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DEPARTMENT OF THE AIR FORCE
27TH CIVIL ENGINEER SQUADRON (ACC)
CANNON AIR FORCE BASE NEW MEXICO

10 MAR 2003

Mr. Robert S. Pyeatt
Deputy Base Civil Engineer
506 N DL Ingram Blvd
Cannon AFB NM 88103-5003

Mr. James Bearzi
Hazardous Waste Bureau Chief
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg 1
Santa Fe NM 87505



Dear Mr. Bearzi

Per your request we are enclosing for your review and records three copies of the Final Resource Recovery and Conservation Act (RCRA) Facility Investigation Report Addendum for Melrose Bombing Range dated Feb 03. The Addendum addresses comments received from your office in Mar 99 regarding the Phase I RCRA Facility Investigation (RFI) dated Nov 96. The Addendum describes the results of supplemental field programs conducted in May 00 and Jun 02 and a facility-wide screening-level ecological risk assessment for Solid Waste Management Units 114, 115 and 117; and potential Areas of Concern 1, 2, 3 and 4.

This additional information should be sufficient for your office to complete the RFI review and inform us of what further action, if any, will need to be taken. If you have any questions, please contact Mr. Peter P. Zamie at (505) 784-1092.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or person who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely


ROBERT S. PYEATT, GS-13

Attachment:
Final Report Addendum, Feb 03

cc:
NMED (G. von Gonten)
EPA Region 6 (Bob Sturdivant)

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CAFM 03-001

**Final RCRA Facility Investigation Report Addendum
for Melrose Bombing Range
Cannon Air Force Base, New Mexico**

February 2003



Prepared for:

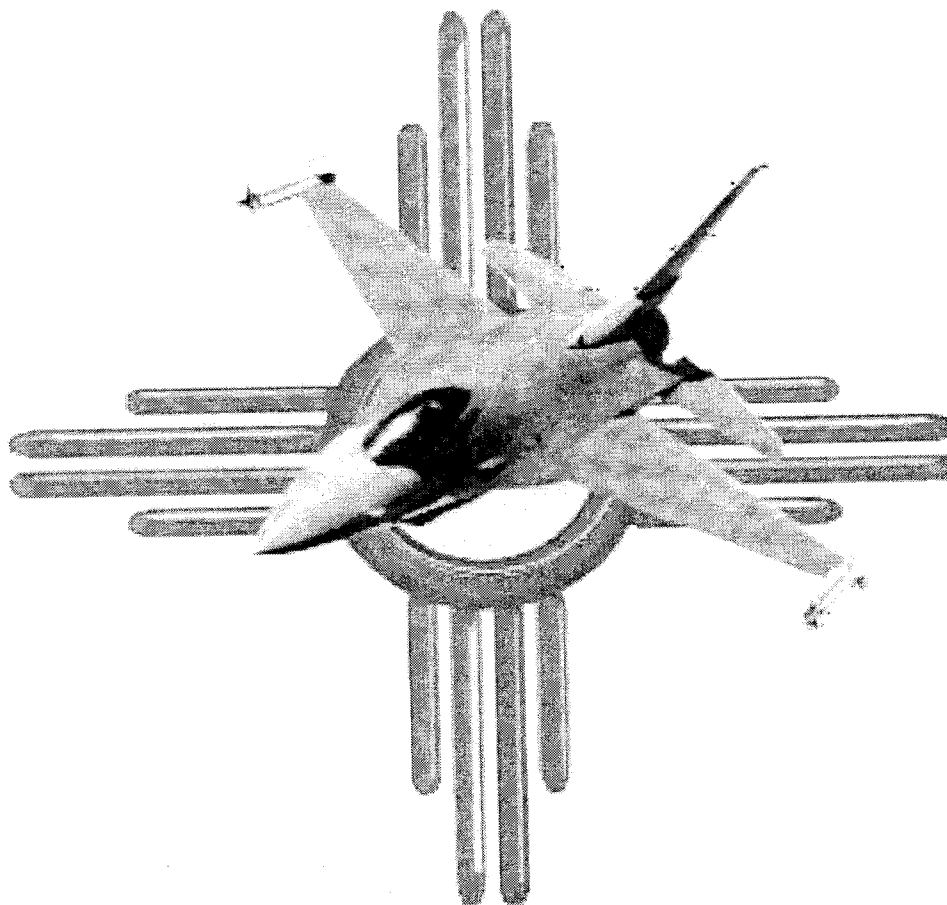
**27 CE/CEV
Cannon Air Force Base
New Mexico**



**Final RCRA Facility Investigation Report Addendum
for Melrose Bombing Range
Cannon Air Force Base, New Mexico**

February 2003

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Estimate
9/15/02*



Prepared for:

**27 CE/CEV
Cannon Air Force Base
New Mexico**

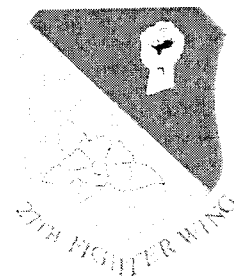


Table 4-1. Groundwater Analytical Results for SWMU 114

Analyte	PQL		M114MW001		M114MW002		M114MW003		M114MW004		NMWQCC Groundwater Standard
	1995	2000	February-96	May-00	December-95	May-00	December-95	May-00	December-95	May-00	
Total Metals (mg/L)											
Aluminum	0.2	0.1	10	3.05	0.6377	22.6	0.786	1.52	0.629	4.44	5.0
Arsenic	0.05	0.005	0.0028 J	ND	ND	ND	ND	ND	ND	ND	0.1
Barium	0.2	0.01	0.28	0.101	0.031	0.401	0.03	ND	0.027	0.0886	1.0
Calcium	5	0.2	282.8	369	315.6	352	359.9	372	363.5	377	--
Chromium	0.01	0.005	0.014	ND	0.0088	0.047	0.0097	ND	0.016	ND	0.05
Cobalt	0.05	0.005	ND	ND	ND	ND	0.014	ND	0.046	ND	0.05
Copper	0.025	0.01	0.018	ND	0.0038	ND	0.0077	ND	0.012	ND	--
Iron	0.1	0.05	7.11	2.51	0.6128	18.1	0.52	1.52 J	0.488	3.4	1.0
Lead	0.003	0.005	ND	ND	ND	ND	0.0014 J	ND	0.0011 J	ND	0.05
Magnesium	5	0.1	248	307	309	315	292.6	286	326.6	311	--
Manganese	0.015	0.005	0.223	0.0873	0.0224	0.244	0.0546	0.036	0.0175	0.0794	0.2
Nickel	0.04	0.005	0.017	ND	ND	0.0376	ND	ND	ND	ND	0.2
Potassium	5	0.4	16.53	28.6 J	16.99	34.5 J	17.23	26.7 J	18.34	28.4 J	--
Selenium	0.025	0.01	0.032 J	ND	0.0048 J	ND	0.022 J	ND	0.0087 J	ND	0.05
Silver	0.01	0.01	ND	ND	0.0035	ND	ND	ND	ND	ND	0.05
Sodium	5	2	4684 J	2430	2062 J	2450	2081 J	2610	2081 J	2450	--
Tin	0.02	NA	ND	NA	0.045	NA	ND	NA	ND	NA	--
Vanadium	0.05	0.01	0.012	ND	0.013	ND	0.013	ND	0.012	ND	--
Zinc	0.02	0.01	0.064	ND	0.012	0.0603 J	0.036	ND	0.047	ND	10.0
Dissolved Metals (mg/L)											
Arsenic	0.05	0.005	0.0021	*	*	*	*	*	*	*	0.1
Barium	0.2	0.01	0.034	*	*	*	*	*	*	*	1.0
Copper	0.025	0.01	0.0032	*	*	*	*	*	*	*	--
Selenium		0.01	0.025	*	*	*	*	*	*	*	0.05
Zinc	0.02	0.01	0.023	*	*	*	*	*	*	*	10.0
Anions (mg/L)											
Bicarbonate	3	NA	100	NA	53	NA	49	NA	54	NA	--
Chloride	0.02	0.2	3400	4110	4800	4230	250	4980	3800	4000	250
Nitrogen (as nitrate+nitrite)	0.05	0.1	0.27	ND	0.35	ND	1.2	ND	1.1	ND	--
Sulfate	0.1	0.5	2100	2100	2000	2000	350	2000	2100	2500	600
Organic Compounds (mg/L)											
Trichloroethene	5	0.005	ND	ND	0.0013	ND	ND	ND	ND	ND	0.1

Notes:

Highlighting indicates analyte is detected above the WQCC Groundwater Standard.

-- No WQCC Standard.

* No dissolved metals samples were collected.

J - Validation qualifier that indicated an estimated detection

mg/L - milligrams per liter

NA - not analyzed

ND - nondetect

PQL - practical quantitation limit

SWMU - Solid Waste Management Unit

Table 4-3. Groundwater Analytical Results for AOC-1

Analyte	PQL	PQL	MA01GW001	MA01GW001	MA01GW002	MA01GW002	MA01GW003	MA01GW003	MA01GW004	MA01GW004	WQCC Groundwater Standard
	1995	2000	November-95	May-00	November-95	May-00	November-95	May-00	December-95	May-00	
Total Metals (mg/L)											
Aluminum	0.2	0.1	0.682	18.6	5.085	2.33	0.4435	3.2	0.5791	17.8	5.0
Barium	0.2	0.01	0.0551	0.447	0.094	0.0602	0.057	0.0844	0.052	0.153	1.0
Calcium	5	0.2	55.3	97.6	57.09	45.9	68.29	66.9	37.34	59.5	--
Chromium	0.01	0.005	0.022	0.0665	0.058	0.0188	0.012	0.0172	0.013	0.114	0.05
Cobalt	0.05	0.005	ND	0.0133	0.024	ND	0.013	ND	0.0092	0.0128	0.05
Copper	0.025	0.01	0.016	0.0215	0.028	ND	0.0099	ND	0.012	0.0179	--
Iron	0.1	0.05	0.548	7.3	3.488	1.68	0.3531	2.64	0.457	14.71	1.0
Lead	0.003	0.005	ND	0.009	0.0027	ND	0.0013 J	ND	0.0018	0.0079	0.05
Magnesium	5	0.1	48.3	55	43.41	38.1	63.64	54.8	32.99	42	--
Manganese	0.015	0.005	0.0385	0.965	0.162	0.083	0.022	0.155	0.0185	0.356	0.2
Mercury	0.0002	0.0005	ND	0.00059	ND	0.00053	ND	ND	ND	0.00057	0.002
Molybdenum	NA	0.005	NA	0.0109	ND	0.0115	ND	0.0078	ND	0.16	1.0
Nickel	0.04	0.005	0.018	0.049	0.054	0.0152	ND	0.0179	ND	0.078	0.2
Potassium	5	0.4	7.34	13.8 J	8.671	11.1 J	8.052	11.7 J	6.224	11.6 J	--
Selenium	0.025	0.01	ND	ND	0.0047 J	ND	ND	ND	0.0055 J	ND	0.05
Silver	0.01	0.01	ND	ND	0.0045	ND	0.0042	ND	ND	ND	0.05
Sodium	5	2	631	601	564.1	535	551.7	565	355	336	--
Thallium	0.05	0.01	0.0039 J	ND	ND	ND	ND	ND	ND	ND	--
Tin	0.02	NA	ND	NA	ND	NA	ND	NA	0.039	NA	--
Vanadium	0.05	0.01	0.006	0.0695	0.02	0.0142	0.012	0.0162	0.021	0.053	--
Zinc	0.02	0.01	0.0676	ND	0.031	0.0133	0.13	0.0318 J	0.052	0.0582 J	10.0
Anions (mg/L)											
Bicarbonate	3	NA	180	NA	170	NA	160	NA	190	NA	--
Chloride	0.02	0.2	600	619	490	515	560	639	250	316	250
Nitrogen (as nitrate+nitrite)	0.05	0.1	0.32	ND	0.44	ND	0.25	ND	0.37	ND	--
Sulfate	0.1	0.5	700	690	570	560	640	670	350	390	600
Organic Compounds (mg/L)											
Trichloroethene	5	0.005	ND	0.0457	ND	ND	ND	ND	0.0022	ND	0.1

Notes:

Highlighting indicates analyte is detected above the WQCC Groundwater Standard.

-- No WQCC Standard.

AOC - Area of Concern

J - Validation qualifier that indicated an estimated detection.

mg/L - milligrams per liter

NA - not analyzed

ND - nondetect

PQL - practical quantitation limit

WQCC - New Mexico Water Quality Control Commission

Table 4-4. Groundwater Analytical Results for AOC-2

Analyte	PQL	PQL	MA02GW001D	MA02GW001D	WQCC Groundwater Standard
	1995	2000	January-96	May-00	
Total Metals (mg/L)					
Aluminum	0.2	0.1	15.22	32.6	5.0
Barium	0.2	0.01	0.057	0.264	1.0
Calcium	5	0.2	112.7	223	--
Chromium	0.01	0.005	0.0037	0.0471	0.05
Cobalt	0.05	0.005	0.008	ND	0.05
Copper	0.025	0.01	0.011	ND	--
Iron	0.1	0.05	10.15	28.1	1.0
Magnesium	5	0.1	53.73	97.3	--
Manganese	0.015	0.005	0.2697	0.754	0.2
Mercury	0.0002	0.0005	ND	0.00054	0.002
Nickel	0.04	0.005	ND	0.0431	0.2
Potassium	5	0.4	10.22	25.3 J	--
Selenium	0.025	0.01	0.082 J	ND	0.05
Sodium	5	2	4557 J	2650	--
Thallium	0.05	0.01	0.0047	ND	--
Vanadium	0.05	0.01	0.027	0.0536	--
Zinc	0.02	0.01	0.034	0.0632 J	10.0
Dissolved Metals (mg/L)					
Antimony	0.06	0.01	0.0065	*	--
Calcium	5	0.2	110	*	--
Copper	0.025	0.01	0.0056	*	--
Magnesium	5	0.1	52	*	--
Manganese	0.015	0.005	0.14	*	0.2
Potassium	5	0.4	8.5	*	--
Selenium	0.025	0.01	0.038	*	0.05
Sodium	5	2	2000	*	--
Zinc	0.02	0.01	0.013	*	10.0
Anions (mg/L)					
Bicarbonate	3	NA	140	NA	--
Chloride	0.02	0.2	1800	3100	250
Nitrogen (as nitrate+nitrite)	0.05	0.1	3	ND	--
Sulfate	0.1	0.5	2300	2500	600
Cyanide and Sulfate (mg/L)					
Cyanide	0.02	0.05	0.016 J	ND	0.2

Notes:

Well MA02MW001S was dry at the time of installation/development and sampling in 1995.

Highlighting indicates analyte is detected above the WQCC Groundwater Standard.

-- No WQCC Standard.

* No dissolved metals were collected.

AOC - Area of Concern

J - Validation qualifier that indicated an estimated detection.

mg/L - milligrams per liter

NA - not analyzed

ND - nondetect

PQL - practical quantitation limit

WQCC - New Mexico Water Quality Control Commission