DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 27th FIGHTER WING (ACC)
CANNON AIR FORCE BASE, NEW MEXICO

Steph S
Barbara

XVII

25 AUG 1993

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RET
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ENTERED

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Cannon AFB NM 88103-5214

Ms Barbara Hoditschek
Program Manager, RCRA Permits
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
1190 St Francis Drive
PO Box 26110
Sante Fe NM 87502

RE: Cannon Air Force Base Landfill 5 Ground Water Monitoring

Dear Ms Hoditschek

Please find enclosed a summary of sampling results from ground water monitoring wells at Cannon AFB Landfill 5. These results are from sampling events which occurred between July 1992 and April 1993.

These results are being supplied in accordance with 40 CFR 265.92(c)(1) to establish initial background concentrations for this site. With these results Cannon AFB has established background concentrations. Therefore, we propose additional monitoring at Landfill 5 take place as follows. This sampling schedule will continue until directed otherwise by NMED.

First quarter 1994:
40 CFR 265 Appendix III constituents
40 CFR 264 Appendix IX constituents
chloride, iron, manganese, phenols, sodium, sulfate nitrate, nitrite, total dissolved solids, pH, specific conductance, total organic carbon, and total organic halogen

Third quarter 1994:
indicators of ground water contamination (pH, total organic halogens, total organic carbon, and specific conductance).

As discussed during telephone conversations with Mr John Pfeil (NMED) and Dr Janice Stowell (Cannon AFB) on July 20, 1993 and August 5, 1993, laboratory results (seven volumes) will be furnished to NMED upon request.

As we are proposing to eliminate the fourth quarter 1993 sampling event, we must have a response from your office by September 30, 1993 concerning the proposed sampling schedule. If we do not receive a response, we will assume that the proposed sampling schedule is satisfactory to NMED and will not implement a fourth quarter 1993 sampling event.

If there are any questions concerning this results summary, please contact Dr Janice Stowell at (505)784-4348.

Sincerely

LANCE L. SMITH, Colonel, USAF
Commander, 27th Fighter Wing

cc: Dave Morgan, NMED

AUG 1993
RECEIVED
HAZARDOUS WASTE
PROGRAM

Summary of the Results of Ground Water Monitoring at Landfill 5
Cannon Air Force Base, June 1992 through April 1993

From: Cannon Air Force Base
To: New Mexico Environment Department

August 1993

Notes about this report

1. The dates of the sampling events were:

June 16-18, 1992
September 23-24, 1992
February 10-12, 1993
April 22, 1993

2. Monitoring well A (MW-A) was designated the upgradient well. Monitoring wells I, L, and M (MW-I, MW-L, and MW-M) were designated the downgradient wells. As shown in Table 1, these designations are still valid.

Table 1. Elevations of Ground Water Surface (feet)

Sampling Data	Monitor Well			
	A	I	L	M
June 1992	4000.71	3995.42	3994.4	3994.88
Sept. 1992	4000.45	3994.96	3993.93	3994.52
Feb. 1993	4000.01	3994.17	3993.72	3994.48
April 1993	4001.39	3996.52	3995.14	3995.42

3. The results are summarized in tabular form as follows:

Table 2. Results for Monitoring Well A (MW-A)
Table 3. Results for Monitoring Well I (MW-I)
Table 4. Results for Monitoring Well L (MW-L)
Table 5. Results for Monitoring Well M (MW-M)
Table 6. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well A
Table 7. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well I
Table 8. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well L
Table 9. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well M
Appendix Detection Limits for All Compounds
Table A.1 Volatile Organic Compounds
Table A.2 Metals
Table A.3 Acid Extractable Organic Compounds
Table A.4 Base-Neutral Extractable Organic Compounds
Table A.5 Chlorinated Pesticides, Chlorinated Herbicides and PCBs
Table A.6 Organophosphorous Pesticides
Table A.7 Dioxins and Furans
Table A.8 Miscellaneous Parameters

4. Total organic carbon (TOC) and total organic halogen (TOX) analyses were inadvertently missed due to a typographical error in the scope of work sent to our contractor.

5. It is not understood why the Drinking Water Characteristics were not added to the scope of work for the February 1993 sampling event.

6. No coliforms were detected in MW-L in the July 1993 sampling event. We feel that the positive results noted here are false positives.

7. Those compounds not specifically addressed in the sampling and analysis plan (i.e. those of 40 CFR 264 Appendix IX) whose concentration were less than the detection limits given in the appendix are not repeated in the results.

8. The dashed lines in the tables indicate those species for which no data was provided (either not a required analysis or there were problems with the laboratory analysis).

9. Tentatively identified compounds are not given.

Table 2. Results for Monitoring Well A (MW-A)					
Parameter	Units	June 1992	Sept. 1992	Feb. 1993	April 1993
Ground Water Quality Parameters					
Chloride	mg/L	48	42	52	46
Iron	µg/L	180	120	45	<100
Manganese	mg/L	--	<10	<10	<10
Phenols	mg/L	<0.01	<0.1	0.012	<0.2
Sodium	mg/L	45	39.3	45.7	53.2
Sulfate	mg/L	94	86	103	91
Ground Water Contamination Parameters[1]					
pH	--	7.40	7.72	7.97	7.60
specific conductance	µmhos/cm	608	596	646	657
total organic carbon	mg/L	<1.0	<1.0	<1.0	--
total organic halogen	µg/L	34	<5.0	5	--
Drinking Water Characteristics					
Arsenic	µg/L	4	<10	--	6
Barium	µg/L	32	30	--	30
Cadmium	µg/L	<10	<5	--	<20
Chromium	µg/L	<10	<50	<10	<20
Lead	µg/L	<20	<20	<20	<50
Mercury	µg/L	<0.2	<1	--	<1
Selenium	µg/L	6	<10	--	5
Silver	µg/L	<10	<10	--	<10
Fluoride	mg/L	2.9	2.9	--	2.6
Nitrate	mg/L	1.0	1.21	--	0.92
Endrin	µg/L	<0.060	<0.060	--	<0.045
Lindane	µg/L	<0.040	<0.040	--	<0.015
Methoxychlor	µg/L	<1.80	<1.76	--	<0.15
Toxaphene	µg/L	<2.40	<2.40	--	<2.0
2,4-D	µg/L	<10.0	<10.0	--	<0.2

Drinking Water Characteristics (MW-A continued)					
2,4,5-TP (Silvex)	μg/L	<2.0	<2.30	--	<0.05
Radium	pCi/L	<1	2+/-1	--	<1.0
Gross Alpha	pCi/L	<2	4+/-3	--	7.2 +/- 2.3
Gross Beta	pCi/L	5+/-3	6+/-4	--	3.7+/- 0.8
Total Coliform	--	Absent	Absent	--	Absent
Fecal Coliform	--	Absent	Absent	--	Absent
Other Parameters[2]					
Nitrite	mg/L	--	--	--	0.092
Total Dissolved Solids	mg/L	--	--	--	408
Turbidity	NTU	--	--	--	<1.0
Magnesium	mg/L	31	--	--	--
Bis(2-ethylhexylphthalate)	μg/L	11.8	<10	--	<40
Vanadium	μg/L	--	--	--	30
Strontium	mg/L	--	--	--	1.23

1 Statistics provided elsewhere.

2 Includes those compounds with concentrations above their detection limits and those requested by NMED.

Table 3. Results for Monitoring Well I (MW-I)					
Parameter	Units	June 1992	Sept. 1992	Feb. 1993	April 1993
Ground Water Quality Parameters					
Chloride	mg/L	74	76	87	80
Iron	µg/L	44	90	23	<100
Manganese	mg/L	--	<0.01	<10	<10
Phenols	mg/L	<0.01	<0.1	[14]	0.04
Sodium	mg/L	35	37.4	36.3	39.8
Sulfate	mg/L	107	105	118	103
Ground Water Contamination Parameters[1]					
pH	--	7.47	7.73	7.03	7.90
specific conductance	µmhos/cm	695	646	726	778
total organic carbon	mg/L	<1.0	<1.0	<1.0	--
total organic halogen	µg/L	38	<5.0	10	--
Drinking Water Characteristics					
Arsenic	µg/L	2.7	<10	--	4
Barium	µg/L	34	20	--	30
Cadmium	µg/L	<10	<5	--	<20
Chromium	µg/L	<10	<50	<10	<20
Lead	µg/L	<20	<20	<20	<50
Mercury	µg/L	<0.2	<1	--	<1
Selenium	µg/L	6	<10	--	7
Silver	µg/L	<10	<10	--	<10
Fluoride	mg/L	3.2	2.38	--	2.1
Nitrate	mg/L	0.8	0.88	--	0.89
Endrin	µg/L	<0.060	<0.060	--	<0.045
Lindane	µg/L	<0.040	<0.040	--	<0.015
Methoxychlor	µg/L	<1.80	<1.76	--	<0.15
Toxaphene	µg/L	<2.40	<2.40	--	<2.0
2,4-D	µg/L	<10.0	<10.0	--	<0.2

Drinking Water Characteristics (MW-I continued)					
2,4,5-TP (Silvex)	µg/L	<2.0	<2.0	--	<0.05
Radium	pCi/L	<1	<1	--	<1.0
Gross Alpha	pCi/L	<2	4+/-3	--	7.8 +/- 2.7
Gross Beta	pCi/L	<3	<3	--	4.4+/- 0.9
Total Coliform	--	Absent	Absent	--	Absent
Fecal Coliform	--	Absent	Absent	--	Absent
Other Parameters[2]					
Nitrite	mg/L	--	--	--	<0.06
Total Dissolved Solids	mg/L	--	--	--	520
Turbidity	NTU	--	--	--	1.0
Magnesium	mg/L	42	--	--	--
Copper	µg/L	24	--	--	<10
Vanadium	µg/L	--	--	--	30
Strontium	mg/L	--	--	--	1.92
Zinc	µg/L	<10	--	--	10

1 Statistics provided elsewhere.

2 Includes those compounds with concentrations above their detection limits and those requested by NMED.

Table 4. Results for Monitoring Well L (MW-L)					
Parameter	Units	June 1992	Sept. 1992	Feb. 1993	April 1993
Ground Water Quality Parameters					
Chloride	mg/L	71	70	67	73
Iron	µg/L	34	270	36	<100
Manganese	mg/L	--	0.07	<10	<0.01
Phenols	mg/L	<0.01	<0.1	0.013	0.05
Sodium	mg/L	43	44.9	45.2	45.4
Sulfate	mg/L	117	111	119	118
Ground Water Contamination Parameters[1]					
pH	--	7.54	7.32	7.03	7.12
specific conductance	µmhos / cm	701	654	726	740
total organic carbon	mg/L	<1.0	<1.0	<1.0	--
total organic halogen	µg/L	16	<5.0	10	--
Drinking Water Characteristics					
Arsenic	µg/L	5	<10	--	7
Barium	µg/L	35	20	--	30
Cadmium	µg/L	<10	<5	--	<20
Chromium	µg/L	<10	<50	<10	<20
Lead	µg/L	<10	<20	<20	<50
Mercury	µg/L	<0.2	<1	--	<1
Selenium	µg/L	6	<10	--	6
Silver	µg/L	<10	<10	--	<10
Fluoride	mg/L	3.0	2.68	--	2.2
Nitrate	mg/L	1.0	1.05	--	1.0
Endrin	µg/L	<0.06	<0.060	--	<0.045
Lindane	µg/L	<0.040	<0.040	--	<0.015
Methoxychlor	µg/L	<1.80	<1.76	--	<0.15
Toxaphene	µg/L	<2.40	<2.40	--	<2.0
2,4-D	µg/L	<10.0	<10.0	--	<0.2

Drinking Water Characteristics (MW-L continued)					
2,4,5-TP (Silvex)	μg/L	<2.0	<2.0	--	<0.05
Radium	pCi/L	<1	<1	--	<1.0
Gross Alpha	pCi/L	<2	4+/-3	--	2.2 +/- 1.3
Gross Beta	pCi/L	<3	4+/-3	--	<3.0
Total Coliform	--	Absent	Absent	--	Present
Fecal Coliform	--	Absent	Absent	--	Present
Other Parameters[2]					
Nitrite	mg/L	--	--	--	<0.06
Total Dissolved Solids	mg/L	--	--	--	462
Turbidity	NTU	--	--	--	1.0
Magnesium	mg/L	42	--	--	--
Vanadium	μg/L	--	--	--	10
Strontium	mg/L	--	--	--	1.92
Zinc	μg/L	11	--	--	10

1 Statistics provided elsewhere.

2 Includes those compounds with concentrations above their detection limits and those requested by NMED.

Table 5. Results for Monitoring Well M (MW-M)					
Parameter	Units	June 1992	Sept. 1992	Feb. 1993	April 1993
Ground Water Quality Parameters					
Chloride	mg/L	57	60	78	63
Iron	µg/L	<20	150	33	<100
Manganese	mg/L	--	<10	<10	<10
Phenols	mg/L	<0.01	<0.1	0.012	0.34
Sodium	mg/L	40	47.4	45.9	48.2
Sulfate	mg/L	105	108	122	106
Ground Water Contamination Parameters[1]					
pH	--	7.39	7.26	6.86	7.44
specific conductance	µmhos/cm	678	617	718	730
total organic carbon	mg/L	<1.0	<1.0	<1.0	--
total organic halogen	µg/L	29	6.25	<5	--
Drinking Water Characteristics					
Arsenic	µg/L	3.0	<10	--	<4
Barium	µg/L	32	20	--	40
Cadmium	µg/L	<10	<5	--	<20
Chromium	µg/L	<10	<50	<10	<20
Lead	µg/L	<10	<20	<20	<50
Mercury	µg/L	<0.2	<1	--	<1
Selenium	µg/L	5	<10	--	6
Silver	µg/L	<10	<10	--	<10
Fluoride	mg/L	2.4	2.47	--	2.2
Nitrate	mg/L	0.8	0.83	--	1.1
Endrin	µg/L	<0.06	<0.060	--	<0.045
Lindane	µg/L	<0.040	<0.040	--	<0.015
Methoxychlor	µg/L	<1.80	<1.76	--	<0.15
Toxaphene	µg/L	<2.40	<2.40	--	<2.0
2,4-D	µg/L	<10.0	<10.0	--	<0.2

Drinking Water Characteristics (MW-M continued)					
2,4,5-TP (Silvex)	µg/L	<2.0	<2.0	--	<0.05
Radium	pCi/L	<1	<1	--	<1.0
Gross Alpha	pCi/L	<2	<2	--	4.2 +/- 1.9
Gross Beta	pCi/L	<3	<3	--	3.5+/- 0.8
Total Coliform	--	Absent	Absent	--	Absent
Fecal Coliform	--	Absent	Absent	--	Absent
Other Parameters[2]					
Nitrite	mg/L	--		--	<0.06
Total Dissolved Solids	mg/L	--		--	456
Turbidity	NTU	--	--	--	<1.0
Magnesium	µg/L	34	--	--	--
Vanadium	µg/L	--	--	--	20
Strontium	mg/L	--	--	--	1.80
Zinc	µg/L	<10	--	--	20
Heptachlor	µg/L	<0.030	<0.030	--	0.267

1 Statistics provided elsewhere.

2 Includes those compounds with concentrations above their detection limits and those requested by NMED.

Table 6. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well A				
Sample Number	June 1992	Sept. 1992	Feb. 1993	April 1993
pH				
1	7.40	7.72	8.51	7.61
2	7.40	7.72	7.72	7.59
3	7.39	7.72	7.84	7.61
4	7.40	7.72	7.82	7.59
Mean	7.40	7.72	7.97	7.60
Variance	0	0	0.362	0.012
Specific Conductance				
1	608	596	618	657
2	608	596	660	656
3	608	595	638	657
4	608	597	667	657
Mean	608	596	646	657
Variance	0	0.816	22.25	0.50
Total Organic Carbon (TOC)				
1	<1.0	<1.0	<1.0	--
2	<1.0	<1.0	<1.0	--
3	<1.0	<1.0	<1.0	--
4	<1.0	<1.0	<1.0	--
Mean	--	--	--	--
Variance	--	--	--	--
Total Organic Halogen (TOX)				
1	33	<5	<5	--
2	34	<5	5	--
3	32	<5	5	--
4	38	<5	<5	--
Mean	34	--	--	--
Variance	2.630	--	--	--

Table 7. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well I				
Sample Number	June 1992	Sept. 1992	Feb. 1993	April 1993
pH				
1	7.47	7.73	8.41	7.90
2	7.47	7.73	7.77	7.90
3	7.47	7.74	7.81	7.90
4	7.47	7.73	7.73	7.89
Mean	7.47	7.73	7.93	7.90
Variance	0	0.005	0.322	0.005
Specific Conductance				
1	695	646	730	778
2	695	647	760	779
3	695	646	747	778
4	695	646	753	779
Mean	695	646	747.5	778.5
Variance	0	0.500	12.819	0.577
Total Organic Carbon (TOC)				
1	<1.0	<1.0	<1.0	--
2	<1.0	<1.0	<1.0	--
3	<1.0	<1.0	<1.0	--
4	<1.0	<1.0	<1.0	--
Mean	--	--	--	--
Variance	--	--	--	--
Total Organic Halogen (TOX)				
1	42	<5	7	--
2	38	<5	6	--
3	38	<5	5	--
4	33	<5	7	--
Mean	38	--	6	--
Variance	3.686	--	0.957	--

Table 8. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well L				
Sample Number	June 1992	Sept. 1992	Feb. 1993	April 1993
pH				
1	7.54	7.33	6.91	7.12
2	7.54	7.31	7.01	7.12
3	7.54	7.33	7.11	7.12
4	7.54	7.32	7.09	7.12
Mean	7.54	7.32	7.03	7.12
Variance	0	0.010	0.091	0
Specific Conductance				
1	700	654	711	740
2	701	654	714	740
3	700	654	738	740
4	701	654	740	740
Mean	700.5	654	726	740
Variance	0.577	0	15.370	0
Total Organic Carbon (TOC)				
1	<1.0	<1.0	<1.0	--
2	<1.0	<1.0	<1.0	--
3	<1.0	<1.0	<1.0	--
4	<1.0	<1.0	<1.0	--
Mean	--	--	--	--
Variance	--	--	--	--
Total Organic Halogen (TOX)				
1	17	7	11	--
2	14	5	9	--
3	17	7	9	--
4	17	6	11	--
Mean	16	5	10	--
Variance	1.500	2.630	1.155	--

Table 9. Statistical Analyses of the Indicators of Ground Water Contamination for Monitoring Well M				
Sample Number	June 1992	Sept. 1992	Feb. 1993	April 1993
pH				
1	7.38	7.25	6.63	7.44
2	7.39	7.27	6.68	7.44
3	7.38	7.27	7.04	7.44
4	7.39	7.26	7.08	7.44
Mean	7.385	7.26	6.86	7.44
Variance	0.006	0.010	0.235	0
Specific Conductance				
1	678	617	716	730
2	678	617	710	730
3	676	617	722	731
4	676	617	725	730
Mean	677	617	718	730
Variance	1.155	0	6.652	0.500
Total Organic Carbon (TOC)				
1	<1.0	<1.0	<1.0	--
2	<1.0	<1.0	<1.0	--
3	<1.0	<1.0	<1.0	--
4	<1.0	<1.0	<1.0	--
Mean	--	--	--	--
Variance	--	--	--	--
Total Organic Halogen (TOX)				
1	14	<5	<5	--
2	36	<5	<5	--
3	31	<5	<5	--
4	34	<5	<5	--
Mean	29	--	--	--
Variance	10.046	--	--	--

Appendix Detection Limits for All Compounds

Table A.1 Volatile Organic Compounds				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Acetone	10.0	100	--	10
Acetonitrile	100	--	--	100
Acrolein	10.0	--	--	10
Acrylonitrile	10.0	--	--	10
Benzene	5.0	5.0	--	5
Bromodichloromethane	5.0	5.0	--	5
Bromoform	5.0	5.0	--	5
Bromomethane	10.0	10.0	--	10
2-Butanone	10.0	50	--	5
Carbon disulfide	5.0	5.0	--	5
Carbon tetrachloride	5.0	5.0	--	5
Chlorobenzene	5.0	5.0	--	5
2-Chloro-1,3-butadiene	10.0	--	--	10
Chlorodibromomethane	5.0	5.0	--	5
Chloroethane	10.0	10.0	--	10
2-Chloroethylvinyl ether	--	10.0	--	10
Chloroform	5.0	5.0	--	5
Chloromethane	10.0	10.0	--	10
3-Chloropropene	10.0	--	--	10
1,2-Dibromo-3-chloropropane	10.0	--	--	10
1,2-Dibromoethane	10.0	--	--	10
Dibromomethane	10.0	--	--	10
Dichlorobenzene	--	--	--	5
trans-1,4-Dichloro-2-butene	10.0	--	--	10

Table A.1 Volatile Organic Compounds				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Dichlorodifluormethane	10.0	--	--	10
1,1-Dichloroethane	5.0	5.0	--	5
1,2-Dichloroethane	5.0	5.0	--	5
1,1-Dichloroethene	5.0	5.0	--	5
cis-1,2-Dichloroethene	5.0	5.0	--	5
trans-1,2-Dichloroethene	5.0		--	5
1,2-Dichloropropane	5.0	5.0	--	5
cis-1,3-Dichloropropene	5.0	5.0	--	5
trans-1,3-Dichloropropene	5.0	5.0	--	5
1,4-Dioxane	10.0	--	--	10
Ethyl benzene	5.0	5.0	--	5
Ethyl cyanide	10.0	--	--	10
Ethyl methacrylate	10.0	--	--	10
2-Hexanone	10.0	50.0	--	5
Iodomethane	10.0	--	--	10
Isobutyl alcohol	20.0	--	--	20
Methacrylonitrile	10.0	--	--	10
Methyl methacrylate	10.0	--	--	10
4-Methyl-2-pentanone	10.0	50.0	--	5
Methylene chloride	5.0	5.0	--	10
Styrene	5.0	5.0	--	5
1,1,1,2-Tetrachloroethane	5.0	--	--	5
1,1,2,2-Tetrachloroethane	5.0	5.0	--	5
Tetrachloroethene	5.0	5.0	--	5

Table A.1 Volatile Organic Compounds				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Toluene	5.0	5.0	--	5
1,1,1-Trichloroethane	5.0	5.0	--	5
1,1,2-Trichloroethane	5.0	5.0	--	5
Trichloroethene	5.0	5.0	--	5
Trichlorofluoromethane	5.0	--	--	5
1,2,3-Trichloropropane	10.0	--	--	10
Vinyl acetate	10.0	50.0	--	5
Vinyl chloride	10.0	10.0	--	10
Xylenes	5.0	5.0	--	5

Table A.2 Metals					
Metal	Units	Detection Limit			
		June 1992	Sept. 1992	Feb. 1993	April 1993
Antimony	µg/L	40	--	--	50
Arsenic	µg/L	2.0	10	--	4
Barium	µg/L	5.0	10	--	20
Beryllium	µg/L	5.0	--	--	10
Cadmium	µg/L	10	5	--	20
Chromium	µg/L	10	50	10	20
Cobalt	µg/L	--	--	--	20
Copper	µg/L	10	--	--	10
Iron	µg/L	20	50	20	100
Lead	µg/L	20	20	20	50
Magnesium	mg/L	0.05	--	--	--
Manganese	µg/L	10	10	10	10
Mercury	µg/L	0.2	1	--	1
Nickel	µg/L	15	--	--	100
Selenium	µg/L	2.0	10	--	3
Silver	µg/L	10	10	--	10
Sodium	mg/L	0.1	0.1	0.1	0.2
Strontium	µg/L	--	--	--	10
Thallium	µg/L	40	--	--	--
Vanadium	µg/L	--	--	--	10
Zinc	µg/L	10	--	--	10

Table A.3 Acid Extractable Organics				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Benzoic Acid	--	50.0	--	50.0
2-sec-Butyl-4,6-dinitrophenol	10.0	--	--	10
p-Chloro-m-cresol	10.0	20.0	--	10
2-Chlorophenol	10.0	10.0	--	10
m-Cresol	10.0	--	--	10
o-Cresol	10.0	10.0	--	10
p-Cresol	10.0	10.0	--	10
2,4-Dichlorophenol	10.0	10.0	--	10
2,6-Dichlorophenol	10.0	--	--	10
2,4-Dimethylphenol	10.0	10.0	--	10
4,6-Dinitro-o-cresol	50.0	50.0	--	50.0
2,4-Dinitrophenol	50.0	50.0	--	50
2-Nitrophenol	10.0	10.0	--	10
4-Nitrophenol	50.0	50.0	--	50
Pentachlorophenol	50.0	50.0	--	10
Phenol	10.0	10.0	--	10
2,3,4,6-Tetrachlorophenol	10.0	--	--	10
2,4,5-Trichlorophenol	10.0	50.0	--	50
2,4,6-Trichlorophenol	10.0	10.0	--	10

Table A.4 Base-Neutral Extractable Organics				
Compounds	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Acenaphthene	10.0	10.0	--	10
Acenaphthylene	10.0	10.0	--	10
Acetophenone	10.0	--	--	10
2-Acetylaminofluorene	10.0	--	--	20
4-Aminobiphenyl	10.0	--	--	10
Aniline	10.0	--	--	10
Anthracene	10.0	10.0	--	10
Benzidine	--	--	--	80
Benzo(a)anthracene	10.0	10.0	--	10
Benzo(b)fluoranthene	10.0	10.0	--	10
Benzo(k)fluoranthene	10.0	10.0	--	10
Benzo(g,h,i)perylene	10.0	10.0	--	10
Benzo(a)pyrene	10.0	10.0	--	10
Benzyl alcohol	10.0	20.0	--	10
Bis(2-chloroethoxy)methane	10.0	10.0	--	20
Bis(2-chloroethyl)ether	10.0	10.0	--	10
Bis(2-chloroisopropyl)ether	10.0	10.0	--	10
Bis(2-ethylhexyl)phthalate	10.0	10.0	--	40
4-Bromophenylphenyl ether	10.0	10.0	--	10
Butyl benzyl phthalate	10.0	10.0	--	10
4-Chloroaniline	10.0	20.0	--	10
Chlorobenzilate	10.0	--	--	10
4-Chlorophenylphenyl ether	10.0	10.0	--	10
2-Chloronaphthalene	10.0	10.0	--	10

Table A.4 Base-Neutral Extractable Organics				
Compounds	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Chrysene	10.0	10.0	--	10
Dibenz(a,h)anthracene	10.0	10.0	--	10
Dibenzofuran	10.0	10.0	--	10
Di-n-butylphthalate	10.0	10.0	--	10
1,3-Dichlorobenzene	10.0	10.0	--	10
1,4-Dichlorobenzene	10.0	10.0	--	10
1,2-Dichlorobenzene	10.0	10.0	--	10
3,3'-Dichlorobenzidine	20.0	20.0	--	20
Diethylphthalate	10.0	10.0	--	10
p-Dimethylaminoazobenzene	10.0	--	--	10
7,12-Dimethylbenzo(a)anthracene	10.0	--	--	10
3,3'-Dimethylbenzidine	10.0	--	--	10
a,a'-Dimethylphenethylamine	10.0	--	--	10
Dimethylphthalate	10.0	10.0	--	10
m-Dinitrobenzene	10.0	--	--	20
2,4-Dinitrotoluene	10.0	10.0	--	20
2,6-Dinitrotoluene	10.0	10.0	--	20
Di-n-octylphthalate	10.0	10.0	--	10
Diphenylamine	10.0	--	--	10
Ethyl methanesulfonate	10.0	--	--	10
Fluoranthene	10.0	10.0	--	10
Fluorene	10.0	10.0	--	10
Hexachlorobenzene	10.0	10.0	--	10
Hexachlorobutadiene	10.0	10.0	--	10

Table A.4 Base-Neutral Extractable Organics				
Compounds	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Hexachlorocyclopentadiene	10.0	10.0	--	10
Hexachloroethane	10.0	10.0	--	10
Hexachlorophene	10.0	--	--	50
Hexachloropropene	10.0	--	--	10
Indeno(1,2,3-cd)pyrene	10.0	10.0	--	10
Isophorone	10.0	10.0	--	10
Isosafrole	10.0	--	--	10
Methapyrilene	10.0	--	--	100
3-Methylcholanthrene	10.0	--	--	10
Methyl methanesulfonate	10.0	--	--	10
2-Methyl naphthalene	10.0	10.0	--	10
1,4-Naphthoquinone	10.0	--	--	10
Naphthalene	10.0	10.0	--	10
1-Naphthylamine	10.0	--	--	10
2-Naphthylamine	10.0	--	--	--
2-Nitroaniline	50.0	50.0	--	50
3-Nitroaniline	50.0	50.0	--	50
4-Nitroaniline	50.0	50.0	--	50
Nitrobenzene	10.0	10.0	--	10
4-Nitroquinoline-1-oxide	10.0	--	--	40
N-Nitroso-di-n-butylamine	10.0	--	--	10
N-Nitroso-di-ethylamine	10.0	--	--	20
N-Nitroso-di-methylamine	10.0	--	--	10
N-Nitroso-di-phenylamine	10.0	10.0	--	20

Table A.4 Base-Neutral Extractable Organics				
Compounds	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
N-Nitroso-di-n-propylamine	10.0	10.0	--	10
N-Nitrosomethylethylamine	10.0	--	--	20
N-Nitrosomorpholine	10.0	--	--	40
N-Nitrosopiperidine	10.0	--	--	10
N-Nitrosopyrrolidine	10.0	--	--	40
5-Nitro-o-toluidine	10.0	--	--	10
Pentachlorobenzene	10.0	--	--	10
Pentachloroethane	10.0	--	--	20
Pentachloronitrobenzene	10.0	--	--	10
Phenacetin	10.0	--	--	10
Phenanthrene	10.0	10.0	--	10
p-Phenylenediamine	10.0	--	--	10
2-Picoline	10.0	--	--	10
Pronamide	10.0	--	--	--
Pyrene	10.0	10.0	--	10
Pyridine	10.0	--	--	50
Safrole	10.0	--	--	10
1,2,4,5-Tetrachlorobenzene	10.0	--	--	10
o-Toluidine	10.0	--	--	10
1,2,4-Trichlorobenzene	10.0	10.0	--	10
sym-Trinitrobenzene	10.0	--	--	10

Table A.5 Chlorinated Pesticides, Chlorinated Herbicides and PCBs

Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Aldrin	0.040	0.040	--	0.015
Aramite	0.10	--	--	2.0
Aroclar 1016	0.090	0.090	--	total PCB 1.0
Aroclar 1221	0.090	0.090	--	
Aroclar 1232	0.090	0.090	--	
Aroclar 1242	0.090	0.090	--	
Aroclar 1248	0.090	0.090	--	
Aroclar 1254	0.090	0.090	--	
Aroclar 1260	0.090	0.090	--	
alpha-BHC	0.030	0.030	--	0.015
beta-BHC	0.060	0.060	--	0.045
delta-BHC	0.090	0.090	--	0.015
gamma-BHC	0.040	0.040	--	0.015
Chlordane	0.140	0.140	--	0.5
Diallate	0.100	--	--	0.5
4,4'-DDD	0.110	0.110	--	0.045
4,4'-DDE	0.040	0.040	--	0.03
4,4'-DDT	0.120	0.120	--	0.045
Dieldrin	0.020	0.020	--	0.024
Endosulfan I	0.140	0.140	--	0.013
Endosulfan II	0.040	0.040	--	0.015
Endosulfan Sulfate	0.660	0.660	--	0.045
Endrin	0.060	0.060	--	0.045

Table A.5 Chlorinated Pesticides, Chlorinated Herbicides and PCBs				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Endrin Aldehyde	0.230	0.230	--	0.045
Heptachlor	0.030	0.030	--	0.015
Heptachlor Epoxide	0.830	0.830	--	0.015
Isodrin	0.100	--	--	--
Kepone	0.100	--	--	--
Methoxychlor	1.80	1.76	--	0.15
Toxaphene	2.40	2.40	--	2.0
2,4-D	10.0	10.0	--	0.2
2,4,5-TP(Silvex)	2.0	2.0	--	0.05
2,4,5-T	2.0	2.0	--	0.05
2,4-DB	--	10.0	--	--
Dalapon	--	58.0	--	--
Dicamba	--	3.0	--	--
Dichloroprop	--	7.0	--	--
Dinoseb	--	1.0	--	--
MCPA	--	2500	--	--
MCPP	--	2000	--	--

Table A.6 Organophosphorus Pesticides				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Azinphos methyl (Guthion)	--	--	--	2
Bolstar (Sulprofos)	--	--	--	0.4
Chlorpyrifos	--	--	--	0.4
Coumaphos	--	--	--	3.2
Demeton	--	--	--	0.8
Dizainon	--	--	--	0.4
Dichlorvos	--	--	--	0.4
Demethoate	--	--	--	0.4
Disulfoton	--	--	--	0.4
EPN	--	--	--	1.6
Ethoprop	--	--	--	0.8
Fensulfothion	--	--	--	1.6
Fenthion	--	--	--	0.2
Malathion	--	--	--	0.8
Merphos	--	--	--	2
Mevinphos	--	--	--	0.2
Monochrotophos	--	--	--	4
Naled	--	--	--	2.4
Parathion methyl	--	--	--	0.4
Parathion ethyl	--	--	--	0.4
Phorate	--	--	--	0.4
Ronnel	--	--	--	0.4
Stirophos (Tetrachlorvinphos)	--	--	--	1.2

Table A.6 Organophosphorus Pesticides				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
Sulfotepp	--	--	--	0.4
TEPP	--	--	--	0.8

Table A.7 Dioxin and Furan				
Compound	Detection Limit (μg/L)			
	June 1992	Sept. 1992	Feb. 1993	April 1993
2378-TCDF	--	--	--	0.37
2378-TCDD	--	--	--	0.37
12378-PeCDF	--	--	--	0.38
23478-PeCDF	--	--	--	0.34
12378-PeCDD	--	--	--	0.34
123478-HxCDF	--	--	--	0.41
123678-HxCDF	--	--	--	0.37
123789-HxCDF	--	--	--	0.51
234678-HxCDF	--	--	--	0.50
123478-HxCDD	--	--	--	0.40
123678-HxCDD	--	--	--	0.48
123789-HxCDD	--	--	--	0.32
1234678-HpCDF	--	--	--	0.40
1234789-HpCDF	--	--	--	0.48
1234678-HpCDD	--	--	--	0.29
OCDF	--	--	--	0.47
OCDD	--	--	--	0.45

Table A.8 Miscellaneous Parameters					
Parameter	Units	Detection Limit			
		June 1992	Sept. 1992	Feb. 1993	April 1993
pH	--	1-14	1-14	1-14	1-14
Conductivity	μmhos/cm	10	10	10	10
Chloride	mg/L	2.0	1.0	2	2
Nitrate	mg/L	0.5	0.1	--	0.05
Sulfate	mg/L	2.0	0.5	2	2
Phenol	mg/L	0.01	0.1	0.01	0.02
Fluoride	mg/L	0.2	0.1	--	0.1
Cyanide, Total	μg/L	10	--	--	10
Sulfide, Total	mg/L	0.1	--	--	1.0
Total Organic Carbon	mg/L	1.0	1.0	1.0	1.0
Total Organic Halogen	μg/L	5	5	5	5
Gross Alpha	pCi/L	2	2	--	1.6
Gross Beta	pCi/L	3	3	--	3.0
Total Radium	pCi/L	1	1	--	1.0
Coliforms	absent/present	--	--	--	--
Nitrite	mg/L	--	--	--	0.06
Total Dissolved Solids	mg/L	--	--	--	5.0
Turbidity	NTU	--	--	--	1.0