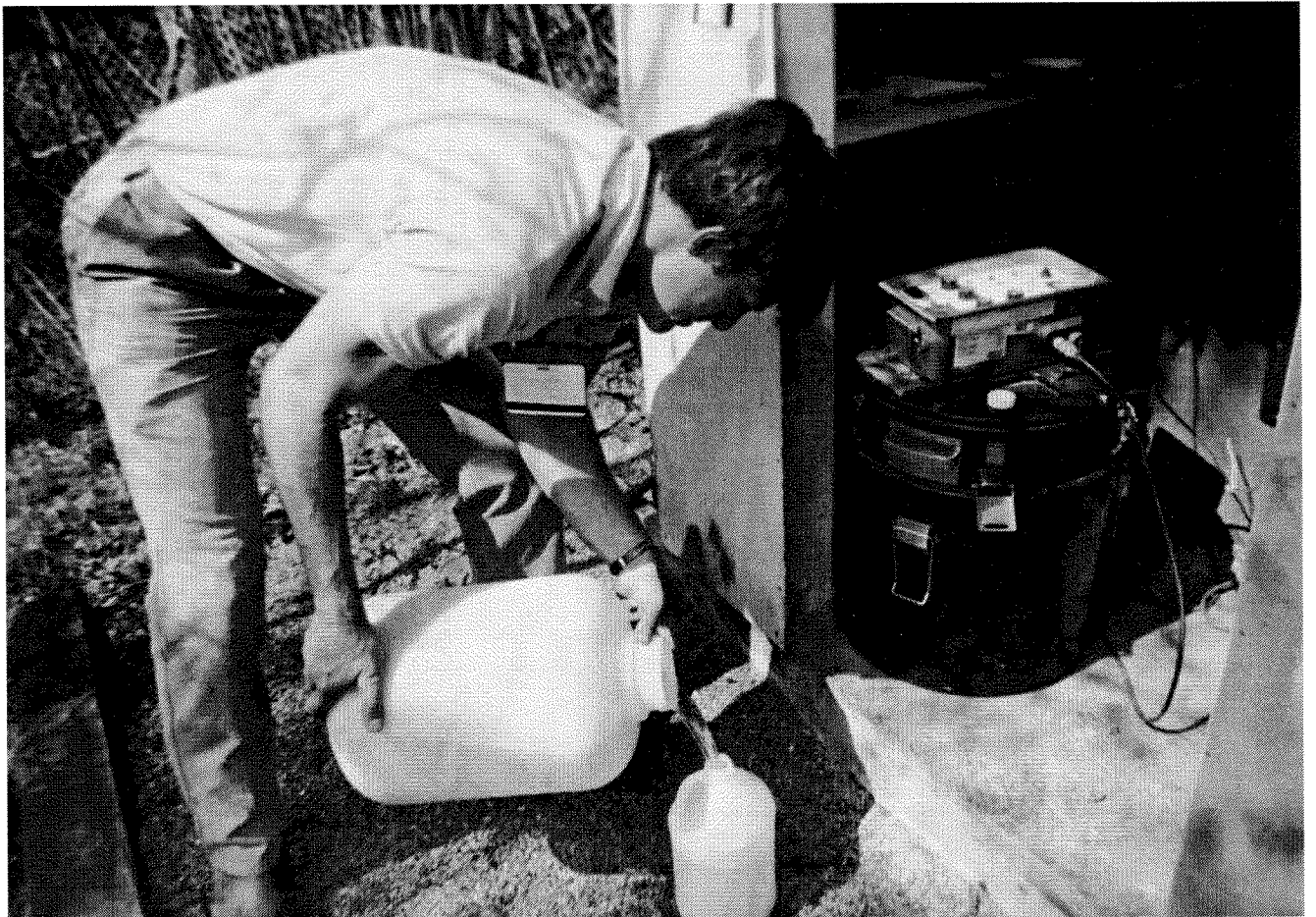


Appendix C - 1

Summary of Water and Sediment Monitoring Data



Collecting a Sample at a Continuous-stream Sampling Station

Table C - 1.1
Total Radioactivity of Liquid Effluents Released from
Lagoon 3 in 1993 (curies)

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL	Average ($\mu\text{Ci/mL}$)
<i>Alpha</i>	2.48 \pm 0.88E-04	1.42 \pm 0.58E-04	1.18 \pm 0.46E-04	3.48 \pm 0.81E-04	8.56 \pm 1.41E-04	2.17 \pm 0.36E-08
<i>Beta</i>	1.18 \pm 0.04E-04	1.04 \pm 0.03E-02	9.04 \pm 0.24E-03	1.20 \pm 0.02E-02	4.32 \pm 0.06E-02	1.10 \pm 0.02E-06
<i>H-3</i>	1.93 \pm 0.04E-01	1.71 \pm 0.05E-01	2.83 \pm 0.06E-01	3.38 \pm 0.08E-01	9.85 \pm 0.12E-01	2.50 \pm 0.03E-05
<i>Sr-90</i>	3.57 \pm 0.11E-03	1.98 \pm 0.08E-03	1.40 \pm 0.05E-03	2.28 \pm 0.09E-03	9.23 \pm 0.17E-03	2.34 \pm 0.04E-07
<i>Cs-137</i>	2.66 \pm 1.69E-04	0.96 \pm 1.10E-04	1.75 \pm 0.99E-04	1.30 \pm 1.60E-04	6.67 \pm 2.76E-04	1.69 \pm 0.70E-08
<i>Co-60</i>	0.00 \pm 2.32E-04	0.00 \pm 1.37E-04	0.00 \pm 1.35E-04	0.00 \pm 1.86E-04	0.00 \pm 3.54E-04	0.00 \pm 9.00E-09
<i>K-40</i>	0.00 \pm 3.21E-03	0.00 \pm 2.02E-03	1.51 \pm 1.72E-03	1.29 \pm 2.46E-03	2.79 \pm 4.84E-03	0.71 \pm 1.23E-07
<i>U-232</i>	2.67 \pm 0.18E-04	8.22 \pm 0.63E-05	9.71 \pm 0.58E-05	1.74 \pm 0.08E-04	6.20 \pm 0.22E-04	1.57 \pm 0.06E-08
<i>U-233/234</i>	1.50 \pm 0.09E-04	4.17 \pm 0.51E-05	5.10 \pm 0.39E-05	9.33 \pm 0.59E-05	3.36 \pm 0.13E-04	8.54 \pm 0.32E-09
<i>U-235</i>	5.24 \pm 5.35E-07	4.43 \pm 4.30E-07	7.60 \pm 4.29E-07	9.29 \pm 5.07E-07	2.66 \pm 0.96E-06	6.74 \pm 2.42E-11
<i>U-236</i>	1.33 \pm 0.68E-06	1.07 \pm 2.72E-07	5.21 \pm 3.43E-07	1.07 \pm 0.53E-06	3.03 \pm 0.97E-06	7.68 \pm 2.46E-11
<i>U-238</i>	7.03 \pm 0.56E-05	2.47 \pm 0.32E-05	1.97 \pm 0.20E-05	4.19 \pm 0.35E-05	1.57 \pm 0.08E-04	3.97 \pm 0.19E-09
<i>Pu-238</i>	9.30 \pm 5.71E-07	6.95 \pm 4.43E-07	3.80 \pm 3.75E-07	6.62 \pm 1.86E-06	8.62 \pm 2.03E-06	2.19 \pm 0.52E-10
<i>Pu-239/240</i>	1.71 \pm 3.72E-07	3.98 \pm 3.86E-07	1.61 \pm 2.50E-07	5.97 \pm 6.80E-07	1.33 \pm 0.90E-06	3.37 \pm 2.29E-11
<i>Am-241</i>	3.34 \pm 3.42E-07	-0.32 \pm 1.83E-07	-0.16 \pm 2.76E-07	5.18 \pm 3.93E-07	8.04 \pm 6.17E-07	2.04 \pm 1.57E-11
<i>I-129</i>	7.39 \pm 1.07E-05	1.96 \pm 0.25E-05	5.28 \pm 0.23E-05	5.23 \pm 0.49E-05	1.99 \pm 0.12E-04	5.04 \pm 0.31E-09
<i>C-14</i>	1.84 \pm 0.71E-04	6.32 \pm 5.06E-05	1.24 \pm 0.60E-04	-7.67 \pm 5.17E-05	2.94 \pm 1.18E-04	7.47 \pm 2.98E-09
<i>Tc-99</i>	1.04 \pm 0.02E-02	1.14 \pm 0.06E-02	1.63 \pm 0.06E-02	1.66 \pm 0.08E-02	5.47 \pm 0.12E-02	1.39 \pm 0.03E-06
<i>Total U(g)</i>	1.62 \pm 0.18E+02	5.25 \pm 0.76E+01	3.66 \pm 0.24E+01	9.98 \pm 1.20E+01	3.51 \pm 0.14E+02	8.91 \pm 0.36E-03 $\mu\text{g/mL}$

Table C - 1.2
Comparison of 1993 Lagoon 3 Liquid Effluent Radioactivity
Concentrations with Department of Energy Guidelines

Isotope	Discharge Activity ^a (Ci)	Radioactivity ^a (Becquerels)	Concentration (μ Ci/mL)	DCG (μ Ci/mL)	% of DCG
Gross Alpha	8.56 \pm 1.41E-04	3.17 \pm 0.52E +07	2.17 \pm 0.36E-08	N/A ^b	N/A
Gross Beta	4.32 \pm 0.06E-02	1.60 \pm 0.02E +09	1.10 \pm 0.02E-06	N/A ^b	N/A
H-3	9.85 \pm 0.12E-01	3.64 \pm 0.04E +10	2.50 \pm 0.03E-05	2.00E-03	1.25
Sr-90	9.23 \pm 0.17E-03	3.42 \pm 0.06E +08	2.34 \pm 0.04E-07	1.00E-06	23.44
Cs-137	6.67 \pm 2.76E-04	2.47 \pm 1.02E +07	1.69 \pm 0.70E-08	3.00E-06	0.56
Co-60	0.00 \pm 3.54E-04	0.00 \pm 1.31E +07	0.00 \pm 9.00E-09	5.00E-06	<0.18
K-40	2.79 \pm 4.84E-03	1.03 \pm 1.79E +08	0.71 \pm 1.23E-06	N/A	N/A
U-232 ^c	6.20 \pm 0.22E-04	2.29 \pm 0.08E +07	1.57 \pm 0.06E-08	1.00E-07	15.73
U-233/234 ^c	3.36 \pm 0.12E-04	1.25 \pm 0.05E +07	8.54 \pm 0.32E-09	5.00E-07	1.71
U-235 ^c	2.66 \pm 0.96E-06	9.83 \pm 3.53E +04	6.74 \pm 2.42E-11	6.00E-07	0.01
U-236 ^c	3.03 \pm 0.97E-06	1.12 \pm 0.36E +05	7.68 \pm 2.46E-11	5.00E-07	0.02
U-238 ^c	1.57 \pm 0.08E-04	5.79 \pm 0.28E +06	3.97 \pm 0.19E-09	6.00E-07	0.66
Pu-238	8.62 \pm 2.03E-06	3.19 \pm 0.75E +05	2.19 \pm 0.52E-10	4.00E-08	0.55
Pu-239/240	1.33 \pm 0.90E-06	4.91 \pm 3.33E +04	3.37 \pm 2.29E-11	3.00E-08	0.11
Am-241	8.04 \pm 6.17E-07	2.97 \pm 2.28E +04	2.04 \pm 1.57E-11	3.00E-08	0.07
I-129	1.99 \pm 0.12E-04	7.35 \pm 0.45E +06	5.04 \pm 0.31E-09	5.00E-07	1.01
C-14	2.94 \pm 1.18E-04	1.09 \pm 0.44E +07	7.47 \pm 2.98E-09	7.00E-05	0.01
Tc-99	5.47 \pm 0.12E-02	2.02 \pm 0.05E +09	1.39 \pm 0.03E-06	1.00E-04	1.39
TOTAL % of DCGs					46.69

^a Total volume released: 3.94E+10 mL.

^b Derived concentration guides (DCGs) are not applicable to gross alpha, gross beta, or potassium-40 activity.

^c Total U (g) = 3.51 \pm 0.14E+02; Average U (μ g/mL) = 8.91 \pm 0.36E-03.

N/A - Not applicable.

Table C - 1.3

**1993 Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface Water
Upstream of the WVDP at Fox Valley (WFBCBKG)**

Month	Alpha	Beta	H-3	Sr-90	Cs-137
January	0.63±1.09E-09	1.34±1.52E-09	0.00±1.00E-07		
February	-2.47±8.39E-10	3.93±1.64E-09	8.12±7.69E-08		
March	0.00±6.50E-10	3.41±1.66E-09	2.47±8.04E-08		
1st Qtr				1.74±2.13E-09	0.00±6.14E-09
April	-0.47±1.30E-09	1.28±1.65E-09	0.00±1.00E-07		
May	0.28±1.10E-09	2.67±1.63E-09	0.00±1.00E-07		
June	1.88±1.95E-09	2.90±1.83E-09	0.00±1.00E-07		
2nd Qtr				3.51±2.47E-09	0.26±5.79E-09
July	-4.04±7.92E-10	2.02±1.82E-09	7.31±8.02E-08		
August	0.00±2.42E-09	3.53±1.75E-09	0.00±1.00E-07		
September	1.70±2.40E-09	3.05±1.81E-09	0.00±1.00E-07		
3rd Qtr				3.08±2.19E-09	0.00±5.95E-09
October	-1.96±2.03E-09	4.16±1.93E-09	1.03±0.77E-07		
November	0.92±1.59E-09	2.76±1.53E-09	2.80±7.93E-08		
December	0.00±1.10E-09	2.65±1.51E-09	0.00±1.00E-07		
4th Qtr				5.51±2.50E-09	0.00±8.49E-09

Table C - 1.4

**1993 Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface Water
Downstream of the WVDP at Thomas Corners (WFBCTCB)**

Month	Alpha	Beta	H-3	Sr-90	Cs-137
January*	2.47±1.81E-09	6.07±1.99E-09	0.00±1.00E-07		
February	-2.61±8.87E-10	3.88±1.65E-09	0.00±1.00E-07		
March*	0.58±1.14E-09	5.27±1.87E-09	0.00±1.00E-07		
1st Qtr				2.35±2.16E-09	0.00±8.90E-09
April*	0.47±1.60E-09	6.58±1.97E-09	0.00±1.00E-07		
May	8.52±9.64E-10	5.34±2.00E-09	0.00±1.00E-07		
June	1.08±1.80E-09	6.20±2.15E-09	0.00±1.00E-07		
2nd Qtr				3.17±2.39E-09	0.00±5.79E-09
July*	2.24±2.32E-09	8.30±2.38E-09	1.56±0.79E-07		
August	-0.27±2.40E-09	1.10±0.25E-08	0.00±1.00E-07		
September*	2.53±2.48E-09	1.86±0.30E-08	1.04±7.62E-08		
3rd Qtr				5.51±2.27E-09	0.00±5.95E-09
October*	-0.41±2.67E-09	4.76±2.33E-09	0.00±1.00E-07		
November	3.01±2.47E-09	6.29±1.92E-09	2.69±7.62E-08		
December*	1.82±2.14E-09	7.41±2.02E-09	1.88±7.60E-08		
4th Qtr				4.75±2.17E-09	2.55±5.93E-09

* Month of discharge from WNSP001.

Table C - 1.5

**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface Water
Downstream of the WVDP at Frank's Creek (WNSP006)**

Month	Alpha	Beta	H-3
<i>January*</i>	1.56 \pm 2.04E-09	7.24 \pm 0.52E-08	9.72 \pm 1.04E-07
<i>February</i>	0.54 \pm 2.55E-09	2.54 \pm 0.33E-08	1.22 \pm 0.83E-07
<i>March*</i>	0.98 \pm 2.70E-09	9.01 \pm 0.59E-08	1.11 \pm 0.10E-06
<i>April*</i>	0.73 \pm 2.40E-09	1.52 \pm 0.10E-07	2.46 \pm 0.17E-06
<i>May</i>	1.32 \pm 2.47E-09	5.18 \pm 0.47E-08	3.00 \pm 8.58E-08
<i>June</i>	3.09 \pm 4.54E-09	6.00 \pm 0.53E-08	1.61 \pm 0.87E-07
<i>July*</i>	4.81 \pm 7.35E-09	1.91 \pm 0.09E-07	3.70 \pm 0.26E-06
<i>August</i>	1.42 \pm 6.25E-09	6.54 \pm 0.65E-08	1.10 \pm 0.81E-07
<i>September*</i>	1.22 \pm 7.75E-09	1.27 \pm 0.07E-07	3.16 \pm 0.21E-06
<i>October*</i>	2.40 \pm 4.39E-09	1.41 \pm 0.11E-07	3.12 \pm 0.22E-06
<i>November</i>	2.04 \pm 2.68E-09	2.45 \pm 0.48E-08	1.02 \pm 0.78E-07
<i>December*</i>	1.08 \pm 2.57E-09	5.10 \pm 0.62E-08	8.80 \pm 0.99E-07

* Month of discharge from WNSP001.

Table C - 1.6

**1993 Quarterly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface
Water Downstream of the WVDP at Frank's Creek (WNSP006)**

	C-14	Sr-90	I-129	Cs-137	U-233/234
<i>1st Qtr</i>	-6.50 \pm 7.90E-09	2.66 \pm 0.40E-08	8.60 \pm 5.10E-10	1.12 \pm 2.60E-08	4.60 \pm 1.50E-10
<i>2nd Qtr</i>	1.70 \pm 1.00E-08	2.58 \pm 0.41E-08	-0.20 \pm 4.16E-10	0.38 \pm 2.18E-08	3.40 \pm 1.30E-10
<i>3rd Qtr</i>	-7.65 \pm 9.05E-09	3.68 \pm 0.51E-08	5.70 \pm 3.80E-10	1.14 \pm 1.95E-08	8.00 \pm 2.10E-10
<i>4th Qtr</i>	-8.30 \pm 9.10E-09	1.96 \pm 0.37E-08	-0.12 \pm 7.48E-10	0.68 \pm 2.37E-08	2.40 \pm 1.00E-10
	U-235	U-238	Pu-238	Pu-239/240	Am-241
<i>1st Qtr</i>	1.40 \pm 3.50E-11	3.20 \pm 1.20E-10	0.33 \pm 3.29E-11	0.66 \pm 4.66E-10	3.20 \pm 4.20E-11
<i>2nd Qtr</i>	0.28 \pm 2.77E-11	3.50 \pm 1.30E-10	0.30 \pm 3.05E-11	2.70 \pm 4.60E-11	1.20 \pm 3.10E-10
<i>3rd Qtr</i>	0.87 \pm 3.46E-11	4.55 \pm 1.59E-10	0.51 \pm 5.08E-11	0.51 \pm 5.08E-11	3.47 \pm 1.37E-10
<i>4th Qtr</i>	0.23 \pm 2.29E-11	2.20 \pm 0.90E-10	0.35 \pm 3.46E-11	0.35 \pm 3.46E-11	3.00 \pm 4.00E-11

Table C - 1.7**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface Water
Downstream of Buttermilk Creek at Felton Bridge (WFFELBR)**

Month	Alpha	Beta	H-3	Sr-90	Cs-137
January*	0.00 \pm 1.26E-09	3.46 \pm 1.81E-09	0.00 \pm 1.00E-07	2.70 \pm 1.81E-09	0.00 \pm 9.49E-09
February	0.00 \pm 1.49E-09	3.72 \pm 1.70E-09	0.04 \pm 1.04E-07	5.38 \pm 2.25E-09	0.00 \pm 6.14E-09
March*	0.00 \pm 2.16E-09	2.16 \pm 1.82E-09	4.48 \pm 7.75E-08	1.09 \pm 1.74E-09	4.09 \pm 8.90E-09
April*	1.36 \pm 1.64E-09	3.14 \pm 1.72E-09	0.00 \pm 1.00E-07	2.39 \pm 1.97E-09	0.00 \pm 6.14E-09
May	-1.14 \pm 1.98E-09	4.20 \pm 1.86E-09	0.00 \pm 1.00E-07	2.58 \pm 2.16E-09	0.00 \pm 9.55E-09
June	1.49 \pm 2.18E-09	2.07 \pm 1.80E-09	0.00 \pm 1.00E-07	3.23 \pm 2.20E-09	2.18 \pm 5.79E-09
July*	-2.55 \pm 2.50E-09	3.73 \pm 1.84E-09	2.82 \pm 7.54E-08	7.52 \pm 2.60E-09	0.00 \pm 5.95E-09
August	0.00 \pm 2.81E-09	2.23 \pm 1.81E-09	0.00 \pm 1.00E-07	2.92 \pm 2.02E-09	1.27 \pm 5.95E-09
September*	0.49 \pm 2.88E-09	3.69 \pm 1.95E-09	0.00 \pm 1.00E-07	2.94 \pm 1.95E-09	0.00 \pm 5.95E-09
October*	2.14 \pm 2.57E-09	1.89 \pm 2.15E-09	1.27 \pm 0.78E-07	4.70 \pm 2.14E-09	0.00 \pm 5.95E-09
November	1.96 \pm 2.35E-09	3.12 \pm 2.16E-09	4.09 \pm 7.74E-08	4.88 \pm 2.48E-09	0.00 \pm 8.49E-09
December*	-0.47 \pm 2.08E-09	1.88 \pm 1.96E-09	0.00 \pm 1.00E-07	1.76 \pm 2.03E-09	0.00 \pm 8.49E-09

* Month of discharge from WNSP001.

Table C - 1.8**1993 Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Potable Well Water around the WVDP**

Well	pH	Conductivity ($\mu\text{mhos}/\text{cm}$ @25 °C)	Alpha	Beta	H-3	Cs-137
WFWEL01	7.51	394	1.55 \pm 2.68E-09	1.78 \pm 1.85E-09	0.00 \pm 1.00E-07	0.00 \pm 3.13E-08
WFWEL02	6.86	316	0.42 \pm 1.85E-09	1.16 \pm 1.74E-09	5.13 \pm 7.68E-08	0.00 \pm 1.83E-08
WFWEL03	6.81	827	0.00 \pm 3.81E-09	6.22 \pm 3.40E-09	0.00 \pm 1.00E-07	0.00 \pm 3.13E-08
WFWEL04	8.11	1,731	-2.40 \pm 8.15E-09	0.00 \pm 6.58E-09	0.00 \pm 1.00E-07	0.70 \pm 1.83E-08
WFWEL05	6.68	290	1.20 \pm 2.07E-09	4.05 \pm 2.07E-09	0.00 \pm 1.00E-07	0.00 \pm 3.13E-08
WFWEL06	7.45	286	0.82 \pm 1.96E-09	0.58 \pm 1.66E-09	0.00 \pm 1.00E-07	0.00 \pm 3.13E-08
WFWEL07	7.45	381	1.90 \pm 2.64E-09	0.12 \pm 1.62E-09	3.80 \pm 7.70E-08	0.00 \pm 1.83E-08
WFWEL08	7.32	485	0.00 \pm 2.66E-09	4.28 \pm 3.08E-09	0.00 \pm 1.00E-07	0.00 \pm 3.13E-08
WFWEL09	7.85	642	0.00 \pm 3.11E-09	4.17 \pm 3.10E-09	0.00 \pm 1.00E-07	0.00 \pm 1.83E-08
WFWEL10	7.17	572	-0.84 \pm 2.87E-09	3.82 \pm 3.08E-09	0.00 \pm 1.00E-07	0.00 \pm 1.83E-08

Table C - 1.9

**1993 Radioactivity Concentrations in Stream Sediments around the WVDP
($\mu\text{Ci/g}$ dry weight from upper 15 cm)**

Location	Date	Alpha	Beta	K-40	Cs-137	Sr-90	Co-60
SFBCSED	6/93	9.70 \pm 5.00E-06	4.20 \pm 0.40E-05	1.50 \pm 0.10E-05	7.00 \pm 3.60E-08	2.10 \pm 4.10E-08	1.60 \pm 2.50E-08
SFBCSED	11/93	1.10 \pm 0.60E-05	5.90 \pm 0.40E-05	2.70 \pm 0.30E-05	3.40 \pm 2.50E-08	1.20 \pm 0.20E-07	0.00 \pm 2.30E-08
SFBISED	6/93	1.70 \pm 0.60E-05	4.70 \pm 0.40E-05	1.40 \pm 0.10E-05	3.80 \pm 2.70E-08	1.40 \pm 7.30E-08	3.80 \pm 2.60E-08
SFBISED	10/93	4.30 \pm 4.00E-06	2.50 \pm 0.30E-05	1.20 \pm 0.10E-05	2.00 \pm 1.40E-08	2.20 \pm 0.10E-06	-0.09 \pm 1.23E-08
SFCCSED	6/93	1.60 \pm 0.60E-05	3.40 \pm 0.30E-05	1.30 \pm 0.10E-05	4.40 \pm 0.40E-07	5.40 \pm 4.40E-08	-0.17 \pm 1.52E-08
SFCCSED	10/93	1.50 \pm 0.60E-05	3.60 \pm 0.30E-05	1.20 \pm 0.10E-05	4.00 \pm 0.40E-07	3.10 \pm 2.80E-08	0.27 \pm 1.83E-08
SFSDSED	6/93	9.70 \pm 5.00E-06	3.80 \pm 0.30E-05	1.20 \pm 0.10E-05	1.60 \pm 0.40E-07	5.40 \pm 4.40E-08	-0.09 \pm 2.16E-08
SFSDSED	10/93	1.30 \pm 0.60E-05	4.25 \pm 0.35E-05	1.45 \pm 0.10E-05	4.00 \pm 0.50E-07	6.65 \pm 3.05E-08	-0.06 \pm 2.42E-08
SFTCSSED	6/93	1.20 \pm 0.55E-05	3.55 \pm 0.30E-05	1.20 \pm 0.10E-05	1.40 \pm 0.10E-06	9.25 \pm 4.76E-08	1.09 \pm 1.79E-08
SFTCSSED	10/93	1.10 \pm 0.50E-05	4.30 \pm 0.30E-05	1.30 \pm 0.10E-05	1.80 \pm 0.20E-06	1.70 \pm 0.40E-07	0.81 \pm 1.77E-08
		U-233/234	U-235	U-238	Pu-238	Pu-239/240	Am-241
SFBCSED	6/93	1.20 \pm 0.30E-07	5.60 \pm 7.40E-09	5.70 \pm 2.10E-08	1.30 \pm 9.40E-09	-3.30 \pm 8.70E-09	0.69 \pm 1.17E-08
SFBCSED	11/93	1.90 \pm 0.40E-07	9.80 \pm 9.50E-09	1.40 \pm 0.30E-07	4.10 \pm 7.50E-09	0.41 \pm 4.12E-09	0.10 \pm 1.00E-08
SFTCSSED	6/93	8.15 \pm 2.40E-08	3.52 \pm 5.77E-09	6.25 \pm 2.00E-08	2.75 \pm 7.11E-09	-0.34 \pm 6.05E-09	3.00 \pm 7.91E-09
SFTCSSED	10/93	1.00 \pm 0.30E-07	3.00 \pm 7.80E-09	7.40 \pm 2.80E-08	0.53 \pm 5.31E-09	2.70 \pm 6.80E-09	0.52 \pm 1.34E-08
		U-232					
SFBCSED	6/93	0.37 \pm 7.81E-09					
SFBCSED	11/93	-1.10 \pm 7.20E-09					
SFTCSSED	6/93	0.89 \pm 1.11E-08					
SFTCSSED	10/93	0.96 \pm 1.14E-08					

Table C - 1.10

**1993 Radioactivity Concentrations in Surface Soil Collected at
Air Sampling Stations around the WVDP ($\mu\text{Ci/g}$ dry weight from upper 15 cm)**

Location	K-40	Cs-137	Sr-90	Am-241	Pu-239/240
SFFXVRD	1.10 \pm 0.10E-05	7.50 \pm 3.50E-08	1.40 \pm 0.70E-07	0.83 \pm 9.64E-09	0.30 \pm 2.99E-08
SFRSPRD	1.25 \pm 0.10E-05	1.55 \pm 0.16E-06	2.30 \pm 0.71E-07	3.35 \pm 6.75E-09	-0.10 \pm 2.13E-08
SFRT240	1.30 \pm 0.10E-05	1.00 \pm 0.10E-06	2.80 \pm 0.80E-07	1.00 \pm 0.90E-08	0.35 \pm 3.59E-08
SFSPRVL	1.30 \pm 0.10E-05	6.10 \pm 0.60E-07	2.70 \pm 0.60E-07	1.50 \pm 1.00E-08	0.27 \pm 2.73E-08
SFTCORD	2.00 \pm 0.20E-05	5.40 \pm 0.60E-07	2.00 \pm 0.70E-07	0.98 \pm 9.79E-09	0.95 \pm 1.06E-07
SFWEVAL	1.00 \pm 0.10E-05	7.10 \pm 0.70E-07	2.70 \pm 0.60E-07	7.20 \pm 7.00E-09	0.33 \pm 3.31E-08
SFGRVAL	1.40 \pm 0.10E-05	6.10 \pm 0.60E-07	4.30 \pm 0.80E-07	0.56 \pm 1.42E-08	-0.51 \pm 1.34E-08
SFBOEHN	1.70 \pm 0.20E-05	6.70 \pm 0.70E-07	2.60 \pm 0.50E-07	6.60 \pm 8.70E-09	0.16 \pm 1.59E-08
SFDNKRK	4.80 \pm 0.50E-06	1.40 \pm 0.30E-07	1.60 \pm 4.70E-08	0.99 \pm 9.87E-09	-0.78 \pm 2.04E-08
SFBLKST	2.50 \pm 0.20E-05	3.20 \pm 0.60E-07	3.60 \pm 7.40E-08	6.20 \pm 8.10E-09	6.60 \pm 7.30E-08
	U-233/234	U-235	U-238		
SFRSPRD	1.04 \pm 0.28E-07	1.22 \pm 4.85E-09	8.50 \pm 2.63E-08		
SFGRVAL	1.30 \pm 0.40E-07	1.30 \pm 1.30E-08	1.30 \pm 0.40E-07		
SFBOEHN	1.00 \pm 0.30E-07	9.40 \pm 9.20E-09	9.70 \pm 2.80E-08		

Table C - 1.11
1993 Surface Water Quality at Locations WFBCBKG, WNSP006,
WNSWAMP, and WNSW74A

Location	Date	pH	Conductivity (µmhos/cm@25°C)	NPOC (mg/L)	TOX (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate/ Nitrite (mg/L)	Fluoride (mg/L)	Bicarbonate Alkalinity (as CaCO ₃)	Carbonate Alkalinity (as CaCO ₃)
WFBCBKG	06/09	7.65*	N/A	2.8	7.8	13.9	19.9	0.290	<0.10	94.5	<1.0
WFBCBKG	11/10	7.76*	N/A	2.4	7.6	10.0	22.4	0.270	<0.10	67.5	<1.0
WNSP006	06/09	7.75**	502**	5.8	33.0	52.8	39.8	2.400	0.12	120.0	<1.0
WNSP006	11/10	7.68**	676**	3.4	30.8	50.1	24.4	1.000	<0.10	91.3	<1.0
WNSWAMP	06/09	7.26	N/A	5.2	6.6	108.0	27.5	1.000	<0.10	172.0	<1.0
WNSWAMP	11/10	7.17**	687	3.8	9.2	97.0	32.3	1.400	<0.10	181.0	<1.0
WNSW74A	06/09	7.65**	690**	6.3	13.0	55.1	42.7	<0.050	0.11	156.0	<1.0
WNSW74A	11/10	7.52**	591**	3.8	7.6	57.3	54.4	0.670	<0.10	146.0	<1.0

			Ca	Mg	Na	K	Ba	Mn		Fe	
			Total (µg/L)	Total (µg/L)	Total (µg/L)	Total (µg/L)	Total (µg/L)	Total (µg/L)	Soluble (µg/L)	Total (µg/L)	Soluble (µg/L)
WFBCBKG	06/09		38,700.0	5,450	10,600.0	2,100	92.0	92.0	N/A	2,160.0	N/A
WFBCBKG	11/10		24,600.0	3,550	8,860.0	1,180	53.0	30.0	N/A	519.0	N/A
WNSP006	06/09		52,150.0	7,800	33,650.0	3,365	62.5	131.0	N/A	3,635.0	N/A
WNSP006	11/10		41,400.0	6,530	35,800.0	2,540	47.0	110.0	N/A	587.0	N/A
WNSWAMP	06/09		83,700.0	10,600	33,200.0	1,710	113.0	N/A	740.0	747.0	N/A
WNSWAMP	11/10		100,000.0	13,200	41,000.0	1,910	119.0	N/A	266.0	117.0	N/A
WNSW74A	06/09		65,000.0	7,180	31,900.0	1,160	15.0	52.0	N/A	N/A	140.0
WNSW74A	11/10		73,300.0	9,080	33,200.0	1,720	55.0	32.0	N/A	N/A	112.0

* Average of biweekly measurements during a semiannual period.

** Average of weekly measurements during semiannual period.

N/A - Not applicable.

Table C - 1.12

**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface Water
at the Northeast Swamp Location (WNSWAMP)**

Month	Alpha	Beta	H-3
<i>January</i>	1.32 \pm 1.49E-09	6.77 \pm 0.48E-08	3.94 \pm 7.98E-08
<i>February</i>	2.32 \pm 4.02E-09	5.25 \pm 0.14E-07	5.37 \pm 0.82E-07
<i>March</i>	0.77 \pm 2.62E-09	4.73 \pm 0.14E-07	2.99 \pm 0.82E-07
<i>April</i>	3.34 \pm 3.46E-09	7.75 \pm 0.17E-07	4.62 \pm 0.83E-07
<i>May</i>	-0.84 \pm 4.37E-09	7.95 \pm 0.18E-07	4.88 \pm 0.85E-07
<i>June</i>	0.00 \pm 4.09E-09	6.78 \pm 0.20E-07	1.83 \pm 0.92E-07
<i>July</i>	0.00 \pm 3.88E-09	6.47 \pm 0.20E-07	5.80 \pm 0.87E-07
<i>August</i>	-1.28 \pm 5.60E-09	7.20 \pm 0.21E-07	3.80 \pm 0.85E-07
<i>September</i>	3.01 \pm 6.53E-09	9.10 \pm 0.24E-07	4.79 \pm 0.83E-07
<i>October</i>	2.98 \pm 5.66E-09	8.81 \pm 0.26E-07	4.39 \pm 0.83E-07
<i>November</i>	3.99 \pm 4.48E-09	6.64 \pm 0.22E-07	3.45 \pm 0.87E-07
<i>December</i>	4.11 \pm 5.07E-09	9.38 \pm 0.25E-07	4.47 \pm 0.82E-07

Table C - 1.13

**1993 Quarterly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface
Water at the Northeast Swamp Location (WNSWAMP)**

	C-14	Sr-90	I-129	Cs-137	U-233/234
<i>4th Qtr</i>	-2.50 \pm 9.20E-09	4.12 \pm 0.15E-07	4.40 \pm 7.80E-10	0.38 \pm 1.30E-08	1.30 \pm 0.80E-10
	U-235	U-238	Pu-238	Pu-239/240	Am-241
<i>4th Qtr</i>	0.25 \pm 2.45E-11	8.10 \pm 6.10E-11	0.35 \pm 3.46E-11	4.50 \pm 5.90E-11	1.90 \pm 3.10E-11

Table C - 1.14**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci/mL}$) in Surface Water at the North Swamp Location (WNSW74A)**

Month	Alpha	Beta	H-3
January	0.50±2.94E-09	1.77±0.44E-08	1.79±8.68E-08
February	-0.55±2.42E-09	1.65±0.31E-08	0.00±1.00E-07
March	-1.37±5.17E-09	2.09±0.42E-08	7.32±7.58E-08
April	0.04±3.12E-09	1.69±0.42E-08	0.10±9.74E-08
May	-0.70±3.56E-09	1.80±0.40E-08	0.00±1.00E-07
June	1.25±3.18E-09	1.79±0.41E-08	0.50±9.72E-08
July	0.48±2.91E-09	1.52±0.39E-08	1.24±9.14E-08
August	-1.40±4.00E-09	1.70±0.39E-08	2.36±9.48E-08
September	0.10±2.68E-09	1.57±0.37E-08	3.68±8.36E-08
October	-0.06±2.21E-09	1.58±0.36E-08	2.95±9.18E-08
November	1.09±2.53E-09	1.30±0.34E-08	0.41±9.47E-08
December	0.77±3.04E-09	1.45±0.36E-08	0.00±1.00E-07

Table C - 1.15**1993 Quarterly Radioactivity Concentrations ($\mu\text{Ci/mL}$) in Surface Water at the North Swamp Location (WNSW74A)**

	C-14	Sr-90	I-129	Cs-137	U-233/234
1st Qtr	2.10±0.10E-06	9.12±2.65E-09	0.30±1.13E-09	0.47±2.82E-08	6.30±6.50E-11
2nd Qtr	2.75±0.90E-08	1.02±0.29E-08	2.65±3.85E-10	0.34±2.72E-08	9.30±6.86E-11
3rd Qtr	-1.20±0.90E-08	8.93±2.86E-09	-1.50±2.90E-10	0.04±1.95E-08	1.90±1.10E-10
4th Qtr	-0.33±9.25E-09	7.79±2.67E-09	0.00±6.50E-10	0.00±2.37E-08	8.80±5.90E-11
	U-235	U-238	Pu-238	Pu-239/240	Am-241
1st Qtr	0.28±2.84E-11	4.80±5.40E-11	0.28±2.84E-11	-0.28±4.36E-11	2.80±5.30E-11
2nd Qtr	0.27±2.67E-11	4.65±5.40E-11	0.28±2.89E-11	0.42±3.10E-11	2.00±4.26E-11
3rd Qtr	0.35±3.52E-11	1.40±1.00E-10	0.45±4.49E-11	1.30±7.80E-11	2.50±4.30E-11
4th Qtr	0.21±2.15E-11	5.40±4.70E-11	0.32±3.23E-11	4.20±5.50E-11	4.40±1.20E-10

Table C - 1.16**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) and pH in Surface Water at Location WNFRC67**

Month	Alpha	Beta	H-3	pH
January	2.01±6.82E-10	2.58±1.84E-09	1.62±0.81E-07	7.40
February	0.00±8.64E-10	3.87±1.62E-09	0.00±1.00E-07	7.35
March	0.00±1.82E-09	3.91±1.74E-09	5.60±7.85E-08	7.17
April	5.67±8.29E-10	2.07±1.65E-09	1.44±8.42E-08	7.66
May	0.60±1.87E-09	4.49±1.75E-09	0.00±1.00E-07	7.72
June	1.25±2.14E-09	8.53±2.98E-09	0.00±1.00E-07	7.83
July	-1.28±1.88E-09	8.87±2.52E-09	9.33±8.15E-08	7.78
August	0.00±2.42E-09	7.35±2.72E-09	0.00±1.00E-07	7.80
September	-1.42±2.07E-09	1.12±0.28E-08	0.00±1.00E-07	7.77
October	0.80±1.11E-09	6.31±2.73E-09	0.00±1.00E-07	7.70
November	0.94±1.85E-09	0.61±3.42E-09	3.57±7.79E-08	7.51
December	-5.87±8.13E-10	4.27±1.97E-09	9.84±7.63E-08	7.47

Table C - 1.17**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) and pH in Surface Water at Location WNERB53**

Month	Alpha	Beta	H-3	pH
January	1.08±1.79E-09	1.75±0.28E-08	6.23±7.84E-08	7.59
February	0.77±3.42E-09	2.72±0.39E-08	1.51±0.78E-07	7.62
March	0.06±2.71E-09	2.45±0.37E-08	2.70±4.08E-07	7.47
April	-0.18±1.68E-09	1.61±0.32E-08	1.33±0.79E-07	7.83
May	1.30±2.97E-09	2.18±0.37E-08	1.83±8.76E-08	7.90
June	0.87±4.27E-09	2.38±0.39E-08	8.34±8.54E-08	7.92
July	-1.96±5.53E-09	2.33±0.40E-08	1.15±0.85E-07	7.92
August	-0.88±5.23E-09	2.27±0.45E-08	0.00±1.00E-07	7.88
September	-2.87±4.18E-09	2.30±0.42E-08	0.00±1.00E-07	7.83
October	-0.29±3.75E-09	2.67±0.47E-08	1.34±0.83E-07	7.76
November	0.99±2.21E-09	1.90±0.40E-08	1.52±0.79E-07	7.64
December	2.44±2.82E-09	2.87±0.40E-08	2.54±0.80E-07	7.64

Table C - 1.18**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) and pH in Surface Water at Location WNCoolw**

Month	Alpha	Beta	H-3	pH
<i>January</i>	0.99 \pm 3.36E-09	2.62 \pm 0.38E-08	0.00 \pm 1.00E-07	7.95
<i>February</i>	2.22 \pm 4.36E-09	2.16 \pm 0.44E-08	2.12 \pm 7.68E-08	7.83
<i>March</i>	0.00 \pm 2.45E-09	3.09 \pm 0.49E-08	0.00 \pm 1.00E-07	7.99
<i>April</i>	-0.69 \pm 3.04E-09	2.59 \pm 0.47E-08	6.10 \pm 7.82E-08	7.99
<i>May</i>	-1.54 \pm 3.69E-09	2.56 \pm 0.45E-08	0.00 \pm 1.00E-07	8.12
<i>June</i>	-2.47 \pm 4.84E-09	2.49 \pm 0.46E-08	0.00 \pm 1.00E-07	8.30
<i>July</i>	0.00 \pm 9.22E-09	3.13 \pm 0.51E-08	5.24 \pm 8.14E-08	8.59
<i>August</i>	0.00 \pm 5.89E-09	1.51 \pm 0.41E-08	0.00 \pm 1.00E-07	8.54
<i>September</i>	-0.60 \pm 3.13E-09	1.10 \pm 0.30E-08	4.44 \pm 7.88E-08	8.38
<i>October</i>	3.16 \pm 3.10E-09	2.00 \pm 0.40E-08	8.95 \pm 7.76E-08	8.39
<i>November</i>	4.19 \pm 5.03E-09	2.14 \pm 0.46E-08	1.09 \pm 7.70E-08	8.18
<i>December</i>	-0.77 \pm 2.60E-09	1.37 \pm 0.35E-08	0.00 \pm 1.00E-07	8.17

Table C - 1.19**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) and pH in Surface Water at Location WNsp005**

Month	Alpha	Beta	H-3	pH
<i>January</i>	1.83 \pm 1.34E-08	1.49 \pm 0.17E-07	0.00 \pm 1.00E-07	7.76
<i>February</i>	0.00 \pm 3.64E-09	8.69 \pm 1.06E-08	1.23 \pm 0.76E-07	7.40
<i>March</i>	-1.63 \pm 3.92E-09	1.08 \pm 0.12E-07	0.00 \pm 1.00E-07	7.29
<i>April</i>	0.00 \pm 4.07E-09	1.61 \pm 0.14E-07	1.27 \pm 0.79E-07	7.25
<i>May</i>	0.00 \pm 3.12E-09	5.82 \pm 0.75E-08	0.00 \pm 1.00E-07	7.58
<i>June</i>	-0.86 \pm 3.76E-09	5.65 \pm 0.91E-08	0.00 \pm 1.00E-07	7.57
<i>July</i>	2.69 \pm 5.82E-09	6.73 \pm 0.92E-08	0.75 \pm 7.32E-08	7.62
<i>August</i>	-0.01 \pm 4.14E-09	3.39 \pm 0.79E-08	0.00 \pm 1.00E-07	7.62
<i>September</i>	0.00 \pm 5.14E-09	7.62 \pm 0.99E-08	0.00 \pm 1.00E-07	7.51
<i>October</i>	2.29 \pm 3.17E-09	7.58 \pm 1.02E-08	2.93 \pm 7.55E-08	7.56
<i>November</i>	1.96 \pm 4.78E-09	7.98 \pm 0.97E-08	4.03 \pm 7.63E-08	7.52
<i>December</i>	3.38 \pm 5.85E-09	1.13 \pm 0.11E-07	3.23 \pm 7.63E-08	7.27

Table C - 1.20**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci/mL}$), pH, and Conductivity at Site Potable Water Location WNDNKEL**

Month	Alpha	Beta	H-3	pH	Conductivity ($\mu\text{mhos/cm @25}^\circ\text{C}$)
January	-1.73 \pm 3.39E-10	0.08 \pm 1.57E-09	1.82 \pm 0.79E-07	7.24	131.3
February	-1.87 \pm 6.36E-10	2.47 \pm 1.44E-09	0.00 \pm 1.00E-07	7.46	175.7
March	0.00 \pm 1.16E-09	1.76 \pm 1.44E-09	0.00 \pm 1.00E-07	7.42	197.9
April	0.00 \pm 4.70E-10	0.74 \pm 1.50E-09	0.00 \pm 1.00E-07	7.37	135.1
May	0.00 \pm 1.12E-09	1.67 \pm 1.39E-09	0.00 \pm 1.00E-07	7.80	189.2
June	-4.82 \pm 9.53E-10	2.92 \pm 1.65E-09	0.00 \pm 1.00E-07	7.73	220.0
July	-4.15 \pm 9.97E-10	4.61 \pm 1.70E-09	0.00 \pm 1.00E-07	7.63	233.0
August	0.59 \pm 1.63E-09	1.05 \pm 1.66E-09	0.00 \pm 1.00E-07	7.69	250.0
September	0.00 \pm 1.46E-09	2.84 \pm 1.61E-09	0.98 \pm 6.92E-08	7.63	249.0
October	1.31 \pm 1.28E-09	0.53 \pm 1.69E-09	4.03 \pm 7.63E-08	7.81	245.0
November	-3.01 \pm 5.90E-10	2.38 \pm 1.76E-09	5.17 \pm 7.74E-08	7.66	210.0
December	-5.02 \pm 6.96E-10	2.53 \pm 1.48E-09	7.24 \pm 7.66E-08	7.55	162.9

Table C - 1.21**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci/mL}$) in Surface Water at Location WNSP007**

Month	Alpha	Beta	H-3	Sr-90	Cs-137
January	-1.87 \pm 9.24E-10	7.16 \pm 2.10E-09	1.29 \pm 9.34E-08	2.67 \pm 2.15E-09	0.00 \pm 2.14E-08
February	-0.57 \pm 1.42E-09	5.74 \pm 2.03E-09	0.00 \pm 1.00E-07	4.53 \pm 2.08E-09	0.00 \pm 2.64E-08
March	-0.96 \pm 1.91E-09	9.55 \pm 2.33E-09	3.01 \pm 9.26E-08	9.62 \pm 2.82E-09	0.00 \pm 3.22E-08
April	-0.45 \pm 1.36E-09	9.67 \pm 2.41E-09	0.00 \pm 1.00E-07	9.25 \pm 2.72E-09	0.00 \pm 1.74E-08
May	0.28 \pm 1.28E-09	8.79 \pm 2.35E-09	0.44 \pm 9.32E-08	2.44 \pm 2.15E-09	0.00 \pm 2.56E-08
June	0.18 \pm 1.74E-09	9.35 \pm 2.44E-09	0.78 \pm 9.28E-08	2.25 \pm 2.10E-09	0.96 \pm 1.96E-08
July	-0.27 \pm 2.16E-09	8.69 \pm 2.36E-09	5.91 \pm 7.83E-08	3.30 \pm 1.98E-09	0.00 \pm 1.96E-08
August	-1.83 \pm 2.64E-09	8.49 \pm 2.59E-09	0.00 \pm 1.00E-07	5.38 \pm 2.22E-09	1.85 \pm 1.94E-08
September	-0.67 \pm 2.48E-09	1.15 \pm 0.26E-08	1.47 \pm 9.33E-08	4.80 \pm 2.43E-09	0.00 \pm 1.94E-08
October	1.35 \pm 1.63E-09	9.68 \pm 2.60E-09	1.48 \pm 8.72E-08	9.91 \pm 2.95E-09	0.00 \pm 1.94E-08
November	0.46 \pm 2.08E-09	7.47 \pm 4.24E-09	3.12 \pm 8.48E-08	9.39 \pm 2.70E-09	0.00 \pm 1.83E-08
December	1.26 \pm 2.69E-09	1.02 \pm 0.36E-08	7.82 \pm 7.70E-08	9.92 \pm 2.82E-09	0.22 \pm 1.83E-08

Table C - 1.22

**1993 Radioactivity Concentrations ($\mu\text{Ci}/\text{mL}$) in Surface Water
at Locations WNDADR and WNDATR**

Location WNDADR

Month	Alpha	Beta	H-3	Cs-137	Sr-90	I-129
<i>January</i>	4.11±3.49E-09	1.33±0.07E-07	2.26±0.12E-06	0.00±2.14E-08		
<i>February</i>	2.86±6.86E-09	2.35±0.10E-07	2.97±0.14E-06	0.00±3.22E-08		
<i>March</i>	-0.94±2.25E-09	1.01±0.09E-07	2.08±0.12E-06	0.00±1.74E-08		
1st Qtr					5.05±0.52E-08	3.20±4.50E-10
<i>April</i>	2.10±4.96E-09	2.15±0.13E-07	4.13±0.18E-06	0.00±3.22E-08		
<i>May</i>	2.98±3.38E-09	3.07±0.15E-07	8.58±0.31E-06	1.40±2.56E-08		
<i>June</i>	-1.01±3.42E-09	2.27±0.13E-07	3.44±0.16E-06	0.00±2.56E-08		
2nd Qtr					1.22±0.09E-07	5.60±3.50E-10
<i>July</i>	1.99±3.90E-09	1.99±0.12E-07	3.62±0.16E-06	0.51±1.96E-08		
<i>August</i>	1.05±6.15E-09	2.02±0.12E-07	2.42±0.13E-06	0.00±1.94E-08		
<i>September</i>	0.00±5.05E-09	2.14±0.13E-07	2.66±0.14E-06	0.70±1.94E-08		
3rd Qtr					8.28±0.68E-08	5.70±2.60E-10
<i>October</i>	-3.36±6.58E-09	2.90±0.17E-07	4.49±0.18E-06	0.00±1.94E-08		
<i>November</i>	9.48±6.19E-09	2.79±0.15E-07	3.56±0.16E-06	1.34±1.83E-08		
<i>December</i>	3.85±5.33E-09	2.57±0.14E-07	3.05±0.14E-06	0.00±3.13E-08		
4th Qtr					1.06±0.08E-07	-3.30±8.00E-10

Location WNDATR

Month	Alpha	Beta	H-3	Cs-137	I-129
<i>January</i>	2.61±4.51E-09	4.42±0.46E-08	8.91±0.31E-06	0.00±2.14E-08	
<i>February</i>	4.28±9.28E-09	5.94±0.75E-08	3.85±0.12E-05	0.00±3.22E-08	
<i>March</i>	-1.53±4.24E-09	3.94±0.62E-08	7.08±0.26E-06	0.26±3.22E-08	
1st Qtr					0.18±1.43E-09
<i>April</i>	0.00±4.23E-09	5.14±0.72E-08	3.41±0.10E-05	0.00±1.96E-08	
<i>May</i>	-1.42±7.36E-09	7.60±0.81E-08	4.20±0.13E-05	0.00±2.56E-08	
<i>June</i>	0.00±2.25E-09	3.50±0.58E-08	1.18±0.04E-05	0.00±1.96E-08	
2nd Qtr					3.30±3.70E-10
<i>July</i>	4.00±4.78E-09	5.08±0.69E-08	1.49±0.05E-05	0.00±1.96E-08	
<i>August</i>	-1.57±3.77E-09	4.58±0.63E-08	1.06±0.04E-05	0.76±1.94E-08	
<i>September</i>	-1.13±2.70E-09	3.41±0.56E-08	4.59±0.19E-06	0.00±1.94E-08	
3rd Qtr					-0.76±3.88E-10
<i>October</i>	-1.10±7.19E-09	5.44±0.71E-08	1.26±0.04E-05	0.00±1.94E-08	
<i>November</i>	1.77±4.20E-09	4.92±0.60E-08	9.69±0.39E-06	0.10±1.83E-08	
<i>December</i>	1.77±5.64E-09	8.30±0.84E-08	1.99±0.06E-05	0.00±1.83E-08	
4th Qtr					2.20±6.90E-10

Table C - 1.23

1993 TOC, NPOC, TOX, and pH for Locations WNDADR and WNDATR

Location WNDADR

	TOC* (mg/L)	TOX (µg/L)	pH (standard units)
<i>January</i>	5.5	7.8	7.6
<i>February</i>	6.4	13.9	7.7
<i>March</i>	4.2	7.7	7.4
<i>April</i>	7.6	17	7.9
<i>May</i>	9.6	22.7	7.9
<i>June</i>	9.2	15.6	7.6
<i>July</i>	9.8	25.2	7.9
<i>August</i>	9.3	64.5	7.8
<i>September</i>	10.0	21.9	7.8
<i>October</i>	9.6	21.42	7.9
<i>November</i>	7.8	15.4	7.9
<i>December</i>	7.4	12.4	7.8

Location WNDATR

	NPOC* (mg/L)	TOX (µg/L)
<i>January</i>	NA	NA
<i>February</i>	NA	NA
<i>March</i>	2.5	12.4
<i>April</i>	3.4	17.6
<i>May</i>	3.1	14.8
<i>June</i>	3.8	6.4
<i>July</i>	3.4	18.9
<i>August</i>	3.4	9.2
<i>September</i>	5.4	10.8
<i>October</i>	4.4	15.5
<i>November</i>	3.9	6.6
<i>December</i>	4.2	12.8

NA - Not available.

* Total organic carbon (TOC) and nonpurgeable organic carbon (NPOC) are two variants of the same analysis. In samples that have little or no purgeable carbon component, NPOC and TOC values can be directly compared.

Table C - 1.24

**1993 Radioactivity Concentrations ($\mu\text{Ci/g}$ dry weight from upper 15 cm)
in On-site Soil Sediments**

Location	U-232	U-233/234	U-235	U-236	U-238	Total U ($\mu\text{g/g}$)
SNSP006	1.60 \pm 0.40E-08	1.20 \pm 0.30E-07	4.30 \pm 5.60E-09	0.33 \pm 3.27E-09	7.90 \pm 2.10E-08	3.20 \pm 0.90E-01
SNSW74A	2.40 \pm 0.80E-09	9.10 \pm 2.90E-08	0.53 \pm 5.26E-09	0.53 \pm 5.26E-09	7.80 \pm 2.70E-08	2.50 \pm 1.00E-01
SNSWAMP	4.30 \pm 1.40E-09	1.10 \pm 0.30E-07	3.50 \pm 6.00E-09	0.39 \pm 3.94E-09	6.20 \pm 2.00E-08	2.60 \pm 0.90E-01
	K-40	Cs-137	Sr-90	Am-241	Pu-239/240	
SNSP006	1.80 \pm 0.20E-05	2.20 \pm 0.20E-05	2.80 \pm 0.20E-06	3.10 \pm 2.80E-08	2.20 \pm 1.40E-08	
SNSW74A	1.20 \pm 0.10E-05	3.90 \pm 0.40E-06	4.50 \pm 0.80E-07	5.60 \pm 3.00E-08	8.80 \pm 4.60E-08	
SNSWAMP	2.20 \pm 0.20E-05	7.40 \pm 0.70E-06	3.60 \pm 0.20E-06	1.80 \pm 0.60E-07	6.30 \pm 4.40E-08	

Table C - 1.25
1993 Metals Concentrations (mg/kg dry) in On-site Soils

Location Code	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium
SNSP006	15,900	<1.5	18.2	90.8	0.78	0.33
SNSW74A	10,295	<1.5	18.0	69.6	0.41	<0.25
SNSWAMP	14,100	1.6	20.7	128.0	0.70	<0.27
	Calcium	Chromium	Cobalt	Copper	Iron	Lead
SNSP006	2,790	21.7	13.9	24.3	29,100	26.4
SNSW74A	11,315	12.0	9.0	14.4	20,000	18.4
SNSWAMP	21,500	19.0	12.9	22.9	27,600	18.7
	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium
SNSP006	5,930	545	<0.02	33.9	3,000	<0.12
SNSW74A	4,810	710	0.02	12.2	1,038	<0.12
SNSWAMP	6,120	779	0.02	31.0	2,290	<0.14
	Silver	Sodium	Thallium	Vanadium	Zinc	
SNSP006	<0.38	116.0	<0.12	24.4	72.2	
SNSW74A	<0.38	66.6	<0.12	19.3	61.6	
SNSWAMP	<0.40	108.0	<0.14	19.6	108.0	

Table C - 1.26

**1993 Monthly Radioactivity Concentrations ($\mu\text{Ci/mL}$) in Surface Water
at French Drain Location WNSP008**

Month	Gross Alpha	Gross Beta	H-3
<i>January</i>	1.91±4.99E-09	6.79±0.64E-08	4.42±0.18E-06
<i>February</i>	-0.03±4.73E-09	6.19±0.82E-08	4.21±0.18E-06
<i>March</i>	2.08±4.08E-09	7.44±0.89E-08	3.58±0.16E-06
<i>April</i>	1.74±4.37E-09	5.67±0.80E-08	4.21±0.18E-06
<i>May</i>	-0.95±4.30E-09	5.76±0.64E-08	3.72±0.14E-06
<i>June</i>	-1.02±3.14E-09	6.74±0.60E-08	2.83±0.15E-06
<i>July</i>	-2.04±3.03E-09	6.05±0.73E-08	3.81±0.17E-06
<i>August</i>	-2.30±4.50E-09	5.66±0.82E-08	2.98±0.15E-06
<i>September</i>	2.09±6.48E-09	6.48±0.83E-08	3.45±0.16E-06
<i>October</i>	4.51±3.12E-09	8.55±0.66E-08	4.11±0.17E-06
<i>November</i>	3.13±5.20E-09	8.00±1.00E-08	3.19±0.15E-06
<i>December</i>	0.35±5.80E-08	6.17±0.81E-08	3.17±0.15E-06

Table C - 1.27

**1993 Quarterly Radioactivity Concentrations ($\mu\text{Ci/mL}$) in Surface Water
at Location WFBCBKG**

	C-14	I-129	U-232	U-233/234	U-235	U-236
<i>1st Qtr</i>	-0.92±7.35E-09	-2.30±5.40E-10	-4.60±8.20E-11	3.30±4.40E-11	0.26±2.56E-11	0.26±2.56E-11
<i>2nd Qtr</i>	1.70±1.00E-08	3.80±3.70E-10	4.30±5.00E-10	1.10±0.70E-10	0.25±2.55E-11	0.25±2.55E-11
<i>3rd Qtr</i>	-1.30±9.10E-09	-1.40±5.10E-10	1.50±3.90E-11	6.40±7.10E-11	0.38±3.76E-11	0.38±3.76E-11
<i>4th Qtr</i>	-2.40±0.90E-08	-5.60±6.6E-10	-1.60±7.40E-11	5.30±5.50E-11	0.24±2.41E-11	0.24±2.41E-11

	U-238	Total U ($\mu\text{g/mL}$)	Pu-238	Pu-239/240	Am-241
<i>1st Qtr</i>	4.30±4.80E-11	1.40±0.20E-04	0.32±3.19E-11	-0.64±3.73E-11	1.10±2.90E-11
<i>2nd Qtr</i>	5.60±5.80E-11	1.60±0.20E-04	0.25±2.49E-11	0.25±2.49E-11	1.50±3.70E-11
<i>3rd Qtr</i>	7.90±7.70E-11	1.90±0.30E-04	2.20±5.70E-11	0.44±4.42E-11	0.52±5.24E-11
<i>4th Qtr</i>	4.10±4.60E-11	2.70±0.40E-04	-0.97±5.68E-11	2.40±6.20E-11	3.90±4.60E-11