
24SVE 1	4 HR - EFF	10/23/96	TOLUENE	0.0093	2.5
24SVE 1	4 HR - EFF	10/23/96	XYLENES (TOTAL)	0.014	3.2
24SVE 1	4 HR - INF	10/23/96	1,1-DICHLOROETHENE	40	10000
24SVE 1	4 HR - INF	10/23/96	TRICHLOROETHENE	340	63000
24SVE 1	4 HR - MID PT	10/23/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.068	8.9
24SVE 1	4 HR - MID PT	10/23/96	1,1-DICHLOROETHENE	0.51	120
24SVE 1	4 HR - MID PT	10/23/96	1,1-DICHLOROETHENE	0.48	130
24SVE 1	4 HR - MID PT	10/23/96	ETHYLBENZENE	0.059	14
24SVE 1	4 HR - MID PT	10/23/96	ETHYLBENZENE	0.050	11
24SVE 1	4 HR - MID PT	10/23/96	TOLUENE	0.16	42
24SVE 1	4 HR - MID PT	10/23/96	TOLUENE	0.15	39
24SVE 1	4 HR - MID PT	10/23/96	TRICHLOROETHENE	4.5	840
24SVE 1	4 HR - MID PT	10/23/96	TRICHLOROETHENE	4.5	840
24SVE 1	4 HR - MID PT	10/23/96	XYLENES (TOTAL)	0.42	110
24SVE 1	4 HR - MID PT	10/23/96	XYLENES (TOTAL)	0.48	96
24SVE 2	15 MIN - INF	10/11/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	28	3200
24SVE 2	15 MIN - INF	10/11/96	1,1-DICHLOROETHENE	950	140000
24SVE 2	15 MIN - INF	10/11/96	TETRACHLOROETHENE	6.2	910
24SVE 2	15 MIN - INF	10/11/96	TRICHLOROETHENE	280	40000
24SVE 2	30 MIN - INF	10/11/96	TRICHLOROETHENE	5.5	980
24SVE 2	60 MIN - INF	10/11/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	16	2100
24SVE 2	60 MIN - INF	10/11/96	1,1-DICHLOROETHENE	58	7400
24SVE 2	60 MIN - INF	10/11/96	TETRACHLOROETHENE	4.1	600
24SVE 2	60 MIN - INF	10/11/96	TRICHLOROETHENE	190	28000
24SVE 2	4 HR - EFF	10/11/96	TOLUENE	0.0083	22
24SVE 2	4 HR - INF	10/11/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	17	2200
24SVE 2	4 HR - INF	10/11/96	1,1-DICHLOROETHENE	55	8400
24SVE 2	4 HR - INF	10/11/96	TETRACHLOROETHENE	4.8	710
24SVE 2	4 HR - INF	10/11/96	TRICHLOROETHENE	200	31000
24SVE 2	4 HR - MID PT	10/11/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.018	2.3
24SVE 2	4 HR - MID PT	10/11/96	1,1-DICHLOROETHENE	0.048	12
24SVE 2	4 HR - MID PT	10/11/96	TOLUENE	0.011	29

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 2	4 HR - MID PT	11/11/96	TRICHLOROETHENE	0.24	45
24SVE 2	4 HR - MID PT	11/11/96	XYLENES (TOTAL)	0.043	9.8
24SVE 2	AMBIENT	11/11/96	ACETONE	0.030	13
24SVE 2	AMBIENT	11/11/96	TOLUENE	0.018	4.8
24SVE 2	AMBIENT	11/11/96	XYLENES (TOTAL)	0.011	2.5
24SVE 2A	15 MIN - INF	11/13/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	10	1300
24SVE 2A	15 MIN - INF	11/13/96	1,1-DICHLOROETHANE	0.36	89
24SVE 2A	15 MIN - INF	11/13/96	1,1-DICHLOROETHENE	55	14000
24SVE 2A	15 MIN - INF	11/13/96	CARBON TETRACHLORIDE	1.9	310
24SVE 2A	15 MIN - INF	11/13/96	CHLOROFORM	0.26	54
24SVE 2A	15 MIN - INF	11/13/96	TETRACHLOROETHENE	6.4	950
24SVE 2A	15 MIN - INF	11/13/96	TRICHLOROETHENE	150	28000
24SVE 2A	30 MIN - INF	11/13/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.9	1300
24SVE 2A	30 MIN - INF	11/13/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.6	1300
24SVE 2A	30 MIN - INF	11/13/96	1,1-DICHLOROETHENE	59	15000
24SVE 2A	30 MIN - INF	11/13/96	1,1-DICHLOROETHENE	59	15000
24SVE 2A	30 MIN - INF	11/13/96	TETRACHLOROETHENE	4.5	660
24SVE 2A	30 MIN - INF	11/13/96	TETRACHLOROETHENE	6.1	900
24SVE 2A	30 MIN - INF	11/13/96	TRICHLOROETHENE	180	30000
24SVE 2A	30 MIN - INF	11/13/96	TRICHLOROETHENE	160	34000
24SVE 2A	60 MIN - INF	11/13/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	7.5	990
24SVE 2A	60 MIN - INF	11/13/96	1,1-DICHLOROETHENE	45	11000
24SVE 2A	60 MIN - INF	11/13/96	TETRACHLOROETHENE	3.5	520
24SVE 2A	60 MIN - INF	11/13/96	TRICHLOROETHENE	120	23000
24SVE 2A	4 HR - INF	11/13/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	9.1	1200
24SVE 2A	4 HR - INF	11/13/96	1,1-DICHLOROETHENE	51	13000
24SVE 2A	4 HR - INF	11/13/96	TETRACHLOROETHENE	4.4	640
24SVE 2A	4 HR - INF	11/13/96	TRICHLOROETHENE	150	28000
24SVE 2A	4 HR - MID PT	11/13/96	1,1-DICHLOROETHENE	0.079	20
24SVE 2A	4 HR - MID PT	11/13/96	ACETONE	0.031	13
24SVE 2A	4 HR - MID PT	11/13/96	TOLUENE	0.018	4.8
24SVE 2A	4 HR - MID PT	11/13/96	TRICHLOROETHENE	0.24	45
24SVE 2A	4 HR - MID PT	11/13/96	XYLENES (TOTAL)	0.037	8.5
24SVE 2A	AMBIENT	11/13/96	ACETONE	0.026	11
24SVE 2A	AMBIENT	11/13/96	TOLUENE	0.016	4.3
24SVE 3	15 MIN - INF	11/04/96	1,1-DICHLOROETHENE	19	4700
24SVE 3	15 MIN - INF	11/04/96	TRICHLOROETHENE	310	59000
24SVE 3	30 MIN - INF	11/04/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	16	2100
24SVE 3	30 MIN - INF	11/04/96	1,1-DICHLOROETHENE	54	14000
24SVE 3	30 MIN - INF	11/04/96	TETRACHLOROETHENE	17	2500
24SVE 3	30 MIN - INF	11/04/96	TRICHLOROETHENE	840	160000
24SVE 3	60 MIN - INF	11/04/96	1,1-DICHLOROETHENE	36	9100
24SVE 3	60 MIN - INF	11/04/96	TETRACHLOROETHENE	10	1500

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 3	60 MIN - INF	11/04/96	TRICHLOROETHENE	580	110000
24SVE 3	4 HR - EFF	11/04/96	TRICHLOROETHENE	0.21	40
24SVE 3	4 HR - INF	11/04/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	17	2200
24SVE 3	4 HR - INF	11/04/96	1,1-DICHLOROETHENE	77	19000
24SVE 3	4 HR - INF	11/04/96	TETRACHLOROETHENE	19	2900
24SVE 3	4 HR - INF	11/04/96	TRICHLOROETHENE	1100	210000
24SVE 3	4 HR - MID PT	11/04/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.017	2.2
24SVE 3	4 HR - MID PT	11/04/96	1,1-DICHLOROETHENE	0.048	12
24SVE 3	4 HR - MID PT	11/04/96	1,1-DICHLOROETHENE	0.067	17
24SVE 3	4 HR - MID PT	11/04/96	TETRACHLOROETHENE	0.016	2.4
24SVE 3	4 HR - MID PT	11/04/96	TETRACHLOROETHENE	0.015	2.2
24SVE 3	4 HR - MID PT	11/04/96	TOLUENE	0.012	3.1
24SVE 3	4 HR - MID PT	11/04/96	TOLUENE	0.0095	2.5
24SVE 3	4 HR - MID PT	11/04/96	TRICHLOROETHENE	1.0	190
24SVE 3	4 HR - MID PT	11/04/96	TRICHLOROETHENE	0.77	140
24SVE 3	4 HR - MID PT	11/04/96	XYLENES (TOTAL)	0.031	7.3
24SVE 3	4 HR - MID PT	11/04/96	XYLENES (TOTAL)	0.015	3.4
24SVE 3A	15 MIN - INF	11/05/96	1,1-DICHLOROETHENE	9.1	2300
24SVE 3A	15 MIN - INF	11/05/96	TETRACHLOROETHENE	2.7	390
24SVE 3A	15 MIN - INF	11/05/96	TRICHLOROETHENE	150	28000
24SVE 3A	30 MIN - INF	11/05/96	1,1-DICHLOROETHENE	9.7	2500
24SVE 3A	30 MIN - INF	11/05/96	TRICHLOROETHENE	160	29000
24SVE 3A	60 MIN - INF	11/05/96	1,1-DICHLOROETHENE	8.2	2100
24SVE 3A	60 MIN - INF	11/05/96	TRICHLOROETHENE	140	26000
24SVE 3A	4 HR - INF	11/05/96	1,1-DICHLOROETHENE	7.5	1900
24SVE 3A	4 HR - INF	11/05/96	TRICHLOROETHENE	130	25000
24SVE 3A	4 HR - MID PT	11/05/96	TOLUENE	0.0082	2.2
24SVE 3A	4 HR - MID PT	11/05/96	TRICHLOROETHENE	0.13	25
24SVE 3A	4 HR - MID PT	11/05/96	TRICHLOROETHENE	0.13	25
24SVE 3A	4 HR - MID PT	11/05/96	XYLENES (TOTAL)	0.013	3.1
24SVE 3A	4 HR - MID PT	11/05/96	XYLENES (TOTAL)	0.014	3.2
24SVE 4	15 MIN - INF	11/14/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	25	3300
24SVE 4	15 MIN - INF	11/14/96	1,1-DICHLOROETHENE	21	5300
24SVE 4	15 MIN - INF	11/14/96	TETRACHLOROETHENE	4.5	670
24SVE 4	15 MIN - INF	11/14/96	TRICHLOROETHENE	260	48000
24SVE 4	30 MIN - INF	11/14/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	37	4800
24SVE 4	30 MIN - INF	11/14/96	1,1-DICHLOROETHENE	32	8000
24SVE 4	30 MIN - INF	11/14/96	TETRACHLOROETHENE	6.5	960
24SVE 4	30 MIN - INF	11/14/96	TRICHLOROETHENE	380	71000
24SVE 4	60 MIN - INF	11/14/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	34	4500
24SVE 4	60 MIN - INF	11/14/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	32	4200
24SVE 4	60 MIN - INF	11/14/96	1,1-DICHLOROETHENE	31	7800
24SVE 4	60 MIN - INF	11/14/96	1,1-DICHLOROETHENE	29	7200

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 4	60 MIN - INF	11/14/96	TETRACHLOROETHENE	6.3	940
24SVE 4	60 MIN - INF	11/14/96	TRICHLOROETHENE	370	70000
24SVE 4	60 MIN - INF	11/14/96	TRICHLOROETHENE	340	64000
24SVE 4	4 HR - INF	11/14/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	29	3800
24SVE 4	4 HR - INF	11/14/96	1,1-DICHLOROETHENE	26	6600
24SVE 4	4 HR - INF	11/14/96	TRICHLOROETHENE	280	52000
24SVE 4	4 HR - MID PT	11/14/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.022	2.8
24SVE 4	4 HR - MID PT	11/14/96	1,1-DICHLOROETHENE	0.024	6.0
24SVE 4	4 HR - MID PT	11/14/96	TRICHLOROETHENE	0.25	46
24SVE 4	4 HR - MID PT	11/14/96	XYLENES (TOTAL)	0.010	2.4
24SVE 5	15 MIN - INF	11/18/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	740	97000
24SVE 5	15 MIN - INF	11/18/96	1,1-DICHLOROETHENE	4.6	1200
24SVE 5	15 MIN - INF	11/18/96	TRICHLOROETHENE	340	64000
24SVE 5	30 MIN - INF	11/18/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	670	87000
24SVE 5	30 MIN - INF	11/18/96	1,1-DICHLOROETHENE	6.6	1700
24SVE 5	30 MIN - INF	11/18/96	TRICHLOROETHENE	340	63000
24SVE 5	60 MIN - INF	11/18/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	580	76000
24SVE 5	60 MIN - INF	11/18/96	1,1-DICHLOROETHENE	3.9	980
24SVE 5	60 MIN - INF	11/18/96	TRICHLOROETHENE	290	53000
24SVE 5	4 HR - INF	11/18/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	400	53000
24SVE 5	4 HR - INF	11/18/96	TRICHLOROETHENE	220	41000
24SVE 5	4 HR - MID PT	11/18/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.47	62
24SVE 5	4 HR - MID PT	11/18/96	TOLUENE	0.010	2.7
24SVE 5	4 HR - MID PT	11/18/96	TRICHLOROETHENE	0.17	32
24SVE 5	4 HR - MID PT	11/18/96	XYLENES (TOTAL)	0.0094	2.2
24SVE 5	AMBIENT	11/18/96	TOLUENE	0.0081	2.2
24SVE 5	AMBIENT	11/18/96	TRICHLOROETHENE	0.031	5.7
24SVE 5A	15 MIN - INF	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	720	94000
24SVE 5A	15 MIN - INF	11/20/96	1,1-DICHLOROETHENE	8.9	2300
24SVE 5A	15 MIN - INF	11/20/96	TRICHLOROETHENE	270	68000
24SVE 5A	30 MIN - INF	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	850	110000
24SVE 5A	30 MIN - INF	11/20/96	1,1-DICHLOROETHENE	8.5	2100
24SVE 5A	30 MIN - INF	11/20/96	TRICHLOROETHENE	370	68000
24SVE 5A	60 MIN - INF	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	770	100000
24SVE 5A	60 MIN - INF	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	750	99000
24SVE 5A	60 MIN - INF	11/20/96	1,1-DICHLOROETHENE	9.9	2500
24SVE 5A	60 MIN - INF	11/20/96	1,1-DICHLOROETHENE	12	3000
24SVE 5A	60 MIN - INF	11/20/96	TRICHLOROETHENE	300	56000
24SVE 5A	60 MIN - INF	11/20/96	TRICHLOROETHENE	370	69000

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 5A	4 HR - EFF	11/20/96	TRICHLOROETHENE	0.21	38
24SVE 5A	4 HR - INF	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	950	120000
24SVE 5A	4 HR - INF	11/20/96	1,1-DICHLOROETHENE	13	3200
24SVE 5A	4 HR - INF	11/20/96	TRICHLOROETHENE	360	68000
24SVE 5A	4 HR - MID PT	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.72	100
24SVE 5A	4 HR - MID PT	11/20/96	1,1-DICHLOROETHENE	0.012	2.7
24SVE 5A	4 HR - MID PT	11/20/96	TOLUENE	0.023	2.5
24SVE 5A	4 HR - MID PT	11/20/96	TRICHLOROETHENE	0.37	70
24SVE 5A	4 HR - MID PT	11/20/96	XYLENES (TOTAL)	0.012	2.8
24SVE 5A	AMBIENT	11/20/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.23	31
24SVE 5A	AMBIENT	11/20/96	TOLUENE	0.012	3.2
24SVE 5A	AMBIENT	11/20/96	TRICHLOROETHENE	0.021	4.0
24SVE 6	15 MIN - INF	11/08/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	13	1700
24SVE 6	15 MIN - INF	11/08/96	1,1-DICHLOROETHENE	38	9500
24SVE 6	15 MIN - INF	11/08/96	TRICHLOROETHENE	380	72000
24SVE 6	30 MIN - INF	11/08/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	15	1900
24SVE 6	30 MIN - INF	11/08/96	1,1-DICHLOROETHENE	42	11000
24SVE 6	30 MIN - INF	11/08/96	TRICHLOROETHENE	430	80000
24SVE 6	60 MIN - INF	11/08/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	13	1700
24SVE 6	60 MIN - INF	11/08/96	1,1-DICHLOROETHENE	38	9500
24SVE 6	60 MIN - INF	11/08/96	TRICHLOROETHENE	400	75000
24SVE 6	4 HR - EFF	11/08/96	TRICHLOROETHENE	0.29	54
24SVE 6	4 HR - INF	11/08/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	12	1500
24SVE 6	4 HR - INF	11/08/96	1,1-DICHLOROETHENE	40	10000
24SVE 6	4 HR - INF	11/08/96	TRICHLOROETHENE	440	83000
24SVE 6	4 HR - MID PT	11/08/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.064	7.8
24SVE 6	4 HR - MID PT	11/08/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.060	8.4
24SVE 6	4 HR - MID PT	11/08/96	1,1-DICHLOROETHENE	0.20	51
24SVE 6	4 HR - MID PT	11/08/96	1,1-DICHLOROETHENE	0.19	48
24SVE 6	4 HR - MID PT	11/08/96	TETRACHLOROETHENE	0.019	2.7
24SVE 6	4 HR - MID PT	11/08/96	TETRACHLOROETHENE	0.015	2.2
24SVE 6	4 HR - MID PT	11/08/96	TOLUENE	0.013	3.5
24SVE 6	4 HR - MID PT	11/08/96	TOLUENE	0.011	2.9
24SVE 6	4 HR - MID PT	11/08/96	TRICHLOROETHENE	2.3	420
24SVE 6	4 HR - MID PT	11/08/96	TRICHLOROETHENE	2.1	400
24SVE 6	4 HR - MID PT	11/08/96	XYLENES (TOTAL)	0.043	10
24SVE 6	4 HR - MID PT	11/08/96	XYLENES (TOTAL)	0.040	9.3
24SVE 6	AMBIENT	11/08/96	4-ETHYLTOLUENE	0.099	2.0
24SVE 6	AMBIENT	11/08/96	TOLUENE	0.013	3.5
24SVE 6	AMBIENT	11/08/96	TRICHLOROETHENE	0.32	60

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 6	AMBIENT	11/08/96	XYLENES (TOTAL)	0.015	3.5
24SVE 7	15 MIN - EFF	10/31/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	53	690
24SVE 7	15 MIN - INF	10/31/96	1,1-DICHLOROETHENE	17	4100
24SVE 7	15 MIN - INF	10/31/96	TETRACHLOROETHENE	41	600
24SVE 7	15 MIN - INF	10/31/96	TRICHLOROETHENE	200	37000
24SVE 7	30 MIN - INF	10/31/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	52	700
24SVE 7	30 MIN - INF	10/31/96	1,1-DICHLOROETHENE	17	4400
24SVE 7	30 MIN - INF	10/31/96	TETRACHLOROETHENE	45	520
24SVE 7	30 MIN - INF	10/31/96	TRICHLOROETHENE	1200	37000
24SVE 7	60 MIN - INF	10/31/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	23	300
24SVE 7	60 MIN - INF	10/31/96	1,1-DICHLOROETHENE	23	1800
24SVE 7	60 MIN - INF	10/31/96	TETRACHLOROETHENE	1.74	250
24SVE 7	60 MIN - INF	10/31/96	TRICHLOROETHENE	94	18000
24SVE 7	4 HR - EFF	10/31/96	TRICHLOROETHENE	0.033	6.2
24SVE 7	4 HR - EFF	10/31/96	XYLENES (TOTAL)	0.0096	2.2
24SVE 7	4 HR - INF	10/31/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.1	140
24SVE 7	4 HR - INF	10/31/96	1,1-DICHLOROETHENE	1.9	390
24SVE 7	4 HR - INF	10/31/96	TETRACHLOROETHENE	0.95	140
24SVE 7	4 HR - INF	10/31/96	TRICHLOROETHENE	54	10000
24SVE 7	4 HR - MID FT	10/31/96	ETHYLBENZENE	0.0092	2.1
24SVE 7	4 HR - MID FT	10/31/96	TOLUENE	0.011	3.0
24SVE 7	4 HR - MID FT	10/31/96	TRICHLOROETHENE	0.034	6.3
24SVE 7	4 HR - MID FT	10/31/96	TRICHLOROETHENE	0.047	8.7
24SVE 7	4 HR - MID FT	10/31/96	XYLENES (TOTAL)	0.020	4.6
24SVE 7	4 HR - MID FT	10/31/96	XYLENES (TOTAL)	0.033	7.7
24SVE 7	AMBIENT	10/31/96	TOLUENE	0.0076	2.0
24SVE 7A	15 MIN - INF	11/01/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.45	59
24SVE 7A	15 MIN - INF	11/01/96	1,1-DICHLOROETHENE	1.7	430
24SVE 7A	15 MIN - INF	11/01/96	TETRACHLOROETHENE	0.53	78
24SVE 7A	15 MIN - INF	11/01/96	TRICHLOROETHENE	24	4400
24SVE 7A	30 MIN - INF	11/01/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.47	61
24SVE 7A	30 MIN - INF	11/01/96	1,1-DICHLOROETHENE	1.8	460
24SVE 7A	30 MIN - INF	11/01/96	TETRACHLOROETHENE	0.50	74
24SVE 7A	30 MIN - INF	11/01/96	TRICHLOROETHENE	24	4500
24SVE 7A	60 MIN - INF	11/01/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.39	52
24SVE 7A	60 MIN - INF	11/01/96	1,1-DICHLOROETHENE	1.5	380
24SVE 7A	60 MIN - INF	11/01/96	TETRACHLOROETHENE	0.42	63
24SVE 7A	60 MIN - INF	11/01/96	TRICHLOROETHENE	20	3800
24SVE 7A	4 HR - EFF	11/01/96	TOLUENE	0.0087	2.3
24SVE 7A	4 HR - EFF	11/01/96	XYLENES (TOTAL)	0.011	2.4
24SVE 7A	4 HR - INF	11/01/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.60	78

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 7A	4 HR - INF	11/01/96	1,1-DICHLOROETHENE	2.2	570
24SVE 7A	4 HR - INF	11/01/96	TETRACHLOROETHENE	0.59	87
24SVE 7A	4 HR - INF	11/01/96	TRICHLOROETHENE	30	5600
24SVE 7A	4 HR - MID PT	11/01/96	TOLUENE	0.018	4.7
24SVE 7A	4 HR - MID PT	11/01/96	TOLUENE	0.013	3.5
24SVE 7A	4 HR - MID PT	11/01/96	TRICHLOROETHENE	0.013	2.4
24SVE 7A	4 HR - MID PT	11/01/96	TRICHLOROETHENE	0.030	5.6
24SVE 7A	4 HR - MID PT	11/01/96	XYLENES (TOTAL)	0.053	12
24SVE 7A	4 HR - MID PT	11/01/96	XYLENES (TOTAL)	0.044	10
24SVE 7A	AMBIENT	11/01/96	BENZENE	0.0074	2.3
24SVE 7A	AMBIENT	11/01/96	TOLUENE	0.023	6.1
24SVE 7A	AMBIENT	11/01/96	XYLENES (TOTAL)	0.013	2.9
24SVE 8	15 MIN - INF	10/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.1	150
24SVE 8	15 MIN - INF	10/25/96	1,1-DICHLOROETHENE	13	3200
24SVE 8	15 MIN - INF	10/25/96	TRICHLOROETHENE	45	8500
24SVE 8	30 MIN - INF	10/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.3	170
24SVE 8	30 MIN - INF	10/25/96	1,1-DICHLOROETHENE	22	5900
24SVE 8	30 MIN - INF	10/25/96	TRICHLOROETHENE	49	9100
24SVE 8	60 MIN - INF	10/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2.9	380
24SVE 8	60 MIN - INF	10/25/96	1,1-DICHLOROETHENE	30	7500
24SVE 8	60 MIN - INF	10/25/96	TRICHLOROETHENE	110	20000
24SVE 8	4 HR - INF	10/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	23	300
24SVE 8	4 HR - INF	10/25/96	1,1-DICHLOROETHENE	28	7200
24SVE 8	4 HR - INF	10/25/96	TRICHLOROETHENE	100	19000
24SVE 8	4 HR - MID PT	10/25/96	1,1-DICHLOROETHENE	0.025	6.4
24SVE 8	4 HR - MID PT	10/25/96	1,1-DICHLOROETHENE	0.024	6.1
24SVE 8	4 HR - MID PT	10/25/96	ETHYLBENZENE	0.0096	2.2
24SVE 8	4 HR - MID PT	10/25/96	TOLUENE	0.024	6.4
24SVE 8	4 HR - MID PT	10/25/96	TOLUENE	0.025	6.7
24SVE 8	4 HR - MID PT	10/25/96	TRICHLOROETHENE	0.10	19
24SVE 8	4 HR - MID PT	10/25/96	TRICHLOROETHENE	0.10	19
24SVE 8	4 HR - MID PT	10/25/96	XYLENES (TOTAL)	0.071	16
24SVE 8	4 HR - MID PT	10/25/96	XYLENES (TOTAL)	0.076	18
24SVE 8A	15 MIN - INF	10/24/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3.1	410
24SVE 8A	15 MIN - INF	10/24/96	1,1-DICHLOROETHENE	55	14000
24SVE 8A	15 MIN - INF	10/24/96	TRICHLOROETHENE	150	28000
24SVE 8A	30 MIN - INF	10/24/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.4	180
24SVE 8A	30 MIN - INF	10/24/96	1,1-DICHLOROETHENE	24	6100
24SVE 8A	30 MIN - INF	10/24/96	TRICHLOROETHENE	69	13000
24SVE 8A	60 MIN - INF	10/24/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.0	130
24SVE 8A	60 MIN - INF	10/24/96	1,1-DICHLOROETHENE	18	4500
24SVE 8A	60 MIN - INF	10/24/96	TRICHLOROETHENE	49	9100

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 8A	4 HR - INF	10/24/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.97	130
24SVE 8A	4 HR - INF	10/24/96	1,1-DICHLOROETHENE	16	4100
24SVE 8A	4 HR - INF	10/24/96	TRICHLOROETHENE	45	8300
24SVE 8A	4 HR - MID PT	10/24/96	1,1-DICHLOROETHENE	0.055	14
24SVE 8A	4 HR - MID PT	10/24/96	1,1-DICHLOROETHENE	0.052	13
24SVE 8A	4 HR - MID PT	10/24/96	ETHYLBENZENE	0.018	2.0
24SVE 8A	4 HR - MID PT	10/24/96	ETHYLBENZENE	0.015	4.2
24SVE 8A	4 HR - MID PT	10/24/96	TOLUENE	0.042	11
24SVE 8A	4 HR - MID PT	10/24/96	TOLUENE	0.040	11
24SVE 8A	4 HR - MID PT	10/24/96	TRICHLOROETHENE	0.16	29
24SVE 8A	4 HR - MID PT	10/24/96	TRICHLOROETHENE	0.15	29
24SVE 8A	4 HR - MID PT	10/24/96	XYLENES (TOTAL)	0.15	34
24SVE 8A	4 HR - MID PT	10/24/96	XYLENES (TOTAL)	0.12	28
24SVE 8A	AMBIENT	10/24/96	ACETONE	0.025	10
24SVE 8A	AMBIENT	10/24/96	TOLUENE	0.014	3.7
24SVE 9	15 MIN - INF	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2500	340000
24SVE 9	15 MIN - INF	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2600	320000
24SVE 9	15 MIN - INF	11/21/96	TRICHLOROETHENE	580	110000
24SVE 9	15 MIN - INF	11/21/96	TRICHLOROETHENE	580	110000
24SVE 9	30 MIN - INF	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2400	320000
24SVE 9	30 MIN - INF	11/21/96	TRICHLOROETHENE	600	110000
24SVE 9	60 MIN - INF	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2300	300000
24SVE 9	60 MIN - INF	11/21/96	TRICHLOROETHENE	590	110000
24SVE 9	4 HR - EFF	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.064	8.3
24SVE 9	4 HR - EFF	11/21/96	TRICHLOROETHENE	1.1	200
24SVE 9	4 HR - INF	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	2200	290000
24SVE 9	4 HR - INF	11/21/96	TRICHLOROETHENE	550	100000
24SVE 9	4 HR MID PT	11/21/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1.6	200
24SVE 9	4 HR MID PT	11/21/96	TOLUENE	0.0084	22
24SVE 9	4 HR MID PT	11/21/96	TRICHLOROETHENE	0.40	75
24SVE 9	4 HR MID PT	11/21/96	XYLENES (TOTAL)	0.012	27
24SVE 9	AMBIENT	11/21/96	TOLUENE	0.0092	25
24SVE 9A	15 MIN - INF	11/22/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	270	35000
24SVE 9A	15 MIN - INF	11/22/96	TRICHLOROETHENE	31	5900
24SVE 9A	30 MIN - INF	11/22/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	360	46000
24SVE 9A	30 MIN - INF	11/22/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	300	39000
24SVE 9A	30 MIN - INF	11/22/96	TRICHLOROETHENE	41	6700
24SVE 9A	30 MIN - INF	11/22/96	TRICHLOROETHENE	36	7600

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 9A	60 MIN - INF	11/22/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	400	53000
24SVE 9A	60 MIN - INF	11/22/96	1,1-DICHLOROETHENE	1.4	360
24SVE 9A	60 MIN - INF	11/22/96	TRICHLOROETHENE	51	9500
24SVE 9A	4 HR - INF	11/22/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	290	38000
24SVE 9A	4 HR - INF	11/22/96	TRICHLOROETHENE	36	6600
24SVE 9A	4 HR - MID PT	11/22/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.36	46
24SVE 9A	4 HR - MID PT	11/22/96	TRICHLOROETHENE	0.050	9.4
24SVE 10	15 MIN - INF	11/15/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3400	440000
24SVE 10	15 MIN - INF	11/15/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5200	680000
24SVE 10	15 MIN - INF	11/15/96	TRICHLOROETHENE	1400	260000
24SVE 10	15 MIN - INF	11/15/96	TRICHLOROETHENE	1000	190000
24SVE 10	30 MIN - INF	11/15/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5200	680000
24SVE 10	30 MIN - INF	11/15/96	TRICHLOROETHENE	1300	250000
24SVE 10	60 MIN - INF	11/15/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4800	620000
24SVE 10	60 MIN - INF	11/15/96	TRICHLOROETHENE	1300	250000
24SVE 10	4 HR - INF	11/15/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	4700	610000
24SVE 10	4 HR - INF	11/15/96	TRICHLOROETHENE	1400	260000
24SVE 10	4 HR - MID PT	11/15/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	82	11000
24SVE 10	4 HR - MID PT	11/15/96	TRICHLOROETHENE	3.9	520
24SVE 10	4 HR - MID PT	11/15/96	XYLENES (TOTAL)	0.015	3.6
24SVE 11	15 MIN - INF	11/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	320	42000
24SVE 11	15 MIN - INF	11/25/96	TRICHLOROETHENE	330	62000
24SVE 11	30 MIN - INF	11/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	310	40000
24SVE 11	30 MIN - INF	11/25/96	TRICHLOROETHENE	310	58000
24SVE 11	60 MIN - INF	11/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	300	40000
24SVE 11	60 MIN - INF	11/25/96	TRICHLOROETHENE	330	61000
24SVE 11	4 HR - EFF	11/25/96	TRICHLOROETHENE	0.34	48
24SVE 11	4 HR - EFF	11/25/96	TRICHLOROETHENE	0.26	64
24SVE 11	4 HR - INF	11/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	270	35000
24SVE 11	4 HR - INF	11/25/96	ACETONE	6.2	2600
24SVE 11	4 HR - INF	11/25/96	TRICHLOROETHENE	300	56000
24SVE 11	4 HR - MID PT	11/25/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.34	45
24SVE 11	4 HR - MID PT	11/25/96	TOLUENE	0.099	2.6
24SVE 11	4 HR - MID PT	11/25/96	TRICHLOROETHENE	0.25	47
24SVE 11	4 HR - MID PT	11/25/96	XYLENES (TOTAL)	0.017	3.8
24SVE 11	AMBIENT	11/25/96	BENZENE	0.0071	2.2
24SVE 11	AMBIENT	11/25/96	METHYLENE CHLORIDE	0.011	3.3

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

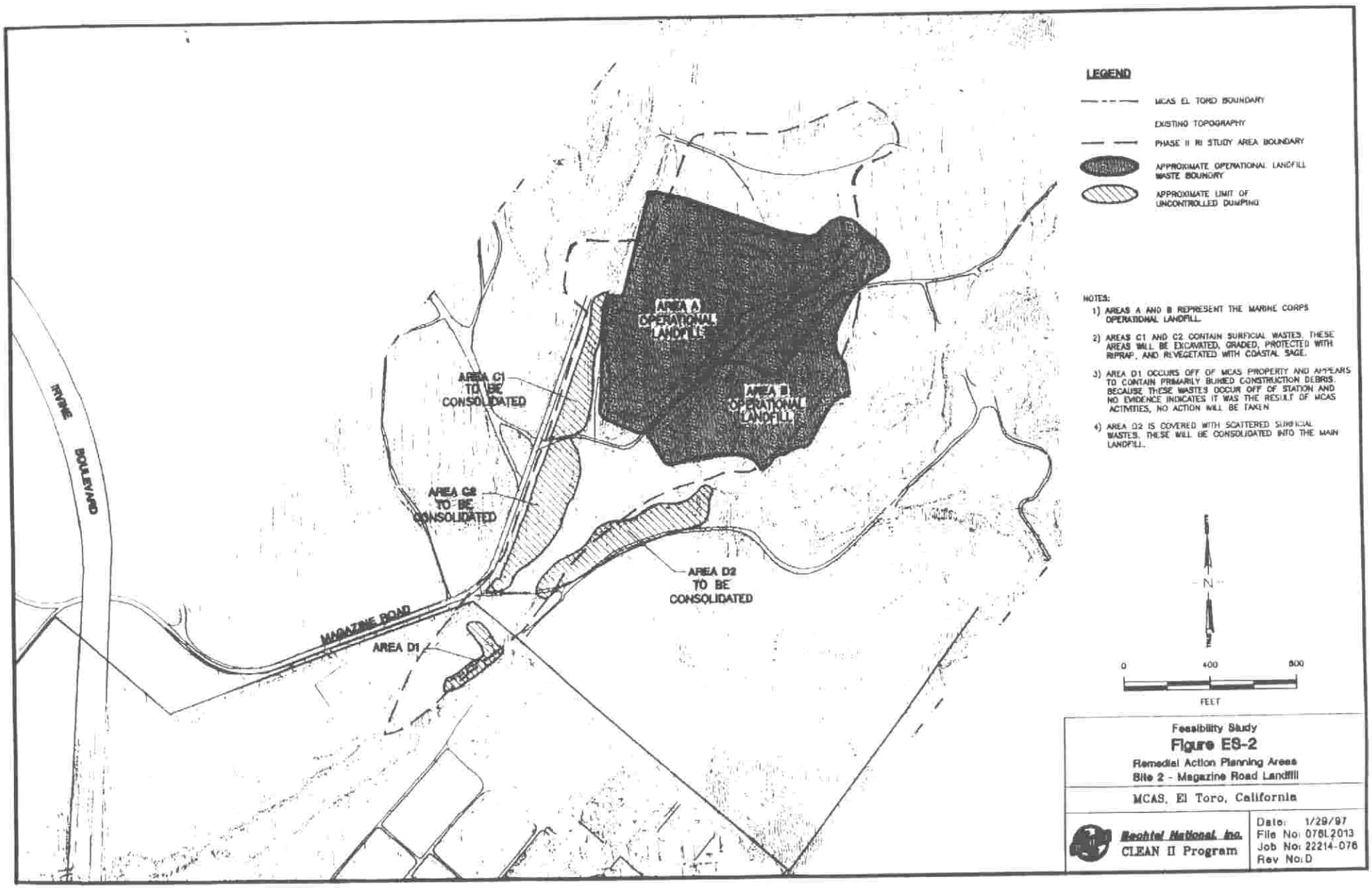
Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 11	AMBIENT	11/25/96	TOLUENE	0.028	7.5
24SVE 11	AMBIENT	11/25/96	XYLENES (TOTAL)	0.017	3.9
24SVE 11A	15 MIN - INF	11/26/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	59	7700
24SVE 11A	15 MIN - INF	11/26/96	TRICHLOROETHENE	89	16000
24SVE 11A	30 MIN - INF	11/26/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	72	9400
24SVE 11A	30 MIN - INF	11/26/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	72	9400
24SVE 11A	30 MIN - INF	11/26/96	TRICHLOROETHENE	110	20000
24SVE 11A	30 MIN - INF	11/26/96	TRICHLOROETHENE	100	19000
24SVE 11A	60 MIN - INF	11/26/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	90	12000
24SVE 11A	60 MIN - INF	11/26/96	TRICHLOROETHENE	120	23000
24SVE 11A	4 HR - INF	11/26/96	TRICHLOROETHENE	0.086	100
24SVE 11A	4 HR - INF	11/26/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.14	19
24SVE 11A	4 HR - INF	11/26/96	TRICHLOROETHENE	0.14	27
24SVE 11A	4 HR - INF	11/26/96	XYLENES (TOTAL)	0.010	2.8
24SVE 11A	4 HR - MID PT	11/26/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	95	12000
24SVE 11A	4 HR - MID PT	11/26/96	1,1-DICHLOROETHENE	0.83	210
24SVE 11A	4 HR - MID PT	11/26/96	BROMODICHLOROMETHANE	0.020	3.0
24SVE 11A	4 HR - MID PT	11/26/96	CARBON TETRACHLORIDE	0.64	100
24SVE 11A	4 HR - MID PT	11/26/96	CHLOROFORM	0.18	37
24SVE 11A	4 HR - MID PT	11/26/96	TETRACHLOROETHENE	0.13	20
24SVE 11A	4 HR - MID PT	11/26/96	TRICHLOROETHENE	150	28000
24SVE 11A	AMBIENT	11/26/96	TOLUENE	0.015	4.0
24SVE 13	15 MIN - INF	11/27/96	TETRACHLOROETHENE	110	16000
24SVE 13	15 MIN - INF	11/27/96	TRICHLOROETHENE	4.2	790
24SVE 13	30 MIN - INF	11/27/96	TETRACHLOROETHENE	130	20000
24SVE 13	30 MIN - INF	11/27/96	TRICHLOROETHENE	5.1	950
24SVE 13	60 MIN - INF	11/27/96	TETRACHLOROETHENE	130	20000
24SVE 13	60 MIN - INF	11/27/96	TRICHLOROETHENE	5.2	970
24SVE 13	4 HR - INF	11/27/96	TETRACHLOROETHENE	140	20000
24SVE 13	4 HR - INF	11/27/96	TETRACHLOROETHENE	120	17000
24SVE 13	4 HR - INF	11/27/96	TRICHLOROETHENE	4.0	740
24SVE 13	4 HR - INF	11/27/96	TRICHLOROETHENE	4.1	760
24SVE 13	4 HR - MID PT	11/27/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.019	2.5
24SVE 13	4 HR - MID PT	11/27/96	TETRACHLOROETHENE	0.088	13
24SVE 13	4 HR - MID PT	11/27/96	TRICHLOROETHENE	0.011	2.1
24SVE 13	AMBIENT	11/27/96	TOLUENE	0.0083	2.2
24SVE 14	15 MIN - INF	11/07/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	55	720
24SVE 14	15 MIN - INF	11/07/96	1,1-DICHLOROETHENE	4.0	1000
24SVE 14	15 MIN - INF	11/07/96	TETRACHLOROETHENE	365	520
24SVE 14	15 MIN - INF	11/07/96	TRICHLOROETHENE	140	25000

Analytical Summary of Vapor Samples
Soil Vapor Extraction Test at Site 24, El Toro MCAS

Extraction Wells	Sampling Location	Sampling Date	Detected Constituents	Concentration (µg/L)	Concentration (ppbv)
24SVE 14	30 MIN - INF	11/07/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5.6	730
24SVE 14	30 MIN - INF	11/07/96	1,1-DICHLOROETHENE	4.6	1200
24SVE 14	30 MIN - INF	11/07/96	TETRACHLOROETHENE	3.5	520
24SVE 14	30 MIN - INF	11/07/96	TRICHLOROETHENE	150	29000
24SVE 14	60 MIN - INF	11/07/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	3	400
24SVE 14	60 MIN - INF	11/07/96	1,1-DICHLOROETHENE	[illegible]	770
24SVE 14	60 MIN - INF	11/07/96	TETRACHLOROETHENE	[illegible]	530
24SVE 14	60 MIN - INF	11/07/96	TRICHLOROETHENE	100	19000
24SVE 14	4 HR - EFF	11/07/96	TOLUENE	0.078	21
24SVE 14	4 HR - INF	11/07/96	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	[illegible]	370
24SVE 14	4 HR - INF	11/07/96	1,1-DICHLOROETHENE	3.3	830
24SVE 14	4 HR - INF	11/07/96	TETRACHLOROETHENE	2.3	340
24SVE 14	4 HR - INF	11/07/96	TRICHLOROETHENE	110	21000
24SVE 14	4 HR - MID PT	11/07/96	STYRENE	0.029	6.8
24SVE 14	4 HR - MID PT	11/07/96	TOLUENE	0.017	4.5
24SVE 14	4 HR - MID PT	11/07/96	TOLUENE	0.016	[illegible]
24SVE 14	4 HR - MID PT	11/07/96	TRICHLOROETHENE	0.21	39
24SVE 14	4 HR - MID PT	11/07/96	TRICHLOROETHENE	0.15	28
24SVE 14	4 HR - MID PT	11/07/96	XYLENES (TOTAL)	0.041	9.4
24SVE 14	4 HR - MID PT	11/07/96	XYLENES (TOTAL)	0.016	3.8

Site 2 - Magazine Road Landfill Boundaries

- Areas A and B will be designated as the operational landfill and considered as IRP Site 2.
- Areas C1, C2, and D2 are considered as areas of unauthorized disposal and will be consolidated at Site 2 as "housekeeping" effort.
- Area D1 is an off-Station area of disposal not related to the Marine Corps activities and will not be considered for remedial action in the draft final FS.
- TCE/PCE groundwater contamination is considered for remediation by natural attentuation with long-term monitoring.
- These issues will be reflected in the draft final RI/FS reports for Site 2.
- The findings of the RI and remedial alternatives in the FS will not change except that Area D1 is the result of off-Station disposal and will not be consolidated in Areas A and B.


LEGEND
MCAS EL TORO BOUNDARY
EXISTING TOPOGRAPHY
PHASE II RI STUDY AREA BOUNDARY
APPROXIMATE OPERATIONAL LANDFILL WASTE BOUNDRY
APPROXIMATE LIMIT OF UNCONTROLLED DUMPING
NOTES:
1) AREAS A AND B REPRESENT THE MARINE CORPS OPERATIONAL LANDFILL.
2) AREAS C1 AND C2 CONTAIN SURFICIAL WASTES. THESE AREAS WILL BE EXCAVATED, GRADED, PROTECTED WITH RIPRAP, AND REVEGETATED WITH COASTAL SAGE.
3) AREA D1 OCCURS OFF OF MCAS PROPERTY AND APPEARS TO CONTAIN PRIMARILY BURIED CONSTRUCTION DEBRIS. BECAUSE THESE WASTES OCCUR OFF OF STATION AND NO EVIDENCE INDICATES IT WAS THE RESULT OF MCAS ACTIVITIES, NO ACTION WILL BE TAKEN
4) AREA D2 IS COVERED WITH SCATTERED SURFICIAL WASTES. THESE WILL BE CONSOLIDATED INTO THE MAIN LANDFILL.
AREA A OPERATIONAL LANDFILL
AREA B OPERATIONAL LANDFILL
AREA C1 TO BE CONSOLIDATED
AREA C2 TO BE CONSOLIDATED
AREA D1
AREA D2 TO BE CONSOLIDATED
MAGAZINE ROAD
IRVINE BOULEVARD
N
0
400
800
FEET
Feasibility Study
Figure ES-2
Remedial Action Planning Areas
Site 2 - Magazine Road Landfill
MCAS, El Toro, California
Bechtel National, Inc.
CLEAN II Program
Date: 1/29/97
File No: 0761.2013
Job No: 22214-076
Rev No: D

Excluding Off-Station Area D1 from Remedial Action Consideration

Site 2 - Magazine Road Landfill

Issue: Area D1 in the draft RI/FS reports is the result of off-station disposal activities and is not apparently the result of Marine Corps activities. Therefore, this area will not be consolidated as part of the landfill remedial action in the draft final FS for Site 2.

Based on:

- Access from MCAS property is restricted by fence at northwest corner of Orange County facility as apparent in 1967, 1971, 1973, 1980, and 1983 air photographs.
- Dumping in D1 appears in 1967, 1971, 1973, 1977, and 1980 photos across from other disturbances on Orange County facility while access to MCAS fenced off.
- Dumping appears as fresh piles on top of D1 and is similar to adjacent fresh piles on the Orange County facility in 1980 air photograph.
- Asphalt and concrete debris in streambed appears deliberately placed on Orange County and The Irvine Company properties in the streambed (1980 color photo) and appears to be construction of possible flood control structure and by 1981 (USGS photo in SAIC report) a dark line (flood control structure) extends across streambed.
- By 1980 operational landfill is closed with some apparent grass/weed growth.
- No CERCLA wastes of significant quantity are present at the property boundary:
  - no soil gas detected in D1 or between D1 and C2
  - Shallow soil sample upstream of MCAS property line had very low SVOC concentration (benzylbutylphthalate 34J µg/kg) (below the soil RBCs)
  - Subsurface soil had very low concentrations of VOCs (acetone, toluene, and methylene chloride), SVOCs (concentrations of 2-7 µg/kg), and metals at depths of 66 to 130 feet in 02NEW1 and 02NEW2 (below RBCs)
  - Subsurface soil in 02NEW7 had very concentrations of SVOCs (butylbenzylphthalate 12J µg/kg and 1-methyl naphthalene 6J µg/kg) at depths of 30.5 and 115.5 feet (below RBCs)
  - Well 02NEW7 had PCE at 0.3J µg/L
  - Sediment sample immediately upstream from MCAS property line had acetone (5J µg/kg), TRPH (153 mg/kg), TPH (gasoline 4555 mg/kg), and metals detected
  - Surface water contained very low concentrations of metals.

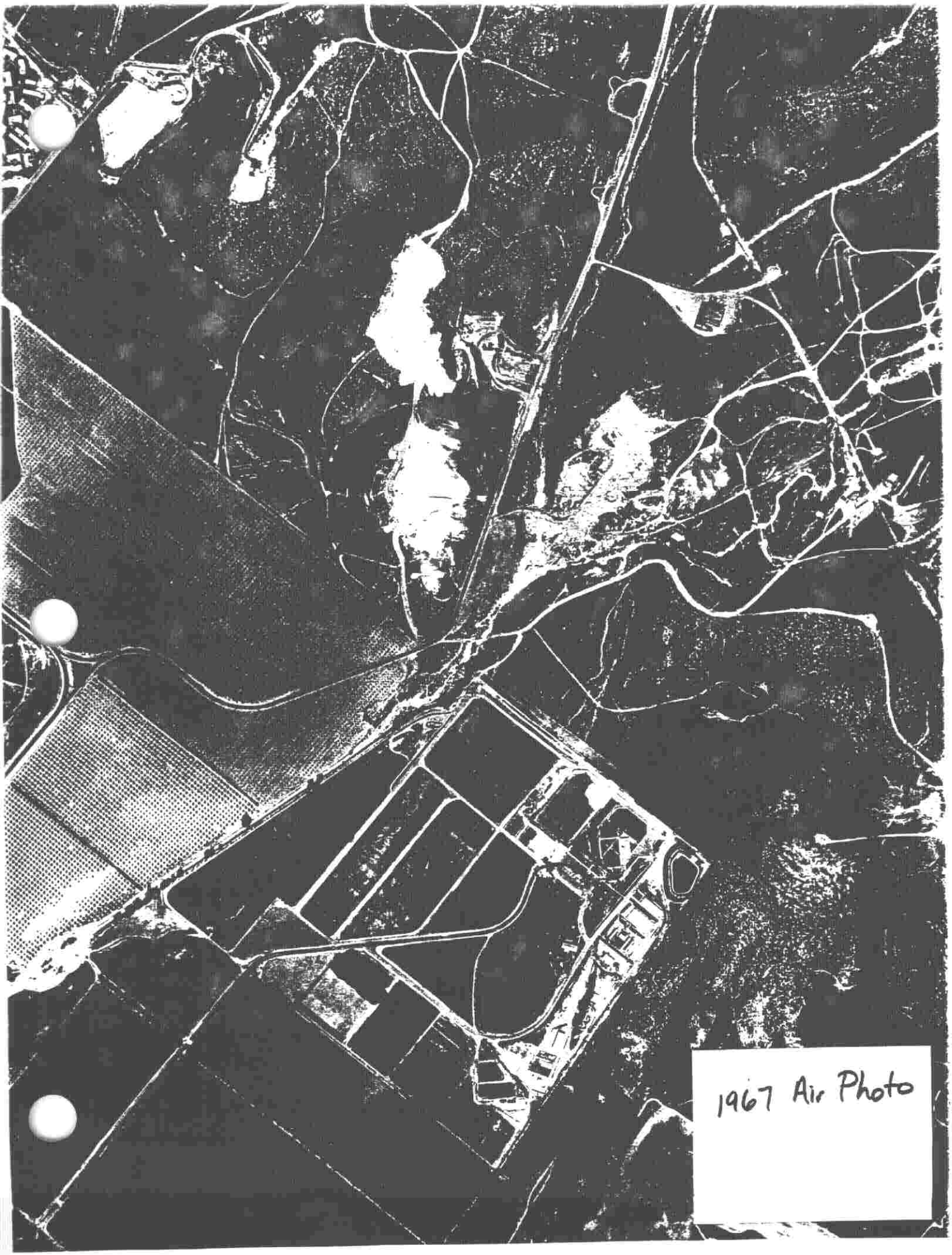
Site 2 IRP Boundaries for the Draft Final RI/FS Reports

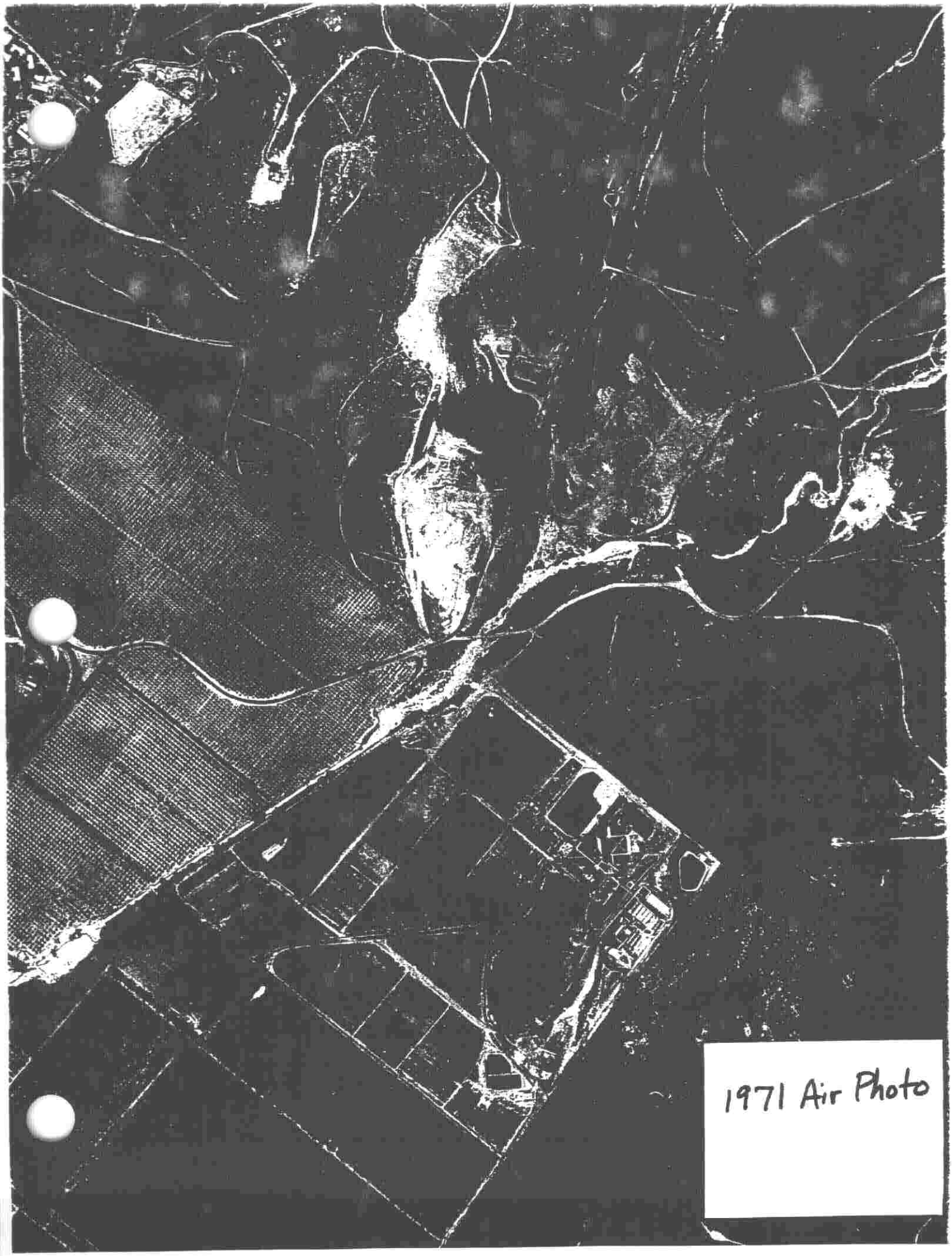
Site 2 - Magazine Road Landfill

Issue: change IRP site boundary to show Marine Corps operational landfill in areas A and B as IRP Site 2 with outlying areas C1, C2, and D2 as areas of uncontrolled waste disposal

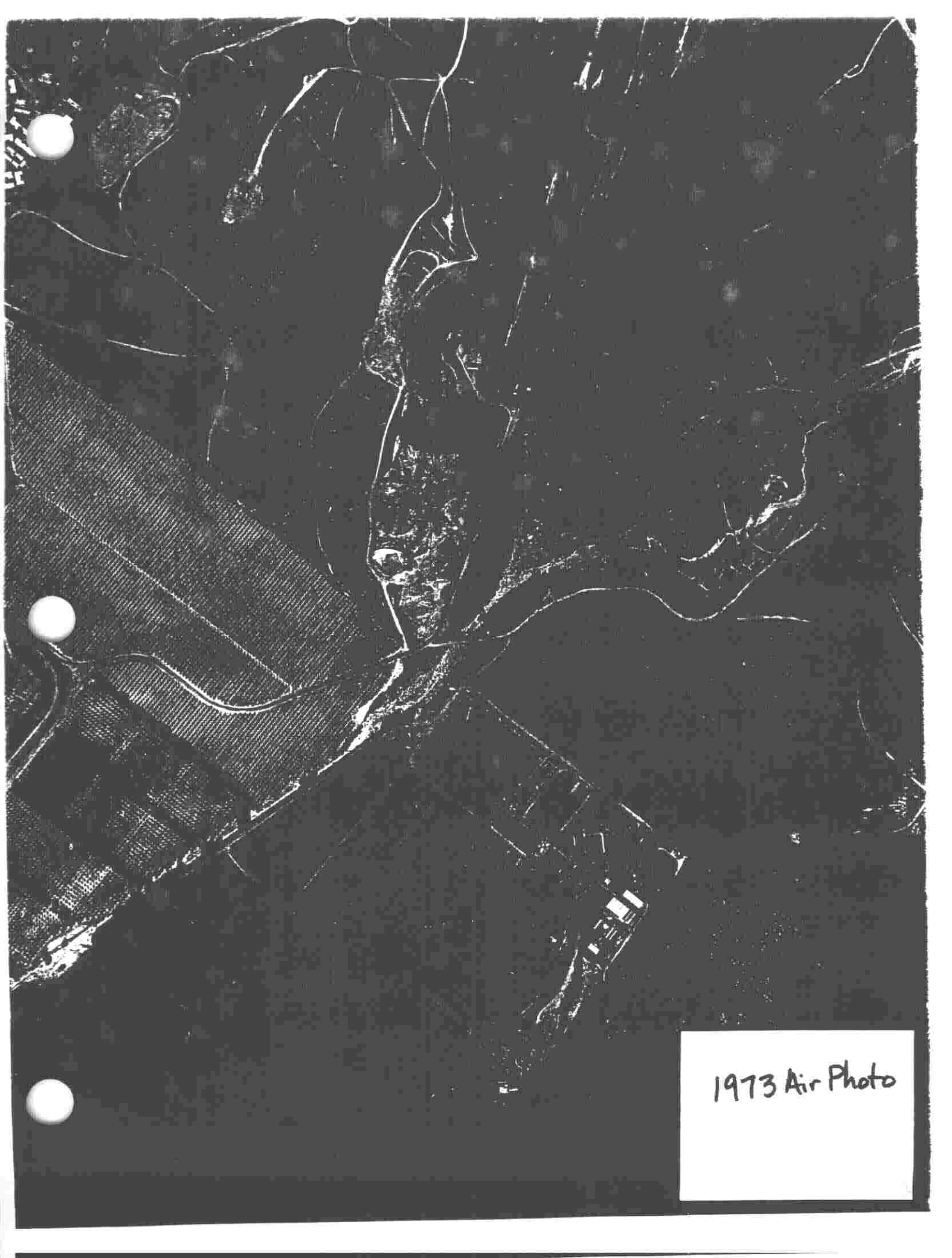
Based on:

- This is a similar approach to the presentation for Site 17 (operational area with outlying areas).
- Marine Corps operational landfill (IRP site) occurred in Areas A and B.
- Areas C1 and D2 are areas with surficial, unauthorized disposal consisting construction debris and municipal refuse as thin, surficial deposits.
- Area C2 has been used as an equipment staging area from mid 1960s through the 1990s.
- Area C2 formed in early 1960s when borrowing activities began in the hills above Magazine Road.
- Wastes present in C1, C2, and D2 are to be consolidated into Areas A and B as "housekeeping".
- Soils below wastes in C1 and C2 will be used to prepare the surface of Site 2 for the foundation soils while allowing the channels to be widened in Borrego Canyon Wash (reducing erosion in the area).
- Air photos show Areas A and B active from early 1960s to 1980.
- Air photos show Areas C1 and D2 had unauthorized, intermittent disposal activities.
- Personnel interviews in 1994 indicate operational area was north of access road (upper access road in streambed).
- Personnel interviews in 1995 confirm the 1994 interviews.
- Visual inspection and trenching indicates C1, C2, and D2 are primarily surficial, unconsolidated wastes consisting of asphalt and concrete rubble, scrap metal, bricks, tires, paper and plastic fragments (unauthorized disposal).
- Visual inspection and trenching of Areas A and B show a wide range of wastes including construction debris, waste aircraft landing matting, military vehicles, and medical wastes in apparent controlled filling operations (operational landfill).


1967 Air Photo



1971 Air Photo


1973 Air Photo