DOE/ORO/2092

ANNUAL SITE ENVIRONMENTAL DATA

1998

Compiled by
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List of Tables

East Tennessee Technology Park

Y-12 Plant

Y-12 Plant (continued)

Y-12 Plant (continued)

Constituents Detected in Groundwater at the Y-12 Plant for 1998 (continued)

OAK RIDGE NATIONAL LABORATORY

Oak Ridge National Laboratory (continued)

ORR SURVEILLANCE

Table 1.1. 1998 NPDES Permit Number TN 0002950

ETTP Storm Drain Discharge Points

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 05A						
Flow, GPD	12	24000	500	8140		
Total Suspended Solids,	12	6.1	<1.0	<1.7		
pH, Standard Units	12	7.8	6.6	7	4.0 - 9.0	0
Oil & Grease	12	5.6	<5.4	<5.5		
Discharge Point SD 100						
Flow, GPD	52	3480000	0	828000		
Total Suspended Solids,	52	12	<1.0	<1.7		
pH, Standard Units	52	8.3	6.3	7.4	6.0 - 9.0	0
Oil & Grease	52	7.7	<5.4	<5.4		
Chlorine, Total Residual	52	0.06	<0.05	<0.05		
Discharge Point SD 120						
Flow, GPD	19	487000	0	98200		
Total Suspended Solids,	7	33.8	2.4	11.7		
pH, Standard Units	7	7.4	6.6	6.9	4.0 - 9.0	0
Oil & Grease	7	5.6	<5.4	<5.5		
Discharge Point SD 124						
Flow, GPD	146	429000	0	25700		
Total Suspended Solids,	40	9	<1.0	<2.0		
pH, Standard Units	40	8.6	6.5	7.4	6.0 - 9.0	0
Oil & Grease	40	7.7	<5.3	<5.8		
Discharge Point SD 130						
Flow, GPD	52	5300000	0	801000		
Total Suspended Solids,	52	64.4	1.4	11.0		
pH, Standard Units	52	7.8	6.5	7.1	6.0 - 9.0	0
Oil & Grease	52	7.4	5.3	<5.5		
Discharge Point SD 140						
Flow, GPD	4	72480	24580	49370		
Total Suspended Solids,	4	8.8	<1.0	<4.8		
pH, Standard Units	4	7.8	6.1	7.1	4.0 - 9.0	0
Discharge Point SD 142						
Flow, GPD	15	117080	0	38860		
Total Suspended Solids,	11	5.4	<1.0	<1.8		
pH, Standard Units	11	7.8	6.6	7.3	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 144						
Flow, GPD	18	214500	0	37120		
Total Suspended Solids,	9	21	<1.0	<5.2		
pH, Standard Units	9	7.7	6.4	7.1	4.0 - 9.0	0
Oil & Grease	9	5.7	<5.4	<5.5		
Discharge Point SD 146						
Flow, GPD	18	25600	0	7350		
Total Suspended Solids,	9	46	<1.0	<6.5		
pH, Standard Units	9	7.7	6.8	7.1	4.0 - 9.0	0
Discharge Point SD 148						
Flow, GPD	17	14050	0	3480		
Total Suspended Solids,	9	10.4	<1.0	<2.6		
pH, Standard Units	9	7.4	6.5	7.1	4.0 - 9.0	0
Discharge Point SD 150						
Flow, GPD	18	429900	0	109760		
Total Suspended Solids,	9	35.6	<1.0	<7.7		
pH, Standard Units	9	7.3	6.4	6.9	4.0 - 9.0	0
Discharge Point SD 154						
Flow, GPD	15	182550	0	58130		
Total Suspended Solids,	9	4	<1.0	<1.8		
pH, Standard Units	9	7.2	6.4	7.0	4.0 - 9.0	0
Discharge Point SD 156						
Flow, GPD	7	14789000	0	10735050		
pH, Standard Units	3	7.0	6.8	6.9		
Discharge Point SD 158						
Flow, GPD	8	50580	0	15400		
Total Suspended Solids,	3	2.6	<1.0	<1.9		
pH, Standard Units	3	6.8	6.7	6.7	4.0 - 9.0	0
Discharge Point SD 160						
Flow, GPD	4	150690	57090	106290		
Total Suspended Solids,	4	4.6	<1.0	<2.4		
pH, Standard Units	4	7.3	6.7	7.0	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 162				
Flow, GPD	19	149950	0	28080		
Total Suspended Solids,	6	2.8	<1.0	<2.0		
pH, Standard Units	6	6.8	6.1	6.6	4.0 - 9.0	0
		Discharge Point SD 168				
Flow, GPD	8	14124	0	2780		
Total Suspended Solids,	2	2.2	<1.0	1.6		
pH, Standard Units	2	6.9	6.7	6.8	4.0 - 9.0	0
		Discharge Point SD 170				
Flow, GPD	53	1110000	0	308580		
Total Suspended Solids,	51	9.6	<1.0	<1.7		
pH, Standard Units	52	8.3	6.4	7.5	6.0 - 9.0	0
		Discharge Point SD 180				
Alpha Activity	1	69	69	69		
Flow, GPD	52	1147000	71000	240030		
Total Suspended Solids,	51	955	<1.0	<26.0		
pH, Standard Units	50	8.1	6.5	7.6	6.0 - 9.0	0
Vinlychloride	1	0.06	0.08	0.08		0
Trichloroethen	1	0.008	0.008	0.008		0
		Discharge Point SD 190				
Flow, GPD	52	1645000	0	452000		
Total Suspended Solids,	52	9.8	<1.0	<1.6		
pH, Standard Units	51	7.8	6.1	7.1	6.0 - 9.0	0
1-2 Dichloroethene	1	0.020	0.02	0.02		0
1-2 Dichloroethene	1	0.14	0.14	0.14		0
		Discharge Point SD 192				
Flow, GPD	5	52000	0	14403		
pH, Standard Units	2	7.4	6.6	7.0	4.0 - 9.0	0
		Discharge Point SD 194				
Flow, GPD	5	52000	0	22500		
pH, Standard Units	3	6.9	6.5	6.7	4.0 - 9.0	0
		Discharge Point SD 195				
Flow, GPD	4	162500	0	72100		
pH, Standard Units	2	7.1	6.6	6.9	4.0 - 9.0	0
		Discharge Point SD 196				
Flow, GPD	6	52250	0	15600		
pH, Standard Units	2	7.0	7.0	7.0	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 197						
Flow, GPD	21	58065	0	11400		
Total Suspended Solids,	8	36.4	<1.0	<12.7		
pH, Standard Units	8	7.6	6.6	7.1	4.0 - 9.0	0
Discharge Point SD 198						
Flow, GPD	10	247750	0	69700		
Total Suspended Solids,	4	8	<1.0	<3.1		
pH, Standard Units	4	7.6	7.3	7.5	4.0 - 9.0	0
Discharge Point SD 200						
Flow, GPD	18	526500	0	135100		
Total Suspended Solids,	9	12	<1.0	<2.6		
pH, Standard Units	9	7.6	6.4	7.2	4.0 - 9.0	0
Discharge Point SD 210						
Flow, GPD	8	846340	0	296480		
Total Suspended Solids,	4	10.6	2	5.9		
pH, Standard Units	4	7.3	6.7	7.0	4.0 - 9.0	0
Discharge Point SD 220						
Flow, GPD	18	53900	0	9100		
Total Suspended Solids,	8	25.6	1.8	10.9		
pH, Standard Units	8	7.6	6.9	7.2	4.0 - 9.0	0
Discharge Point SD 230						
Flow, GPD	5	172800	28800	91600		
Total Suspended Solids,	12	<1.0	<1.0	<1.0		
pH, Standard Units	12	8.0	6.5	7.3	4.0 - 9.0	0
Discharge Point SD 238						
Flow, GPD	4	5320	0	3120		
pH, Standard Units	3	7.3	6.8	7.0	4.0 - 9.0	0
Discharge Point SD 240						
Flow, GPD	16	687980	0	202370		
Total Suspended Solids,	10	3.2	<1.0	<1.4		
pH, Standard Units	10	7.9	6.9	7.3	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 250				
Flow, GPD	12	154360	0	28300		
Total Suspended Solids,	3	10.8	5.4	8.4		
pH, Standard Units	3	7.0	6.4	6.6	4.0 - 9.0	0
		Discharge Point SD 254				
Flow, GPD	12	480	0	41		
Total Suspended Solids,	1	26.4	26.4	26.4		
pH, Standard Units	1	7.2	7.2	7.2	4.0 - 9.0	0
		Discharge Point SD 264				
Flow, GPD	6	2580	0	430		
pH, Standard Units	1	7.2	7.2	7.2	4.0 – 9.0	0
		Discharge Point SD 270				
Flow, GPD	6	5880	0	980		
pH, Standard Units	1	7.6	7.6	7.6	4.0 - 9.0	0
		Discharge Point SD 280				
Flow, GPD	6	47200	0	11300		
pH, Standard Units	2	7.8	7.2	7.5	4.0 - 9.0	0
		Discharge Point SD 292				
Flow, GPD	3	43300	0	26000		
pH, Standard Units	2	7.7	7.0	7.4	4.0 - 9.0	0
		Discharge Point SD 294				
Flow, GPD	5	58700	0	12700		
pH, Standard Units	2	7.6	7.0	7.3	4.0 - 9.0	0
		Discharge Point SD 296				
Flow, GPD	6	11800	0	1970		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
		Discharge Point SD 297				
Flow, GPD	3	32300	0	19100		
pH, Standard Units	2	7.7	6.8	7.3	4.0 - 9.0	0
		Discharge Point SD 300				
Flow, GPD	9	32800	0	3650		
pH, Standard Units	1	6.8	6.8	6.8	4.0 - 9.0	0
		Discharge Point SD 310				
Flow, GPD	6	26360	0	4390		
pH, Standard Units	1	7.5	7.5	7.5	4.0 - 9.0	0
		Discharge Point SD 320				
Flow, GPD	6	136600	0	30300		
pH, Standard Units	2	7.2	7.0	7.1	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 322						
Flow, GPD	3	19800	0	11500		
pH, Standard Units	2	7.3	7.1	7.2	4.0 - 9.0	0
Discharge Point SD 326						
Flow, GPD	7	8920	0	1820		
pH, Standard Units	2	7.3	7.0	7.2	4.0 - 9.0	0
Discharge Point SD 330						
Flow, GPD	8	404580	0	94520		
Total Suspended Solids,	3	4	<1.0	<2.1		
pH, Standard Units	3	7.1	6.8	7.0	4.0 - 9.0	0
Discharge Point SD 332						
Flow, GPD	7	10740	0	2200		
pH, Standard Units	2	7.3	7.0	7.2	4.0 - 9.0	0
Discharge Point SD 334						
Flow, GPD	6	14720	0	2450		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 340						
Flow, GPD	3	425890	262300	352930		
pH, Standard Units	3	7.4	6.8	7.0	4.0 - 9.0	0
Discharge Point SD 350						
Flow, GPD	3	37230	0	18000		
pH, Standard Units	2	7.2	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 360						
Flow, GPD	3	23530	0	12200		
pH, Standard Units	2	7.1	6.9	7.0	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 362						
Flow, GPD	3	107730	0	54840		
pH, Standard Units	2	6.8	6.7	6.8	4.0 - 9.0	0
Discharge Point SD 370						
Flow, GPD	3	1840	0	950		
pH, Standard Units	2	7.6	7.0	7.3	4.0 - 9.0	0
Discharge Point SD 380						
Flow, GPD	12	868460	64630	374390		
Total Suspended Solids,	12	28.2	<1.0	<3.6		
pH, Standard Units	12	8.3	6.3	7.3	4.0 - 9.0	0
Discharge Point SD 382						
Flow, GPD	3	95470	0	50740		
pH, Standard Units	2	7.5	7.0	7.3	4.0 - 9.0	0
Trichloroethene	1	16	16	16		
Discharge Point SD 390						
Flow, GPD	23	237060	0	30600		
Suspended Solids,	5	25.6	2	9.2		
pH, Standard Units	5	7.4	6.6	7.0	4.0 - 9.0	0
Discharge Point SD 400						
Flow, GPD	5	350	0	120		
pH, Standard Units	2	7.1	7.0	7.1	4.0 - 9.0	0
Discharge Point SD 410						
Flow, GPD	3	36620	19200	28750		
pH, Standard Units	3	7.1	6.4	6.7	4.0 - 9.0	0
Discharge Point SD 420						
Flow, GPD	5	136370	0	64960		
pH, Standard Units	3	7.2	6.7	6.9	4.0 - 9.0	0
Discharge Point SD 430						
Flow, GPD	13	769120	55920	294610		
Suspended Solids,	12	11	<1.0	<2.6		
pH, Standard Units	12	7.8	6.6	7.2	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 440						
Flow, GPD	15	392800	0	87960		
Total Suspended Solids,	10	24	<1.0	<5.7		
pH, Standard Units	10	7.8	6.9	7.3	4.0 - 9.0	0
Discharge Point SD 450						
Flow, GPD	3	32250	10310	22180		
pH, Standard Units	3	7.2	7.0	7.1	4.0 - 9.0	0
Discharge Point SD 460						
Flow, GPD	5	6420	0	1840		
pH, Standard Units	2	7.0	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 470						
Flow, GPD	3	21360	6830	14690		
pH, Standard Units	3	7.4	7.1	7.2	4.0 - 9.0	0
Discharge Point SD 490						
Flow, GPD	13	3640000	703630	2000000		
Suspended Solids, mg/L	12	13.4	<1.0	<13.4		
pH, Standard Units	12	7.5	6.6	7.2	4.0 - 9.0	0
Trichloroethene	1	8	8	8		
Discharge Point SD 500						
Flow, GPD	3	24310	0	16210		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 510						
Flow, MGD	13	606170	0	225380		
Total Suspended Solids,	11	16.2	<1.0	<4.2		
pH, Standard Units	11	7.5	4.3	6.4	4.0 - 9.0	0
Discharge Point SD 520						
Flow, GPD	5	30910	0	13470		
pH, Standard Units	3	6.9	6.3	6.6	4.0 - 9.0	0
Discharge Point SD 522						
Flow, GPD	1	69010	69010	69010		
pH, Standard Units	1	7.3	7.3	7.3	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 532						
Flow, GPD	4	20160	0	9100		
pH, Standard Units	2	7.6	7.0	7.3	4.0 - 9.0	0
Discharge Point SD 540						
Flow, GPD	5	31180	0	13890		
pH, Standard Units	3	7	6.3	6.8	4.0 - 9.0	0
Discharge Point SD 550						
Flow, GPD	4	31700	0	17000		
pH, Standard Units	3	7.3	6.7	7.1	4.0 - 9.0	0
Discharge Point SD 560						
Flow, GPD	17	193590	0	46330		
Total Suspended Solids,	8	4.2	<1.0	<2.0		
pH, Standard Units	8	7.1	5.1	6.1	4.0 - 9.0	0
Discharge Point SD 570						
Flow, GPD	4	92080	0	41480		
pH, Standard Units	2	7.6	7.0	7.3	4.0 - 9.0	0
Discharge Point SD 580						
Flow, GPD	7	55570	0	11910		
pH, Standard Units	2	7.0	6.6	6.8	4.0 - 9.0	0
Discharge Point SD 610						
Flow, GPD	17	330300	0	74980		
Total Suspended Solids,	8	10.2	<1.0	4.0		
pH, Standard Units	8	7.1	5.6	6.4	4.0 - 9.0	0
Discharge Point SD 620						
Flow, GPD	3	37820	0	17260		
pH, Standard Units	2	6.8	6.0	6.4	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 640						
Flow, GPD	7	54740	0	12430		
Total Suspended Solids,	3	6.6	1.8	4.5		
pH, Standard Units	3	7.3	7.0	7.2	4.0 - 9.0	0
Discharge Point SD 650						
Flow, GPD	3	12090	0	4330		
pH, Standard Units	2	10.7	6.9	8.8	4.0 - 9.0	1
Discharge Point SD 660						
Flow, GPD	10	230	0	23		
Total Suspended Solids,	1	3.4	3.4	3.4		
pH, Standard Units	1	7.6	7.6	7.6	4.0 - 9.0	0
Discharge Point SD 670						
Flow, GPD	8	6450	0	830		
Total Suspended Solids,	2	36.8	11.8	24.3		
pH, Standard Units	2	11.2	8.7	10.0	4.0 - 9.0	1
Discharge Point SD 680						
Flow, GPD	10	70150	0	10610		
Total Suspended Solids,	2	7.8	1.8	4.8		
pH, Standard Units	2	7.5	6.9	7.2	4.0 - 9.0	0
Discharge Point SD 690						
Flow, GPD	15	1478000	0	460580		
Total Suspended Solids,	10	5	1.0	2.5		
pH, Standard Units	10	7.1	6.5	6.9	4.0 - 9.0	0
Discharge Point SD 692						
Flow, GPD	3	19130	0	11600		
pH, Standard Units	2	7.5	7.1	7.3	4.0 - 9.0	0
Discharge Point SD 694						
Flow, GPD	3	38060	0	23090		
pH, Standard Units	2	7.1	6.9	7.0	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 696						
Flow, GPD	3	43340	0	22350		
pH, Standard Units	2	7.8	6.2	7.0	4.0 - 9.0	0
Discharge Point SD 700						
Flow, GPD	15	1089000	0	303380		
Total Suspended Solids,	10	577	1.4	61.6		
pH, Standard Units	10	7.4	6.6	6.9	4.0 - 9.0	0
Discharge Point SD 710						
Flow, GPD	12	1698000	119510	691960		
Total Suspended Solids,	12	10.8	<1.0	<2.47		
pH, Standard Units	12	7.6	6.6	7.2	4.0 - 9.0	0
Discharge Point SD 720						
Flow, GPD	27	274120	0	29520		
Total Suspended Solids,	6	18.6	3.4	10.2		
pH, Standard Units	6	7.3	6.5	6.9	4.0 - 9.0	0
Discharge Point SD 724						
Flow, GPD	6	554500	0	92420		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 730						
Flow, GPD	2	40340	0	17800		
pH, Standard Units	2	7.2	6.9	7.1	4.0 - 9.0	0
Discharge Point SD 740						
Flow, GPD	8	21800	0	5820		
pH, Standard Units	3	7.3	7.0	7.1	4.0 - 9.0	0
Discharge Point SD 750						
Flow, GPD	18	30560	0	3830		
Total Suspended Solids,	4	1.4	<1.0	<1.1		
pH, Standard Units	4	7.5	7.0	7.3	4.0 - 9.0	0
Discharge Point SD 760						
Flow, GPD	19	21260	0	1840		
Total Suspended Solids,	3	<1.0	<1.0	<1.0		
pH, Standard Units	3	7.5	7.3	7.4	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	Number of exceeding reference
		Max	Min	Avg		
Discharge Point SD 770						
Flow, GPD	18	12020	0	1140		
Total Suspended Solids,	4	<1.0	<1.0	<1.0		
pH, Standard Units	4	7.8	7.0	7.4	4.0 - 9.0	0
Discharge Point SD 780						
Flow, GPD	8	246300	0	47760		
Total Suspended Solids,	2	1.6	1.4	1.5		
pH, Standard Units	2	7.7	6.9	7.3	4.0 - 9.0	0
Discharge Point SD 800						
Flow, GPD	14	12020	0	860		
Total Suspended Solids,	1	14	14	14		
pH, Standard Units	1	7.5	7.5	7.5	4.0 - 9.0	0
Discharge Point SD 820						
Flow, GPD	9	95910	0	16700		
Total Suspended Solids,	2	2.2	<1.0	<1.6		
pH, Standard Units	2	7.7	7.4	7.6	4.0 - 9.0	0
Discharge Point SD 830						
Flow, GPD	10	167010	0	26390		
Total Suspended Solids,	2	1.8	<1.0	<1.4		
pH, Standard Units	2	7.0	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 870						
Flow, GPD	13	82680	0	6360		
Total Suspended Solids,	1	11.2	11.2	11.2		
pH, Standard Units	1	7.6	7.6	7.6	4.0 - 9.0	0
Discharge Point SD 880						
Flow, GPD	10	57700	0	9240		
Total Suspended Solids,	2	<1.0	<1.0	<1.0		
pH, Standard Units	2	7.6	6.7	7.2	4.0 - 9.0	0
Discharge Point SD 890						
Flow, GPD	10	176320	0	27020		
Total Suspended Solids,	2	2.6	1.8	2.2		
pH, Standard Units	2	7.5	6.9	7.2	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 900						
Flow, GPD	8	62400	0	16370		
Total Suspended Solids,	3	<1.0	<1.0	<1.0		
pH, Standard Units	3	7.7	6.9	7.2	4.0 - 9.0	0
Discharge Point SD 910						
Flow, GPD	5	124790	0	53910		
pH, Standard Units	3	7.9	6.9	7.3	4.0 - 9.0	0
Discharge Point SD 920						
Flow, GPD	7	80600	0	11510		
pH, Standard Units	1	6.5	6.5	6.5	4.0 - 9.0	0
Discharge Point SD 929						
Flow, GPD	5	200	0	40		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 930						
Flow, GPD	3	69360	0	23120		
pH, Standard Units	1	7.8	7.8	7.8	4.0 - 9.0	0
Discharge Point SD 934						
Flow, GPD	7	16630	0	5070		
pH, Standard Units	3	8.1	7.0	7.7	4.0 - 9.0	0
Discharge Point SD 940						
Flow, GPD	4	880	0	180		
pH, Standard Units	1	6.7	6.7	6.7	4.0 - 9.0	0
Discharge Point SD 950						
Flow, GPD	8	440	0	50		
pH, Standard Units	1	7.0	7.0	7.0	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 960						
Flow, GPD	6	1130	0	390		
pH, Standard Units	3	7.5	6.9	7.3	4.0 - 9.0	0
Discharge Point SD 970						
Flow, GPD	6	119760	0	29610		
pH, Standard Units	2	7.4	7.0	7.2	4.0 - 9.0	0
Discharge Point SD 980						
Flow, GPD	6	283570	0	72150		
pH, Standard Units	2	7.5	7.3	7.4	4.0 - 9.0	0
Discharge Point SD 982						
Flow, GPD	5	266680	0	81430		
pH, Standard Units	2	7.4	7.3	7.4	4.0 - 9.0	0
Discharge Point SD 990						
Flow, GPD	9	28890	0	4900		
pH, Standard Units	2	7.5	7.0	7.3	4.0 - 9.0	0
Discharge Point SD 992						
Flow, GPD	22	503720	0	44400		
Total Suspended Solids,	4	103	24	50		
pH, Standard Units	4	6.9	6.2	6.7	4.0 - 9.0	0
Discharge Point SD 996						
Flow, GPD	2	125330	0	112000		
pH, Standard Units	2	7.5	6.5	7.0	4.0 - 9.0	0

[a] - Units are mg/L unless otherwise noted

[b] - NPDES permit limit

Table 1.2. 1998 NPDES Permit Number TN 0002950

Discharge Point 005, Sewage Treatment Plant, ETTP

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
			K-1203			
Amonia Nitrogen	157	2.7	0.2	0.25	7	0
Dissolved Oxygen, mg/L	365	13	7.5	9.2	5.0 min[c]	0
Fecal Coliform, col/100ml	156	170	<1.0	<7.7	400	0
Flow Total (MGD)	365	680970	136070	288120		
Settleable Solids, ml/L	261	0.6	<0.1	<0.1	0.5	1
Suspended Solids, mg/L	157	25	<1	4.3	45	0
pH, Standard Units	365	8.0	6.8	7.5	6.0 - 9.0	0

[a] - Units are mg/L unless otherwise noted

[b] - NPDES permit limit

[c] - Daily minimum

Table 1.3. 1998 NPDES Permit Number TN 0002950

Discharge Point 014, Central Neutralization Facility to Clinch River, ETTP

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
			K-1407J			
Acetone, mg/L	4	0.010	0.003	0.0053		
Cadmium, mg/L	4	0.0064	0.0031	0.0053	0.069	0
Chemical Oxygen Demand, mg/L	52	55	<5	<13		
Chloride, mg/L	209	1000	70	310	70000	0
Chromium, mg/L	4	0.13	0.016	0.063	2.8	0
Copper, mg/L	4	0.0021	<0.005	<0.007	2.2	0
Flow, GPD	365	206870	490	76830		
Lead, mg/L	4	0.003	<0.0005	< 0.0014	0.69	0
Nickel, mg/L	4	0.013	0.0055	0.0091	4.0	0
Petroleum Hydrocarbons,	12	0.45	<0.37	<0.038		
pH, Standard Units	365	8.0	6.2	7.0	6.0 - 9.0	0
Suspended Solids, mg/L	209	2.0	<1.0	<1.0	40	0
Uranium, mg/L	11	1.4	0.073	0.48		
Zinc, mg/L	4	0.027	0.014	0.02	2.6	
Silver	4	0.0013	<0.0005	<0.00082	0.43	

[a] - Units are mg/L unless otherwise noted

[b] - NPDES permit limit

Table 1.4. 1998 NPDES Permit Number TN 0002950

Discharge Point 009, Holding Pond, ETTP

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
K-1515F						
Aluminum, mg/L	52	1.2	0.1	0.57	2.0	0
Chlorine, Total Residual,	52	1.4	<0.05	<0.098	1.0	1
Flow, MGD	365	476640	0	147440		
Settleable Solids, ml/L	52	0.1	<0.1	<0.1	0.5	0
Suspended Solids, mg/L	52	11	<1.0	<3.0	40	0
pH, Standard Units	52	8.4	7.0	7.5	6.0 - 9.0	0
Barium	33	0.037	0.026	0.032		
Calcium	33	43	27	35		
Iron	33	0.2	0.05	0.069		
Magnesium	33	11	7.1	8.9		
Manganese	33	1.2	0.0098	0.16		
Sodium	33	19	3.7	5.6		
Zinc	33	0.08	0.05	0.05		

[a] - Units are mg/L unless otherwise noted.

[b] - NPDES permit limit

Table 1.5. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of sample	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median[b]	Average[b]			
K-716 (Poplar Creek)								
U-234	12	1.2e+00	1.9e-01	4.7e-01	5.2e-01	5.0e+02	1.0e-01	1.0e-03
U-235	12	4.2e-02	9.3e-03	2.3e-02	2.6e-02	6.0e+02	4.3e-03	4.3e-05
U-238	12	1.3e+00	2.0e-01	5.0e-01	5.5e-01	6.0e+02	9.2e-02	9.2e-04
Tc-99	12	1.5e+01	-1.1e+01	4.3e+00	4.9e+00	1.0e+05	4.9e-03	4.9e-05
Gross Alpha	12	3.1e+00	-8.9e-01	1.1e+00	1.0e+00	*a*	*a*	*a*
Gross Beta	12	6.5e+00	-4.1e-01	4.0e+00	3.5e+00	*a*	*a*	*a*
All listed isotopes								2.0e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.6. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of sample	Concentration (pCi/L)				DCG	Percent of DCG	Sum of fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-901-A (settling basin for surface water runoff)								
U-234	12	1.2e+00	3.3e-01	5.8e-01	6.5e-01	5.0e+02	1.3e-01	1.3e-03
U-235	12	1.6e-01	2.0e-02	3.7e-02	4.7e-02	6.0e+02	7.9e-03	7.9e-05
U-238	12	1.2e+00	3.3e-01	6.2e-01	7.0e-01	6.0e+02	1.2e-02	1.2e-04
Tc-99	12	4.4e+01	-1.1e+01	1.5e+01	1.7e+01	1.0e+05	1.7e-02	1.7e-04
Gross Alpha	12	4.4e+00	-3.5e-01	6.4e-01	1.6e+00	*a*	*a*	*a*
Gross Beta	12	2.5e+01	1.9e+00	8.1e+00	9.3e+00	*a*	*a*	*a*
All listed isotopes								2.7e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.7. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclid	No. of sample	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median[b]	Average[b]			
K-1007-B (settling basin for surface water runoff)								
U-234	12	4.1e-01	1.9e-01	2.8e-01	2.9e-01	5.00e+02	5.7e-02	5.7e-04
U-235	12	3.7e-02	9.3e-03	1.6e-02	1.9e-02	6.00e+02	3.2e-03	3.2e-05
U-238	12	4.3e-01	2.0e-01	3.0e-01	3.1e-01	6.00e+02	5.1e-02	5.1e-04
Tc-99	12	3.6e+01	-1.7e+00	1.2e+01	1.2e+01	1.00e+05	1.2e-02	1.2e-04
Gross Alpha	12	4.0e+00	-4.5e-01	1.3e+00	1.4e+00	*a*	*a*	*a*
Gross Beta	12	9.8e+00	5.9e-01	5.9e+00	5.8e+00	*a*	*a*	*a*
All listed isotopes								1.2e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.8. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclid	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median[b]	Average[b]			
K-1203 (sewage treatment plant)								
U-234	12	1.2e+00	2.1e-01	3.3e-01	4.0e-01	5.0e+02	8.0e-02	8.0e-04
U-235	12	2.5e-01	1.0e-02	1.8e-02	3.9e-02	6.0e+02	6.6e-03	6.6e-05
U-238	12	1.2e+00	2.2e-01	3.5e-01	4.2e-01	6.0e+02	7.1e-02	7.1e-04
Tc-99	12	2.6e+01	-5.5e+00	7.2e+00	7.2e+00	1.0e+05	7.2e-03	7.2e-05
Gross Alpha	12	2.5e+00	-1.3e+00	2.1e+00	2.5e+00	*a*	*a*	*a*
Gross Beta	12	1.5e+01	1.5e+00	6.4e+00	8.5e+00	*a*	*a*	*a*
All listed isotopes								1.6e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.9. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclid	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-1407-J (treated effluents from Central Neutralization Facility and TSCA Incinerator)								
U-234	12	3.2e+02	2.3e+00	3.1e+01	7.7e+01	5.0e+02	1.6e+01	1.6e-01
U-235	12	1.8e+01	1.8e-01	1.5e+00	4.2e+00	6.0e+02	7.0e-01	7.0e-03
U-236	12	3.3e+00	2.7e-02	2.9e-01	8.9e-01	5.0e+02	1.8e-01	1.8e-03
U-238	12	5.9e+02	6.0e+00	6.0e+01	1.5e+02	6.0e+02	2.5e+01	2.5e-01
Cs-137	12	9.6e+01	-3.3e-01	4.0e+00	1.3e+01	3.0e+03	4.5e-01	4.5e-03
Tc-99	12	7.1e+02	5.2e+01	3.2e+02	3.4e+02	1.0e+05	3.4e-01	3.4e-03
Np-237	12	6.8e-01	-1.2e-01	4.7e-02	1.3e-01	3.0e+01	4.5e-01	4.5e-03
Pu-238	12	1.6e-01	-2.9e-02	4.3e-02	5.4e-02	4.0e+01	1.3e-01	1.3e-03
Pu-239	12	1.4e-01	-2.4e-02	8.0e-03	2.0e-02	3.0e+01	6.8e-02	6.8e-04
Gross Alpha	12	3.4e+02	1.0e+01	9.0e+01	9.7e+01	*a*	*a*	*a*
Gross Beta	12	4.5e+02	3.5e+01	1.9e+02	2.0e+02	*a*	*a*	*a*
H_3	10	1.1e+05	6.9e+01	5.2e+04	5.1e+05		2.1e+00	2.1e-02
C-14	9	2.3e+03	2.8e+01	5.2e+02	6.4e+02		9.1e-01	9.1e-03
Co^{-60}	6	3.9e+00	6.7e-01	1.5e+00	8.3e-01		1.7e-02	1.7e-04
Th-234	1	2.0e+02	2.0e+02	2.0e+02	2.0e+02		1.7e-01	1.7e-03
$Pa234_m$	1	7.9e+02	7.9e+02	7.9e+02	7.9e+02		9.4e-02	9.4e-04
All listed isotopes								4.6e-01

[a]Not applicable.
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.10. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclid	No. of sample	Concentration (pCi/L)				DCG	Percent of DCG	Sum of fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-1700 (Mitchell Branch)								
U-234	12	4.8e+01	2.7e+00	5.0e+00	9.0e+00	5.0e+02	1.8e+00	1.8e-02
U-235	12	9.8e-01	2.8e-01	4.9e-01	5.1e-01	6.0e+02	8.5e-02	8.5e-04
U-238	12	8.8e+00	2.8e+00	5.1e+00	5.1e+00	6.0e+02	8.5e-01	8.5e-03
Tc-99	12	7.1e+01	1.7e+00	2.2e+01	2.8e+01	1.0e+05	2.8e-02	2.8e-04
Gross Alpha	12	3.3e+01	4.4e+00	9.3e+00	1.4e+01	*a*	*a*	*a*
Gross Beta	12	2.1e+01	1.1e+01	1.6e+01	2.1e+01	*a*	*a*	*a*
All listed isotopes								2.8e-02

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities

Table 1.11. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclid	No. of sample	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-1710 (Poplar Creek upstream of the ETTP)								
U-234	12	1.6e+00	2.2e-01	4.1e-01	5.8e-01	5.0e+02	1.2e-01	1.2e-03
U-235	12	1.2e-01	1.1e-02	2.1e-02	3.2e-02	6.0e+02	5.3e-03	5.3e-05
U-238	12	1.8e+00	2.2e-01	4.4e-01	6.2e-01	6.0e+02	1.0e-01	1.0e-03
Tc-99	12	4.4e+01	-8.4e+00	5.9e+00	6.9e+00	1.0e+05	6.9e-03	6.9e-05
Gross Alpha	12	2.7e+00	-1.1e+00	1.0e+00	1.2e+00	*a*	*a*	*a*
Gross Beta	12	8.6e+00	-2.3e+00	3.8e+00	3.6e+00	*a*	*a*	*a*
All listed isotopes								2.3e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.12. 1998 ETTP parameters detected at K-716

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of values exceeding reference
		Max	Min	Avg		
Alkalinity	4/4	120	66	88		
Chromium	2/12	0.0035	<0.0025	<0.0026	0.016	0
Dissolved Oxygen	4/4	11	7.3	9.4	5.0 min	0
Dissolved Solids	4/4	170	110	140		
Fluoride	2/4	0.17	<0.1	<0.12		
Lead	9/12	0.0053	<0.0005	<0.0015	0.082	0
Manganese	12/12	0.140	0.052	0.090		
Suspended Solids	3/4	14	<1	<7.8		
Temperature (C°)	4/4	24	8.7	18		
Uranium	12/12	0.0038	0.0006	0.0038		
Zinc	6/12	0.027	<0.005	<0.0085	0.120	0
pH (standard units)	4/4	7.7	6.7	7.3	6.5 - 8.5	0

a Units in mg/L unless otherwise noted.
b All reference values are Tennessee Water Quality Criteria for fish and aquatic life.

Table 1.13. 1998 ETTP parameters detected at K-901-A

Parameter	Number number of samples	Detected results[a] Max	Min	Avg	Reference Value[b]	Number of values exceeding reference
Alkalinity	4/4	150	120	140		
Chromium	3/12	0.046	<0.0025	<.007	.016	0
Dissolved Oxygen	4/4	10	4.0	7.6	5.0 min	1
Dissolved Solids	4/4	180	140	170		
Fluoride	2/4	0.19	<0.1	<0.14		
Lead	6/12	0.001	<0.0005	<.0006	0.082	0
Manganese	12/12	0.55	0.026	0.12		
Suspended Solids	4/4	46	3.8	18		
Temperature (C°)	4/4	27	7	17		
Uranium	12/12	0.0031	0.0011	0.0018		
Zinc	6/12	0.0087	<0.005	<0.0060	0.12	0
pH (standard units)	4/4	7.8	6.9	7.3	6.5 - 8.5	0
Biochemical Oxygen Demand	1/9	9.8	<5	<6.2		

a Units in mg/L unless otherwise noted.
b All reference values are Tennessee Water Quality Criteria for fish and aquatic life.

Table 1.14. 1998 ETTP parameters detected at K-1007-B

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of exceeding reference
		Max	Min	Avg		
Alkalinity	4/4	110	78	93		
Biochemical Oxygen Demand	1/4	6.4	<5.0	<5.4		
Chromium	1/12	0.0025	<0.0025	<0.0025	0.016	0
Dissolved Oxygen	4/4	11	6.4	8.7	5.0 min	0
Dissolved Solids	4/4	180	120	140		
Fluoride	3/4	0.19	<0.10	0.14		
Lead	11/12	0.0013	<0.0005	<0.001	.082	0
Manganese	12/12	0.170	0.057	0.095		
Suspended Solids	4/4	17	5.6	9.1		
Temperature (C°)	4/4	29	8.0	18		
Uranium	12/12	0.0013	0.0006	0.0009		
Zinc	7 /12	0.0092	<0.005	<0.0061	0.12	0
pH (standard	4/4	8.9	6.4	7.6	6.5 - 8.5	2

a Units in mg/L unless otherwise noted.
b All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.15. 1998 ETTP parameters detected at K-1203

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of exceeding reference
		Max	Min	Avg		
Chromium	1/12	0.0042	<0.0025	<0.0026	0.016	0
Lead	10/12	0.0036	<0.0005	0.001	0.082	0
Manganese	12/12	0.190	0.0089	0.039		
Nickel	1/12	0.0066	<0.005	<0.0051		
Silver	2/12	0.0023	<0.0005	<0.0007		
Uranium	12/12	0.0038	0.0005	0.0012		
Zinc	12/12	0.1	0.009	0.047	0.12	0

a Units in mg/L unless otherwise noted.
b All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.16. 1998 ETTP parameters detected at K-1407-J

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value	Number of values exceeding reference
		Max	Min	Avg		
Uranium	12/12	1.4	0.04	0.7		

a **Units in mg/L unless otherwise noted.**

Table 1.17. 1998 ETTP parameters detected at K-1700

Parameter	Number number of samples	Detected results[a]			Reference Value[b]	Number of values exceeding reference
		Max	Min	Avg		
1,2 Dichloroethene (µg/L)	4/4	76	7	47		
Alkalinity	4/4	200	150	170		
Chromium	7/12	0.01	<0.0025	<0.0039	0.016	0
Dissolved Oxygen	4/4	12	7.6	9.0	5.0 min	0
Dissolved Solids	4/4	290	210	250		
Fluoride	3/4	0.32	0.2	0.26		
Lead	1/12	0.0006	<0.0005	<0.0005	0.082	0
Manganese	12/12	0.91	0.19	0.37		
Nickel	12/12	0.016	0.008	0.011	1.4	0
Suspended Solids	4/4	3.2	1.4	2.3		
Temperature (C°)	4/4	23	10	16		
Trichloroethene (µg/L)	4/4	90	6	51	810	0
Uranium	12/12	0.027	0.0086	0.015		
Vinyl Chloride	3/4	20	<10	12		
Zinc	8/12	0.020	<0.005	0.0078	0.12	0
pH (standard units)	4/4	7.7	6.9	7.2	6.5 - 8.5	0

a Units in mg/L unless otherwise noted.
b All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.18. 1998 ETTP parameters detected at K-1710

Parameter	Number detected/ number of samples	Detected results[a]			Referenc Value[b]	Number of values exceeding reference
		Max	Min	Avg		
Alkalinity	4/4	120	62	94		
Dissolved Oxygen	4/4	11	7.7	9	5.0 min	0
Dissolved Solids	4/4	200	110	160		
Fluoride	2/4	0.28	0.10	0.17		
Lead	10/12	0.003	<0.00050	<0.0012	0.082	0
Manganese	12/12	0.23	0.042	0.11		
Suspended Solids	3/4	18	<1	8.4		
Temperature (Co)	4/4	24	8.5	16		
Uranium	12/12	0.0053	0.0007	0.002		
Zinc	11/12	0.02	<0.005	<0.0094	0.12	0
pH (standard units)	4/4	7.5	5.8	6.9	6.5 - 8.5	0

a All Reference values are Tennessee Water Quality Standards for fish and aquatic life.
b Units in mg/L unless otherwise noted.

Table 2.1. Y-12 Plant Biomonitoring Program summary information for wastewater treatment systems and storm sewer effluents for 1998[a]

Site/building	Date	Species	48-h LC_{50}[b] (%)	IWC[c] (%)
Central Pollution Control Facility (CPCF)	1/23/98	Ceriodaphnia	>100	0.09
Storm Sewer 9215/9204-2E Alley	2/5/98	Ceriodaphnia	32.0	d
Storm Sewer 9215/9204-2E Alley (dechlorinated)	2/5/98	Ceriodaphnia	75.9	d
Storm Sewer west of 9215	2/5/98	Ceriodaphnia	40.3	d
Storm Sewer west of 9215 (dechlorinated)	2/5/98	Ceriodaphnia	>100	d
Storm Sewer southeast of 9703-11	2/5/98	Ceriodaphnia	2.2	d
Storm Sewer southeast of 9703-11 (dechlorinated)	2/5/98	Ceriodaphnia	39.3	d
Groundwater Treatment Facility (GWTF)	2/6/98	Ceriodaphnia	72.3	0.19
Storm Sewer south of 9201-4	2/10/98	Ceriodaphnia	66.0	d
Central Mercury Treatment System (CMTS)	2/10/98	Ceriodaphnia	>100	0.12
West End Treatment Facility (WETF)	4/10/98	Ceriodaphnia	42.4	0.13
Central Pollution Control Facility (CPCF)	4/17/98	Ceriodaphnia	>100	0.13
Storm Sewer southeast of 9703-11	4/23/98	Ceriodaphnia	17.3	d
Storm Sewer southeast of 9703-11 (dechlorinated)	4/23/98	Ceriodaphnia	70.7	d
Groundwater Treatment Facility (GWTF)	4/23/98	Ceriodaphnia	70.7	0.24
Central Pollution Control Facility (CPCF)	4/23/98	Ceriodaphnia	>100	0.11
Storm Sewer 9215/9204-2E Alley	4/23/98	Ceriodaphnia	66.7	d
Storm Sewer 9215/9204-2E Alley (dechlorinated)	4/23/98	Ceriodaphnia	70.7	d
Central Mercury Treatment System (CMTS)	4/24/98	Ceriodaphnia	>100	0.15
Storm Sewer south of 9201-4	4/28/98	Ceriodaphnia	70.7	d
West End Treatment Facility (WETF)	4/28/98	Ceriodaphnia	55.9	0.23
Storm Sewer southeast of 9201-4	4/28/98	Ceriodaphnia	70.7	d
Storm Sewer southeast of 9201-4	7/9/98	Ceriodaphnia	>100	d
Storm Sewer south of 9201-4	7/9/98	Ceriodaphnia	70.7	d
Groundwater Treatment Facility (GWTF)	7/10/98	Ceriodaphnia	88.0	0.14
Central Mercury Treatment System (CMTS)	7/10/98	Ceriodaphnia	>100	0.04
Storm Sewer southeast of 9703-11	7/14/98	Ceriodaphnia	63.0	d
Storm Sewer southeast of 9703-11 (dechlorinated)	7/14/98	Ceriodaphnia	70.7	d
Storm Sewer 9215/9204-2E Alley	7/14/98	Ceriodaphnia	72.2	d
Storm Sewer 9215/9204-2E Alley (dechlorinated)	7/14/98	Ceriodaphnia	>100	d

Table 2.1 (continued)

Site/building	Date	Species	48-h LC50 (%)	IWC (%)
West End Treatment Facility (WETF)	7/29/98	Ceriodaphnia	41.4	0.19
Central Pollution Control Facility (CPCF)	9/29/98	Ceriodaphnia	>100	0.15
Groundwater Treatment Facility (GWTF)	10/8/98	Ceriodaphnia	90.3	0.03
Storm Sewer west of 9215	10/8/98	Ceriodaphnia	59.8	d
Storm Sewer southeast of 9703-11	10/8/98	Ceriodaphnia	15.8	d
Storm Sewer southeast of 9703-11 (dechlorinated)	10/8/98	Ceriodaphnia	39.7	d
West End Treatment Facility (WETF)	10/9/98	Ceriodaphnia	22.6	0.22
Central Mercury Treatment System (CMTS)	10/9/98	Ceriodaphnia	>100	0.32
Storm Sewer 9215/9204-2E Alley	10/13/98	Ceriodaphnia	71.0	d
Storm Sewer 9215/9204-2E Alley (dechlorinated)	10/13/98	Ceriodaphnia	75.8	d
Storm Sewer southeast of 9201-4	10/13/98	Ceriodaphnia	69.3	d
Central Pollution Control Facility (CPCF)	11/19/98	Ceriodaphnia	78.1	0.09

[a]Summarized are the effluents and their corresponding 48-hour LC^{50}s and instream waste concentrations (IWCs).
NOTE: Discharges from treatment facilities are intermittent because of batch operations.

[b]The concentration of effluent (as a percentage of full-strength effluent diluted with laboratory control water) that is lethal to 50% of the test organisms in 48 hours.

[c]IWC= instream waste concentration. The IWC is based on actual flows at outfall 201 in East Fork Poplar Creek.

[d]This is a point in the storm sewer system; therefore, an IWC is not applicable.

Table 2.2. Y-12 Plant Discharge Point 017, OUTFALL 017
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	346	0.45055	0.003513	0.06570	d	d
pH, Standard Units	53	7.6	6.4	d	9/ 6(e)	0
Kjeldahl Nitrogen, mg/L	53	13.7	<0.2	<3	d	d
Ammonia as Nitrogen, mg/L	52	<14.6	0.299	<2.69	64.8	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.3. Y-12 Plant Discharge Point 021, OUTFALL 021
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	156	4.4323	0.1296	0.4121	d	d
pH, Standard Units	157	8.2	6.7	d	9/ 6(e)	0
Temperature, degrees C	156	24.4	9.2	19	30.5	0
Total Residual Chlorine	160	0.3	<0.05	<0.05	0.188	1

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.4. Y-12 Plant Discharge Point 051, OUTFALL 051
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	358	1.5591	0.009013	0.2199	d	d
pH, Standard Units	104	7.9	6.5	d	9/ 6(e)	0
Mercury	52	0.0066	<0.0002	<0.002	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.5. Y-12 Plant Discharge Point 055, OUTFALL 055
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	359	0.0947	0.0104	0.0363	d	d
pH, Standard Units	104	8.0	7.0	d	9/ 6(e)	0
Total Residual Chlorine, mg/L	104	<0.05	<0.05	<0.05	0.5	0
Mercury, mg/L	104	0.0011	<0.0002	<0.0002	0.004	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.6. Y-12 Plant Discharge Points, Outfalls 066, 068, and 117
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Outfall 066						
Flow, mgd		eliminated in 1997				
pH, Standard Units						
Outfall 068						
Flow, mgd	12	0.0001	0.000048	0.000082	d	
pH, Standard Units	12	8.4	6.9	d	9/ 6(e)	0
Outfall 117						
Flow, mgd	12	0.00045	0.00013	0.00024	d	d
pH, Standard Units	12	8.3	7.5	d	9/ 6(e)	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.7. Y-12 Plant Discharge Points, Outfalls 073, 077, 122, and 133
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Outfall 073						
Flow, mgd	12	0.00076	0.00002	0.0002	d	d
pH, Standard Units	12	8.2	6.8	d	9/ 6(e)	0
Total Residual Chlorine	12	0.08	<0.05	<0.05	0.5	0
Outfall 077						
Flow, mgd	11	0.0001	0.00002	0.00004	d	d
pH, Standard Units	11	8.0	7.2	d	9/ 6(e)	0
Total Residual Chlorine	11	<0.05	<0.05	<0.05	0.5	0
Outfall 122						
Eliminated in 1995						
Outfall 133						
Eliminated in 1995						

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.8. Y-12 Plant Discharge Point 125, OUTFALL 125
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	14	0.3024	0.1728	0.235	d	d
pH, Standard Units	14	7.0	6.6	d	9/ 6(e)	0
Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
Mercury	5	0.0002	<0.0002	<0.0002	d	d
Lead	4	<0.003	<0.0005	<0.0012	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.9. Y-12 Plant Discharge Point 135, OUTFALL 135
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	162	1.728	0.1152	0.2189	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.10. Y-12 Plant Discharge Point 200, NORTH-SOUTH PIPES
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	168	45.0	0.75	1.8	d	d
Beryllium	14	<0.001	<0.0002	<0.0004	d	d
Cadmium	14	<0.01	<0.002	<0.004	d	d
Copper	14	<0.02	<0.006	<0.01	d	d
Iron	14	0.72	0.0721	0.26	d	d
Fluoride	12	1.14	0.32	0.79	d	d
Mercury	54	0.0015	<0.0002	<0.0007	d	d
Nitrate/Nitrite as Nitrogen	12	9.73	<0.05	<5	d	d
Oil and Grease	157	<6.4	<5.6	<6.0	15	0
Lead	14	<0.1	<0.02	<0.03	d	d
Phosphate as Phosphorus	13	2.53	0.44	1.3	d	d
Sulfate	54	89.1	16.2	40.7	d	d
Uranium	53	0.147	0.004	0.04	d	d
U-235 , weight %	53	0.46	0.2	0.3	d	d
Zinc	14	0.2	0.05	0.1	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.11. Y-12 Plant Discharge Point 200, NORTH-SOUTH PIPE
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	53	45.0	8.3	0.4*	2.1	12.0	4.4	2	e	4E-02
Americium-241 (pCi/L)	53	0.29	.22	-0.11*	.29	0.065*	.2	0.013	0.22	1.8E-04
Beta activity (pCi/L)	53	34.0	6.6	2.9*	4.6	13.0	5.9	0.79	e	3.5E-02
Cobalt-60 (pCi/L)	53	4.1*	2.3	-1.9*	2.3	0.76*	2	0.17	0.015	2.2E-03
Cesium-137 (pCi/L)	53	2.6*	1.8	-2.7*	2.9	0.26*	2.3	0.14	0.0087	5.4E-04
Gamma Activity (pCi/L)	53	40.0*	30	-24.0*	28	3.5*	14	1.6		1.0E-02
Neptunium-237 (pCi/L)	53	0.22*	.21	-0.05*	.057	0.039*	.078	0.008	0.1	2E-04
Plutonium-238 (pCi/L)	53	0.27	.15	-0.096*	.16	0.036*	.15	0.010	0.090	1.2E-04
Plutonium-239/240 (pCi/L)	53	0.16	.12	-0.039*	.055	0.007*	.058	0.005	0.02	4E-05
Radium-228 (pCi/L)	53	16.0	11	-14.0*	9	2.9*	12	1.1	2.9	5.0E-03
Strontium-89/90 (pCi/L)	53	3.8*	3.1	-1.3*	2.8	0.47*	2.6	0.18	e	2.0E-03
Total Radium Alpha (pCi/L)	53	3.4*	1.5	-0.77*	.68	0.61*	.72	0.12	e	1.7E-03
Technetium-99 (pCi/L)	53	42.0	7.2	-5.6*	8	17.0	7	1.4	0.017	4.2E-02
Thorium-228 (pCi/L)	53	0.34	.24	-0.13*	.13	0.049*	.12	0.015	0.012	1.8E-04
Thorium-230 (pCi/L)	53	1.9	.63	0.0*	0	0.3	.2	0.04	0.1	9E-04
Thorium-232 (pCi/L)	53	0.29	.3	-0.09*	.13	0.0*	0	0.0075	0.0	2.5E-05
Thorium-234 (pCi/L)	53	51.0	5.7	1.2	.4	13.0	1.8	1.8	0.13	3.7E-02
Tritium (pCi/L)	52	1100.0	550	-150.0*	520	420.0	e	34.96	0.02100	1.0300E+00
Uranium-234 (pCi/L)	53	11.0	1.9	0.73	.31	3.3	.68	0.35	0.66	9.0E-03
Uranium-235 (pCi/L)	53	0.74	.32	-0.021*	.043	0.23*	.2	0.026	0.038	6.1E-04
Uranium-238 (pCi/L)	53	51.0	5.7	1.2	.4	13.0	1.8	1.8	2.2	3.7E-02

(e) Not applicable

* Result was below the minimum detectable activity

Table 2.12. Y-12 Plant Discharge Point 201, OUTFALL 201
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
96-Hour Toxicity Test with Ceriodaphnia, %	4	>100.0	>100.0	>100.0	d/ 100(e)	0
96-Hour Toxicity Test with Fathead Minnows, %	4	>100.0	>100.0	>100.0	d/ 100(e)	0
NOEC, Reproduction/ Growth with Ceriodaphnia, %	4	100.0	100.0	100.0	d/ 100(e)	0
NOEC, Reproduction/Growth With Fathead Minnows, %	4	100.0	100.0	100.0	d/ 100(e)	0
pH, Standard Units	157	8.2	6.8	d	8.5/ 6.5(e)	0
Temperature, degrees C	157	27.1	8.1	16	30.5	0
Total Residual Chlorine	178	0.31	<0.05	<0.05	0.019	6
Suspended Solids	52	28.8	<1.0	<7.3	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.13. Y-12 Plant Biomonitoring Program summary information for Outfall 201 for 1998[a]

Site	Date	Species	NOEC (%)[b]	96-h LC50 (%)[c]
		Ceriodaphnia	100	>100
Outfall 201	2/4	Fathead minnow	100	>100
		Ceriodaphnia	100	>100
Outfall 201	4/22	Fathead minnow	100	>100
		Ceriodaphnia	100	>100
Outfall 201	7/8	Fathead minnow	100	>100
		Ceriodaphnia	100	>100
Outfall 201	10/7	Fathead minnow	100	>100

(a) Summarized are the no-observed-effect concentrations and the 96-h LC50s for the instream monitoring location, Outfall 201.

(b) No-observed-effect concentration (NOEC) as a percent of full-strength effluent from Outfall 201 diluted with laboratory control water. The NOEC must equal one of the test concentrations and is the concentration that does not reduce Ceriodaphnia survival or reproduction or fathead minnow survival or growth.

(c) The concentration of effluent (as a percent of full-strength effluent diluted with laboratory control water) that is lethal to 50% of the test organisms in 96 h.

Table 2.14. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48-Hour Toxicity Test with Ceriodaphnia, %	5	>100.0	78.1	>95.62	d	d
Flow, mgd	16	0.0144	0.0048	0.00941	d	d
pH, Standard Units	15	8.8	6.3	d	9/ 6(e)	0
Temperature, degrees C	15	29.8	11.8	21.7	d	d
Silver	15	<0.04	<0.02	<0.03	0.05	0
Boron	15	15.7	0.872	4.84	d	d
Beryllium	15	<0.002	<0.001	<0.002	d	d
Calcium	15	800.0	348.0	607.5	d	d
Cadmium	15	<0.02	<0.01	<0.02	0.15	0
Chloride	15	265.0	28.0	65.9	d	d
Chromium	15	<0.04	<0.02	<0.03	1	0
Copper	15	<0.04	<0.02	<0.03	1	0
Cyanide	15	<0.01	<0.01	<0.01	1.2	0
Iron	15	0.831	<0.1	<0.3	d	d
Fluoride	15	1.87	0.35	0.87	d	d
Mercury	15	<0.0002	<0.0002	<0.0002	d	d
Potassium	15	68.6	15.0	36.2	d	d
Lithium	15	5.41	0.26	1.8	d	d
Magnesium	15	7.2	0.767	3.8	d	d
Sodium	15	265.0	46.8	99.5	d	d
Nickel	15	0.24	0.07	<0.1	3.98	0
Nitrate/Nitrite as Nitrogen	15	8.19	<0.05	<1	100	0
Oil and Grease	15	<5.8	<5.5	<5.6	15	0
Lead	15	<0.003	<0.0002	<0.002	0.2	0
PCB, Total	1	<0.0005	<0.0005	<0.0005	0.001	0
Phosphate as Phosphorus	15	0.78	<0.153	<0.37	d	d
Sulfate	15	2230.0	1240.0	1670.9	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.15. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Surfactant	1	<0.05	<0.05	<0.05	d	d
Suspended Solids	15	4.6	<1.0	<2.1	40	0
Sum of TTO Analysis	1	<0.01	<0.01	<0.01	2.13	0
Uranium	13	0.055	<0.001	<0.01	d	d
U-235 , weight %	9	0.63	0.28	0.50	d	d
Zinc	15	<0.1	<0.05	<0.07	2	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.16. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	13	35.0	25	-17.0*	33	4.1*	8.2	4.3	e	9.05E-05
Americium-241 (pCi/L)	13	0.31*	.33	-0.047*	.066	0.12*	.21	0.034	0.40	1.7E-06
Beta activity (pCi/L)	13	92.0	50	1.6*	4.5	60.0*	46	8.3	e	6.4E-04
Cobalt-60 (pCi/L)	13	3.1*	2.9	-3.2*	3.5	0.89*	1.7	0.47	0.018	7.9E-06
Cesium-137 (pCi/L)	13	53.0	9.4	1.7*	1.8	4.6	3.1	4.0	0.15	1.4E-04
Gamma Activity (pCi/L)	13	34.0	21	-11.0*	27	14.0*	28	2.87	e	1.72E-04
Neptunium-237 (pCi/L)	13	0.18	.18	-0.039*	.055	0.065*	.092	0.020	0.22	1.1E-06
Plutonium-238 (pCi/L)	13	0.43	.21	-0.1*	.53	0.053*	.075	0.036	0.13	1.0E-06
Plutonium-239/240 (pCi/L)	13	0.05*	.07	-0.029*	.041	0.026*	.053	0.006	0.09	2E-07
Radium-228 (pCi/L)	13	14.0	8.4	-19.0*	15	0.23*	11	2.8	0.23	-1.4E-05
Strontium-89/90 (pCi/L)	13	5.4	3.2	-6.1*	3.9	0.7*	2	0.8	e	9E-06
Total Radium Alpha (pCi/L)	13	2.2	1.2	0.76*	.89	1.2*	.98	0.13	e	1.7E-05
Technetium-99 (pCi/L)	13	55.0	8.3	0.09*	7.8	25.0	8.2	4	0.02	3E-04
Thorium-228 (pCi/L)	13	0.37	.29	-0.32*	.54	0.063*	.16	0.051	0.016	8.4E-07
Thorium-230 (pCi/L)	13	0.58	.26	-0.029*	.058	0.21*	.18	0.048	0.070	3.2E-06
Thorium-232 (pCi/L)	13	0.098*	.2	-0.043*	.086	0.0*	0	0.011	0.0	7.9E-08
Thorium-234 (pCi/L)	13	19.0	3	0.055*	.09	0.73	.31	2.1	0.0073	6.9E-05
Tritium (pCi/L)	13	500.0*	520	-250.0*	530	85.0*	480	71.6	0.00420	1.79E-03
Uranium-234 (pCi/L)	13	14.0	1.7	0.044*	.11	0.46	.23	1.2	0.092	3.5E-05
Uranium-235 (pCi/L)	13	0.76	.3	-0.012*	.084	0.033*	.067	0.075	0.0055	2.3E-06
Uranium-238 (pCi/L)	13	19.0	3	0.055*	.09	0.73	.31	2.1	0.12	6.9E-05

(e) Not applicable
* Result was below the minimum detectable activity

Table 2.17. Y-12 Plant Discharge Point 502, WEST END TREATMENT FACILITY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48-Hour Toxicity Test with Ceriodaphnia, %	4	55.9	22.6	40.6	d	d
Flow, mgd	69	0.01896	0.000356	0.0136	d	d
pH, Sandartd Units	46	8.9	6.8	d	9/ 6(e)	0
Temperature, degrees C	46	28.9	15.7	22.0	d	d
Silver	46	<0.2	<0.02	<0.09	0.05	0
Arsenic	46	<2.0	<0.2	<0.9	d	d
Boron	46	9.31	1.1	3.8	d	d
Beryllium	46	<0.01	<0.001	<0.005	d	d
Calcium	46	149.0	45.0	79.8	d	d
Cadmium	46	<0.1	<0.01	<0.05	0.15	0
Chloride	46	749.0	314.0	566.2	d	d
Chromium	46	<0.2	<0.02	<0.09	1	0
Copper	46	<0.2	<0.02	<0.09	1	0
Cyanide	46	<0.01	<0.01	<0.01	1.2	0
Iron	46	1.73	0.16	<0.77	d	d
Fluoride	17	5.36	0.72	2.6	d	d
Mercury	46	<0.0002	<0.0001	<0.0002	d	d
Potassium	46	209.0	45.0	124	d	d
Lithium	46	23.4	4.49	14.2	d	d
Magnesium	46	34.2	17.1	24.1	d	d
Manganese	46	4.03	0.112	1.10	d	d
Sodium	46	3060.0	1900.0	2413.9	d	d
Nickel	46	2.85	<0.04	<0.4	3.98	0
Nitrate/Nitrite as Nitrogen	46	40.8	0.062	19	150	0
Oil and Grease	46	<5.8	<5.3	<5.6	15	0
Lead	46	0.0052	<0.0005	<0.0008	0.2	0
PCB, Total	8	<0.0005	<0.0005	<0.0005	0.001	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.18. Y-12 Plant Discharge Point 502, WEST END TREATMENT FACILITY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Phosphate as Phosphorus	46	23.0	<0.31	<7.3	d	d
Selenium	46	<2.0	<0.2	<1	d	d
Sulfate	46	7162.0	2480.0	5170.3	d	d
Suspended Solids	46	6.6	<1.0	<2.2	40	0
Sum of TTO Analysis	8	0.02	<0.01	<0.01	2.13	0
Uranium	17	0.009	<0.001	<0.0019	d	d
U235, weight %	9	0.73	0.34	0.51	d	d
Zinc	46	<0.5	<0.05	<0.2	2	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.19. Y-12 Plant Discharge Point 502, WEST END TREATMENT FACILITY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	17	52.0*	51	-35.0*	100	0.5*	1.1	5	e	-2E-05
Americium-241 (pCi/L)	17	0.19*	.27	-0.044*	.13	0.039*	.21	0.017	0.13	1.1E-06
Beta activity (pCi/L)	17	200.0	59	-190.0*	320	57.0*	44	21.6	e	1.11E-03
Cobalt-60 (pCi/L)	17	4.1*	2.7	-1.2*	2.2	1.7*	2.6	0.34	0.034	2.8E-05
Cesium-137 (pCi/L)	17	46.0	8.2	0.77*	2.5	5.9	3	4.2	0.20	3.0E-04
Gamma Activity (pCi/L)	17	63.0	19	-9.1*	28	8.6*	29	5.1	e	3.2E-04
Neptunium-237 (pCi/L)	17	0.17	.12	-0.035*	.05	0.058*	.082	0.018	0.19	1.1E-06
Plutonium-238 (pCi/L)	17	0.39	.25	-0.16*	.15	0.036*	.14	0.031	0.090	1.3E-06
Plutonium-239/240 (pCi/L)	17	0.092	.11	-0.071*	.071	-0.012*	.084	0.013	-0.040	1.2E-07
Radium-228 (pCi/L)	17	12.0	8.1	-13.0*	12	7.6*	10	1.8	7.6	7.0E-05
Strontium-89/90 (pCi/L)	17	9.2	3	-1.7*	3.2	0.99*	1.8	0.74	e	3.7E-05
Total Radium Alpha (pCi/L)	17	3.1	1.6	-0.034*	.7	1.3*	1.6	0.21	e	2.6E-05
Technetium-99 (pCi/L)	17	27.0	7.8	-8.0*	8.3	7.3*	7	2.6	0.0073	1.8E-04
Thorium-228 (pCi/L)	17	0.26*	.23	-0.21*	.32	0.07*	.1	0.02	0.02	1E-06
Thorium-230 (pCi/L)	17	9.1	1.4	0.1	.12	0.27	.18	0.5	0.09	2E-05
Thorium-232 (pCi/L)	17	0.13*	.18	-0.076*	.11	0.024*	.048	0.013	0.048	2.4E-07
Thorium-234 (pCi/L)	17	3.3	.63	0.012*	.089	0.32	.18	0.18	0.0032	1.1E-05
Tritium (pCi/L)	17	5700.0	660	1500.0	550	3200.0	610	328.43	0.1600	6.2100E-02
Uranium-234 (pCi/L)	17	1.9	.45	0.006*	.063	0.21	.16	0.1	0.04	7E-06
Uranium-235 (pCi/L)	17	0.12*	.13	-0.021*	.042	0.008*	.065	0.008	0.001	4E-07
Uranium-238 (pCi/L)	17	3.3	.63	0.012*	.089	0.32	.18	0.18	0.053	1.1E-05

(e) Not applicable
* Result was below the minimum detectable activity

Table 2.20. Y-12 Plant Discharge Point 512, OUTFALL 512 (GWTF)
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48-Hour Toxicity Testing with Ceroidaphnia, %	4	90.3	70.7	80.3	d	d
Flow, mgd	194	0.0464	0.00012	0.0117	d	d
pH, Standard Units	140	8.2	7.3	d	9/ 6(e)	0
Copper	141	<0.2	<0.02	<0.03	d	d
Iron	141	0.73	<0.05	<0.2	1	0
Manganese	141	3.28	0.01	0.5	d	d
Lead	141	<1.0	<0.1	<0.1	d	d
PCB, Total	12	<0.0005	<0.0005	<0.0005	0.001	0
Uranium	51	0.056	0.013	0.030	d	d
U235, weight %	51	0.55	0.24	0.32	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.21. Y-12 Plant Discharge Point 512, OUTFALL 512 (GWTF)
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	51	21.0	6.2	-0.51*	2.3	8.8	4.2	0.60	e	1.6E-04
Americium-241 (pCi/L)	51	0.4*	.42	-0.097*	.26	0.052*	.28	0.01	0.2	1E-06
Beta activity (pCi/L)	51	200.0	14	-1.6*	4.1	11.0	5.2	3.9	e	2.4E-04
Cobalt-60 (pCi/L)	51	3.5*	2.2	-2.0*	2.7	0.98*	2.7	0.17	0.020	1.5E-05
Cesium-137 (pCi/L)	51	3.1*	2.4	-2.8*	3	0.46*	2.4	0.18	0.015	9.0E-06
Gamma Activity (pCi/L)	51	36.0*	30	-35.0*	29	4.8*	29	1.9	e	6.5E-05
Neptunium-237 (pCi/L)	51	0.14*	.22	-0.079*	.091	0.025*	.05	0.0072	0.083	5.6E-07
Plutonium-238 (pCi/L)	51	1.4	.41	-0.073*	.17	0.036*	.089	0.028	0.090	1.0E-06
Plutonium-239/240 (pCi/L)	51	0.17	.12	-0.082*	.074	0.0*	0	0.0061	0.0	9.4E-08
Radium-228 (pCi/L)	51	29.0	11	-9.3*	11	3.1*	11	1.1	3.1	7.2E-05
Strontium-89/90 (pCi/L)	51	22.0	4.1	-1.3*	2.1	1.0*	3.4	0.45	e	2.3E-05
Total Radium Alpha (pCi/L)	51	9.8	4.1	-0.54*	.59	0.68*	.8	0.21	e	1.4E-05
Technetium-99 (pCi/L)	51	40.0	7.1	-7.1*	8	8.1*	7.7	1.4	0.0081	1.3E-04
Thorium-228 (pCi/L)	51	0.42	.31	-0.1*	.15	0.049*	.17	0.02	0.01	9E-07
Thorium-230 (pCi/L)	51	1.3	.41	0.02*	.11	0.21*	.18	0.035	0.07	4.72E-06
Thorium-232 (pCi/L)	51	0.12*	.17	-0.066*	.095	0.0*	0	0.0049	0.0	2.3E-07
Thorium-234 (pCi/L)	50	21.0	2.6	4.2	.8	9.65	e	0.51	0.096	1.6E-04
Tritium (pCi/L)	51	2600.0	600	-320.0*	520	1800.0	570	70.58	0.09000	2.7900E-02
Uranium-234 (pCi/L)	51	6.6	1.2	1.3	.41	3.2	.72	0.16	0.64	5.4E-05
Uranium-235 (pCi/L)	51	0.52	.26	-0.049*	.099	0.2*	.18	0.02	0.03	3E-06
Uranium-238 (pCi/L)	51	21.0	2.6	4.2	.8	9.7	1.4	0.50	1.6	1.6E-04

(e) Not applicable
* Result was below the minimum detectable activity

Table 2.22. Y-12 Plant Discharge Point 550, OUTFALL 550
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	363	0.0305	0.000011	0.010	d	d
pH, Standard Units	52	7.9	7.0	d	9/ 6(e)	0
Mercury	52	0.0018	<0.0002	<0.0002	0.004	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.23. Y-12 Plant Discharge Point 551, CENTRAL MERCURY TREATMENT UNIT
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	356	0.05396	0.00036	0.0096	d	d
pH, Standard Units	52	8.2	6.8	d	9/ 6(e)	0
Mercury	52	0.0026	<0.0002	<0.0004	0.004	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.24. Y-12 Plant Discharge Point 551, CENTRAL MERCURY TREATMENT UNIT
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Americium-241 (pCi/L)	11	0.12*	.17	-0.13*	.18	0.003*	.36	0.02	0.01	-3E-08
Cobalt-60 (pCi/L)	11	3.7*	2.5	-6.4*	3.8	0.96*	2.3	0.81	0.019	6.1E-06
Cesium-137 (pCi/L)	11	2.0*	2.5	-1.2*	2.3	0.58*	2.1	0.24	0.019	5.8E-06
Neptunium-237 (pCi/L)	11	0.095	.11	-0.053*	.075	0.0*	0	0.014	0.0	2.0E-07
Plutonium-238 (pCi/L)	11	0.19*	.16	-0.057*	.092	0.033*	.22	0.024	0.082	6.8E-07
Plutonium-239/240 (pCi/L)	11	0.078*	.1	-0.055*	.064	0.015*	.082	0.01	0.05	1E-07
Radium-228 (pCi/L)	11	17.0	12	-2.9*	14	3.4*	11	1.5	3.4	5.7E-05
Strontium-89/90 (pCi/L)	11	5.4*	4.7	-0.86*	3.6	1.0*	3.4	0.49	e	1.6E-05
Total Radium Alpha (pCi/L)	11	3.5	1.7	0.13*	1.3	1.7*	1.4	0.27	e	2.2E-05
Technetium-99 (pCi/L)	11	290.0	12	29.0	8.7	180.0	11	29.1	0.180	2.02E-03
Thorium-228 (pCi/L)	11	0.17*	.18	-0.12*	.19	0.007*	.31	0.03	0.002	2E-07
Thorium-230 (pCi/L)	11	0.6	.29	0.027*	.054	0.22*	.21	0.06	0.07	3E-06
Thorium-232 (pCi/L)	11	0.066*	.094	-0.062*	.073	0.0*	0	0.011	0.0	6.2E-08
Thorium-234 (pCi/L)	11	5.5	.97	0.0*	0	2.4	.55	0.66	0.024	3.3E-05
Tritium (pCi/L)	11	540.0*	510	-490.0*	520	-90.0*	520	98.6	-0.00450	-1.48E-04
Uranium-234 (pCi/L)	11	3.5	.69	-0.017*	.035	1.6	.43	0.45	0.32	2.2E-05
Uranium-235 (pCi/L)	11	0.14	.14	-0.024*	.048	0.059*	.083	0.013	0.0098	8.4E-07
Uranium-238 (pCi/L)	11	5.5	.97	0.0*	0	2.4	.55	0.66	0.40	3.3E-05

(e) Not applicable
* Results were below the minimum detectable activity

Table 2.25. Y-12 Plant Discharge Point 9422-1, STATION 17
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	368	60.7522	2.1974	9.1915	d	d
pH, Standard Units	158	9.6	6.6	d	9/ 6(e)	0
Silver	148	<0.02	<0.004	<0.008	0.0041	1
Aluminum	148	4.62	0.05	<0.5	d	d
Arsenic	148	<0.2	<0.04	<0.07	0.0014	0
Boron	148	0.2	<0.02	<0.06	d	d
Barium	148	0.0792	0.0316	0.0478	d	d
Beryllium	148	<0.001	<0.0002	<0.0004	d	d
Calcium	148	140.0	25.1	40.9	d	d
Cadmium	148	<0.01	<0.002	<0.004	0.0039	0
Cobalt	148	<0.02	<0.002	<0.006	d	d
Chromium	148	<0.02	<0.004	<0.008	0.016	0
Copper	148	0.0388	<0.004	<0.01	0.0177	13
Iron	148	5.16	0.11	0.71	d	d
Mercury	413	0.0191	<0.0002	<0.001	0.00015	408
Potassium	148	5.1	1.2	<2.1	d	d
Lithium	148	0.07	0.007	<0.03	d	d
Magnesium	148	14.6	5.09	10.1	d	d
Manganese	148	0.692	0.032	0.16	d	d
Molybdenum	148	<0.05	<0.006	<0.02	d	d
Sodium	148	93.7	3.94	10.5	d	d
Ammonia as Nitrogen	149	1.59	<0.2	<0.2	d	d
Nickel	148	<0.05	<0.008	<0.02	1.418	0
Lead	148	<0.1	<0.02	<0.03	0.0817	0
Antimony	148	<0.2	<0.04	<0.07	4.30	0
Selenium	148	<0.2	<0.04	<0.09	0.02	0
Strontium	148	0.261	0.06	0.1	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee Water Quality Criteria
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.26. Y-12 Plant Discharge Point 9422-1, STATION 17
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Suspended Solids	149	161.0	2.4	30	d	d
Thorium	148	<0.2	<0.01	<0.06	d	d
Titanium	148	0.07	<0.01	<0.02	d	d
Thallium	148	<0.2	<0.03	<0.07	0.0063	0
Uranium	52	0.035	0.002	0.01	d	d
U-235, weight %	52	0.89	0.22	0.41	d	d
Vanadium	148	<0.02	<0.004	<0.007	d	d
Zinc	148	0.335	0.02	<0.07	0.117	21
Zirconium	148	<0.2	<0.004	<0.05	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee Water Quality Criteria
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.27. Y-12 Plant Discharge Point 9422-1, STATION 17
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies	Average
Alpha activity (pCi/L)	52	13.0	4.3	-0.082*	2.4	5.65	e	0.46	e	7.6E-02	6.0
Americium-241 (pCi/L)	52	0.43	.23	-0.15*	.13	0.0605	e	0.015	0.20	9.6E-04	0.76
Beta activity (pCi/L)	52	24.0	6.2	-0.24*	4.8	5.8	e	0.52	e	8.2E-02	6.4
Cobalt-60 (pCi/L)	52	5.0	2.7	-2.0*	2.6	1.0	e	0.17	0.020	1.4E-02	1.1
Cesium-137 (pCi/L)	52	5.5*	3.3	-2.1*	3.2	0.585	e	0.19	0.020	7.1E-03	0.56
Gamma Activity (pCi/L)	52	33.0*	29	-14.0*	28	4.15	e	1.45	e	5.98E-02	4.71
Neptunium-237 (pCi/L)	52	0.27*	.29	-0.094*	.085	0.0385	e	0.010	0.13	7.3E-04	0.058
Plutonium-238 (pCi/L)	52	0.37	.24	-0.14*	.13	0.0445	e	0.016	0.11	9.9E-04	0.078
Plutonium-239/240 (pCi/L)	52	0.058*	.094	-0.051*	.059	0.0078	e	0.0041	0.026	8.6E-05	0.0067
Radium-228 (pCi/L)	52	18.0	9	-10.0*	14	2.3	e	1.0	2.3	2.7E-02	2.1
Strontium-89/90 (pCi/L)	52	4.0*	3.6	-1.8*	2.5	0.64	e	0.18	e	8.1E-03	0.64
Total Radium Alpha (pCi/L)	52	3.7	1.8	-1.3*	.52	0.485	e	0.11	e	7.2E-03	0.57
Technetium-99 (pCi/L)	52	56.0	8.2	-13.0*	7.7	5.1	e	1.8	0.0051	9.7E-02	7.6
Thorium-228 (pCi/L)	52	1.3	.46	-0.32*	.52	0.06	e	0.03	0.02	1E-03	0.093
Thorium-230 (pCi/L)	52	2.0	.52	-0.035*	.071	0.235	e	0.048	0.078	4.4E-03	0.35
Thorium-232 (pCi/L)	52	0.14	.12	-0.15*	.22	0.0105	e	0.0067	0.021	2.3E-04	0.018
Thorium-234 (pCi/L)	52	12.0	1.7	0.082*	.11	3.2	e	0.40	0.032	5.1E-02	4.0
Tritium (pCi/L)	52	8700.0	760	-530.0*	480	97.0	e	171	0.00480	3.320E+00	262
Uranium-234 (pCi/L)	52	3.9	.72	0.073*	.13	1.7	e	0.13	0.34	2.4E-02	1.8
Uranium-235 (pCi/L)	52	0.49	.26	-0.043*	.061	0.0945	e	0.014	0.016	1.2E-03	0.095
Uranium-238 (pCi/L)	52	12.0	1.7	0.082*	.11	3.2	e	0.40	0.53	5.1E-02	4.0

(e) Not applicable
* Result was below the minimum detectable activity

Table 2.28. Y-12 Plant Category I Outfalls

From: 1998/01/01 To: 1998/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
003	Flow, mgd	3	0.1852	0.0455	0.106	d	d
	pH, Standard Units	3	7.9	7.4	d	9/ 4(e)	0
006	Flow, mgd	2	0.0576	0.0001	0.0288	d	d
	pH, Standard Units	2	7.9	7.4	d	9/ 4(e)	0
007	Flow, mgd	3	0.0345	0.0288	0.0323	d	d
	pH, Standard Units	3	7.9	7.6	d	9/ 4(e)	0
008	Flow, mgd	2	0.2	0.0115	0.1	d	d
	pH, Standard Units	2	8.1	7.4	d	9/ 4(e)	0
009	Flow, mgd	2	0.35	0.036	0.19	d	d
	pH, Standard Units	2	8.0	7.5	d	9/ 4(e)	0
011	Flow, mgd	2	0.00038	0.00003	0.0002	d	d
	pH, Standard Units	2	7.8	7.6	d	9/ 4(e)	0
015	Flow, mgd	2	0.013	0.0045	0.0087	d	d
	pH, Standard Units	2	8.4	7.4	d	9/ 4(e)	0
018	Flow, mgd	3	0.0086	0.0011	0.0054	d	d
	pH, Standard Units	3	7.8	7.5	d	9/ 4(e)	0
032	Outfall was eliminated						
033	Flow, mgd	2	0.0216	0.0046	0.013	d	d
	pH, Standard Units	2	7.6	7.4	d	9/ 4(e)	0
045	Flow, mgd	2	0.0144	0.0011	0.0078	d	d
	pH, Standard Units	2	7.7	7.3	d	9/ 4(e)	0

Table 2.28 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
046	Flow, mgd	2	0.0072	0.0004	0.0038	d	d
	pH, Standard Units	2	7.8	7.4	d	9/ 4(e)	0
058	Flow, mgd	2	0.0086	0.0015	0.0051	d	d
	pH, Standard Units	2	7.7	7.3	d	9/ 4(e)	0
062	Flow, mgd	2	0.0114	0.0006	0.006	d	d
	pH, Standard Units	2	7.7	7.5	d	9/ 4(e)	0
086	Flow, mgd	2	0.000025	0.000024	0.000025	d	d
	pH, Standard Units	2	8.3	7.4	d	9/ 4(e)	0
087	Flow, mgd	2	0.0144	0.0011	0.0078	d	d
	pH, Standard Units	2	7.6	7.2	d	9/ 4(e)	0
098	Flow, mgd	3	0.0187	0.0038	0.0107	d	d
	pH, Standard Units	3	8.6	7.8	d	9/ 4(e)	0
110	Flow, mgd	2	0.0058	0.0011	0.0035	d	d
	pH, Standard Units	2	7.8	7.4	d	9/ 4(e)	0
134	Flow, mgd	2	0.0046	0.00006	0.0023	d	d
	pH, Standard Units	2	7.8	7.6	d	9/ 4(e)	0
213	Flow, mgd	2	0.0144	0.0011	0.0078	d	d
	pH, Standard Units	2	7.6	7.4	d	9/ 4(e)	0
S01	Flow, mgd	2	0.6048	0.36	0.4824	d	d
	pH, Standard Units	3	7.8	7.6	d	9/ 4(e)	0
S03	Flow, mgd	2	0.0576	0.0215	0.0395	d	d
	pH, Standard Units	2	7.3	6.4	d	9/ 4(e)	0
S04	Flow, mgd	2	0.216	0.0864	0.151	d	d
	pH, Standard Units	2	7.6	6.4	d	9/ 4(e)	0

Table 2.28 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S06	Flow, mgd	51	2.4047	0.0064	0.25	d	d
	pH, Standard Units	2	7.3	7.1	d	9/ 4(e)	0
S07	Flow, mgd	2	0.3024	0.172	0.237	d	d
	pH, Standard Units	2	7.3	7.2	d	9/ 4(e)	0
S09	Flow, mgd	2	0.65	0.6048	0.63	d	d
	pH, Standard Units	2	7.2	7.1	d	9/ 4(e)	0
S15	Flow, mgd	2	0.0086	0.0004	0.004	d	d
	pH, Standard Units	2	8.8	6.8	d	10/ 6(e)	0
S16	Flow, mgd	3	0.09	0.0011	0.03	d	d
	pH, Standard Units	3	7.6	7.0	d	10/ 6(e)	0
S18	Flow, mgd	2	1.2	0.0058	0.60	d	d
	pH, Standard Units	2	7.5	6.7	d	9/ 4(e)	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.29. Y-12 Plant Category II Outfalls
From: 1998/01/01 To: 1998/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
004	Flow, mgd	4	0.0864	0.0015	0.031	d	d
	pH, Standard Units	4	8.4	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
010	Flow, mgd	4	0.0152	0.008	0.01	d	d
	pH, Standard Units	4	7.8	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
014	Flow, mgd	4	0.432	0.0076	0.12	d	d
	pH, Standard Units	4	8.1	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
016	Flow, mgd	4	0.156	0.0011	0.040	d	d
	pH, Standard Units	4	7.7	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
019	Flow, mgd	4	0.1255	0.0004	0.03	d	d
	pH, Standard Units	4	8.1	7.7	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
020	Flow, mgd	5	0.6322	0.0015	0.20	d	d
	pH, Standard Units	5	7.9	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
041	Flow, mgd	2	0.00304	0.00190	0.00247	d	d
	pH, Standard Units	2	8.5	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	2	<0.05	<0.05	<0.05	0.5	0
044	Flow, mgd	2	0.019022	0.013696	0.016359	d	d
	pH, Standard Units	2	7.6	7.5	d	9/ 4(e)	0
	Total Residual Chlorine	2	<0.05	<0.05	<0.05	0.5	0

Table 2.29 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
057	Flow, mgd	5	0.07344	0.000075	0.022	d	d
	pH, Standard Units	5	7.8	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
057	Flow, mgd	5	0.07344	0.000075	0.022	d	d
	pH, Standard Units	5	7.8	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
063	Flow, mgd	4	0.038045	0.00228	0.012646	d	d
	pH, Standard Units	4	8.2	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
064	Flow, mgd	4	0.07609	0.00114	0.0201	d	d
	pH, Standard Units	4	8.1	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
067	Flow, mgd	4	0.136961	0.00076	0.040	d	d
	pH, Standard Units	4	8.0	7.5	d	9/ 4(e)	0
	Total Residual Chlorine	4	0.68	<0.05	<0.26	0.5	1
083	Flow, mgd	4	0.125548	0.00304	0.0379	d	d
	pH, Standard Units	4	7.9	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
088	Flow, mgd	5	0.03132	0.00342	0.0193	d	d
	pH, Standard Units	5	7.8	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
099	Flow, mgd	4	0.0114	0.0038	0.0067	d	d
	pH, Standard Units	4	7.7	7.5	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0

Table 2.29 (continued)

Number of	Concentration(a)	Reference	Number of Values

Outfall	Parameter	Samples	Max	Min	Avg	Value(b)	Exceeding Reference
126	Flow, mgd	4	0.031958	0.00038	0.0093	d	d
	pH, Standard Units	4	7.5	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
S02	Flow, mgd	53	4.623126	0.00228	0.443	d	d
	pH, Standard Units	5	8.1	7.4	d	9/ 4(e)	0
S08	Flow, mgd	4	0.072	0.0228	0.0471	d	d
	pH, Standard Units	4	8.0	7.4	d	9/ 4(e)	0
S10	Flow, mgd	3	0.0864	0.0288	0.0648	d	d
	pH, Standard Units	3	7.4	7.2	d	9/ 4(e)	0
S11	Flow, mgd	3	0.160272	0.022	0.070	d	d
	pH, Standard Units	3	7.5	7.3	d	9/ 4(e)	0
S12	Flow, mgd	4	0.0181008	0.00144	0.0113	d	d
	pH, Standard Units	3	7.9	6.6	d	9/ 4(e)	0
S13	Flow, mgd	3	0.328896	0.0144	0.177	d	d
	pH, Standard Units	3	7.9	7.4	d	9/ 4(e)	0
S17	Flow, mgd	9	0.864	0.11088	0.255	d	d
	pH, Standard Units	6	7.8	7.1	d	9/ 4(e)	0
S20	Flow, mgd	5	2.31297	0.00076	0.50	d	d
	pH, Standard Units	5	8.1	6.9	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
S21	Outfall eliminated						
S22	Flow, mgd	3	0.0114	0.00566	0.00797	d	d
	pH, Standard Units	3	7.8	7.0	d	10/ 6(e)	0

Table 2.29 (continued)

Outfall	Number of Parameter	Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S24	Flow, mgd	5	1.08	0.04	0.3	d	d
	pH, Standard Units	5	8.3	7.7	d	9/ 4(e)	0
S25	Flow, mgd	4	0.091308	0.00216	0.0536	d	d
	pH, Standard Units	4	7.9	7.7	d	10/ 6(e)	0
S26	Flow, mgd	3	0.125548	0.0228	0.0614	d	d
	pH, Standard Units	3	7.7	7.4	d	10/ 6(e)	0
S27	Flow, mgd	3	0.288	0.0019	0.14	d	d
	pH, Standard Units	3	7.9	7.3	d	10/ 6(e)	0
S28	Flow, mgd	3	0.144	0.0076	0.82	d	d
	pH, Standard Units	4	8.6	7.3	d	10/ 6(e)	0
S29	Flow, mgd	3	0.0864	0.0158	0.0417	d	d
	pH, Standard Units	3	7.6	7.5	d	10/ 6(e)	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.30. Y-12 Plant Category III Outfalls
From: 1998/01/01 To: 1998/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
002	Flow, mgd	14	0.576	0.0144	0.163	d	d
	pH, Standard Units	13	8.3	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
034	Flow, mgd	14	0.216	0.055	0.13	d	d
	pH, Standard Units	14	7.9	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	12	0.4	<0.05	<0.08	0.5	0
042	Flow, mgd	13	0.1113	0.0009	0.02	d	d
	pH, Standard Units	14	8.1	7.1	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
047	Flow, mgd	14	0.0648	0.000024	0.013	d	d
	pH, Standard Units	14	8.2	7.1	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
048	Flow, mgd	12	0.04	0.0002	0.01	d	d
	pH, Standard Units	12	8.2	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	12	0.09	<0.05	<0.05	0.5	0
054	Flow, mgd	14	0.01872	0.00144	0.00336	d	d
	pH, Standard Units	13	8.2	6.8	d	9/ 4(e)	0
	Total Residual Chlorine	13	<0.05	<0.05	<0.05	0.5	0
071	Flow, mgd	13	0.0342	0.00571	0.0110	d	d
	pH, Standard Units	13	8.0	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
109	Flow, mgd	14	5.76	0.0432	0.628	d	d
	pH, Standard Units	14	8.0	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0

Table 2.30 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
113	Flow, mgd	13	0.002282	0.00038	0.0011	d	d
	pH, Standard Units	14	8.5	7.5	d	9/ 4(e)	0
	Total Residual Chlorine	13	<0.05	<0.05	<0.05	0.5	0
114	Flow, mgd	12	0.017	0.0004	0.003	d	d
	pH, Standard Units	12	8.2	7.7	d	9/ 4(e)	0
	Total Residual Chlorine	12	0.41	<0.05	<0.08	0.5	0
S05	Flow, mgd	11	0.0288	0.001	0.0124	d	d
	pH, Standard Units	13	7.7	6.6	d	9/ 4(e)	0
S14	Flow, mgd	12	1.2535	0.00288	0.1553	d	d
	pH, Standard Units	12	8.3	7.1	d	9/ 4(e)	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.31. Y-12 Plant Discharge Point S17, UNNAMED TRIBUTARY TO THE CLINCH RIVER
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	13	10.0	5.3	-0.5*	2.2	1.3*	1.9	0.9	e	9E-04
Americium-241 (pCi/L)	13	0.18	.18	-0.016*	.11	0.075*	.17	0.018	0.25	2.9E-05
Beta activity (pCi/L)	13	5.5*	5	-2.4*	3.2	1.9*	4.3	0.63	e	4.6E-04
Cobalt-60 (pCi/L)	13	2.6*	2.3	-1.8*	2.3	1.5*	1.6	0.35	0.030	4.1E-04
Cesium-137 (pCi/L)	13	2.0*	2	-1.2*	2.1	0.29*	1.7	0.26	0.0097	7.8E-05
Gamma Activity (pCi/L)	13	29.0	18	-14.0*	27	3.8*	16	3.3	e	2.3E-03
Neptunium-237 (pCi/L)	13	0.089*	.15	-0.041*	.058	0.017*	.098	0.011	0.057	8.0E-06
Plutonium-238 (pCi/L)	13	0.16	.14	-0.063*	.063	-0.012*	.083	0.017	-0.030	1.7E-06
Plutonium-239/240 (pCi/L)	13	0.098*	.13	-0.037*	.053	0.022*	.044	0.013	0.073	8.7E-06
Radium-228 (pCi/L)	13	15.0*	18	-11.0*	11	2.8*	13	2.1	2.8	4.6E-04
Strontium-89/90 (pCi/L)	13	2.7*	2.2	-2.3*	4.2	0.43*	4	0.36	e	1.3E-04
Total Radium Alpha (pCi/L)	13	1.8	1.1	-0.25*	.74	0.41*	.76	0.18	e	2.0E-04
Technetium-99 (pCi/L)	13	20.0	7.5	-9.7*	7.8	9.1*	7.4	2.2	0.0091	2.5E-03
Thorium-228 (pCi/L)	13	0.26*	.25	0.008*	.087	0.097*	.17	0.02	0.02	4E-05
Thorium-230 (pCi/L)	13	0.72	.3	-0.051*	.073	0.15*	.2	0.064	0.050	8.1E-05
Thorium-232 (pCi/L)	13	0.21*	.25	-0.064*	.091	0.011*	.089	0.019	0.022	8.2E-06
Thorium-234 (pCi/L)	13	0.76	.27	0.13	.11	0.35	.24	0.059	0.0035	1.4E-04
Tritium (pCi/L)	12	940.0	530	-330.0*	500	275.0	e	107.0	0.01370	9.6500E-02
Uranium-234 (pCi/L)	13	7.1	1.1	0.3	.2	0.78	.27	0.6	0.2	5E-04
Uranium-235 (pCi/L)	13	0.28	.21	-0.029*	.058	0.063*	.09	0.023	0.011	2.6E-05
Uranium-238 (pCi/L)	13	0.76	.27	0.13	.11	0.35	.24	0.056	0.058	1.4E-04

(e) Not applicable
* Result was below the minimum detectable activity

Table 2.32. Y-12 Plant Discharge Point S19, ROGERS QUARRY
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	323	3.3782	0.0044	0.41	d	d
pH, Standard Units	14	8.0	7.3	d	9/ 6(e)	0
Silver	13	<0.02	<0.004	<0.007	d	d
Aluminum	13	0.994	<0.04	<0.1	d	d
Arsenic	13	<0.2	<0.04	<0.06	d	d
Boron	13	<0.1	0.05	<0.07	d	d
Barium	13	0.0698	0.0377	0.0519	d	d
Beryllium	13	<0.001	<0.0002	<0.0004	d	d
Calcium	13	42.2	28.4	38.0	d	d
Cadmium	13	<0.01	<0.002	<0.004	d	d
Cobalt	13	<0.02	<0.002	<0.005	d	d
Chromium	13	<0.02	<0.004	<0.007	d	d
Copper	13	<0.02	<0.004	<0.007	d	d
Iron	13	1.18	0.02	<0.2	d	d
Potassium	13	2.13	1.4	<1.9	d	d
Lithium	13	<0.02	0.0137	<0.02	d	d
Magnesium	13	10.5	7.04	9.62	d	d
Manganese	13	0.722	0.012	0.12	d	d
Molybdenum	13	<0.05	<0.006	<0.01	d	d
Sodium	13	2.05	1.21	1.71	d	d
Nickel	13	<0.05	<0.008	<0.02	d	d
Lead	13	<0.1	<0.02	<0.03	d	d
Antimony	13	<0.2	<0.04	<0.06	d	d
Strontium	13	0.24	0.162	0.22	d	d
Thallium	13	<0.2	<0.03	<0.06	d	d
Uranium	13	<0.001	<0.001	<0.001	d	d
Vanadium	13	<0.02	<0.004	<0.006	d	d
Zinc	13	<0.05	<0.01	<0.02	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.33. Y-12 Plant Discharge Point S19, ROGERS QUARRY

From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies	Average
Alpha activity (pCi/L)	13	16.0	5.4	0.0*	1.2	1.1	1.2	1.3	e	1.5E-03	2.7
Americium-241 (pCi/L)	13	0.57*	.6	-0.06*	.07	0.065*	.18	0.05	0.2	6E-05	0.1
Beta activity (pCi/L)	13	14.0	5.9	-1.6*	3.3	2.0*	4.8	1.3	e	1.8E-03	3.1
Cobalt-60 (pCi/L)	13	1.9*	1.6	-1.4*	2.6	1.0*	1.6	0.26	0.020	4.6E-04	0.81
Cesium-137 (pCi/L)	13	3.0*	2.1	-2.1*	3.2	-0.036*	2.3	0.41	-0.0012	9.7E-05	0.17
Gamma Activity (pCi/L)	13	27.0*	28	-19.0*	28	7.1*	14	3.3	e	4.2E-03	7.5
Neptunium-237 (pCi/L)	13	0.14	.13	-0.022*	.044	0.045*	.11	0.017	0.15	3.2E-05	0.056
Plutonium-238 (pCi/L)	13	0.11*	.15	-0.041*	.058	0.005*	.11	0.01	0.01	1E-05	0.02
Plutonium-239/240 (pCi/L)	13	0.025*	.051	-0.062*	.16	0.0*	0	0.0063	0.0	-4.1E-06	-0.0073
Radium-228 (pCi/L)	13	14.0*	12	-35.0*	14	2.2*	14	3.6	2.2	-5.1E-05	-0.091
Strontium-89/90 (pCi/L)	13	3.2*	2.6	-1.6*	2.4	0.59*	2	0.35	e	3.0E-04	0.53
Total Radium Alpha (pCi/L)	13	1.3*	1.4	-0.33*	.56	0.37*	.84	0.13	e	2.3E-04	0.41
Technetium-99 (pCi/L)	13	20.0	7.5	-8.1*	7.8	7.0*	7	2.2	0.0070	3.5E-03	6.3
Thorium-228 (pCi/L)	13	0.27*	.27	-0.025*	.16	0.11*	.19	0.024	0.028	5.5E-05	0.098
Thorium-230 (pCi/L)	13	0.74	.39	0.01*	.079	0.24*	.2	0.06	0.08	2E-04	0.3
Thorium-232 (pCi/L)	13	0.061*	.086	-0.066*	.094	0.0*	0	0.0096	0.0	2.0E-06	0.0034
Thorium-234 (pCi/L)	13	0.37	.25	0.069*	.18	0.19	.15	0.023	0.0019	1.1E-04	0.19
Tritium (pCi/L)	12	510.0*	520	-220.0*	520	245.0	e	67.87	0.01230	1.140E-01	203
Uranium-234 (pCi/L)	13	0.45	.32	0.11	.096	0.22	.15	0.027	0.044	1.3E-04	0.24
Uranium-235 (pCi/L)	13	0.083*	.2	-0.024*	.048	0.0*	0	0.0084	0.0	6.0E-06	0.011
Uranium-238 (pCi/L)	13	0.37	.25	0.069*	.18	0.19	.15	0.023	0.032	1.1E-04	0.19

(e) Not applicable

* Result was below the minimum detectable activity

Table 2.34. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, gpd	365	2186818.0	433721.0	749357.6	d	d
pH, Standard Units	53	8.4	7.0	d	9/ 6(e)	0
Silver	52	0.03	<0.0002	<0.005	0.1	0
Arsenic	52	0.0095	<0.002	<0.004	0.0045	2
Boron	52	<0.1	<0.02	<0.05	d	d
Benzene	12	<0.010	<0.005	<0.008	0.015	0
Biochemical Oxygen Demand	53	53.6	20.9	34.8	300	0
Cadmium	53	0.0049	<0.0002	<0.001	0.0045	1
Chromium	52	0.0715	<0.001	<0.004	0.075	0
Copper	52	0.0746	0.014	0.027	0.092	0
Cyanide	12	0.02	<0.01	<0.01	0.062	0
Iron	52	2.25	<0.06	<0.8	15	0
Mercury	248	0.0161	<0.0002	<0.001	0.035	0
Kjeldahl Nitrogen	53	14.4	3.15	10.1	90	0
Methylene chloride	12	0.033	<0.005	<0.010	0.041	0
Nickel	52	<0.01	<0.002	<0.006	0.032	0
Oil and Grease	53	21.9	<5.0	<7.1	50	0
Lead	52	0.0067	<0.0002	<0.003	0.074	0
Phenols - Total Recoverable	53	0.029	<0.005	<0.01	0.5	0
Selenium	52	<0.2	<0.04	<0.1	d	d
Suspended Solids	53	123.0	30.8	59.1	300	0
Toluene	12	<0.010	<0.005	<0.008	0.02	0
Trichloroethene	12	<0.010	0.001	<0.007	0.027	0
Zinc	52	0.174	0.08	0.1	0.75	0
Uranium	52	0.012	0.002	0.005	d	d
^{235}U, weight %	52	1.5	0.62	1.1	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Industrial and Commercial User Waste Water Discharge Permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.35. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	52	11.0*	16	-0.51*	3.4	3.5	e	0.35	e	3.8E-03
Beta activity (pCi/L)	52	13.0*	4.4	-300.0*	290	5.9	e	5.9	e	-4.3E-04
Gamma Activity (pCi/L)	52	26.0*	57	-18.0*	27	4.9	e	1.4	e	3.8E-03
Plutonium-238 (pCi/L)	1	0.18*	.16	0.18*	.16	0.18*	.16		0.45	1.9E-04
Plutonium-239/240 (pCi/L)	1	0.016*	.092	0.016*	.092	0.016*	.092		0.053	1.7E-05
Uranium-234 (pCi/L)	52	43.0	5	1.1	.33	3.2	e	0.78	0.64	3.9E-03
Uranium-235 (pCi/L)	52	2.3	.62	0.0*	0	0.115	e	0.043	0.019	1.7E-04
Uranium-238 (pCi/L)	52	77.0	8.4	0.45	.22	1.4	e	1.5	0.23	3.1E-03

(e) Not applicable
* Result was below the minimum detectable activity

Table 2.36. Y-12 Plant Discharge Point STATION 304, BEAR CREEK AT KM 4.55
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies	Average
Alpha activity (pCi/L)	12	20.0	5.5	5.5	3.8	12.0	e	1.4	e	9.1E-02	12
Americium-241 (pCi/L)	12	0.15*	.34	-0.13*	.13	0.0525	e	0.026	0.18	2.6E-04	0.038
Beta activity (pCi/L)	12	19.0	4.7	4.8*	5.1	10.35	e	1.6	e	8.3E-02	11
Cobalt-60 (pCi/L)	12	2.2*	1.7	-5.9*	3.8	1.25	e	0.62	0.025	3.7E-03	0.48
Cesium-137 (pCi/L)	12	1.6*	1.7	-2.0*	2.6	-0.305	e	0.31	-0.010	-1.1E-03	-0.15
Gamma Activity (pCi/L)	12	21.0*	28	-19.0*	28	3.5	e	3.1	e	1.5E-02	2.0
Neptunium-237 (pCi/L)	12	0.14*	.16	-0.038*	.11	0.004	e	0.02	0.01	3E-04	0.04
Plutonium-238 (pCi/L)	12	0.12*	.16	-0.074*	.12	0.0065	e	0.019	0.016	9.3E-05	0.013
Plutonium-239/240 (pCi/L)	12	0.067*	.11	-0.053*	.061	0.007	e	0.009	0.02	3E-05	0.0046
Radium-228 (pCi/L)	12	8.4*	14	-6.6*	10	2.55	e	1.4	2.6	9.8E-03	1.3
Strontium-89/90 (pCi/L)	12	3.9*	2.9	-1.4*	2.6	0.57	e	0.45	e	4.1E-03	0.55
Total Radium Alpha (pCi/L)	12	4.9	2.1	-0.19*	.81	0.605	e	0.44	e	7.8E-03	1.1
Technetium-99 (pCi/L)	12	32.0	7.7	-8.1*	7.8	15.5	e	3.2	0.016	1.1E-01	14
Thorium-228 (pCi/L)	12	0.14	.16	-0.029*	.15	0.064	e	0.018	0.016	4.5E-04	0.061
Thorium-230 (pCi/L)	12	2.3	.65	0.08*	.14	0.36	e	0.2	0.1	4E-03	0.5
Thorium-232 (pCi/L)	12	0.075*	.15	-0.044*	.087	0.0	e	0.012	0.0	1.1E-04	0.018
Thorium-234 (pCi/L)	12	13.0	1.7	2.2	.47	7.4	e	0.91	0.074	5.9E-02	7.8
Tritium (pCi/L)	12	600.0*	510	-300.0*	530	-12.5	e	76.1	-0.000600	2.26E-01	30.6
Uranium-234 (pCi/L)	12	6.7	1	1.4	.36	3.6	e	0.43	0.72	3.0E-02	4.0
Uranium-235 (pCi/L)	12	0.53	.25	0.033*	.081	0.21	e	0.044	0.035	1.7E-03	0.23
Uranium-238 (pCi/L)	12	13.0	1.7	2.2	.47	7.4	e	0.91	1.2	5.9E-02	7.8

(e) Not applicable
* Result was the minimum detectable activity

Table 2.37. Y-12 Plant Discharge Point STATION 304, BEAR CREEK AT KM 4.55
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	365	185.4881	0.2068	5.356	d	d
pH, Standard Units	24	8.3	7.3	d	9/ 6(e)	0
Silver	12	<0.02	<0.004	<0.008	0.0041	0
Aluminum	12	0.97	<0.04	<0.3	d	d
Arsenic	12	<0.2	<0.04	<0.07	0.0014	0
Boron	12	10.7	<0.02	<0.9	d	d
Barium	12	0.0723	0.0239	0.0509	d	d
Beryllium	12	<0.001	<0.0002	<0.0004	d	d
Calcium	12	54.8	17.5	35.9	d	d
Cadmium	12	<0.01	<0.002	<0.004	0.0039	0
Chloride	12	11.4	3.35	6.56	d	d
Cobalt	12	<0.02	<0.002	<0.006	d	d
Chromium	12	<0.02	<0.004	<0.008	0.016	0
Copper	12	<0.02	<0.004	<0.008	0.0177	0
Iron	12	0.99	<0.01	<0.3	d	d
Mercury	12	<0.0002	<0.0001	<0.0002	0.00015	0
Potassium	12	2.06	0.8	<1	d	d
Lithium	12	2.21	<0.002	<0.2	d	d
Magnesium	12	19.9	3.69	11.6	d	d
Manganese	12	0.069	0.01	0.04	d	d
Molybdenum	12	<0.05	<0.006	<0.02	d	d
Sodium	12	5.94	1.53	3.69	d	d
Nickel	12	<0.05	<0.008	<0.02	1.418	0
Nitrite as Nitrogen	12	<0.15	<0.015	<0.030	d	d
Nitrate as Nitrogen	12	3.75	0.47	1.8	d	d
Lead	12	<0.1	<0.02	<0.03	0.0817	0
Phenols - Total Recoverable	12	0.0064	<0.005	<0.005	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee Water Quality Criteria.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.38. Y-12 Plant Discharge Point STATION 304, BEAR CREEK AT KM 4.55
From: 1998/01/01 To: 1998/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Antimony	12	<0.2	<0.04	<0.07	4.30	0
Selenium	12	<0.2	<0.04	<0.09	0.02	0
Strontium	12	0.0896	0.038	0.061	d	d
Sulfate	12	13.6	3.83	8.86	d	d
Suspended Solids	12	16.8	1.2	4.3	d	d
Thorium	12	<0.2	<0.01	<0.05	d	d
Titanium	12	<0.05	<0.01	<0.02	d	d
Thallium	12	<0.2	<0.03	<0.06	0.0063	0
Uranium	12	0.044	0.007	0.02	d	d
U-235, weight %	12	0.47	0.35	0.39	d	d
Vanadium	12	<0.02	<0.004	<0.007	d	d
Zinc	12	<0.05	<0.01	<0.02	d	d
Zirconium	12	<0.2	<0.004	<0.05	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee Water Quality Criteria.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.39. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Background

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	19.8	16.5	18.15	250	0
Fluoride	(mg/L)		2	1	0.1	0.1	0.1	2	0
Sulfate	(mg/L)		2	2	19.3	16.9	18.1	250	0
Barium, ICAP(mg/L)			2	2	0.2	0.199	0.1995	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.204	0.2	0.202	2	0
Boron, ICAP	(mg/L)		2	1	0.0099	0.0099	0.0099	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.015	0.015	0.015	NR	NA
Calcium, ICAP	(mg/L)		2	2	84	81.1	82.55	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	83.2	83	83.1	NR	NA
Iron, ICAP	(mg/L)		2	2	0.604	0.58	0.592	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	0.63	0.584	0.607	0.3	2
Lead, PMS	(mg/L)		2	1	0.0008	0.0008	0.0008	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.019	0.017	0.018	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.019	0.0174	0.0182	NR	NA
Magnesium, ICAP	(mg/L)		2	2	14	13.9	13.95	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	14.3	14	14.15	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.65	0.623	0.6365	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.69	0.643	0.6665	0.05	2
Potassium, ICAP	(mg/L)		2	2	2.6	2.4	2.5	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	2.35	2.2	2.275	NR	NA
Sodium, ICAP	(mg/L)		2	2	12	11.3	11.65	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	12	11.6	11.8	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.15	0.139	0.1445	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.15	0.143	0.1465	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.003	0.003	0.003	5	0

Table 2.39 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.0039	0.0039	0.0039	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	488	449	468.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.44	0.16	0.3	NR	NA
pH, field measurement	(pH)		2	NA	7.37	6.48	6.925	6.5/8.5	1
REDOX, field measurement	(mV)		2	NA	-91	-111	-101	NR	NA
Static Water Level	(ft - toc)		2	NA	-8	-13.35	-10.675	NR	NA
Temperature, field measurement	(Deg C)		2	NA	18.8	15	16.9	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	256	246	251	NR	NA
Conductivity	(umhos/cm)		2	2	563	543	553	NR	NA
Dissolved Solids	(mg/L)		2	2	338	323	330.5	500	0
pH	(pH)		2	2	7.51 L	7.26 L	7.385	6.5/8.5	0
Turbidity	(NTU)		2	2	5.51	3.98	4.745	1	2
Iodine-129	(pCi/L)		2	2	11	0.34	5.67	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	1.1	-0.15	0.475	5 g	0
Uranium-234	(pCi/L)		2	2	0.12	0.077	0.0985	20	0
Uranium-235	(pCi/L)		2	2	0.01	-0.036	-0.013	24	0
Neptunium-237	(pCi/L)		2	2	0.062	-0.041	0.0105	1.2	0
Plutonium-238	(pCi/L)		2	2	0.058	-0.044	0.007	1.6	0
Uranium-238	(pCi/L)		2	2	0.062	-0.018	0.022	24	0
Plutonium-239	(pCi/L)		2	2	0.014	0	0.007	1.2	0
Americium-241	(pCi/L)		2	2	0.041	0.016	0.0285	1.2	0
Strontium-89/90	(pCi/L)		2	2	1.3	-1.5	-0.1	8	0
Technetium-99	(pCi/L)		2	2	-3.1	-3.6	-3.35	4000	0
Gross Alpha	(pCi/L)		2	2	1.6	-1.5	0.05	15 f	0

Table 2.39 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Gross Beta	(pCi/L)		2	2	3.7	2.6	3.15	50 a	0
Tritium	(pCi/L)		2	2	290	200	245	20000	0
2-Butanone	(ug/L)		2	1	3 BJ	3 BJ	3	NR	NA
Acetone	(ug/L)		2	2	2 BJ	1 J	1.5	NR	NA

Table 2.40. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Bear Creek Burial Grounds WMA

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	48.3	0.88	20.405	250	0
Fluoride	(mg/L)		10	2	5.34	5.2	5.27	2	2
Nitrate Nitrogen	(mg/L)		10	3	1.04	0.095	0.511667	10	0
Sulfate	(mg/L)		10	10	26.1	1.46	12.372	250	0
Aluminum, ICAP	(mg/L)		10	1	0.29	0.29	0.29	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	10	1	0.1	0.1	0.1	0.2	0
Barium, ICAP	(mg/L)		10	10	0.233	0.0302	0.10696	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.243	0.0289	0.10585	2	0
Boron, ICAP	(mg/L)		10	7	0.48	0.006	0.225857	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	7	0.5	0.0043	0.225186	NR	NA
Calcium, ICAP	(mg/L)		10	10	120	1.28	32.96	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	120	1.4	32.855	NR	NA
Cobalt, ICAP	(mg/L)		10	1	0.017	0.017	0.017	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	10	1	0.015	0.015	0.015	NR	NA
Copper, ICAP	(mg/L)	FILTERED	10	1	0.0051	0.0051	0.0051	1	0
Iron, ICAP	(mg/L)		10	7	0.36	0.0904	0.191629	0.3	1
Iron, ICAP	(mg/L)	FILTERED	10	7	0.22	0.008	0.100257	0.3	0
Lead, PMS	(mg/L)		10	4	0.0015	0.0006	0.001125	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	1	0.0011	0.0011	0.0011	NR	NA
Lithium, ICAP	(mg/L)		10	6	0.613	0.0855	0.291917	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	6	0.644	0.0825	0.290417	NR	NA
Magnesium, ICAP	(mg/L)		10	10	14.4	0.224	4.9536	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	14.4	0.235	4.9834	NR	NA
Manganese, ICAP	(mg/L)		10	9	0.89	0.0014	0.164422	0.05	5
Manganese, ICAP	(mg/L)	FILTERED	10	9	0.88	0.0013	0.165467	0.05	5
Mercury, CVAA	(mg/L)		10	1	0.000315	0.000315	0.000315	0.002	0

Table 2.40 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Mercury, CVAA	(mg/L)	FILTERED	10	1	0.000216	0.000216	0.000216	0.002	0
Nickel, ICAP	(mg/L)		10	2	0.017	0.016	0.0165	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	10	2	0.02	0.014	0.017	0.1 d	0
Potassium, ICAP	(mg/L)		10	5	2.9	1.3	2.136	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	7	2.8	0.66	1.87	NR	NA
Sodium, ICAP	(mg/L)		10	10	310	2.1	64.497	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	320	2.11	64.998	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.43	0.0164	0.13111	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.41	0.016	0.12897	NR	NA
Uranium, PMS	(mg/L)		10	2	0.0028	0.0018	0.0023	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	2	0.0028	0.0018	0.0023	NR	NA
Zinc, ICAP	(mg/L)		10	2	0.0089	0.0047	0.0068	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	3	0.01	0.0035	0.006367	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	1174	30	421.3	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	7.32	0.27	2.002	NR	NA
pH, field measurement	(pH)		10	NA	9.61	4.39	6.464	6.5/8.5	8
REDOX, field measurement	(mV)		10	NA	300	-182	125.3	NR	NA
Static Water Level	(ft - toc)		10	NA	-2.72	-24.94	-13.359	NR	NA
Temperature, field measurement	(Deg C)		10	NA	20	9.4	14.53	NR	NA
Alkalinity as CO3	(mg/L)		10	2	100	88	94	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	486	14	183.2	NR	NA
Conductivity	(umhos/cm)		10	10	1228	32.3	470.01	NR	NA
Dissolved Solids	(mg/L)		10	10	745	21	280.5	500	2

Table 2.40 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
pH	(pH)		10	10	9.41 L	5.48 L	6.729	6.5/8.5	8
Total Suspended Solids	(mg/L)		10	2	2	1	1.5	NR	NA
Turbidity	(NTU)		10	10	2.98	0.303	1.2756	1	6
Iodine-129	(pCi/L)		2	2	5.6	-13	-3.7	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	1.3	0.48	0.89	5 g	0
Uranium-234	(pCi/L)		2	2	0.065	0.058	0.0615	20	0
Uranium-235	(pCi/L)		2	2	-0.022	-0.022	-0.022	24	0
Neptunium-237	(pCi/L)		2	2	-0.016	-0.092	-0.054	1.2	0
Plutonium-238	(pCi/L)		2	2	0.094	0.04	0.067	1.6	0
Uranium-238	(pCi/L)		2	2	0.1	0.058	0.079	24	0
Plutonium-239	(pCi/L)		2	2	0	0	0	1.2	0
Americium-241	(pCi/L)		2	2	0.23	-0.0043	0.11285	1.2	0
Strontium-89/90	(pCi/L)		2	2	0.44	-1.2	-0.38	8	0
Technetium-99	(pCi/L)		2	2	19	1.6	10.3	4000	0
Gross Alpha	(pCi/L)		10	10	2.4	-0.32	1.14	15 f	0
Gross Beta	(pCi/L)		10	10	4.9	-2.2	2.191	50 a	0
Tritium	(pCi/L)		2	2	180	-100	40	20000	0
1,1,1-Trichloroethane	(ug/L)		10	2	80	64	72	200	0
1,1,2-Trichloroethane	(ug/L)		10	2	1 J	1 J	1	5	0
1,1-Dichloroethane	(ug/L)		10	7	230 D	2 J	65.85714	NR	NA
1,1-Dichloroethene	(ug/L)		10	5	66	1 J	30.2	7	4
1,2-Dibromoethane	(ug/L)		10	1	2 J	2 J	2	NR	NA
1,2-Dichloroethane	(ug/L)		10	2	7	3 J	5	5	1
1,2-Dichloroethene (Total)	(ug/L)		10	8	6417 D	5 J	1238.375	NR b	NA
2-Butanone	(ug/L)		10	5	3 BJ	2 BJ	2.2	NR	NA

Table 2.40 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Acetone	(ug/L)		10	9	16 B	1 BJ	3.666667	NR	NA
Benzene	(ug/L)		10	2	49	18	33.5	5	2
Chloroethane	(ug/L)		10	3	12	1 J	6.666667	NR	NA
Chloroform	(ug/L)		10	2	9	5	7	100 i	0
cis-1,2-Dichloroethene	(ug/L)		10	8	6400 D	3 J	1233	70	2
Methylene chloride	(ug/L)		10	2	13	4 J	8.5	5	1
Tetrachloroethene	(ug/L)		10	10	4600 D	1 J	607.6	5	4
trans-1,2-Dichloroethene	(ug/L)		10	4	21	2 J	10.75	100	0
Trichloroethene	(ug/L)		10	7	3000 D	1 J	582	5	4
Trichlorofluoromethane	(ug/L)		10	2	11	7	9	NR	NA
Vinyl chloride	(ug/L)		10	6	760 D	4 J	205.8333	2	6
Xylenes	(ug/L)		10	2	8	6	7	10000	0
Xylenes	(ug/L)		10	2	8	6	7	10000	0

Table 2.41. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Exit Pathway Monitoring Location A

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	139	9.22	50.265	250	0
Fluoride	(mg/L)		8	5	0.19	0.1	0.134	2	0
Nitrate Nitrogen	(mg/L)		8	8	6.5	0.19	3.218	10	0
Sulfate	(mg/L)		8	8	27.8	12.3	19.45	250	0
Aluminum, ICAP	(mg/L)		8	4	1.97	0.025	0.83425	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	8	1	0.02	0.02	0.02	0.2	0
Barium, ICAP	(mg/L)		8	8	0.12	0.076	0.101288	2	0
Barium, ICAP	(mg/L)	FILTERED	8	8	0.117	0.076	0.096288	2	0
Boron, ICAP	(mg/L)		8	4	0.042	0.01	0.024	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	4	0.042	0.014	0.02675	NR	NA
Cadmium, PMS	(mg/L)		4	1	0.0012	0.0012	0.0012	0.005	0
Calcium, ICAP	(mg/L)		8	8	120	45	81.375	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	110	45	78.525	NR	NA
Chromium, ICAP	(mg/L)		8	2	0.0206	0.014	0.0173	0.1	0
Copper, ICAP	(mg/L)		8	2	0.0057	0.0054	0.00555	1	0
Iron, ICAP	(mg/L)		8	6	4.1	0.021	1.2805	0.3	3
Iron, ICAP	(mg/L)	FILTERED	8	6	0.353	0.007	0.10985	0.3	1
Lead, PMS	(mg/L)		8	4	0.0141	0.0006	0.0052	NR	NA
Lead, PMS	(mg/L)	FILTERED	8	1	0.0028	0.0028	0.0028	NR	NA
Lithium, ICAP	(mg/L)		8	4	0.029	0.0054	0.0168	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	8	3	0.028	0.0075	0.02	NR	NA
Magnesium, ICAP	(mg/L)		8	8	29.5	15	22.05	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	29.5	15	21.7	NR	NA
Manganese, ICAP	(mg/L)		8	6	0.332	0.0056	0.159015	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	8	7	0.231	0.0012	0.098593	0.05	4
Nickel, ICAP	(mg/L)		8	2	0.0662	0.04	0.0531	0.1 d	0

Table 2.41 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Nickel, ICAP	(mg/L)	FILTERED	8	1	0.084	0.084	0.084	0.1 d	0
Potassium, ICAP	(mg/L)		8	5	9.7	1.2	4.044	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	5	8.9	1.3	3.914	NR	NA
Selenium, ICAP	(mg/L)	FILTERED	4	1	0.05	0.05	0.05	0.05	0
Sodium, ICAP	(mg/L)		8	8	85	4.5	28.355	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	68	4.5	25.98375	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.17	0.085	0.1325	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	0.17	0.084	0.13075	NR	NA
Thallium, PMS	(mg/L)		8	2	0.0006	0.0005	0.00055	NR	NA
Uranium, PMS	(mg/L)		8	8	0.0339	0.0017	0.017063	NR	NA
Uranium, PMS	(mg/L)	FILTERED	8	8	0.0343	0.0033	0.017188	NR	NA
Zinc, ICAP	(mg/L)		8	4	0.031	0.0025	0.012525	5	0
Zinc, ICAP	(mg/L)	FILTERED	8	4	0.016	0.0042	0.007925	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	896	285	580.625	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	7.62	0.26	2.235	NR	NA
pH, field measurement	(pH)		8	NA	8.29	6.9	7.425	6.5/8.5	0
REDOX, field measurement	(mV)		8	NA	223	-41	89.75	NR	NA
Static Water Level	(ft - toc)		8	NA	-6.4	-89.17	-30.0838	NR	NA
Temperature, field measurement	(Deg C)		8	NA	19.5	9.1	14.05	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	300	162	242.75	NR	NA
Conductivity	(umhos/cm)		8	8	992	369	661.875	NR	NA
Dissolved Solids	(mg/L)		8	8	570	204	386.875	500	3
pH	(pH)		8	8	7.88 L	7.25 L	7.4925	6.5/8.5	0

Table 2.41 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Total Suspended Solids	(mg/L)		8	4	229	1	75.55	NR	NA
Turbidity	(NTU)		8	8	99.3	0.212	20.17313	1	6
Gross Alpha	(pCi/L)		8	8	22	0.38	7.835	15 f	1
Gross Beta	(pCi/L)		8	8	34	-0.95	14.01875	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		8	1	2 J	2 J	2	NR b	NA
2-Butanone	(ug/L)		8	5	4 BJ	3 BJ	3.4	NR	NA
Acetone	(ug/L)		8	7	29	2 BJ	7.571429	NR	NA
cis-1,2-Dichloroethene	(ug/L)		8	1	2 J	2 J	2	70	0
Tetrachloroethene	(ug/L)		8	1	5	5	5	5	0
Trichloroethene	(ug/L)		8	1	2 J	2 J	2	5	0

Table 2.42. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Exit Pathway Monitoring Location B

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	33.5	2.5	16.771	250	0
Fluoride	(mg/L)		10	7	0.33	0.1	0.204286	2	0
Nitrate Nitrogen	(mg/L)		10	9	48.1	1.23	16.93222	10	4
Sulfate	(mg/L)		10	10	39.9	2.04	18.615	250	0
Aluminum, ICAP	(mg/L)		10	5	0.45	0.023	0.1134	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	10	1	0.028	0.028	0.028	0.2	0
Barium, ICAP	(mg/L)		10	10	0.17	0.0188	0.07172	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.17	0.0173	0.07285	2	0
Boron, ICAP	(mg/L)		10	6	0.116	0.0084	0.056567	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	6	0.116	0.007	0.057	NR	NA
Cadmium, PMS	(mg/L)		5	1	0.0006	0.0006	0.0006	0.005	0
Calcium, ICAP	(mg/L)		10	10	130	20.4	67.35	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	130	37.7	68.86	NR	NA
Copper, ICAP	(mg/L)		10	2	0.0051	0.0043	0.0047	1	0
Iron, ICAP	(mg/L)		10	9	0.6	0.022	0.245411	0.3	3
Iron, ICAP	(mg/L)	FILTERED	10	6	0.16	0.0066	0.041483	0.3	0
Lead, PMS	(mg/L)		10	5	0.002	0.0007	0.0013	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	2	0.0008	0.0006	0.0007	NR	NA
Lithium, ICAP	(mg/L)		10	8	0.0223	0.0094	0.016763	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	8	0.022	0.0084	0.0164	NR	NA
Magnesium, ICAP	(mg/L)		10	10	28.5	8.68	22.488	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	29	8.47	22.517	NR	NA
Manganese, ICAP	(mg/L)		10	8	0.098	0.0022	0.036623	0.05	3
Manganese, ICAP	(mg/L)	FILTERED	10	7	0.094	0.001	0.030584	0.05	2
Nickel, ICAP	(mg/L)		10	1	0.017	0.017	0.017	0.1 d	0

Table 2.42 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Nickel, ICAP	(mg/L)	FILTERED	10	1	0.011	0.011	0.011	0.1 d	0
Potassium, ICAP	(mg/L)		10	9	5.8	1.1	3.845556	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	9	6	1	3.716667	NR	NA
Sodium, ICAP	(mg/L)		10	10	18	1.21	9.396	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	18	1.21	9.452	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.44	0.0575	0.19543	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.44	0.0562	0.2015	NR	NA
Uranium, PMS	(mg/L)		10	10	0.13	0.0008	0.02638	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	10	0.13	0.00088	0.026138	NR	NA
Zinc, ICAP	(mg/L)		10	5	0.024	0.0058	0.01418	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	5	0.013	0.0031	0.00704	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	919	260	485.7	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	8.01	0.15	2.915	NR	NA
pH, field measurement	(pH)		10	NA	8.4	7.2	7.643	6.5/8.5	0
REDOX, field measurement	(mV)		10	NA	210	-252	124.3	NR	NA
Static Water Level	(ft - toc)		10	NA	-11.73	-46.37	-28.086	NR	NA
Temperature, field measurement	(Deg C)		10	NA	18.5	11.3	14.8	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	238	136	191.2	NR	NA
Conductivity	(umhos/cm)		10	10	957	328	561.5	NR	NA
Dissolved Solids	(mg/L)		10	10	683	201	358.6	500	2
pH	(pH)		10	10	8.35 L	7.33 L	7.764	6.5/8.5	0
Total Suspended Solids	(mg/L)		10	5	31.2	1	8.44	NR	NA
Turbidity	(NTU)		10	10	52.7	0.381	9.6792	1	7
Gross Alpha	(pCi/L)		10	10	42	-0.085	9.9615	15 f	2

Table 2.42 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Gross Beta	(pCi/L)		10	10	140	1.8	41.54	50 a	2
1,1-Dichloroethane	(ug/L)		10	1	2 J	2 J	2	NR	NA
1,1-Dichloroethene	(ug/L)		10	4	8	1 J	3.5	7	1
1,2-Dibromo-3-chloropropane	(ug/L)		10	1	1 J	1 J	1	NR	NA
1,2-Dichloroethene (Total)	(ug/L)		10	8	8	2 J	4	NR b	NA
2-Butanone	(ug/L)		10	5	4 BJ	3 J	3.6	NR	NA
Acetone	(ug/L)		10	8	20 B	2 BJ	5.75	NR	NA
Benzene	(ug/L)		10	1	1 J	1 J	1	5	0
cis-1,2-Dichloroethene	(ug/L)		10	8	8	2 J	4	70	0
Methylene chloride	(ug/L)		10	1	1 J	1 J	1	5	0
Trichloroethene	(ug/L)		10	8	78	5	23.375	5	7

Table 2.43. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Exit Pathway Monitoring Location C

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	76.4	5.56	38.81125	250	0
Fluoride	(mg/L)		8	6	0.21	0.14	0.18	2	0
Nitrate Nitrogen	(mg/L)		8	8	26.1	2.74	14.2275	10	5
Sulfate	(mg/L)		8	8	45.8	12.5	28.3125	250	0
Aluminum, ICAP	(mg/L)		8	1	0.063	0.063	0.063	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	8	1	0.034	0.034	0.034	0.2	0
Barium, ICAP	(mg/L)		8	8	0.25	0.0436	0.11935	2	0
Barium, ICAP	(mg/L)	FILTERED	8	8	0.26	0.0435	0.111138	2	0
Boron, ICAP	(mg/L)		8	4	0.055	0.0064	0.0286	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	4	0.067	0.008	0.0295	NR	NA
Calcium, ICAP	(mg/L)		8	8	160	43.4	105.05	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	160	43.8	97.6375	NR	NA
Iron, ICAP	(mg/L)		8	7	4.8	0.041	1.192714	0.3	3
Iron, ICAP	(mg/L)	FILTERED	8	3	0.065	0.006	0.029	0.3	0
Lead, PMS	(mg/L)		8	3	0.004	0.0007	0.001833	NR	NA
Lead, PMS	(mg/L)	FILTERED	8	2	0.0038	0.0026	0.0032	NR	NA
Lithium, ICAP	(mg/L)		8	5	0.0271	0.0041	0.0157	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	8	5	0.0191	0.0056	0.0146	NR	NA
Magnesium, ICAP	(mg/L)		8	8	62.2	23	32.8625	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	41	22	29.775	NR	NA
Manganese, ICAP	(mg/L)		8	6	0.643	0.0013	0.2113	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	8	5	0.64	0.0011	0.25174	0.05	4
Potassium, ICAP	(mg/L)		8	6	3.4	1.2	2.521667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	6	3.7	1.5	2.626667	NR	NA
Sodium, ICAP	(mg/L)		8	8	25	1.7	13.7475	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	27	1.55	14.0725	NR	NA

Table 2.43 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)		8	8	0.9	0.053	0.3465	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	1.1	0.051	0.36375	NR	NA
Uranium, PMS	(mg/L)		8	5	0.0091	0.0006	0.00422	NR	NA
Uranium, PMS	(mg/L)	FILTERED	8	5	0.009	0.0006	0.00408	NR	NA
Zinc, ICAP	(mg/L)		8	2	0.0078	0.0024	0.0051	5	0
Zinc, ICAP	(mg/L)	FILTERED	8	1	0.0033	0.0033	0.0033	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	926	335	627.75	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	3.01	0.12	1.2075	NR	NA
pH, field measurement	(pH)		8	NA	8	6.67	7.28875	6.5/8.5	0
REDOX, field measurement	(mV)		8	NA	154	80	118.375	NR	NA
Static Water Level	(ft - toc)		8	NA	-9.54	-74.06	-36.4463	NR	NA
Temperature, field measurement	(Deg C)		8	NA	16.5	13	14.5875	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	336	164	272.25	NR	NA
Conductivity	(umhos/cm)		8	8	1056	525	774.125	NR	NA
Dissolved Solids	(mg/L)		8	8	693	267	444.25	500	2
pH	(pH)		8	8	8.06 L	6.87 L	7.405	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	4	15	2	7.25	NR	NA
Turbidity	(NTU)		8	8	41.9	0.687	13.58588	1	7
Gross Alpha	(pCi/L)		8	8	7.7	-0.55	1.30625	15 f	0
Gross Beta	(pCi/L)		8	8	47	2.8	19.875	50 a	0
1,1,1-Trichloroethane	(ug/L)		8	2	1 J	1 J	1	200	0
1,2-Dichloroethene (Total)	(ug/L)		8	8	4 J	2 J	2.875	NR b	NA

Table 2.43 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
2-Butanone	(ug/L)		8	2	4 J	3 J	3.5	NR	NA
Acetone	(ug/L)		8	5	14	1 BJ	4.6	NR	NA
Carbon tetrachloride	(ug/L)		8	3	3 J	1 J	2	5	0
Chloroform	(ug/L)		8	5	2 J	1 J	1.2	100 i	0
cis-1,2-Dichloroethene	(ug/L)		8	8	4 J	2 J	2.875	70	0
Tetrachloroethene	(ug/L)		8	4	3 J	2 J	2.75	5	0
Trichloroethene	(ug/L)		8	8	130	20	63.75	5	8

Table 2.44. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Exit Pathway Monitoring Location W

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	33.5	8.57	16.09	250	0
Fluoride	(mg/L)		8	6	0.54	0.18	0.363333	2	0
Nitrate Nitrogen	(mg/L)		8	3	4.01	0.05	1.473333	10	0
Sulfate	(mg/L)		8	8	122	7.12	60.94	250	0
Barium, ICAP	(mg/L)		8	8	0.072	0.0303	0.047012	2	0
Barium, ICAP	(mg/L)	FILTERED	8	8	0.072	0.031	0.046613	2	0
Boron, ICAP	(mg/L)		8	4	0.081	0.011	0.05425	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	4	0.078	0.0097	0.051425	NR	NA
Calcium, ICAP	(mg/L)		8	8	89	48	59.7125	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	88	46.8	59.3625	NR	NA
Chromium, ICAP	(mg/L)		8	2	0.0674	0.013	0.0402	0.1	0
Iron, ICAP	(mg/L)		8	8	8.01	0.31	4.513	0.3	8
Iron, ICAP	(mg/L)	FILTERED	8	8	6.57 k	0.0541	3.697638	0.3	6
Lead, PMS	(mg/L)		8	2	0.00082	0.0005	0.00066	NR	NA
Lithium, ICAP	(mg/L)		8	5	0.014	0.0088	0.01164	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	8	4	0.014	0.0088	0.01165	NR	NA
Magnesium, ICAP	(mg/L)		8	8	33.1	10	24.7	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	33	10	24.5	NR	NA
Manganese, ICAP	(mg/L)		8	8	0.267	0.0077	0.144738	0.05	6
Manganese, ICAP	(mg/L)	FILTERED	8	8	0.264	0.00727	0.140234	0.05	6
Nickel, ICAP	(mg/L)		8	2	0.109	0.089	0.099	0.1 d	1
Nickel, ICAP	(mg/L)	FILTERED	8	2	0.0967	0.088	0.09235	0.1 d	0
Potassium, ICAP	(mg/L)		8	6	2.64	1.5	2.025	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	6	2.81	1.3	2.045	NR	NA
Sodium, ICAP	(mg/L)		8	8	18	3.7	11.8525	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	18	3.79	11.89875	NR	NA

Table 2.44 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)		8	8	1.34	0.0808	0.5401	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	1.32	0.0816	0.537325	NR	NA
Uranium, PMS	(mg/L)		8	1	0.0006	0.0006	0.0006	NR	NA
Uranium, PMS	(mg/L)	FILTERED	8	1	0.0006	0.0006	0.0006	NR	NA
Zinc, ICAP	(mg/L)		8	2	0.0037	0.0022	0.00295	5	0
Zinc, ICAP	(mg/L)	FILTERED	8	2	0.0049	0.0022	0.00355	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	519	347	437.125	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	3.97	0.11	1.0975	NR	NA
pH, field measurement	(pH)		8	NA	8.44	6.38	7.51875	6.5/8.5	1
REDOX, field measurement	(mV)		8	NA	84	-263	-147.75	NR	NA
Static Water Level	(ft - toc)		8	NA	-28.13	-39.1	-32.8125	NR	NA
Temperature, field measurement	(Deg C)		8	NA	19.6	8.5	13.825	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	250	158	191.25	NR	NA
Conductivity	(umhos/cm)		8	8	605	424	526.25	NR	NA
Dissolved Solids	(mg/L)		8	8	387	247	323.75	500	0
pH	(pH)		8	8	7.64 L	6.82 L	7.375	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	7	18	1	8.714286	NR	NA
Turbidity	(NTU)		8	8	124	3.76	58.945	1	8
Iodine-129	(pCi/L)		8	8	13	-8.8	2.5125	NR	NA
Cesium-137	(pCi/L)		3	3	2.3	0.29	0.963333	120	0
Radium - Total Alpha	(pCi/L)		8	8	4.8	0.16	1.15625	5 g	0
Radium-228	(pCi/L)		3	3	-0.75	-6.2	-4.28333	5 g	0
Uranium-234	(pCi/L)		8	8	0.26	-0.023	0.1215	20	0

Table 2.44 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium-235	(pCi/L)		8	8	0.01	-0.061	-0.01138	24	0
Neptunium-237	(pCi/L)		8	8	0.098	0	0.03425	1.2	0
Plutonium-238	(pCi/L)		8	8	0.12	-0.096	0.026875	1.6	0
Uranium-238	(pCi/L)		8	8	0.25	-0.081	0.0526	24	0
Plutonium-239	(pCi/L)		8	8	0.062	-0.075	0.005025	1.2	0
Americium-241	(pCi/L)		8	8	0.15	-0.079	0.088625	1.2	0
Cobalt-60	(pCi/L)		3	3	1.4	0.65	0.963333	NR	NA
Strontium-89/90	(pCi/L)		8	8	630	-1	79.0835	8	1
Technetium-99	(pCi/L)		8	8	15	-3.1	2.9875	4000	0
Gross Alpha	(pCi/L)		8	8	3.4	0.096	1.31075	15 f	0
Gross Beta	(pCi/L)		8	8	11	0.37	3.94625	50 a	0
Tritium	(pCi/L)		8	8	350	-200	68.375	20000	0
2-Butanone	(ug/L)		8	1	4 BJ	4 BJ	4	NR	NA
Acetone	(ug/L)		8	8	77 B	2 BJ	18	NR	NA

Table 2.45. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Exit Pathway Spring/Surface Water

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		22	22	186	4.7	33.18864	250	0
Fluoride	(mg/L)		22	20	1.33	0.1	0.3015	2	0
Nitrate Nitrogen	(mg/L)		22	22	252	0.477	25.66055	10	9
Sulfate	(mg/L)		22	22	95.6	6.77	24.80591	250	0
Aluminum, ICAP	(mg/L)		22	11	0.86	0.075	0.437727	0.2	8
Aluminum, ICAP	(mg/L)	FILTERED	22	6	0.15	0.023	0.057667	0.2	0
Antimony, PMS	(mg/L)		11	1	0.0007	0.0007	0.0007	0.006	0
Antimony, PMS	(mg/L)	FILTERED	11	2	0.0008	0.0006	0.0007	0.006	0
Barium, ICAP	(mg/L)		22	22	0.782	0.039	0.130205	2	0
Barium, ICAP	(mg/L)	FILTERED	22	22	0.775	0.035	0.126923	2	0
Boron, ICAP	(mg/L)		22	14	0.33	0.011	0.064357	NR	NA
Boron, ICAP	(mg/L)	FILTERED	22	14	0.335	0.019	0.065714	NR	NA
Cadmium, PMS	(mg/L)		11	1	0.0132	0.0132	0.0132	0.005	1
Cadmium, PMS	(mg/L)	FILTERED	11	1	0.0117	0.0117	0.0117	0.005	1
Cadmium, ICAP	(mg/L)		11	1	0.0066	0.0066	0.0066	0.005	1
Cadmium, ICAP	(mg/L)	FILTERED	11	1	0.0075	0.0075	0.0075	0.005	1
Calcium, ICAP	(mg/L)		22	22	342 k	23	88.85455	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	22	22	337	23	87.66818	NR	NA
Iron, ICAP	(mg/L)		22	17	0.65	0.0568	0.266241	0.3	6
Iron, ICAP	(mg/L)	FILTERED	22	11	0.15	0.0069	0.052809	0.3	0
Lead, PMS	(mg/L)		22	4	0.0009	0.0005	0.000675	NR	NA
Lead, PMS	(mg/L)	FILTERED	22	4	0.0025	0.0005	0.001175	NR	NA
Lithium, ICAP	(mg/L)		22	13	0.0532	0.0042	0.014608	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	22	11	0.0536	0.0049	0.015873	NR	NA
Magnesium, ICAP	(mg/L)		22	22	44.1 k	5.3	15.84091	NR	NA

Table 2.45 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Magnesium, ICAP	(mg/L)	FILTERED	22	22	44.4	5.3	15.74545	NR	NA
Manganese, ICAP	(mg/L)		22	20	2.12	0.0052	0.289374	0.05	8
Manganese, ICAP	(mg/L)	FILTERED	22	21	2	0.00557	0.247244	0.05	5
Nickel, ICAP	(mg/L)		22	2	0.042	0.018	0.03	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	22	2	0.041	0.015	0.028	0.1 d	0
Potassium, ICAP	(mg/L)		22	19	7.2	1	2.674211	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	22	19	6.94	0.78	2.488947	NR	NA
Selenium, ICAP	(mg/L)		11	1	0.062	0.062	0.062	0.05	1
Sodium, ICAP	(mg/L)		22	22	54	3.66	16.32318	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	22	22	52	3.68	15.99273	NR	NA
Strontium, ICAP	(mg/L)		22	22	0.983	0.055	0.280486	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	22	22	0.98	0.053	0.27645	NR	NA
Thallium, PMS	(mg/L)	FILTERED	22	1	0.0005	0.0005	0.0005	NR	NA
Uranium, PMS	(mg/L)		22	22	0.149	0.0058	0.052336	NR	NA
Uranium, PMS	(mg/L)	FILTERED	22	22	0.144	0.006	0.052686	NR	NA
Zinc, ICAP	(mg/L)		22	10	0.0082	0.0029	0.00481	5	0
Zinc, ICAP	(mg/L)	FILTERED	22	11	0.0074	0.0026	0.003955	5	0
Conductivity, field measurement	(umhos/cm)		22	NA	2880	158	674.2273	NR	NA
Dissolved Oxygen, field measurement	(ppm)		22	NA	9.08	2.04	6.931364	NR	NA
pH, field measurement	(pH)		22	NA	7.84	6.57	7.252727	6.5/8.5	0
REDOX, field measurement	(mV)		22	NA	249	0.84	194.5382	NR	NA
Temperature, field measurement	(Deg C)		22	NA	23.5	8.3	14.83182	NR	NA
Alkalinity as HCO3	(mg/L)		22	22	334	68	165.2727	NR	NA
Conductivity	(umhos/cm)		22	22	2450	182.8	656.5364	NR	NA

Table 2.45 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Dissolved Solids	(mg/L)		22	21	2320	107	467.8095	500	7
pH	(pH)		22	22	8.17 L	6.86 L	7.508182	6.5/8.5	0
Total Suspended Solids	(mg/L)		22	15	12	1	5.133333	NR	NA
Turbidity	(NTU)		22	22	14.1	0.741	4.905818	1	20
Iodine-129	(pCi/L)		2	2	3.4	1.9	2.65	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	0	0	0	5 g	0
Thorium-228	(pCi/L)		2	2	0.17	-0.053	0.0585	16	0
Thorium-230	(pCi/L)		2	2	0.19	0.16	0.175	12	0
Thorium-231+234	(pCi/L)		2	2	41	20	30.5	400	0
Thorium-232	(pCi/L)		2	2	0	0	0	2	0
Uranium-234	(pCi/L)		2	2	24	10	17	20	1
Uranium-235	(wt %)		2	2	0.44	0.41	0.425	NR	NA
Uranium-235	(pCi/L)		2	2	1.3	0.4	0.85	24	0
Neptunium-237	(pCi/L)		2	2	0.92	0.16	0.54	1.2	0
Plutonium-238	(pCi/L)		2	2	0.18	0.072	0.126	1.6	0
Uranium-238	(pCi/L)		2	2	41	20	30.5	24	1
Plutonium-239	(pCi/L)		2	2	0.035	-0.031	0.002	1.2	0
Americium-241	(pCi/L)		2	2	0.1	-0.036	0.032	1.2	0
Strontium-89/90	(pCi/L)		2	2	1.5	-0.32	0.59	8	0
Technetium-99	(pCi/L)		2	2	350	160	255	4000	0
Gross Alpha	(pCi/L)		22	22	45	1.3	19.96364	15 f	12
Gross Beta	(pCi/L)		22	22	500	1.7	65.99091	50 a	6
Tritium	(pCi/L)		2	2	170	-50	60	20000	0
Uranium, Total	(mg/L)		2	2	0.11	0.058	0.084	NR	NA
1,1,1-Trichloroethane	(ug/L)		22	1	1 J	1 J	1	200	0
1,1-Dichloroethene	(ug/L)		22	1	2 J	2 J	2	7	0

Table 2.45 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
1,2-Dichloroethene (Total)	(ug/L)		22	6	11	1 J	3.166667	NR b	NA
2-Butanone	(ug/L)		22	7	4 BJ	3 BJ	3.714286	NR	NA
Acetone	(ug/L)		22	17	26	1 BJ	5.117647	NR	NA
Carbon disulfide	(ug/L)		22	1	2 J	2 J	2	NR	NA
Carbon tetrachloride	(ug/L)		22	1	6	6	6	5	1
cis-1,2-Dichloroethene	(ug/L)		22	6	11	1 J	3.166667	70	0
Tetrachloroethene	(ug/L)		22	5	7	1 J	3.2	5	2
Trichloroethene	(ug/L)		22	5	14	1 J	4.6	5	1
Trichlorofluoromethane	(ug/L)		22	1	1 J	1 J	1	NR	NA

Table 2.46. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Oil Landfarm WMA

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	45.1	2.57	16.013	250	0
Fluoride	(mg/L)		10	3	0.44	0.12	0.33	2	0
Nitrate Nitrogen	(mg/L)		10	8	674	8.92	184.2775	10	7
Sulfate	(mg/L)		10	10	30.5	0.74	11.416	250	0
Aluminum, ICAP	(mg/L)		10	5	2.5	0.035	0.651	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	10	2	0.057	0.036	0.0465	0.2	0
Antimony, PMS	(mg/L)		5	1	0.0006	0.0006	0.0006	0.006	0
Antimony, PMS	(mg/L)	FILTERED	5	1	0.001	0.001	0.001	0.006	0
Arsenic, PMS	(mg/L)		10	1	0.0076	0.0076	0.0076	NR	NA
Barium, ICAP	(mg/L)		10	10	2.3	0.0668	0.65828	2	1
Barium, ICAP	(mg/L)	FILTERED	10	10	2.3	0.067	0.6498	2	1
Beryllium, ICAP	(mg/L)		10	1	0.00073	0.00073	0.00073	0.004	0
Beryllium, ICAP	(mg/L)	FILTERED	10	1	0.00067	0.00067	0.00067	0.004	0
Boron, ICAP	(mg/L)		10	6	0.26	0.011	0.116167	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	6	0.25	0.011	0.114333	NR	NA
Calcium, ICAP	(mg/L)		10	10	1100	9.22	251.402	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	1000	9.51	239.071	NR	NA
Cobalt, ICAP	(mg/L)		10	2	0.023	0.005	0.014	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	10	1	0.024	0.024	0.024	NR	NA
Iron, ICAP	(mg/L)		10	8	3.5	0.014	1.435	0.3	6
Iron, ICAP	(mg/L)	FILTERED	10	5	2.4	0.0095	0.7739	0.3	2
Lead, PMS	(mg/L)		10	5	0.0027	0.0006	0.00164	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	4	0.0018	0.0005	0.001038	NR	NA
Lithium, ICAP	(mg/L)		10	8	0.056	0.0133	0.030163	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	8	0.056	0.0128	0.0294	NR	NA
Magnesium, ICAP	(mg/L)		10	10	69	5.21	23.862	NR	NA

Table 2.46 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Magnesium, ICAP	(mg/L)	FILTERED	10	10	68	5.3	23.684	NR	NA
Manganese, ICAP	(mg/L)		10	7	1.8	0.002	0.708371	0.05	5
Manganese, ICAP	(mg/L)	FILTERED	10	4	1.8	0.521	1.24375	0.05	4
Nickel, ICAP	(mg/L)		10	2	0.02	0.011	0.0155	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	10	1	0.021	0.021	0.021	0.1 d	0
Potassium, ICAP	(mg/L)		10	7	5	1.2	3.391429	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	7	5	1.3	3.247143	NR	NA
Sodium, ICAP	(mg/L)		10	10	110	1.8	32.966	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	100	1.8	32.008	NR	NA
Strontium, ICAP	(mg/L)		10	10	2.7	0.0194	0.86204	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	10	10	2.7	0.0198	0.85978	NR	NA
Uranium, PMS	(mg/L)		10	6	0.016	0.0008	0.004933	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	6	0.015	0.0008	0.004583	NR	NA
Zinc, ICAP	(mg/L)		10	4	0.023	0.011	0.0155	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	5	0.017	0.0024	0.00784	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	4780	88	1296.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	5.11	0.25	1.486	NR	NA
pH, field measurement	(pH)		10	NA	9.03	4	6.9	6.5/8.5	4
REDOX, field measurement	(mV)		10	NA	208	78	157.9	NR	NA
Static Water Level	(ft - toc)		10	NA	-6.05	-19.83	-13.136	NR	NA
Temperature, field measurement	(Deg C)		10	NA	18.5	7.1	14.96	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	408	46	195.6	NR	NA
Conductivity	(umhos/cm)		10	10	5580	108.4	1506.73	NR	NA

Table 2.46 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Dissolved Solids	(mg/L)		10	10	4460	57	1175.4	500	5
pH	(pH)		10	10	8.64 L	5.6 L	7.106	6.5/8.5	4
Total Suspended Solids	(mg/L)		10	7	50	1	14.85714	NR	NA
Turbidity	(NTU)		10	10	80.3	0.643	15.8485	1	8
Iodine-129	(pCi/L)		2	2	9.8	-5.4	2.2	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	2.9	-0.2	1.35	5 g	0
Uranium-234	(pCi/L)		4	4	3.2	0.076	1.044	20	0
Uranium-235	(pCi/L)		4	4	0.19	0	0.05575	24	0
Neptunium-237	(pCi/L)		2	2	-0.028	-0.063	-0.0455	1.2	0
Plutonium-238	(pCi/L)		2	2	0.041	0.014	0.0275	1.6	0
Uranium-238	(pCi/L)		4	4	5	0	1.5275	24	0
Plutonium-239	(pCi/L)		2	2	-0.01	-0.017	-0.0135	1.2	0
Americium-241	(pCi/L)		2	2	0.029	-0.024	0.0025	1.2	0
Strontium-89/90	(pCi/L)		4	4	11	-0.51	3.4475	8	1
Technetium-99	(pCi/L)		4	4	28	5.5	15.125	4000	0
Gross Alpha	(pCi/L)		10	10	18	0.49	4.231	15 f	1
Gross Beta	(pCi/L)		10	10	440	2.2	93.41	50 a	2
Tritium	(pCi/L)		2	2	370	-230	70	20000	0
1,1-Dichloroethane	(ug/L)		10	3	9	1 J	6	NR	NA
1,1-Dichloroethene	(ug/L)		10	3	5	2 J	4	7	0
1,2-Dichloroethene (Total)	(ug/L)		10	4	17	3 J	10.25	NR b	NA
1,2-Dichloropropane	(ug/L)		10	2	3 J	2 J	2.5	5	0
2-Butanone	(ug/L)		10	3	4 BJ	2 J	3.333333	NR	NA
Acetone	(ug/L)		10	8	9 BJ	1 BJ	3.125	NR	NA
Benzene	(ug/L)		10	2	2 J	2 J	2	5	0
Carbon tetrachloride	(ug/L)		10	2	3 J	2 J	2.5	5	0
Chloroethane	(ug/L)		10	1	2 J	2 J	2	NR	NA

Table 2.46 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloroform	(ug/L)		10	4	2 J	1 J	1.75	100 i	0
cis-1,2-Dichloroethene	(ug/L)		10	4	17	3 J	10.25	70	0
Dichlorodifluoromethane	(ug/L)		10	1	1 J	1 J	1	NR	NA
Tetrachloroethene	(ug/L)		10	2	19	10	14.5	5	2
Trichloroethene	(ug/L)		10	4	180	3 J	74.25	5	2

Table 2.47. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Rust Spoil Area

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	2.12	1.94	2.03	250	0
Nitrate Nitrogen	(mg/L)		2	2	0.42	0.37	0.395	10	0
Sulfate	(mg/L)		2	2	4.02	3.61	3.815	250	0
Aluminum, ICAP	(mg/L)		2	1	0.024	0.024	0.024	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.026	0.026	0.026	0.2	0
Barium, ICAP	(mg/L)		2	2	0.021	0.0177	0.01935	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.022	0.0182	0.0201	2	0
Calcium, ICAP	(mg/L)		2	2	90	85.2	87.6	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	90	85.8	87.9	NR	NA
Iron, ICAP	(mg/L)		2	1	0.0081	0.0081	0.0081	0.3	0
Magnesium, ICAP	(mg/L)		2	2	6.8	5.45	6.125	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	6.8	5.46	6.13	NR	NA
Manganese, ICAP	(mg/L)		2	1	0.0014	0.0014	0.0014	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	1	0.0021	0.0021	0.0021	0.05	0
Potassium, ICAP	(mg/L)		2	1	1.9	1.9	1.9	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	1	2	2	2	NR	NA
Sodium, ICAP	(mg/L)		2	2	3.2	1.96	2.58	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	3.3	1.98	2.64	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.08	0.0728	0.0764	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.08	0.0732	0.0766	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0007	0.0006	0.00065	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	1	0.0007	0.0007	0.0007	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.0077	0.0077	0.0077	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.017	0.017	0.017	5	0

Table 2.47 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity, field measurement	(umhos/cm)		2	NA	454	333	393.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	5.59	4.77	5.18	NR	NA
pH, field measurement	(pH)		2	NA	7.55	7.41	7.48	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	195	190	192.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-36.12	-40.73	-38.425	NR	NA
Temperature, field measurement	(Deg C)		2	NA	17.6	12.8	15.2	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	240	238	239	NR	NA
Conductivity	(umhos/cm)		2	2	473	455	464	NR	NA
Dissolved Solids	(mg/L)		2	2	264	243	253.5	500	0
pH	(pH)		2	2	7.49 L	7.31 L	7.4	6.5/8.5	0
Turbidity	(NTU)		2	2	0.852	0.483	0.6675	1	0
Gross Alpha	(pCi/L)		2	2	2.5	0.088	1.294	15 f	0
Gross Beta	(pCi/L)		2	2	3.9	-0.27	1.815	50 a	0
2-Butanone	(ug/L)		2	1	3 BJ	3 BJ	3	NR	NA
Acetone	(ug/L)		2	2	1 BJ	1 BJ	1	NR	NA
Carbon tetrachloride	(ug/L)		2	1	1 J	1 J	1	5	0
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0
Trichloroethene	(ug/L)		2	2	10	8	9	5	2

Table 2.48. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=S-3 Site

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	186	146	166	250	0
Fluoride	(mg/L)		2	2	2.59	1.66	2.125	2	1
Nitrate Nitrogen	(mg/L)		2	2	139	129	134	10	2
Sulfate	(mg/L)		2	2	36.8	31.9	34.35	250	0
Aluminum, ICAP	(mg/L)		2	2	4.1	2.8	3.45	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	2	2	4.07	3.8	3.935	0.2	2
Arsenic, PMS	(mg/L)		2	1	0.008	0.008	0.008	NR	NA
Barium, ICAP	(mg/L)		2	2	0.37	0.32	0.345	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.38	0.302	0.341	2	0
Beryllium, ICAP	(mg/L)		2	2	0.0043	0.00333	0.003815	0.004	1
Beryllium, ICAP	(mg/L)	FILTERED	2	2	0.00486	0.0043	0.00458	0.004	2
Boron, ICAP	(mg/L)		2	1	0.028	0.028	0.028	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.027	0.027	0.027	NR	NA
Cadmium, PMS	(mg/L)		1	1	0.0256	0.0256	0.0256	0.005	1
Cadmium, PMS	(mg/L)	FILTERED	1	1	0.0288	0.0288	0.0288	0.005	1
Cadmium, ICAP	(mg/L)		1	1	0.031	0.031	0.031	0.005	1
Cadmium, ICAP	(mg/L)	FILTERED	1	1	0.032	0.032	0.032	0.005	1
Calcium, ICAP	(mg/L)		2	2	197	160	178.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	170	160	165	NR	NA
Cobalt, ICAP	(mg/L)		2	2	0.11	0.0731	0.09155	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	2	2	0.11	0.0947	0.10235	NR	NA
Copper, ICAP	(mg/L)		2	1	0.0063	0.0063	0.0063	1	0
Copper, ICAP	(mg/L)	FILTERED	2	1	0.0053	0.0053	0.0053	1	0
Iron, ICAP	(mg/L)		2	1	0.023	0.023	0.023	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	1	0.0096	0.0096	0.0096	0.3	0

Table 2.48 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Lead, PMS	(mg/L)		2	2	0.0009	0.00064	0.00077	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	2	0.001	0.00072	0.00086	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.015	0.0105	0.01275	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.015	0.0149	0.01495	NR	NA
Magnesium, ICAP	(mg/L)		2	2	29.7	27	28.35	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	27	25.7	26.35	NR	NA
Manganese, ICAP	(mg/L)		2	2	6.5	5.63	6.065	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	6.6	5.89	6.245	0.05	2
Nickel, ICAP	(mg/L)		2	2	0.27	0.217	0.2435	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	2	2	0.28	0.272	0.276	0.1 d	2
Potassium, ICAP	(mg/L)		2	2	11	9.45	10.225	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	11	9.9	10.45	NR	NA
Silver, ICAP	(mg/L)		2	1	0.0069	0.0069	0.0069	0.1	0
Sodium, ICAP	(mg/L)		2	2	84	80.6	82.3	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	86	81.6	83.8	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.427	0.36	0.3935	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.37	0.359	0.3645	NR	NA
Thallium, PMS	(mg/L)		2	1	0.00063	0.00063	0.00063	NR	NA
Uranium, PMS	(mg/L)		2	2	0.726	0.63	0.678	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.818	0.6	0.709	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.069	0.069	0.069	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.071	0.0694	0.0702	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	1616	1378	1497	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	3.2	0.7	1.95	NR	NA
pH, field measurement	(pH)		2	NA	5.42	5.1	5.26	6.5/8.5	2

Table 2.48 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		2	NA	230	114	172	NR	NA
Static Water Level	(ft - toc)		2	NA	-6.1	-8.45	-7.275	NR	NA
Temperature, field measurement	(Deg C)		2	NA	25.9	14.1	20	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	70	22	46	NR	NA
Conductivity	(umhos/cm)		2	2	1758	1679	1718.5	NR	NA
Dissolved Solids	(mg/L)		2	2	1570	1148	1359	500	2
pH	(pH)		2	2	5.67 L	5.33 L	5.5	6.5/8.5	2
Total Suspended Solids	(mg/L)		2	2	3	2.4	2.7	NR	NA
Turbidity	(NTU)		2	2	2.73	1.13	1.93	1	2
Iodine-129	(pCi/L)		2	2	7.2	3.1	5.15	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	1.9	0.37	1.135	5 g	0
Uranium-234	(pCi/L)		2	2	110	100	105	20	2
Uranium-235	(pCi/L)		2	2	5.6	3.9	4.75	24	0
Neptunium-237	(pCi/L)		2	2	18	13	15.5	1.2	2
Plutonium-238	(pCi/L)		2	2	0.16	-0.024	0.068	1.6	0
Uranium-238	(pCi/L)		2	2	240	220	230	24	2
Plutonium-239	(pCi/L)		2	2	0.21	-0.016	0.097	1.2	0
Americium-241	(pCi/L)		2	2	0.042	0.024	0.033	1.2	0
Strontium-89/90	(pCi/L)		2	2	4.8	3.4	4.1	8	0
Technetium-99	(pCi/L)		2	2	970	840	905	4000	0
Gross Alpha	(pCi/L)		2	2	140	0.39	70.195	15 f	1
Gross Beta	(pCi/L)		2	2	590	-3.5	293.25	50 a	1
Tritium	(pCi/L)		2	2	-10	-41	-25.5	20000	0
2-Butanone	(ug/L)		2	1	3 BJ	3 BJ	3	NR	NA
Acetone	(ug/L)		2	2	2 BJ	2 BJ	2	NR	NA
Chloroform	(ug/L)		2	2	1 J	1 J	1	100 i	0
Tetrachloroethene	(ug/L)		2	2	12	11	11.5	5	2

Table 2.49. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=BC AREA NAME=Spoil Area I

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	13.7	12	12.85	250	0
Nitrate Nitrogen	(mg/L)		2	2	9.33	7.84	8.585	10	0
Sulfate	(mg/L)		2	2	68.9	59.7	64.3	250	0
Barium, ICAP	(mg/L)		2	2	0.06	0.0568	0.0584	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.06	0.0559	0.05795	2	0
Boron, ICAP	(mg/L)		2	1	0.017	0.017	0.017	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.016	0.016	0.016	NR	NA
Cadmium, PMS	(mg/L)	FILTERED	1	1	0.0005	0.0005	0.0005	0.005	0
Calcium, ICAP	(mg/L)		2	2	130	121	125.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	130	120	125	NR	NA
Iron, ICAP	(mg/L)		2	1	0.0094	0.0094	0.0094	0.3	0
Magnesium, ICAP	(mg/L)		2	2	14.4	14	14.2	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	14.2	14	14.1	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.107	0.016	0.0615	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.102	0.015	0.0585	0.05	1
Potassium, ICAP	(mg/L)		2	2	3.3	3.26	3.28	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3.4	3.31	3.355	NR	NA
Sodium, ICAP	(mg/L)		2	2	7.3	6.4	6.85	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	7.3	6.36	6.83	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.21	0.192	0.201	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.21	0.19	0.2	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0026	0.0023	0.00245	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0024	0.0023	0.00235	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.016	0.016	0.016	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.012	0.012	0.012	5	0

Table 2.49 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity, field measurement	(umhos/cm)		2	NA	737	595	666	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.42	0.39	0.405	NR	NA
pH, field measurement	(pH)		2	NA	7.29	7.18	7.235	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	216	167	191.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-55.85	-62.58	-59.215	NR	NA
Temperature, field measurement	(Deg C)		2	NA	15.9	13.9	14.9	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	274	272	273	NR	NA
Conductivity	(umhos/cm)		2	2	736	709	722.5	NR	NA
Dissolved Solids	(mg/L)		2	2	447	442	444.5	500	0
pH	(pH)		2	2	7.27 L	7.23 L	7.25	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	1	1	1	1	NR	NA
Turbidity	(NTU)		2	2	0.365	0.274	0.3195	1	0
Gross Alpha	(pCi/L)		2	2	2.9	2.2	2.55	15 f	0
Gross Beta	(pCi/L)		2	2	30	21	25.5	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	5	3 J	4	NR b	NA
2-Butanone	(ug/L)		2	1	4 BJ	4 BJ	4	NR	NA
Acetone	(ug/L)		2	1	3 BJ	3 BJ	3	NR	NA
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0
cis-1,2-Dichloroethene	(ug/L)		2	2	5	3 J	4	70	0
Tetrachloroethene	(ug/L)		2	2	12	11	11.5	5	2
Trichloroethene	(ug/L)		2	2	6	5	5.5	5	1

Table 2.50. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=C. Ridge Borrow Area Waste Pile

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	1.21	0.94	1.075	250	0
Nitrate Nitrogen	(mg/L)		2	2	0.32	0.307	0.3135	10	0
Sulfate	(mg/L)		2	2	3.06	2.28	2.67	250	0
Aluminum, ICAP	(mg/L)		2	1	0.021	0.021	0.021	0.2	0
Barium, ICAP	(mg/L)		2	2	0.02	0.0192	0.0196	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.02	0.0188	0.0194	2	0
Calcium, ICAP	(mg/L)		2	2	35	28.7	31.85	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	34	28.9	31.45	NR	NA
Magnesium, ICAP	(mg/L)		2	2	21	20.9	20.95	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	21.2	21	21.1	NR	NA
Potassium, ICAP	(mg/L)		2	1	1.1	1.1	1.1	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	1	1.4	1.4	1.4	NR	NA
Sodium, ICAP	(mg/L)		2	2	1.09	0.76	0.925	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	1.01	0.73	0.87	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.021	0.0185	0.01975	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.021	0.0187	0.01985	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.0022	0.0022	0.0022	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	242	233	237.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	6.87	6.11	6.49	NR	NA
pH, field measurement	(pH)		2	NA	8	7.64	7.82	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	201	126	163.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-128.64	-135.33	-131.985	NR	NA

Table 2.50 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Temperature, field measurement	(Deg C)		2	NA	17.8	13.8	15.8	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	174	160	167	NR	NA
Conductivity	(umhos/cm)		2	2	319	303	311	NR	NA
Dissolved Solids	(mg/L)		2	2	179	161	170	500	0
pH	(pH)		2	2	8.18 L	8.06 L	8.12	6.5/8.5	0
Turbidity	(NTU)		2	2	1.61	0.287	0.9485	1	1
Gross Alpha	(pCi/L)		2	2	-0.36	-0.76	-0.56	15 f	0
Gross Beta	(pCi/L)		2	2	4.5	3.4	3.95	50 a	0
2-Butanone	(ug/L)		2	1	3 J	3 J	3	NR	NA
Acetone	(ug/L)		2	1	1 J	1 J	1	NR	NA

Table 2.51. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=C. Ridge Security Pits

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		7	7	2.51	0.786	1.354143	250	0
Nitrate Nitrogen	(mg/L)		7	5	1.18	0.25	0.7928	10	0
Sulfate	(mg/L)		7	7	3.45	1.04	2.622857	250	0
Aluminum, ICAP	(mg/L)		7	4	0.055	0.021	0.03025	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	7	1	0.054	0.054	0.054	0.2	0
Barium, ICAP	(mg/L)		7	7	0.019	0.00949	0.013341	2	0
Barium, ICAP	(mg/L)	FILTERED	7	7	0.019	0.00938	0.013297	2	0
Boron, ICAP	(mg/L)		7	1	0.025	0.025	0.025	NR	NA
Boron, ICAP	(mg/L)	FILTERED	7	1	0.025	0.025	0.025	NR	NA
Calcium, ICAP	(mg/L)		7	7	46	28	39.02857	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	7	7	46	27.2	38.77143	NR	NA
Iron, ICAP	(mg/L)		7	5	0.27	0.0063	0.10126	0.3	0
Iron, ICAP	(mg/L)	FILTERED	7	4	0.27	0.0082	0.10955	0.3	0
Lead, PMS	(mg/L)	FILTERED	7	2	0.0013	0.0006	0.00095	NR	NA
Magnesium, ICAP	(mg/L)		7	7	28	15	22.91429	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	7	7	27	15	22.81429	NR	NA
Manganese, ICAP	(mg/L)		7	4	0.13	0.0015	0.0539	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	7	4	0.12	0.0021	0.051475	0.05	2
Nickel, ICAP	(mg/L)	FILTERED	7	1	0.01	0.01	0.01	0.1 d	0
Potassium, ICAP	(mg/L)		7	3	2.2	1.3	1.866667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	7	3	2.4	1.1	1.6	NR	NA
Sodium, ICAP	(mg/L)		7	7	1	0.46	0.69	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	7	7	1.1	0.447	0.682571	NR	NA
Strontium, ICAP	(mg/L)		7	7	0.033	0.015	0.020357	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	7	7	0.033	0.015	0.020243	NR	NA

Table 2.51 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, PMS	(mg/L)		7	1	0.0021	0.0021	0.0021	NR	NA
Uranium, PMS	(mg/L)	FILTERED	7	1	0.0022	0.0022	0.0022	NR	NA
Zinc, ICAP	(mg/L)		7	4	0.0065	0.006	0.0062	5	0
Zinc, ICAP	(mg/L)	FILTERED	7	4	0.0089	0.0022	0.006925	5	0
Conductivity, field measurement	(umhos/cm)		7	NA	350	192	285.5714	NR	NA
Dissolved Oxygen, field measurement	(ppm)		7	NA	8.21	0.8	5.38	NR	NA
pH, field measurement	(pH)		7	NA	8.06	6.4	7.47	6.5/8.5	1
REDOX, field measurement	(mV)		7	NA	199	-145	94.14286	NR	NA
Static Water Level	(ft - toc)		7	NA	-68.86	-169.58	-128.306	NR	NA
Temperature, field measurement	(Deg C)		7	NA	18.2	13.8	15.74286	NR	NA
Alkalinity as HCO3	(mg/L)		7	7	224	132	187.4286	NR	NA
Conductivity	(umhos/cm)		7	7	409	259	355.7143	NR	NA
Dissolved Solids	(mg/L)		7	7	230	139	193.7143	500	0
pH	(pH)		7	7	8.25 L	7.56 L	7.895714	6.5/8.5	0
Total Suspended Solids	(mg/L)		7	4	2	1	1.25	NR	NA
Turbidity	(NTU)		7	7	2.97	0.334	1.537	1	4
Gross Alpha	(pCi/L)		7	7	3.6	-0.073	1.903857	15 f	0
Gross Beta	(pCi/L)		7	7	4.6	-0.16	1.554286	50 a	0
1,1,1-Trichloroethane	(ug/L)		7	1	220 D	220 D	220	200	1
1,1-Dichloroethane	(ug/L)		7	1	160	160	160	NR	NA
1,1-Dichloroethene	(ug/L)		7	1	170	170	170	7	1
1,2-Dichloroethane	(ug/L)		7	1	3 J	3 J	3	5	0

Table 2.51 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
1,2-Dichloroethene (Total)	(ug/L)		7	2	5	3 J	4	NR b	NA
2-Butanone	(ug/L)		7	4	3 J	2 BJ	2.75	NR	NA
Acetone	(ug/L)		7	7	5 BJ	2 BJ	3	NR	NA
cis-1,2-Dichloroethene	(ug/L)		7	2	5	3 J	4	70	0
Dichlorodifluoromethane	(ug/L)		7	1	5 B	5 B	5	NR	NA
Ethylbenzene	(ug/L)		7	1	1 BJ	1 BJ	1	700	0
Tetrachloroethene	(ug/L)		7	3	10	5	7.333333	5	2
Trichlorofluoromethane	(ug/L)		7	3	54	4 J	20.66667	NR	NA

Table 2.52. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=C. Ridge Sediment Disposal Basin

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		32	32	3.879	0.79	1.551031	250	0
Nitrate Nitrogen	(mg/L)		32	32	0.427	0.15	0.237719	10	0
Sulfate	(mg/L)		32	32	9.862	2.11	6.229875	250	0
Aluminum, ICAP	(mg/L)		32	9	0.424	0.026	0.122444	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	32	2	0.037	0.026	0.0315	0.2	0
Antimony, PMS	(mg/L)		32	2	0.0007	0.0006	0.00065	0.006	0
Antimony, PMS	(mg/L)	FILTERED	32	14	0.0009	0.0005	0.000707	0.006	0
Barium, ICAP	(mg/L)		32	32	0.043	0.0038	0.017838	2	0
Barium, ICAP	(mg/L)	FILTERED	32	32	0.043	0.0037	0.017862	2	0
Boron, ICAP	(mg/L)		32	16	0.016	0.0054	0.009138	NR	NA
Boron, ICAP	(mg/L)	FILTERED	32	16	0.015	0.0045	0.009056	NR	NA
Cadmium, PMS	(mg/L)	FILTERED	32	1	0.0047	0.0047	0.0047	0.005	0
Calcium, ICAP	(mg/L)		32	32	70.2	11	39.1375	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	32	32	70.5 k	11	39.25938	NR	NA
Copper, ICAP	(mg/L)	FILTERED	32	2	0.0044	0.004	0.0042	1	0
Iron, ICAP	(mg/L)		32	20	0.517	0.0062	0.083195	0.3	2
Iron, ICAP	(mg/L)	FILTERED	32	14	0.088	0.0076	0.017829	0.3	0
Lead, PMS	(mg/L)		32	8	0.0016	0.0005	0.0009	NR	NA
Lead, PMS	(mg/L)	FILTERED	32	2	0.0054	0.0009	0.00315	NR	NA
Lithium, ICAP	(mg/L)		32	4	0.044	0.017	0.0315	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	32	4	0.045	0.017	0.0305	NR	NA
Magnesium, ICAP	(mg/L)		32	32	41.6	17.8	25.76875	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	32	32	41.6	18	25.91875	NR	NA
Manganese, ICAP	(mg/L)		32	6	0.0104	0.0025	0.005457	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	32	12	0.0126	0.0011	0.003375	0.05	0

Table 2.52 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Potassium, ICAP	(mg/L)		32	24	37	0.95	13.24083	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	32	25	38	1.1	12.9372	NR	NA
Sodium, ICAP	(mg/L)		32	32	7.6	0.47	2.730281	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	32	32	8.1	0.46	2.767469	NR	NA
Strontium, ICAP	(mg/L)		32	32	0.035	0.0056	0.021009	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	32	32	0.033	0.0056	0.020938	NR	NA
Uranium, PMS	(mg/L)		32	20	0.0025	0.0006	0.00154	NR	NA
Uranium, PMS	(mg/L)	FILTERED	32	16	0.002	0.0012	0.001681	NR	NA
Zinc, ICAP	(mg/L)		32	12	0.01	0.0025	0.005183	5	0
Zinc, ICAP	(mg/L)	FILTERED	32	13	0.024	0.0022	0.010285	5	0
Conductivity, field measurement	(umhos/cm)		32	NA	597	192	355.5625	NR	NA
Dissolved Oxygen, field measurement	(ppm)		32	NA	7.12	0.4	4.826875	NR	NA
pH, field measurement	(pH)		32	NA	9.79	6.64	7.938125	6.5/8.5	7
REDOX, field measurement	(mV)		32	NA	236	79	186.4063	NR	NA
Static Water Level	(ft - toc)		32	NA	-116.48	-157.95	-135.939	NR	NA
Temperature, field measurement	(Deg C)		32	NA	19.6	13.8	15.64375	NR	NA
Alkalinity as CO3	(mg/L)		32	4	68	32	48	NR	NA
Alkalinity as HCO3	(mg/L)		32	32	372	82	204	NR	NA
Conductivity	(umhos/cm)		32	32	688	255	403.125	NR	NA
Dissolved Solids	(mg/L)		32	32	399	133	217.8125	500	0
pH	(pH)		32	32	9.74 L	7.23 L	8.050625	6.5/8.5	5
Total Suspended Solids	(mg/L)		32	6	10	1	5	NR	NA
Turbidity	(NTU)		32	32	11.3	0.071	1.91325	1	14

Table 2.53. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=Const./Debris Landfill VI

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		9	9	9.48	0.744	3.131889	250	0
Nitrate Nitrogen	(mg/L)		9	9	0.714	0.064	0.314778	10	0
Sulfate	(mg/L)		9	9	12.9	1.391	5.276444	250	0
Aluminum, ICAP	(mg/L)		9	3	0.65	0.38	0.507333	0.2	3
Aluminum, ICAP	(mg/L)	FILTERED	9	1	0.024	0.024	0.024	0.2	0
Barium, ICAP	(mg/L)		9	9	0.018	0.00803	0.011659	2	0
Barium, ICAP	(mg/L)	FILTERED	9	9	0.017	0.00857	0.011308	2	0
Boron, ICAP	(mg/L)		9	1	0.0071	0.0071	0.0071	NR	NA
Boron, ICAP	(mg/L)	FILTERED	9	1	0.0052	0.0052	0.0052	NR	NA
Calcium, ICAP	(mg/L)		9	9	52.4	19.7	39.17778	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	9	9	53	19.3	39.22222	NR	NA
Iron, ICAP	(mg/L)		9	3	0.71	0.25	0.462333	0.3	2
Iron, ICAP	(mg/L)	FILTERED	9	1	0.012	0.012	0.012	0.3	0
Lead, PMS	(mg/L)		9	3	0.0012	0.0005	0.0008	NR	NA
Magnesium, ICAP	(mg/L)		9	9	30	9.83	22.55889	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	9	9	30.6	9.64	22.66	NR	NA
Manganese, ICAP	(mg/L)		9	3	0.018	0.0061	0.011967	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	9	1	0.0013	0.0013	0.0013	0.05	0
Potassium, ICAP	(mg/L)		9	2	2	1.3	1.65	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	9	2	2.1	0.88	1.49	NR	NA
Sodium, ICAP	(mg/L)		9	9	5.09	0.625	2.042667	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	9	9	5.32	0.628	2.059778	NR	NA
Strontium, ICAP	(mg/L)		9	9	0.031	0.0172	0.0241	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	9	9	0.032	0.0171	0.024156	NR	NA
Uranium, PMS	(mg/L)		9	3	0.0022	0.0006	0.0015	NR	NA

Table 2.53 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, PMS	(mg/L)	FILTERED	9	2	0.0025	0.0014	0.00195	NR	NA
Zinc, ICAP	(mg/L)		9	1	0.011	0.011	0.011	5	0
Zinc, ICAP	(mg/L)	FILTERED	9	1	0.0021	0.0021	0.0021	5	0
Conductivity, field measurement	(umhos/cm)		9	NA	433	139	316.7778	NR	NA
Dissolved Oxygen, field measurement	(ppm)		9	NA	6.4	1.76	3.628889	NR	NA
pH, field measurement	(pH)		9	NA	8.04	6.36	7.463333	6.5/8.5	1
REDOX, field measurement	(mV)		9	NA	209	69	175.8889	NR	NA
Static Water Level	(ft - toc)		9	NA	-31.11	-80.11	-60.5933	NR	NA
Temperature, field measurement	(Deg C)		9	NA	16.1	12.9	14.38889	NR	NA
Alkalinity as HCO3	(mg/L)		9	9	244	62	181.3333	NR	NA
Conductivity	(umhos/cm)		9	9	478	137.1	353.1222	NR	NA
Dissolved Solids	(mg/L)		9	9	272	92	188.7778	500	0
pH	(pH)		9	9	7.94 L	6.44 L	7.497778	6.5/8.5	1
Total Suspended Solids	(mg/L)		9	3	11	6	8	NR	NA
Turbidity	(NTU)		9	9	17.9	0.074	3.621111	1	3
Gross Alpha	(pCi/L)		9	9	2.8	-1.1	0.501111	15 f	0
Gross Beta	(pCi/L)		9	9	5	0	2.843333	50 a	0
1,1,1-Trichloroethane	(ug/L)		9	1	1 J	1 J	1	200	0
2-Butanone	(ug/L)		9	1	2 J	2 J	2	NR	NA
Acetone	(ug/L)		9	7	5 J	1 J	2.571429	NR	NA
Carbon disulfide	(ug/L)		9	1	1 J	1 J	1	NR	NA

Table 2.54. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=Exit Pathway Spring/Surface Water

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	14.6	1.17	5.228	250	0
Fluoride	(mg/L)		10	2	0.11	0.1	0.105	2	0
Nitrate Nitrogen	(mg/L)		10	10	3.16	0.03	1.0301	10	0
Sulfate	(mg/L)		10	10	11.5	2.77	7.458	250	0
Aluminum, ICAP	(mg/L)		10	6	0.87	0.074	0.406167	0.2	3
Aluminum, ICAP	(mg/L)	FILTERED	10	1	0.051	0.051	0.051	0.2	0
Barium, ICAP	(mg/L)		10	10	0.104	0.0159	0.04589	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.0921	0.0164	0.04177	2	0
Boron, ICAP	(mg/L)		10	5	0.041	0.0049	0.01392	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	5	0.04	0.0046	0.01432	NR	NA
Calcium, ICAP	(mg/L)		10	10	70.2	16	43.01	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	70.1	16	42.64	NR	NA
Iron, ICAP	(mg/L)		10	9	0.79	0.0543	0.280811	0.3	3
Iron, ICAP	(mg/L)	FILTERED	10	6	0.349	0.0094	0.081233	0.3	1
Lead, PMS	(mg/L)		10	3	0.0023	0.001	0.001467	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	2	0.0028	0.0006	0.0017	NR	NA
Lithium, ICAP	(mg/L)		10	2	0.016	0.0094	0.0127	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	2	0.016	0.0078	0.0119	NR	NA
Magnesium, ICAP	(mg/L)		10	10	17.2	5	11.644	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	18.1	4.8	11.673	NR	NA
Manganese, ICAP	(mg/L)		10	9	1.81	0.0027	0.24874	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	10	10	1.42	0.0044	0.151522	0.05	1
Potassium, ICAP	(mg/L)		10	4	1.5	0.91	1.1525	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	5	1.3	0.77	1.032	NR	NA
Sodium, ICAP	(mg/L)		10	10	6.6	0.554	2.4232	NR	NA

Table 2.54 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sodium, ICAP	(mg/L)	FILTERED	10	10	6.2	0.626	2.3982	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.223	0.017	0.08743	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.225	0.017	0.08638	NR	NA
Uranium, PMS	(mg/L)		10	6	0.0092	0.0006	0.0023	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	4	0.0076	0.0006	0.002775	NR	NA
Zinc, ICAP	(mg/L)		10	5	0.028	0.0045	0.01068	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	5	0.0076	0.0037	0.00552	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	660	148	348.1	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	8.08	1.04	5.266	NR	NA
pH, field measurement	(pH)		10	NA	7.76	6.86	7.301	6.5/8.5	0
REDOX, field measurement	(mV)		10	NA	221	72	176.3	NR	NA
Temperature, field measurement	(Deg C)		10	NA	22	12	15.58	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	194	68	147.2	NR	NA
Conductivity	(umhos/cm)		10	10	414	163.7	314.97	NR	NA
Dissolved Solids	(mg/L)		10	10	248	82	178.2	500	0
pH	(pH)		10	10	7.51 L	6.78 L	7.273	6.5/8.5	0
Total Suspended Solids	(mg/L)		10	8	25	1	5.75	NR	NA
Turbidity	(NTU)		10	10	31.2	0.951	6.6451	1	9
Gross Alpha	(pCi/L)		10	10	9.7	-0.77	1.4113	15 f	0
Gross Beta	(pCi/L)		10	10	5.4	-1.2	1.333	50 a	0
2-Butanone	(ug/L)		10	8	4 BJ	2 BJ	3.125	NR	NA
Acetone	(ug/L)		10	8	7 J	2 BJ	3.625	NR	NA
Carbon disulfide	(ug/L)		10	1	2 J	2 J	2	NR	NA

Table 2.55. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=Industrial Landfill II

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	1.997	1.422	1.638833	250	0
Fluoride	(mg/L)		6	2	1.77	1.67	1.72	2	0
Nitrate Nitrogen	(mg/L)		6	5	0.223	0.033	0.1332	10	0
Sulfate	(mg/L)		6	6	14	2.792	6.9695	250	0
Antimony, PMS	(mg/L)		6	2	0.0006	0.00055	0.000575	0.006	0
Antimony, PMS	(mg/L)	FILTERED	6	2	0.0008	0.00061	0.000705	0.006	0
Barium, ICAP	(mg/L)		6	6	0.35	0.0092	0.151612	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.4	0.0092	0.154358	2	0
Calcium, ICAP	(mg/L)		6	6	44	5.25	20.675	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	45	5.54	21.42667	NR	NA
Chromium, ICAP	(mg/L)		6	1	0.023	0.023	0.023	0.1	0
Lithium, ICAP	(mg/L)		6	2	0.029	0.028	0.0285	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	2	0.0295	0.026	0.02775	NR	NA
Magnesium, ICAP	(mg/L)		6	6	26.1	9.56	20.57667	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	27.2	9.95	21.54167	NR	NA
Potassium, ICAP	(mg/L)		6	2	15.8	14	14.9	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	2	16.5	13	14.75	NR	NA
Sodium, ICAP	(mg/L)		6	6	35.3	0.5	11.8185	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	36.6	0.62	12.02667	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.42	0.0233	0.136367	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	0.43	0.0207	0.139667	NR	NA
Uranium, PMS	(mg/L)		6	2	0.0069	0.0039	0.0054	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	4	0.0039	0.0005	0.00225	NR	NA

Table 2.55 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity, field measurement	(umhos/cm)		6	NA	347	237	283.1667	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	3.09	0.46	1.783333	NR	NA
pH, field measurement	(pH)		6	NA	9.44	7.74	8.678333	6.5/8.5	3
REDOX, field measurement	(mV)		6	NA	160	61	117.1667	NR	NA
Static Water Level	(ft - toc)		6	NA	-18.44	-95.35	-62.5217	NR	NA
Temperature, field measurement	(Deg C)		6	NA	21	12.7	16.46667	NR	NA
Alkalinity as CO3	(mg/L)		6	2	52	48	50	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	208	76	142	NR	NA
Conductivity	(umhos/cm)		6	6	451	259	344.1667	NR	NA
Dissolved Solids	(mg/L)		6	6	200	128	162	500	0
pH	(pH)		6	6	9.56 L	7.82 L	8.716667	6.5/8.5	4
Total Suspended Solids	(mg/L)		6	1	1	1	1	NR	NA
Turbidity	(NTU)		6	6	0.58 hX	0.122	0.269167	1	0
Gross Alpha	(pCi/L)		6	6	5.3	-0.96	1.118333	15 f	0
Gross Beta	(pCi/L)		6	6	13	-3.9	2.906667	50 a	0
Acetone	(ug/L)		6	3	110	1 J	37.66667	NR	NA

Table 2.56. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=Industrial Landfill IV

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	2.17	1.05	1.526	250	0
Nitrate Nitrogen	(mg/L)		10	10	0.55	0.204	0.3626	10	0
Sulfate	(mg/L)		10	10	7.19	0.624	2.5484	250	0
Aluminum, ICAP	(mg/L)		10	4	0.68	0.031	0.305	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	10	1	0.081	0.081	0.081	0.2	0
Barium, ICAP	(mg/L)		10	10	0.0399	0.00611	0.015188	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.0395	0.00638	0.014751	2	0
Boron, ICAP	(mg/L)		10	5	0.14	0.0045	0.05982	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	4	0.135	0.0058	0.07095	NR	NA
Calcium, ICAP	(mg/L)		10	10	47.8	21	31.18	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	48.1	21	30.87	NR	NA
Iron, ICAP	(mg/L)		10	6	0.74	0.022	0.233333	0.3	2
Iron, ICAP	(mg/L)	FILTERED	10	5	0.086	0.024	0.039	0.3	0
Lead, PMS	(mg/L)		10	3	0.0022	0.0007	0.001267	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	2	0.0007	0.0005	0.0006	NR	NA
Magnesium, ICAP	(mg/L)		10	10	29.6	16	20.45	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	29.8	15.7	20.15	NR	NA
Manganese, ICAP	(mg/L)		10	5	0.029	0.0012	0.00796	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	10	4	0.0019	0.0013	0.001625	0.05	0
Nickel, ICAP	(mg/L)		10	2	0.0502	0.039	0.0446	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	10	1	0.025	0.025	0.025	0.1 d	0
Potassium, ICAP	(mg/L)		10	5	3.7	0.89	2.088	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	5	3.9	1.1	2.104	NR	NA
Silver, ICAP	(mg/L)		10	1	0.0094	0.0094	0.0094	0.1	0
Sodium, ICAP	(mg/L)		10	10	6	0.55	2.7408	NR	NA

Table 2.56 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sodium, ICAP	(mg/L)	FILTERED	10	10	5.8	0.533	2.7177	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.018	0.0097	0.014158	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.0171	0.0096	0.01374	NR	NA
Zinc, ICAP	(mg/L)		10	6	0.16	0.0081	0.056983	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	6	0.14	0.0053	0.044833	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	399	206	266.7	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	7.63	2.25	5.153	NR	NA
pH, field measurement	(pH)		10	NA	8.6	5.86	7.532	6.5/8.5	4
REDOX, field measurement	(mV)		10	NA	200	113	166.5	NR	NA
Static Water Level	(ft - toc)		10	NA	-82.99	-122.36	-103.175	NR	NA
Temperature, field measurement	(Deg C)		10	NA	20.4	8.9	16.16	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	232	130	162.4	NR	NA
Conductivity	(umhos/cm)		10	10	438	252	310.6	NR	NA
Dissolved Solids	(mg/L)		10	10	237	119	161.1	500	0
pH	(pH)		10	10	8.63 L	7.14 L	8.024	6.5/8.5	2
Total Suspended Solids	(mg/L)		10	3	7	1	4.333333	NR	NA
Turbidity	(NTU)		10	10	13.9	0.335	3.8102	1	6
Gross Alpha	(pCi/L)		10	10	1.5	-1.1	0.5041	15 f	0
Gross Beta	(pCi/L)		10	10	7.3	-2.8	2.319	50 a	0
1,1,1-Trichloroethane	(ug/L)		10	2	17	3 J	10	200	0
1,1-Dichloroethane	(ug/L)		10	2	4 J	2 J	3	NR	NA
1,1-Dichloroethene	(ug/L)		10	1	2 J	2 J	2	7	0
2-Butanone	(ug/L)		10	4	3 BJ	2 BJ	2.5	NR	NA
Acetone	(ug/L)		10	9	120 B	1 J	17.11111	NR	NA

Table 2.57. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=Industrial Landfill V

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		12	12	9.83	1.15	2.294167	250	0
Fluoride	(mg/L)		12	1	0.12	0.12	0.12	2	0
Nitrate Nitrogen	(mg/L)		12	12	1.98	0.049	0.597833	10	0
Sulfate	(mg/L)		12	12	9.74	0.3	4.29275	250	0
Aluminum, ICAP	(mg/L)		12	7	0.637	0.022	0.230571	0.2	4
Aluminum, ICAP	(mg/L)	FILTERED	12	3	0.034	0.023	0.028333	0.2	0
Antimony, PMS	(mg/L)	FILTERED	6	1	0.0007	0.0007	0.0007	0.006	0
Barium, ICAP	(mg/L)		12	11	0.106	0.003	0.022734	2	0
Barium, ICAP	(mg/L)	FILTERED	12	11	0.102	0.0028	0.021479	2	0
Boron, ICAP	(mg/L)		12	5	0.0093	0.0041	0.00652	NR	NA
Boron, ICAP	(mg/L)	FILTERED	12	4	0.015	0.0072	0.010525	NR	NA
Cadmium, PMS	(mg/L)	FILTERED	6	1	0.0006	0.0006	0.0006	0.005	0
Calcium, ICAP	(mg/L)		12	12	37	25	31.325	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	12	12	36	22.6	30.55	NR	NA
Chromium, ICAP	(mg/L)		12	2	0.036	0.0236	0.0298	0.1	0
Chromium, ICAP	(mg/L)	FILTERED	12	2	0.036	0.0258	0.0309	0.1	0
Iron, ICAP	(mg/L)		12	8	0.672	0.0052	0.184525	0.3	2
Iron, ICAP	(mg/L)	FILTERED	12	5	0.052	0.016	0.0348	0.3	0
Lead, PMS	(mg/L)		12	3	0.0017	0.0005	0.000998	NR	NA
Lead, PMS	(mg/L)	FILTERED	12	3	0.311	0.0009	0.104667	NR	NA
Magnesium, ICAP	(mg/L)		12	12	21	7.9	16.51667	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	12	12	21.4	7.7	16.38333	NR	NA
Manganese, ICAP	(mg/L)		12	8	0.0154	0.0016	0.006726	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	12	6	0.0113	0.0014	0.004595	0.05	0
Potassium, ICAP	(mg/L)		12	7	2.2	0.83	1.47	NR	NA

Table 2.57 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Potassium, ICAP	(mg/L)	FILTERED	12	6	2.3	1.2	1.633333	NR	NA
Silver, ICAP	(mg/L)		12	3	0.0087	0.0073	0.007967	0.1	0
Sodium, ICAP	(mg/L)		12	12	3.9	0.52	1.46025	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	12	12	3.8	0.51	1.461833	NR	NA
Strontium, ICAP	(mg/L)		12	12	0.068	0.014	0.027367	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	12	12	0.067	0.0125	0.025875	NR	NA
Uranium, PMS	(mg/L)		12	2	0.0015	0.0014	0.00145	NR	NA
Uranium, PMS	(mg/L)	FILTERED	12	2	0.0015	0.0014	0.00145	NR	NA
Zinc, ICAP	(mg/L)		12	5	0.028	0.0027	0.01082	5	0
Zinc, ICAP	(mg/L)	FILTERED	12	5	0.027	0.0026	0.01012	5	0
Conductivity, field measurement	(umhos/cm)		12	NA	725	173	293.75	NR	NA
Dissolved Oxygen, field measurement	(ppm)		12	NA	8.11	0.3	4.854167	NR	NA
pH, field measurement	(pH)		12	NA	8.68	6.55	7.838333	6.5/8.5	2
REDOX, field measurement	(mV)		12	NA	209	94	160.3333	NR	NA
Static Water Level	(ft - toc)		10	NA	-10.49	-119.65	-75.108	NR	NA
Temperature, field measurement	(Deg C)		12	NA	19.4	11.9	15.16667	NR	NA
Alkalinity as HCO3	(mg/L)		12	12	174	82	142.3333	NR	NA
Conductivity	(umhos/cm)		12	12	330	212	282.1667	NR	NA
Dissolved Solids	(mg/L)		12	12	189	126	157.5833	500	0
pH	(pH)		12	12	8.37 L	6.77 L	7.913333	6.5/8.5	0
Total Suspended Solids	(mg/L)		12	7	26	1	6.571429	NR	NA
Turbidity	(NTU)		12	12	24.7	0.322	7.146	1	8
Gross Alpha	(pCi/L)		12	12	2.4	-1.4	0.4975	15 f	0
Gross Beta	(pCi/L)		12	12	5.1	-1.8	1.7275	50 a	0
1,1,1-Trichloroethane	(ug/L)		12	3	4 J	1 J	2	200	0
2-Butanone	(ug/L)		12	5	4 BJ	2 J	2.8	NR	NA
Acetone	(ug/L)		12	11	24 B	1 J	6.818182	NR	NA

Table 2.58. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=CR AREA NAME=Kerr Hollow Quarry

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Ammonia as Nitrogen	(mg/L)		6	3	0.52	0.22	0.386667	NR	NA
Chloride	(mg/L)		40	40	11.3	0.19	4.2935	250	0
Fluoride	(mg/L)		40	30	3.32	0.12	1.612333	2	14
Nitrate Nitrogen	(mg/L)		40	24	6.89	0.16	1.61225	10	0
Sulfate	(mg/L)		40	40	46.2	0.6	18.729	250	0
Antimony, PMS	(mg/L)		40	1	0.0006	0.0006	0.0006	0.006	0
Antimony, PMS	(mg/L)	FILTERED	40	2	0.0007	0.0006	0.00065	0.006	0
Barium, ICAP	(mg/L)		40	40	0.488	0.029	0.140018	2	0
Barium, ICAP	(mg/L)	FILTERED	40	40	0.463	0.0297	0.138743	2	0
Boron, ICAP	(mg/L)		40	16	0.938	0.238	0.578	NR	NA
Boron, ICAP	(mg/L)	FILTERED	40	16	0.935	0.233	0.580688	NR	NA
Calcium, ICAP	(mg/L)		40	40	54.5	28.2	41	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	40	40	51.5	28.7	40.6275	NR	NA
Iron, ICAP	(mg/L)		40	22	3.72	0.257	1.534818	0.3	18
Iron, ICAP	(mg/L)	FILTERED	40	22	2.58	0.244	1.176364	0.3	19
Lead, PMS	(mg/L)		40	2	0.0013	0.0006	0.00095	NR	NA
Lead, PMS	(mg/L)	FILTERED	40	3	0.0023	0.0011	0.0016	NR	NA
Lithium, ICAP	(mg/L)		40	33	0.319	0.013	0.110403	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	40	33	0.324	0.0118	0.11123	NR	NA
Magnesium, ICAP	(mg/L)		40	40	38.2	15.5	25.9575	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	40	40	37.6	15.6	25.8375	NR	NA
Manganese, ICAP	(mg/L)		40	16	0.0978	0.0198	0.06225	0.05	8
Manganese, ICAP	(mg/L)	FILTERED	40	16	0.0973	0.0254	0.061781	0.05	8
Nitrate/Nitrite as Nitrogen	(mg/L)		1	1	1.38	1.38	1.38	NR	NA
Potassium, ICAP	(mg/L)		40	32	18.8	2.83	10.68156	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	40	32	19.3	2.97	10.68219	NR	NA
Sodium, ICAP	(mg/L)		40	40	26.7	0.778	7.2072	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	40	40	27.1	0.839	7.288025	NR	NA
Strontium, ICAP	(mg/L)		40	40	7.78	0.0391	2.158858	NR	NA

Table 2.58 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)	FILTERED	40	40	7.92	0.0392	2.162338	NR	NA
Thallium, PMS	(mg/L)	FILTERED	40	1	0.0005	0.0005	0.0005	NR	NA
Uranium, PMS	(mg/L)		40	29	0.014	0.00051	0.004587	NR	NA
Uranium, PMS	(mg/L)	FILTERED	40	27	0.0151	0.00053	0.004948	NR	NA
Conductivity, field measurement	(umhos/cm)		40	NA	526	262	388.75	NR	NA
Dissolved Oxygen, field measurement	(ppm)		40	NA	6.89	0.39	2.45625	NR	NA
pH, field measurement	(pH)		40	NA	8.44	6.54	7.6385	6.5/8.5	0
REDOX, field measurement	(mV)		40	NA	217	-217	22.75	NR	NA
Static Water Level	(ft - toc)		40	NA	-2.94	-141.3	-63.5008	NR	NA
Temperature, field measurement	(Deg C)		40	NA	19.5	12.3	14.7225	NR	NA
Alkalin ity as HCO3	(mg/L)		40	40	242	156	204.8	NR	NA
Conductivity	(umhos/cm)		40	40	569	310	434.975	NR	NA
Dissolved Solids	(mg/L)		40	40	341 X	171	251.05	500	0
pH	(pH)		40	40	8.31 L	7.44 L	7.91175	6.5/8.5	0
Total Suspended Solids	(mg/L)		40	15	6	1	2.666667	NR	NA
Turbidity	(NTU)		40	39	49.2	0.109	8.697872	1	16
Gross Alpha	(pCi/L)		40	40	20	-1.1	3.7954	15 f	1
Gross Beta	(pCi/L)		40	40	18	-2.2	7.188575	50 a	0
Acetone	(ug/L)		40	21	13 B	1 J	4.47619	NR	NA
Trichloroethene	(ug/L)		40	2	4 J	3 J	3.5	5	0

Table 2.59. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Beta-4 Security Pits

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	22.527	12.8	17.6635	250	0
Fluoride	(mg/L)		2	2	0.33	0.14	0.235	2	0
Nitrate Nitrogen	(mg/L)		2	2	0.072	0.03	0.051	10	0
Sulfate	(mg/L)		2	2	6.531	3.78	5.1555	250	0
Arsenic, PMS	(mg/L)		2	1	0.0065	0.0065	0.0065	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	2	1	0.0059	0.0059	0.0059	NR	NA
Barium, ICAP	(mg/L)		2	2	0.177	0.14	0.1585	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.178	0.136	0.157	2	0
Calcium, ICAP	(mg/L)		2	2	135	100	117.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	137 k	98.7	117.85	NR	NA
Iron, ICAP	(mg/L)		2	2	4.44	2.62	3.53	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	3.97	1.59	2.78	0.3	2
Lithium, ICAP	(mg/L)		2	1	0.0183	0.0183	0.0183	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.0184	0.011	0.0147	NR	NA
Magnesium, ICAP	(mg/L)		2	2	18.3	9.7	14	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	18.5 k	9.71	14.105	NR	NA
Manganese, ICAP	(mg/L)		2	2	1.85	1.31	1.58	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	1.81	1.32 k	1.565	0.05	2
Potassium, ICAP	(mg/L)		2	2	3.16	2.56	2.86	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3.09	2.94	3.015	NR	NA
Sodium, ICAP	(mg/L)		2	2	7.52	6.58	7.05	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	7.58	6.71 k	7.145	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.291	0.172	0.2315	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.298	0.172	0.235	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	748	489	618.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.59	0.28	0.435	NR	NA
pH, field measurement	(pH)		2	NA	7.02	6.44	6.73	6.5/8.5	1

Table 2.59 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		2	NA	24	-64	-20	NR	NA
Static Water Level	(ft - toc)		2	NA	-6.52	-8.47	-7.495	NR	NA
Temperature, field measurement	(Deg C)		2	NA	17.5	17.5	17.5	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	408	228	318	NR	NA
Conductivity	(umhos/cm)		2	2	777	578	677.5	NR	NA
Dissolved Solids	(mg/L)		2	2	448	340	394	500	0
pH	(pH)		2	2	7.93 L	6.53 L	7.23	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	7	1	4	NR	NA
Turbidity	(NTU)		2	2	50.8	9.59	30.195	1	2
Gross Alpha	(pCi/L)		2	2	1.3	0.32	0.81	15 f	0
Gross Beta	(pCi/L)		2	2	1.5	0.86	1.18	50 a	0
1,1-Dichloroethane	(ug/L)		2	1	2 J	2 J	2	NR	NA
1,2-Dichloroethene (Total)	(ug/L)		2	2	22	4 J	13	NR b	NA
Acetone	(ug/L)		2	2	4 J	1 J	2.5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	22	4 J	13	70	0
Tetrachloroethene	(ug/L)		2	1	4 J	4 J	4	5	0
Trichloroethene	(ug/L)		2	2	7	2 J	4.5	5	1

Table 2.60. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Building 9201-2

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		3	3	53	3.15	23.75	250	0
Fluoride	(mg/L)		3	3	0.2	0.11	0.166667	2	0
Nitrate Nitrogen	(mg/L)		3	1	0.481	0.481	0.481	10	0
Sulfate	(mg/L)		3	3	50.5	0.52	28.24	250	0
Aluminum, ICAP	(mg/L)		3	2	0.42	0.027	0.2235	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	3	2	0.035	0.021	0.028	0.2	0
Arsenic, PMS	(mg/L)		3	1	0.015	0.015	0.015	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	3	1	0.014	0.014	0.014	NR	NA
Barium, ICAP	(mg/L)		3	3	0.45	0.076	0.242	2	0
Barium, ICAP	(mg/L)	FILTERED	3	3	0.44	0.074	0.238	2	0
Boron, ICAP	(mg/L)		3	3	0.07	0.024	0.04	NR	NA
Boron, ICAP	(mg/L)	FILTERED	3	3	0.067	0.022	0.038333	NR	NA
Calcium, ICAP	(mg/L)		3	3	170	73	111.3333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	3	3	170	72	110.6667	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	3	1	0.0053	0.0053	0.0053	NR	NA
Iron, ICAP	(mg/L)		3	3	39	0.26	13.21667	0.3	2
Iron, ICAP	(mg/L)	FILTERED	3	3	37	0.018	12.41933	0.3	1
Lead, PMS	(mg/L)		3	1	0.0014	0.0014	0.0014	NR	NA
Lead, PMS	(mg/L)	FILTERED	3	1	0.0005	0.0005	0.0005	NR	NA
Magnesium, ICAP	(mg/L)		3	3	15	13	13.66667	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	3	3	14	13	13.33333	NR	NA
Manganese, ICAP	(mg/L)		3	3	0.9	0.021	0.420333	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	3	3	0.89	0.016	0.408667	0.05	2
Potassium, ICAP	(mg/L)		3	3	9.3	3.2	5.5	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	3	3	9.5	3.5	5.533333	NR	NA
Sodium, ICAP	(mg/L)		3	3	22	3.1	11.23333	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	3	3	22	3.2	11.3	NR	NA

Table 2.60 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)		3	3	1	0.21	0.52	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	3	3	1	0.21	0.516667	NR	NA
Uranium, PMS	(mg/L)		3	1	0.005	0.005	0.005	NR	NA
Uranium, PMS	(mg/L)	FILTERED	3	1	0.0048	0.0048	0.0048	NR	NA
Zinc, ICAP	(mg/L)		3	3	0.0057	0.0049	0.005267	5	0
Zinc, ICAP	(mg/L)	FILTERED	3	3	0.0055	0.0027	0.004167	5	0
Conductivity, field measurement	(umhos/cm)		3	NA	1013	435	640	NR	NA
Dissolved Oxygen, field measurement	(ppm)		3	NA	1.23	0.2	0.673333	NR	NA
pH, field measurement	(pH)		3	NA	7.48	6.9	7.166667	6.5/8.5	0
REDOX, field measurement	(mV)		3	NA	50	-125	-36	NR	NA
Static Water Level	(ft - toc)		3	NA	-8.1	-10.1	-9.29667	NR	NA
Temperature, field measurement	(Deg C)		3	NA	21.9	17.7	19.26667	NR	NA
Alkalinity as HCO3	(mg/L)		3	3	492	200	306.6667	NR	NA
Conductivity	(umhos/cm)		3	3	1112	492	711.6667	NR	NA
Dissolved Solids	(mg/L)		3	3	602	313	417.3333	500	1
pH	(pH)		3	3	7.38 L	6.84 L	7.146667	6.5/8.5	0
Total Suspended Solids	(mg/L)		3	2	70	13	41.5	NR	NA
Turbidity	(NTU)		3	3	302	2.6	104.9	1	3
Uranium-234	(pCi/L)		3	3	1.4	0.056	0.552	20	0
Uranium-235	(pCi/L)		3	3	0.14	0	0.062	24	0
Uranium-238	(pCi/L)		3	3	1.6	0.11	0.616667	24	0
Strontium-89/90	(pCi/L)		3	3	2.7	0.19	1.663333	8	0
Technetium-99	(pCi/L)		3	3	4.2	-1.3	2.3	4000	0
Gross Alpha	(pCi/L)		3	3	1.6	0.38	0.786667	15 f	0
Gross Beta	(pCi/L)		3	3	7.1	1.5	4.366667	50 a	0
1,1-Dichloroethane	(ug/L)		3	1	1 J	1 J	1	NR	NA

Table 2.60 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
1,1-Dichloroethene	(ug/L)		3	1	4 J	4 J	4	7	0
1,2-Dichloroethene (Total)	(ug/L)		3	2	876 D	1 J	438.5	NR b	NA
1,4-Dichlorobenzene	(ug/L)		3	1	2 J	2 J	2	75	0
Acetone	(ug/L)		3	3	16	3 J	9.333333	NR	NA
Chlorobenzene	(ug/L)		3	1	1 J	1 J	1	100	0
cis-1,2-Dichloroethene	(ug/L)		3	2	870 D	1 J	435.5	70	1
Tetrachloroethene	(ug/L)		3	1	7300 D	7300 D	7300	5	1
trans-1,2-Dichloroethene	(ug/L)		3	1	6	6	6	100	0
Trichloroethene	(ug/L)		3	2	590 D	6	298	5	2
Vinyl chloride	(ug/L)		3	1	65	65	65	2	1

Table 2.61. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Building 9202

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		3	3	51.7	18.6	35.2	250	0
Fluoride	(mg/L)		3	1	0.1	0.1	0.1	2	0
Nitrate Nitrogen	(mg/L)		3	3	1.17	0.4	0.69	10	0
Sulfate	(mg/L)		3	3	19	13.5	16.4	250	0
Aluminum, ICAP	(mg/L)		3	3	3.5	0.43	2.31	0.2	3
Aluminum, ICAP	(mg/L)	FILTERED	3	1	0.051	0.051	0.051	0.2	0
Barium, ICAP	(mg/L)		3	3	0.33	0.13	0.213333	2	0
Barium, ICAP	(mg/L)	FILTERED	3	3	0.31	0.11	0.18	2	0
Boron, ICAP	(mg/L)		3	3	0.02	0.011	0.016	NR	NA
Boron, ICAP	(mg/L)	FILTERED	3	3	0.015	0.01	0.013	NR	NA
Calcium, ICAP	(mg/L)		3	3	100	66	78.33333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	3	3	94	64	75	NR	NA
Chromium, ICAP	(mg/L)		3	3	0.16	0.014	0.101333	0.1	2
Cobalt, ICAP	(mg/L)		3	1	0.017	0.017	0.017	NR	NA
Copper, ICAP	(mg/L)		3	3	0.0086	0.0044	0.007067	1	0
Iron, ICAP	(mg/L)		3	3	4.8	0.5	3.066667	0.3	3
Iron, ICAP	(mg/L)	FILTERED	3	3	0.029	0.019	0.022667	0.3	0
Lead, PMS	(mg/L)		3	3	0.0084	0.0026	0.004633	NR	NA
Lithium, ICAP	(mg/L)		3	2	0.016	0.006	0.011	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	3	2	0.014	0.0064	0.0102	NR	NA
Magnesium, ICAP	(mg/L)		3	3	15	4.4	10.13333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	3	3	14	3.8	9.6	NR	NA
Manganese, ICAP	(mg/L)		3	3	0.32	0.039	0.189667	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	3	3	0.07	0.0099	0.0313	0.05	1
Nickel, ICAP	(mg/L)		3	3	0.28	0.092	0.204	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	3	3	0.15	0.072	0.102333	0.1 d	1
Potassium, ICAP	(mg/L)		3	3	3.8	1.5	2.566667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	3	3	2.5	1.1	1.9	NR	NA

Table 2.61 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sodium, ICAP	(mg/L)		3	3	12	6.4	9.066667	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	3	3	12	6.3	8.8	NR	NA
Strontium, ICAP	(mg/L)		3	3	0.4	0.23	0.306667	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	3	3	0.39	0.19	0.29	NR	NA
Thallium, PMS	(mg/L)		3	2	0.0068	0.004	0.0054	NR	NA
Thallium, PMS	(mg/L)	FILTERED	3	1	0.0049	0.0049	0.0049	NR	NA
Uranium, PMS	(mg/L)		3	2	0.0085	0.0009	0.0047	NR	NA
Uranium, PMS	(mg/L)	FILTERED	3	1	0.0082	0.0082	0.0082	NR	NA
Vanadium, ICAP	(mg/L)		3	2	0.0069	0.0051	0.006	NR	NA
Zinc, ICAP	(mg/L)		3	2	0.0041	0.0034	0.00375	5	0
Conductivity, field measurement	(umhos/cm)		3	NA	469	368	418.3333	NR	NA
Dissolved Oxygen, field measurement	(ppm)		3	NA	9.15	3.15	5.336667	NR	NA
pH, field measurement	(pH)		3	NA	7.68	7	7.316667	6.5/8.5	0
REDOX, field measurement	(mV)		3	NA	137	57	89	NR	NA
Static Water Level	(ft - toc)		3	NA	-4.48	-5.64	-4.87	NR	NA
Temperature, field measurement	(Deg C)		3	NA	16.9	13.8	15.53333	NR	NA
Alkalinity as HCO3	(mg/L)		3	3	216	150	180.6667	NR	NA
Conductivity	(umhos/cm)		3	3	541	431	484.6667	NR	NA
Dissolved Solids	(mg/L)		3	3	327	203	265.3333	500	0
pH	(pH)		3	3	7.6 L	7.21 L	7.373333	6.5/8.5	0
Total Suspended Solids	(mg/L)		3	3	106	12	55.66667	NR	NA
Turbidity	(NTU)		3	3	60.1	9.22	41.77333	1	3
Gross Alpha	(pCi/L)		3	3	6.9	1.1	4.5	15 f	0
Gross Beta	(pCi/L)		3	3	8.1	4.1	5.633333	50 a	0
Acetone	(ug/L)		3	2	3 J	1 BJ	2	NR	NA
Trichloroethene	(ug/L)		3	1	7	7	7	5	1

Table 2.62. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=CPT

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	19.3	11.8	15.55	250	0
Nitrate Nitrogen	(mg/L)		2	2	0.427	0.22	0.3235	10	0
Sulfate	(mg/L)		2	2	1920	128	1024	250	1
Aluminum, ICAP	(mg/L)		2	1	0.024	0.024	0.024	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.038	0.038	0.038	0.2	0
Barium, ICAP	(mg/L)		2	2	0.043	0.018	0.0305	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.046	0.016	0.031	2	0
Boron, ICAP	(mg/L)		2	2	0.088	0.026	0.057	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.046	0.03	0.038	NR	NA
Cadmium, ICAP	(mg/L)	FILTERED	2	1	0.0038	0.0038	0.0038	0.005	0
Calcium, ICAP	(mg/L)		2	2	560	140	350	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	550	140	345	NR	NA
Chromium, ICAP	(mg/L)	FILTERED	2	1	0.016	0.016	0.016	0.1	0
Iron, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	1	0.17	0.17	0.17	0.3	0
Lead, PMS	(mg/L)	FILTERED	2	1	0.15	0.15	0.15	NR	NA
Lithium, ICAP	(mg/L)		2	1	0.048	0.048	0.048	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	1	0.052	0.052	0.052	NR	NA
Magnesium, ICAP	(mg/L)		2	2	260	18	139	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	260	18	139	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.4	0.07	0.235	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.46	0.022	0.241	0.05	1
Potassium, ICAP	(mg/L)		2	2	5.2	2.8	4	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	8.2	2.8	5.5	NR	NA
Sodium, ICAP	(mg/L)		2	2	75	12	43.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	73	12	42.5	NR	NA
Strontium, ICAP	(mg/L)		2	2	1.4	0.32	0.86	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	1.4	0.32	0.86	NR	NA

Table 2.62 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, PMS	(mg/L)		2	2	0.0069	0.0009	0.0039	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0079	0.0008	0.00435	NR	NA
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.002	0.002	0.002	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	2940	729	1834.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	4.18	0.67	2.425	NR	NA
pH, field measurement	(pH)		2	NA	6.84	6.82	6.83	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	402	159	280.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-11.56	-13.22	-12.39	NR	NA
Temperature, field measurement	(Deg C)		2	NA	16.2	14.4	15.3	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	446	300	373	NR	NA
Conductivity	(umhos/cm)		2	2	3460	827	2143.5	NR	NA
Dissolved Solids	(mg/L)		2	2	3377	525	1951	500	2
pH	(pH)		2	2	6.97 L	6.71 L	6.84	6.5/8.5	0
Turbidity	(NTU)		2	2	1.81	1.69	1.75	1	2
Uranium-234	(pCi/L)		2	2	4.1	0.39	2.245	20	0
Uranium-235	(pCi/L)		2	2	0.034	0	0.017	24	0
Uranium-238	(pCi/L)		2	2	2.4	0.3	1.35	24	0
Strontium-89/90	(pCi/L)		2	2	4.5	0.22	2.36	8	0
Technetium-99	(pCi/L)		2	2	140	10	75	4000	0
Gross Alpha	(pCi/L)		2	2	-0.36	-1.5	-0.93	15 f	0
Gross Beta	(pCi/L)		2	2	3.9	-28	-12.05	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	1	6	6	6	NR b	NA
Acetone	(ug/L)		2	2	4 BJ	3 BJ	3.5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	1	6	6	6	70	0
Vinyl chloride	(ug/L)		2	1	1 J	1 J	1	2	0

Table 2.63. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Exit Pathway Monitoring Location E

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	20.3	15.907	18.1035	250	0
Fluoride	(mg/L)		2	2	0.29	0.2	0.245	2	0
Nitrate Nitrogen	(mg/L)		2	2	0.41	0.324	0.367	10	0
Sulfate	(mg/L)		2	2	21	19.117	20.0585	250	0
Barium, ICAP	(mg/L)		2	2	0.0522	0.05	0.0511	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.0522	0.0508	0.0515	2	0
Boron, ICAP	(mg/L)		2	2	0.122	0.114	0.118	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.128	0.113	0.1205	NR	NA
Cadmium, PMS	(mg/L)		2	2	0.0078	0.0075	0.00765	0.005	2
Cadmium, PMS	(mg/L)	FILTERED	2	2	0.0045	0.0039	0.0042	0.005	0
Calcium, ICAP	(mg/L)		2	2	107	101	104	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	106	105	105.5	NR	NA
Iron, ICAP	(mg/L)		2	2	0.632	0.469	0.5505	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	0.496	0.368	0.432	0.3	2
Magnesium, ICAP	(mg/L)		2	2	8.9	8.29	8.595	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	8.73	8.58	8.655	NR	NA
Manganese, ICAP	(mg/L)		2	2	1.61	1.51	1.56	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	1.67	1.45	1.56	0.05	2
Potassium, ICAP	(mg/L)		2	2	3.69	3.33	3.51	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3.77	3.68	3.725	NR	NA
Sodium, ICAP	(mg/L)		2	2	17.5	15.8	16.65	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	17.6	16.6	17.1	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.197	0.182	0.1895	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.193	0.19	0.1915	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	677	554	615.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.18	0.12	0.15	NR	NA
pH, field measurement	(pH)		2	NA	6.7	6.53	6.615	6.5/8.5	0

Table 2.63 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		2	NA	12	-83	-35.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-13.5	-16.59	-15.045	NR	NA
Temperature, field measurement	(Deg C)		2	NA	17.8	17.3	17.55	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	314	310	312	NR	NA
Conductivity	(umhos/cm)		2	2	693	653	673	NR	NA
Dissolved Solids	(mg/L)		2	2	371	332	351.5	500	0
pH	(pH)		2	2	7.49 L	6.79 L	7.14	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	1	1	1	1	NR	NA
Turbidity	(NTU)		2	2	5.77	5.41	5.59	1	2
Gross Alpha	(pCi/L)		2	2	0.86	0	0.43	15 f	0
Gross Beta	(pCi/L)		2	2	5.5	1.9	3.7	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	23	15	19	NR b	NA
Acetone	(ug/L)		2	1	2 BJ	2 BJ	2	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	23	15	19	70	0
Tetrachloroethene	(ug/L)		2	2	19	11	15	5	2
Trichloroethene	(ug/L)		2	2	16	8	12	5	2
Vinyl chloride	(ug/L)		2	2	2 J	1 J	1.5	2	0

Table 2.64. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Exit Pathway Monitoring Location I

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	44.1	12.8	22.9	250	0
Fluoride	(mg/L)		4	3	0.18	0.11	0.153333	2	0
Nitrate Nitrogen	(mg/L)		4	4	4.69	0.36	2.62325	10	0
Sulfate	(mg/L)		4	4	48.1	33.2	40.3	250	0
Aluminum, ICAP	(mg/L)		4	1	0.23	0.23	0.23	0.2	1
Barium, ICAP	(mg/L)		4	4	0.12	0.0437	0.086925	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.12	0.0418	0.0857	2	0
Boron, ICAP	(mg/L)		4	2	0.16	0.018	0.089	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	2	0.16	0.018	0.089	NR	NA
Cadmium, PMS	(mg/L)	FILTERED	2	1	0.0032	0.0032	0.0032	0.005	0
Calcium, ICAP	(mg/L)		4	4	90	44.6	64.325	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	89	44.5	63.875	NR	NA
Iron, ICAP	(mg/L)		4	2	0.25	0.0574	0.1537	0.3	0
Iron, ICAP	(mg/L)	FILTERED	4	1	0.051	0.051	0.051	0.3	0
Lead, PMS	(mg/L)		4	1	0.0016	0.0016	0.0016	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	1	0.0013	0.0013	0.0013	NR	NA
Lithium, ICAP	(mg/L)		4	1	0.0088	0.0088	0.0088	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	1	0.0079	0.0079	0.0079	NR	NA
Magnesium, ICAP	(mg/L)		4	4	29	12.4	21.325	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	29	12.1	21.3	NR	NA
Manganese, ICAP	(mg/L)		4	3	0.76	0.0039	0.3213	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	4	3	0.1	0.0048	0.061933	0.05	2
Potassium, ICAP	(mg/L)		4	4	4.3	2.23	3.2275	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	4.3	2.02	3.2525	NR	NA
Sodium, ICAP	(mg/L)		4	4	24	4.81	10.255	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	24	4.85	10.225	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.41	0.12	0.29075	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.42	0.118	0.2935	NR	NA

Table 2.64 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, PMS	(mg/L)		4	4	0.33	0.0022	0.095325	NR	NA
Uranium, PMS	(mg/L)	FILTERED	4	4	0.32	0.0022	0.09305	NR	NA
Zinc, ICAP	(mg/L)	FILTERED	4	1	0.0029	0.0029	0.0029	5	0
Conductivity, field measurement	(umhos/cm)		4	NA	548	405	449.25	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	0.51	0.22	0.3425	NR	NA
pH, field measurement	(pH)		4	NA	8.3	6.3	7.3225	6.5/8.5	1
REDOX, field measurement	(mV)		4	NA	148	91	118.5	NR	NA
Static Water Level	(ft - toc)		4	NA	-10.59	-14.2	-12.415	NR	NA
Temperature, field measurement	(Deg C)		4	NA	19.2	13.6	16.6	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	252	144	192	NR	NA
Conductivity	(umhos/cm)		4	4	658	476	531.25	NR	NA
Dissolved Solids	(mg/L)		4	4	390	258	310.5	500	0
pH	(pH)		4	4	8.11 L	7.2 L	7.725	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	1	3	3	3	NR	NA
Turbidity	(NTU)		4	4	6.52	0.293	3.32825	1	3
Technetium-99	(pCi/L)		4	4	4.7	-6.1	-0.3	4000	0
Gross Alpha	(pCi/L)		4	4	130	4	42	15 f	2
Gross Beta	(pCi/L)		4	4	35	-0.044	11.014	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		4	1	79	79	79	NR b	NA
Acetone	(ug/L)		4	2	6 J	2 J	4	NR	NA
Carbon tetrachloride	(ug/L)		4	4	130	4 J	74	5	3

Table 2.64 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloroform	(ug/L)		4	3	150	11	100.3333	100 i	2
cis-1,2-Dichloroethene	(ug/L)		4	1	79	79	79	70	1
Tetrachloroethene	(ug/L)		4	3	35	7	16.66667	5	3
Trichloroethene	(ug/L)		4	1	43	43	43	5	1
Vinyl chloride	(ug/L)		4	1	1 J	1 J	1	2	0

Table 2.65. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Exit Pathway Monitoring Location J

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	17.7	4.11	9.505	250	0
Fluoride	(mg/L)		6	4	0.25	0.12	0.1775	2	0
Nitrate Nitrogen	(mg/L)		6	3	0.31	0.049	0.220333	10	0
Sulfate	(mg/L)		6	6	24.1	7.9	18.03	250	0
Barium, ICAP	(mg/L)		6	6	0.773	0.0199	0.381317	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.748	0.0209	0.37465	2	0
Boron, ICAP	(mg/L)		6	1	0.011	0.011	0.011	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	1	0.0072	0.0072	0.0072	NR	NA
Calcium, ICAP	(mg/L)		6	6	131	41.4	85.98333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	130	42	85.7	NR	NA
Iron, ICAP	(mg/L)		6	5	0.39	0.061	0.276	0.3	3
Iron, ICAP	(mg/L)	FILTERED	6	3	0.283	0.0071	0.179033	0.3	0
Magnesium, ICAP	(mg/L)		6	6	17	9.45	12.69833	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	17.1	9.42	12.67	NR	NA
Manganese, ICAP	(mg/L)		6	6	0.539	0.018	0.1997	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	6	6	0.53	0.0021	0.192967	0.05	4
Potassium, ICAP	(mg/L)		6	6	4.83	2.13	3.126667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	4.57	2.17	3.073333	NR	NA
Sodium, ICAP	(mg/L)		6	6	5.24	2.49	3.845	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	5.07	2.55	3.86	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.683	0.0873	0.349883	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	0.661	0.089	0.345167	NR	NA
Conductivity, field measurement	(umhos/cm)		6	NA	672	280	474.3333	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	7.66	0.13	2.236667	NR	NA
pH, field measurement	(pH)		6	NA	7.9	7.1	7.41	6.5/8.5	0

Table 2.65 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		6	NA	149	-53	43.5	NR	NA
Static Water Level	(ft - toc)		6	NA	-8.96	-58.35	-29.135	NR	NA
Temperature, field measurement	(Deg C)		6	NA	19.2	9.9	14.91667	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	318	160	237.6667	NR	NA
Conductivity	(umhos/cm)		6	6	691	335	507.8333	NR	NA
Dissolved Solids	(mg/L)		6	6	433	193	295.8333	500	0
pH	(pH)		6	6	7.92 L	6.96 L	7.488333	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	2	1	1	1	NR	NA
Turbidity	(NTU)		6	6	3.68	1.01	2.826667	1	6
Technetium-99	(pCi/L)		2	2	3.4	-2.6	0.4	4000	0
Gross Alpha	(pCi/L)		6	6	6.5	-1.3	1.346667	15 f	0
Gross Beta	(pCi/L)		6	6	9.9	0.82	4.786667	50 a	0
Acetone	(ug/L)		6	3	12	2 BJ	7	NR	NA
Carbon tetrachloride	(ug/L)		6	2	11	11	11	5	2
Chloroform	(ug/L)		6	2	2 J	2 J	2	100 i	0
Tetrachloroethene	(ug/L)		6	1	1 J	1 J	1	5	0

Table 2.66. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Exit Pathway Scarboro Road/Pine Ridge

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	5.13	1.17	2.335	250	0
Fluoride	(mg/L)		6	5	0.44	0.15	0.256	2	0
Sulfate	(mg/L)		6	6	123	16.8	80.45	250	0
Aluminum, ICAP	(mg/L)		6	1	0.268	0.268	0.268	0.2	1
Barium, ICAP	(mg/L)		6	6	0.416	0.0441	0.1588	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.402	0.0438	0.15725	2	0
Boron, ICAP	(mg/L)		6	4	0.24	0.128	0.1875	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	4	0.245	0.126	0.189	NR	NA
Cadmium, PMS	(mg/L)		6	2	0.0035	0.0008	0.00215	0.005	0
Calcium, ICAP	(mg/L)		6	6	85.1	51.8	68.1	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	86.5	51.4	68.2	NR	NA
Cobalt, ICAP	(mg/L)		6	1	0.0307	0.0307	0.0307	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	6	1	0.0338	0.0338	0.0338	NR	NA
Iron, ICAP	(mg/L)		6	6	23.2	0.219	6.318833	0.3	4
Iron, ICAP	(mg/L)	FILTERED	6	6	21.1	0.216	5.541	0.3	4
Lead, PMS	(mg/L)		6	3	0.0136	0.0015	0.005633	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	1	0.0008	0.0008	0.0008	NR	NA
Lithium, ICAP	(mg/L)		6	4	0.0331	0.0305	0.031975	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	4	0.0332	0.0303	0.0324	NR	NA
Magnesium, ICAP	(mg/L)		6	6	42.4 k	14	28.51667	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	42.8	14.6	28.36667	NR	NA
Manganese, ICAP	(mg/L)		6	6	2.32	0.0131	0.673517	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	6	6	2.24	0.0123	0.67245	0.05	2
Potassium, ICAP	(mg/L)		6	6	6.3	3.08	4.141667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	6.48	3.13	4.21	NR	NA
Sodium, ICAP	(mg/L)		6	6	16.9	4.21	10.775	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	16.9	4.21	10.815	NR	NA
Strontium, ICAP	(mg/L)		6	6	1.59	0.113	0.774333	NR	NA

Table 2.66 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)	FILTERED	6	6	1.62	0.117	0.774667	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	1	0.0005	0.0005	0.0005	NR	NA
Zinc, ICAP	(mg/L)		6	2	6.95	3.06	5.005	5	1
Zinc, ICAP	(mg/L)	FILTERED	6	2	2.13	1.83	1.98	5	0
Conductivity, field measurement	(umhos/cm)		6	NA	643	451	560	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	1.22	0.26	0.675	NR	NA
pH, field measurement	(pH)		6	NA	7.89	6.59	7.301667	6.5/8.5	0
REDOX, field measurement	(mV)		6	NA	-13	-133	-68.8333	NR	NA
Static Water Level	(ft - toc)		6	NA	0	-12.77	-4.14667	NR	NA
Temperature, field measurement	(Deg C)		6	NA	18.1	12.9	15.43333	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	272	170	227.3333	NR	NA
Conductivity	(umhos/cm)		6	6	654	440	574.3333	NR	NA
Dissolved Solids	(mg/L)		6	6	424	241	346.5	500	0
pH	(pH)		6	6	7.83 L	6.72 L	7.32	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	5	35	1	12.8	NR	NA
Turbidity	(NTU)		6	6	221	2.26	48.07667	1	6
Gross Alpha	(pCi/L)		6	6	4.9	-0.094	2.334333	15 f	0
Gross Beta	(pCi/L)		6	6	8.9	2.1	4.85	50 a	0
Acetone	(ug/L)		6	2	9 J	4 BJ	6.5	NR	NA

Table 2.67. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Exit Pathway Spring/Surface Water

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	15.1	11.2	13.15	250	0
Fluoride	(mg/L)		2	2	0.73	0.34	0.535	2	0
Nitrate Nitrogen	(mg/L)		2	2	4.84	2.79	3.815	10	0
Sulfate	(mg/L)		2	2	40.6	32.8	36.7	250	0
Antimony, PMS	(mg/L)	FILTERED	2	1	0.0007	0.0007	0.0007	0.006	0
Barium, ICAP	(mg/L)		2	2	0.0537	0.0502	0.05195	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.0524	0.0497	0.05105	2	0
Boron, ICAP	(mg/L)		2	1	0.108	0.108	0.108	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.112	0.112	0.112	NR	NA
Calcium, ICAP	(mg/L)		2	2	53.2	52.4 k	52.8	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	53.1	52.6	52.85	NR	NA
Iron, ICAP	(mg/L)		2	2	0.157	0.123	0.14	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	1	0.23	0.23	0.23	0.3	0
Lithium, ICAP	(mg/L)		2	2	0.0381	0.0336	0.03585	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.0366	0.0346	0.0356	NR	NA
Magnesium, ICAP	(mg/L)		2	2	11.9	9.62 k	10.76	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	11.7	9.79	10.745	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.0236	0.0209	0.02225	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.0185	0.0173	0.0179	0.05	0
Mercury, CVAA	(mg/L)		2	2	0.000521	0.0003	0.000411	0.002	0
Potassium, ICAP	(mg/L)		2	2	2.77	2.33	2.55	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	2.58	2.25	2.415	NR	NA
Sodium, ICAP	(mg/L)		2	2	12.5	8.19 k	10.345	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	12.4	8.37	10.385	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.134	0.128	0.131	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.134	0.13	0.132	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0335	0.0197	0.0266	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0326	0.0206	0.0266	NR	NA

Table 2.67 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.111	0.111	0.111	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	368	300	334	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	7.96	7.84	7.9	NR	NA
pH, field measurement	(pH)		2	NA	8.2	7.22	7.71	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	226	91	158.5	NR	NA
Temperature, field measurement	(Deg C)		2	NA	22.8	14.6	18.7	NR	NA
Alkalini ty as HCO3	(mg/L)		2	2	130	120	125	NR	NA
Conductivity	(umhos/cm)		2	2	401 X	376	388.5	NR	NA
Dissolved Solids	(mg/L)		2	2	237	217	227	500	0
pH	(pH)		2	2	8.19 L	7.48 L	7.835	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	2.8	1	1.9	NR	NA
Turbidity	(NTU)		2	2	4.32	2.12	3.22	1	2
Gross Alpha	(pCi/L)		2	2	5.8	2.3	4.05	15 f	0
Gross Beta	(pCi/L)		2	2	8.2	6.6	7.4	50 a	0
Acetone	(ug/L)		2	1	28	28	28	NR	NA
Carbon tetrachloride	(ug/L)		2	1	16	16	16	5	1
Chloroform	(ug/L)		2	1	3 J	3 J	3	100 i	0
Tetrachloroethene	(ug/L)		2	1	3 J	3 J	3	5	0

Table 2.68. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Fire Training Facility

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	2.321	2.12	2.2205	250	0
Fluoride	(mg/L)		2	2	0.16	0.16	0.16	2	0
Nitrate Nitrogen	(mg/L)		2	2	7.042	1.42	4.231	10	0
Sulfate	(mg/L)		2	2	5.13	1.569	3.3495	250	0
Aluminum, ICAP	(mg/L)		2	1	0.624	0.624	0.624	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.563	0.563	0.563	0.2	1
Barium, ICAP	(mg/L)		2	2	0.0396	0.0395	0.03955	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.0372	0.035	0.0361	2	0
Calcium, ICAP	(mg/L)		2	2	91.5	3.57	47.535	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	78.2	3.41	40.805	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.0199	0.0172	0.01855	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.0195	0.017	0.01825	NR	NA
Magnesium, ICAP	(mg/L)		2	1	0.571	0.571	0.571	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	1	0.539	0.539	0.539	NR	NA
Potassium, ICAP	(mg/L)		2	2	14.2	12.4	13.3	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	13.4	11.8	12.6	NR	NA
Sodium, ICAP	(mg/L)		2	2	2.26	2.19	2.225	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	2.22	2.09	2.155	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.442	0.389	0.4155	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.406	0.368	0.387	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	1195	95	645	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	5.64	1.04	3.34	NR	NA
pH, field measurement	(pH)		2	NA	11.96	10.28	11.12	6.5/8.5	2
REDOX, field measurement	(mV)		2	NA	139	-26	56.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-24.8	-33.17	-28.985	NR	NA

Table 2.68 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Temperature, field measurement	(Deg C)		2	NA	21.4	17.1	19.25	NR	NA
Alkalinity as CO3	(mg/L)		2	2	20	12	16	NR	NA
Conductivity	(umhos/cm)		2	2	714	96.6	405.3	NR	NA
Dissolved Solids	(mg/L)		2	2	161	51	106	500	0
pH	(pH)		2	2	11.57 L	9.78 L	10.675	6.5/8.5	2
Turbidity	(NTU)		2	2	0.448	0.22	0.334	1	0
Gross Alpha	(pCi/L)		2	2	1.4	0.077	0.7385	15 f	0
Gross Beta	(pCi/L)		2	2	14	5.2	9.6	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	56	18	37	NR b	NA
Acetone	(ug/L)		2	1	3 J	3 J	3	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	56	18	37	70	0
Tetrachloroethene	(ug/L)		2	2	31	14	22.5	5	2
Toluene	(ug/L)		2	1	1 J	1 J	1	1000	0
Trichloroethene	(ug/L)		2	2	18	6	12	5	2
Xylenes	(ug/L)		2	1	1 J	1 J	1	10000	0
Xylenes	(ug/L)		2	1	1 J	1 J	1	10000	0

Table 2.69. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location C3

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		3	3	33.6	11.4	19.3	250	0
Fluoride	(mg/L)		3	1	0.34	0.34	0.34	2	0
Nitrate Nitrogen	(mg/L)		3	3	1.04	0.073	0.517667	10	0
Sulfate	(mg/L)		3	3	119	25.1	68.63333	250	0
Aluminum, ICAP	(mg/L)		3	3	0.051	0.023	0.035667	0.2	0
Barium, ICAP	(mg/L)		3	3	0.15	0.069	0.109667	2	0
Barium, ICAP	(mg/L)	FILTERED	3	3	0.15	0.067	0.109	2	0
Boron, ICAP	(mg/L)		3	3	0.77	0.081	0.320333	NR	NA
Boron, ICAP	(mg/L)	FILTERED	3	3	0.77	0.074	0.318	NR	NA
Calcium, ICAP	(mg/L)		3	3	100	8.7	68.9	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	3	3	100	8.3	68.1	NR	NA
Iron, ICAP	(mg/L)		3	3	0.21	0.013	0.098667	0.3	0
Iron, ICAP	(mg/L)	FILTERED	3	3	0.063	0.0056	0.024767	0.3	0
Lithium, ICAP	(mg/L)		3	3	0.07	0.015	0.034333	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	3	3	0.07	0.015	0.033667	NR	NA
Magnesium, ICAP	(mg/L)		3	3	13	2.1	7.233333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	3	3	13	2.1	7.2	NR	NA
Manganese, ICAP	(mg/L)		3	3	0.018	0.0019	0.007567	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	3	2	0.015	0.0013	0.00815	0.05	0
Molybdenum, ICAP	(mg/L)		3	1	0.011	0.011	0.011	NR	NA
Nickel, ICAP	(mg/L)		3	1	0.07	0.07	0.07	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	3	1	0.066	0.066	0.066	0.1 d	0
Potassium, ICAP	(mg/L)		3	3	5.2	2.5	3.766667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	3	3	5.5	2.4	3.7	NR	NA
Sodium, ICAP	(mg/L)		3	3	110	8	43	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	3	3	110	8.2	43.06667	NR	NA
Strontium, ICAP	(mg/L)		3	3	0.42	0.2	0.326667	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	3	3	0.42	0.21	0.33	NR	NA

Table 2.69 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, PMS	(mg/L)		3	1	0.0005	0.0005	0.0005	NR	NA
Uranium, PMS	(mg/L)	FILTERED	3	1	0.0006	0.0006	0.0006	NR	NA
Zinc, ICAP	(mg/L)		3	1	0.0039	0.0039	0.0039	5	0
Conductivity, field measurement	(umhos/cm)		3	NA	532	439	498	NR	NA
Dissolved Oxygen, field measurement	(ppm)		3	NA	5.6	3.48	4.723333	NR	NA
pH, field measurement	(pH)		3	NA	8.64	7.21	7.82	6.5/8.5	1
REDOX, field measurement	(mV)		3	NA	87	16	56.66667	NR	NA
Static Water Level	(ft - toc)		3	NA	-7.14	-9.23	-8.06667	NR	NA
Temperature, field measurement	(Deg C)		3	NA	15	13.7	14.5	NR	NA
Alkalinity as HCO3	(mg/L)		3	3	204	168	187.3333	NR	NA
Conductivity	(umhos/cm)		3	3	605	510	566	NR	NA
Dissolved Solids	(mg/L)		3	3	384	303	350.6667	500	0
pH	(pH)		3	3	8.59 L	7.4 L	7.866667	6.5/8.5	1
Total Suspended Solids	(mg/L)		3	1	1	1	1	NR	NA
Turbidity	(NTU)		3	3	2.25	0.566	1.602	1	2
Gross Alpha	(pCi/L)		3	3	1.2	-0.35	0.65	15 f	0
Gross Beta	(pCi/L)		3	3	5	1.9	3.366667	50 a	0
1,1,1-Trichloroethane	(ug/L)		3	1	1 J	1 J	1	200	0
1,1-Dichloroethene	(ug/L)		3	2	7	3 J	5	7	0
1,2-Dichloroethene (Total)	(ug/L)		3	3	184 J	4 J	87.66667	NR b	NA

Table 2.69 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Acetone	(ug/L)		3	1	14 B	14 B	14	NR	NA
cis-1,2-Dichloroethene	(ug/L)		3	3	180	4 J	86	70	2
Tetrachloroethene	(ug/L)		3	3	1400 D	48	772.6667	5	3
trans-1,2-Dichloroethene	(ug/L)		3	2	4 J	1 J	2.5	100	0
Trichloroethene	(ug/L)		3	3	380 D	7	145.6667	5	3
Vinyl chloride	(ug/L)		3	1	6 J	6 J	6	2	1

Table 2.70. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location D2

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	44.6	5.58	20.455	250	0
Fluoride	(mg/L)		4	2	0.14	0.13	0.135	2	0
Nitrate Nitrogen	(mg/L)		4	2	6.02	3.47	4.745	10	0
Sulfate	(mg/L)		4	4	26.7	10.5	17.725	250	0
Barium, ICAP	(mg/L)		4	4	0.263	0.0887	0.178425	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.254	0.0862	0.17655	2	0
Cadmium, PMS	(mg/L)	FILTERED	4	1	0.0006	0.0006	0.0006	0.005	0
Calcium, ICAP	(mg/L)		4	4	68.1	41.3	57.9	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	68.9	40	58.125	NR	NA
Iron, ICAP	(mg/L)		4	4	0.497	0.058	0.171	0.3	1
Iron, ICAP	(mg/L)	FILTERED	4	2	0.062	0.0513	0.05665	0.3	0
Lead, PMS	(mg/L)		4	1	0.0007	0.0007	0.0007	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	2	0.0018	0.0007	0.00125	NR	NA
Lithium, ICAP	(mg/L)		4	3	0.0148	0.0105	0.012667	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	2	0.0136	0.0132	0.0134	NR	NA
Magnesium, ICAP	(mg/L)		4	4	14.1	4.29	9.3425	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	14.4	4.1	9.375	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.025	0.0141	0.019225	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	4	4	0.0247	0.0179	0.02095	0.05	0
Nickel, ICAP	(mg/L)		4	1	0.0955	0.0955	0.0955	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	4	1	0.0924	0.0924	0.0924	0.1 d	0
Potassium, ICAP	(mg/L)	FILTERED	4	1	2.02	2.02	2.02	NR	NA
Sodium, ICAP	(mg/L)		4	4	9.94	7.03	8.2625	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	9.99	6.96	8.295	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.427	0.0799	0.256975	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.426	0.078	0.2555	NR	NA

Table 2.70 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity, field measurement	(umhos/cm)		4	NA	424	304	381.25	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	1.2	0.73	0.965	NR	NA
pH, field measurement	(pH)		4	NA	7.55	6.17	6.86	6.5/8.5	2
REDOX, field measurement	(mV)		4	NA	204	-16	115.25	NR	NA
Static Water Level	(ft - toc)		4	NA	-22.68	-26	-24.3575	NR	NA
Temperature, field measurement	(Deg C)		4	NA	22.2	18.6	20.7	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	224	66	148.5	NR	NA
Conductivity	(umhos/cm)		4	4	450	299	399.75	NR	NA
Dissolved Solids	(mg/L)		4	4	292	191	250.5	500	0
pH	(pH)		4	4	7.61 X	6.18 L	6.8825	6.5/8.5	2
Total Suspended Solids	(mg/L)		4	1	1	1	1	NR	NA
Turbidity	(NTU)		4	4	1.04	0.379	0.5515	1	1
Gross Alpha	(pCi/L)		4	4	4.2	1.6	2.525	15 f	0
Gross Beta	(pCi/L)		4	4	4.6	1.5	3.1	50 a	0
Acetone	(ug/L)		4	1	6 J	6 J	6	NR	NA
Tetrachloroethene	(ug/L)		4	4	330 D	5	102.75	5	3
Trichloroethene	(ug/L)		4	1	2 J	2 J	2	5	0

Table 2.71. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location E3

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	48.2	8.97	22.79833	250	0
Fluoride	(mg/L)		6	1	0.12	0.12	0.12	2	0
Nitrate Nitrogen	(mg/L)		6	4	0.88	0.05	0.4325	10	0
Sulfate	(mg/L)		6	6	21.3	8.69	15.60333	250	0
Antimony, PMS	(mg/L)	FILTERED	6	1	0.0006	0.0006	0.0006	0.006	0
Barium, ICAP	(mg/L)		6	6	0.668	0.0925	0.349417	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.644	0.0902	0.341533	2	0
Boron, ICAP	(mg/L)		6	4	0.514	0.127	0.3135	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	4	0.515	0.124	0.31325	NR	NA
Calcium, ICAP	(mg/L)		6	6	102	10.3	59.86667	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	101	10.2	59.53333	NR	NA
Chromium, ICAP	(mg/L)		6	1	0.0808	0.0808	0.0808	0.1	0
Iron, ICAP	(mg/L)		6	4	1.38	0.382	0.9165	0.3	4
Iron, ICAP	(mg/L)	FILTERED	6	2	0.0959	0.0588	0.07735	0.3	0
Lead, PMS	(mg/L)		6	2	0.0139	0.0005	0.0072	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	2	0.0014	0.0006	0.001	NR	NA
Lithium, ICAP	(mg/L)		6	4	0.0619	0.0203	0.0399	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	4	0.0604	0.0198	0.04015	NR	NA
Magnesium, ICAP	(mg/L)		6	6	16.6	3.59	8.653333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	16.6	3.57	8.568333	NR	NA
Manganese, ICAP	(mg/L)		6	5	0.163	0.0124	0.07094	0.05	3
Manganese, ICAP	(mg/L)	FILTERED	6	5	0.131	0.0122	0.04656	0.05	1
Nickel, ICAP	(mg/L)		6	2	0.635	0.432	0.5335	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	6	2	0.572	0.396	0.484	0.1 d	2
Potassium, ICAP	(mg/L)		6	4	5.76	4.93	5.275	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	4	5.7	5.12	5.2975	NR	NA
Sodium, ICAP	(mg/L)		6	6	81.2	9.23	35.60667	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	80.5	9.23	35.63	NR	NA

Table 2.71 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)		6	6	1.16	0.147	0.648167	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	1.16	0.146	0.6415	NR	NA
Uranium, PMS	(mg/L)		6	4	0.0019	0.0011	0.0014	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	4	0.0019	0.001	0.00135	NR	NA
Conductivity, field measurement	(umhos/cm)		6	NA	562	383	461	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	2.95	0.05	1.086667	NR	NA
pH, field measurement	(pH)		6	NA	8.76	7.17	7.766667	6.5/8.5	2
REDOX, field measurement	(mV)		6	NA	155	-21	45.66667	NR	NA
Static Water Level	(ft - toc)		6	NA	-8.78	-10.8	-9.81	NR	NA
Temperature, field measurement	(Deg C)		6	NA	24.4	15	18.45	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	256	158	216.3333	NR	NA
Conductivity	(umhos/cm)		6	6	619	412	500.6667	NR	NA
Dissolved Solids	(mg/L)		6	6	335	256	294.3333	500	0
pH	(pH)		6	6	8.57 L	7.15 L	7.656667	6.5/8.5	1
Total Suspended Solids	(mg/L)		6	3	3	1	1.666667	NR	NA
Turbidity	(NTU)		6	6	12.1	0.203	5.596333	1	4
Gross Alpha	(pCi/L)		6	6	64	-1.3	20.46667	15 f	2
Gross Beta	(pCi/L)		6	6	15	1.8	8.05	50 a	0
1,1,1-Trichloroethane	(ug/L)		6	4	8	1 J	3.25	200	0
1,1-Dichloroethane	(ug/L)		6	4	150	1 J	65.5	NR	NA
1,1-Dichloroethene	(ug/L)		6	3	37	4 J	23.33333	7	2
1,2-Dichloroethene (Total)	(ug/L)		6	4	20	4 J	15.25	NR b	NA
Acetone	(ug/L)		6	3	21	1 J	8.333333	NR	NA
Carbon tetrachloride	(ug/L)		6	2	2 J	1 J	1.5	5	0
Chloroethane	(ug/L)		6	2	4 J	1 J	2.5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		6	4	15	3 J	11.25	70	0

Table 2.71 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Tetrachloroethene	(ug/L)		6	6	230 D	6	87.83333	5	6
trans-1,2-Dichloroethene	(ug/L)		6	4	6	1 J	4	100	0
Trichloroethene	(ug/L)		6	5	64	2 J	29.4	5	3
Vinyl chloride	(ug/L)		6	2	4 J	1 J	2.5	2	1

Table 2.72. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location F3

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	9.8	6.22	8.1325	250	0
Fluoride	(mg/L)		4	3	1.21	0.14	0.823333	2	0
Nitrate Nitrogen	(mg/L)		4	4	0.81	0.37	0.545	10	0
Sulfate	(mg/L)		4	4	32.2	19.1	25.5	250	0
Antimony, PMS	(mg/L)	FILTERED	4	1	0.0005	0.0005	0.0005	0.006	0
Barium, ICAP	(mg/L)		4	4	0.344	0.146	0.23675	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.348	0.145	0.23825	2	0
Boron, ICAP	(mg/L)		4	2	1.31	1.2	1.255	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	2	1.29	1.23	1.26	NR	NA
Calcium, ICAP	(mg/L)		4	4	63	10 k	36.35	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	63	10.3	36.4	NR	NA
Iron, ICAP	(mg/L)		4	1	0.0553	0.0553	0.0553	0.3	0
Iron, ICAP	(mg/L)	FILTERED	4	2	0.118	0.0876	0.1028	0.3	0
Lead, PMS	(mg/L)		4	1	0.0008	0.0008	0.0008	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	1	0.001	0.001	0.001	NR	NA
Lithium, ICAP	(mg/L)		4	4	0.0763	0.0114	0.042425	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	4	0.0743	0.0117	0.043425	NR	NA
Magnesium, ICAP	(mg/L)		4	4	11.1	3.63	7.075	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	11.2	3.56	7.12	NR	NA
Manganese, ICAP	(mg/L)		4	1	0.0146	0.0146	0.0146	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	4	1	0.0142	0.0142	0.0142	0.05	0
Potassium, ICAP	(mg/L)		4	4	5.29	2.82	4.1625	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	5.65	2.71	4.185	NR	NA
Sodium, ICAP	(mg/L)		4	4	124	5.74	63.435	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	123	5.86	63.9925	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.62	0.289	0.45725	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.648	0.289	0.461	NR	NA
Uranium, PMS	(mg/L)		4	2	0.0018	0.0013	0.00155	NR	NA
Uranium, PMS	(mg/L)	FILTERED	4	2	0.0016	0.0013	0.00145	NR	NA

Table 2.72 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity, field measurement	(umhos/cm)		4	NA	592	383	486	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	1.63	0.3	0.9425	NR	NA
pH, field measurement	(pH)		4	NA	8.63	7.31	8.1	6.5/8.5	2
REDOX, field measurement	(mV)		4	NA	210	111	173.5	NR	NA
Static Water Level	(ft - toc)		4	NA	-0.83	-4.47	-2.7725	NR	NA
Temperature, field measurement	(Deg C)		4	NA	27.3	16.7	21.4	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	268	180	221	NR	NA
Conductivity	(umhos/cm)		4	4	594	397	491	NR	NA
Dissolved Solids	(mg/L)		4	4	364	220	291.25	500	0
pH	(pH)		4	4	8.42 L	7.58 L	8.0175	6.5/8.5	0
Turbidity	(NTU)		4	4	0.752	0.293	0.424	1	0
Gross Alpha	(pCi/L)		4	4	3.4	-0.093	1.29175	15 f	0
Gross Beta	(pCi/L)		4	4	6	4	4.575	50 a	0
Acetone	(ug/L)		4	3	71	1 J	24.66667	NR	NA
Chloroform	(ug/L)		4	2	1 J	1 J	1	100 i	0
Tetrachloroethene	(ug/L)		4	2	3 J	1 J	2	5	0
Trichloroethene	(ug/L)		4	2	3 J	2 J	2.5	5	0

Table 2.73. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location G3

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	11.6	5.52	9.4825	250	0
Fluoride	(mg/L)		4	2	0.26	0.18	0.22	2	0
Nitrate Nitrogen	(mg/L)		4	4	1.51	0.24	0.691	10	0
Sulfate	(mg/L)		4	4	25.4	18.3	21.9	250	0
Barium, ICAP	(mg/L)		4	4	0.372	0.0532	0.214675	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.366	0.053	0.212025	2	0
Calcium, ICAP	(mg/L)		4	4	78.2	55.8	68.025	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	76.6	56.6	67	NR	NA
Lithium, ICAP	(mg/L)		4	2	0.0152	0.0145	0.01485	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	2	0.0139	0.0134	0.01365	NR	NA
Magnesium, ICAP	(mg/L)		4	4	9.03	4.13	6.6475	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	8.82	4.23	6.5525	NR	NA
Manganese, ICAP	(mg/L)		4	2	0.0108	0.0082	0.0095	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	4	2	0.0101	0.00786	0.00898	0.05	0
Potassium, ICAP	(mg/L)		4	3	2.74	2.33	2.566667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	3	2.56	2.31	2.443333	NR	NA
Sodium, ICAP	(mg/L)		4	4	7.66	5.06	6.4525	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	7.58	4.88	6.305	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.379	0.0728	0.22625	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.375	0.0729	0.2239	NR	NA
Conductivity, field measurement	(umhos/cm)		4	NA	447	364	402	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	4.65	0.22	2.02	NR	NA
pH, field measurement	(pH)		4	NA	7.53	7.18	7.4025	6.5/8.5	0
REDOX, field measurement	(mV)		4	NA	198	-5	124.75	NR	NA
Static Water Level	(ft - toc)		4	NA	-8.64	-13.31	-11.1675	NR	NA

Table 2.73 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Temperature, field measurement	(Deg C)		4	NA	21.4	17.2	19.575	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	206	130	172	NR	NA
Conductivity	(umhos/cm)		4	4	447	327	400	NR	NA
Dissolved Solids	(mg/L)		4	4	278	186	238	500	0
pH	(pH)		4	4	7.38 L	7.11 L	7.29	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	1	2	2	2	NR	NA
Turbidity	(NTU)		4	4	0.888	0.187	0.4255	1	0
Gross Alpha	(pCi/L)		4	4	1.8	0	0.82025	15 f	0
Gross Beta	(pCi/L)		4	4	5.2	-2.2	2.25	50 a	0
1,1-Dichloroethene	(ug/L)		4	2	1 J	1 J	1	7	0
1,2-Dichloroethene (Total)	(ug/L)		4	2	2 J	1 J	1.5	NR b	NA
Acetone	(ug/L)		4	3	53	2 BJ	20.66667	NR	NA
Carbon tetrachloride	(ug/L)		4	4	12	3 J	8.25	5	3
Chloroform	(ug/L)		4	4	7	2 J	3.75	100 i	0
cis-1,2-Dichloroethene	(ug/L)		4	2	2 J	1 J	1.5	70	0
Tetrachloroethene	(ug/L)		4	2	7	6	6.5	5	2
Trichloroethene	(ug/L)		4	2	2 J	2 J	2	5	0

Table 2.74. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location H3

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	46.9	34.3	41.4	250	0
Nitrate Nitrogen	(mg/L)		4	4	1.4	0.45	0.94	10	0
Sulfate	(mg/L)		4	4	43.2	29.7	36.425	250	0
Aluminum, ICAP	(mg/L)		4	1	0.256	0.256	0.256	0.2	1
Barium, ICAP	(mg/L)		4	4	0.201	0.0871	0.142725	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.201	0.0765	0.140675	2	0
Calcium, ICAP	(mg/L)		4	4	105	88.9	98.175	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	99.9	95.3	97.75	NR	NA
Chromium, ICAP	(mg/L)		4	2	1.75	0.0333	0.89165	0.1	1
Iron, ICAP	(mg/L)		4	2	11.5	0.413	5.9565	0.3	2
Lithium, ICAP	(mg/L)		4	2	0.011	0.0102	0.0106	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	1	0.0102	0.0102	0.0102	NR	NA
Magnesium, ICAP	(mg/L)		4	4	7.55	5.49	6.59	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	7.64	5.29	6.57	NR	NA
Manganese, ICAP	(mg/L)		4	2	0.109	0.0275	0.06825	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	4	2	0.0219	0.0164	0.01915	0.05	0
Nickel, ICAP	(mg/L)		4	2	0.736	0.629	0.6825	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	4	2	0.57	0.479	0.5245	0.1 d	2
Potassium, ICAP	(mg/L)		4	4	2.97	2.34	2.6125	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	2.72	2.41	2.6	NR	NA
Sodium, ICAP	(mg/L)		4	4	16.2	4.05	9.3425	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	15.6	4.39	9.295	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.245	0.173	0.20725	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.246	0.169	0.208	NR	NA
Conductivity, field measurement	(umhos/cm)		4	NA	567	479	536.75	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	2.13	0.28	0.9725	NR	NA
pH, field measurement	(pH)		4	NA	7.52	7.36	7.4175	6.5/8.5	0

Table 2.74 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		4	NA	225	132	183	NR	NA
Static Water Level	(ft - toc)		4	NA	-13.18	-16.13	-14.6425	NR	NA
Temperature, field measurement	(Deg C)		4	NA	22	17.6	19.25	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	200	180	190	NR	NA
Conductivity	(umhos/cm)		4	4	599	537	567	NR	NA
Dissolved Solids	(mg/L)		4	4	381	323	353.5	500	0
pH	(pH)		4	4	7.48 L	7.3 L	7.4125	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	1	5	5	5	NR	NA
Turbidity	(NTU)		4	4	28.7	0.233	8.29525	1	2
Gross Alpha	(pCi/L)		4	4	13	0.36	3.98	15 f	0
Gross Beta	(pCi/L)		4	4	36	3.6	11.95	50 a	0
Acetone	(ug/L)		4	2	6 BJ	2 BJ	4	NR	NA
Trichloroethene	(ug/L)		4	4	6	2 J	4.25	5	1

Table 2.75. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location K1

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	7.04	6.95	6.995	250	0
Fluoride	(mg/L)		2	2	0.18	0.11	0.145	2	0
Sulfate	(mg/L)		2	2	17.7	16.1	16.9	250	0
Barium, ICAP	(mg/L)		2	2	0.261	0.204	0.2325	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.268	0.21	0.239	2	0
Calcium, ICAP	(mg/L)		2	2	56.9	51.4	54.15	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	58.3	51.8	55.05	NR	NA
Iron, ICAP	(mg/L)		2	2	0.179	0.0893	0.13415	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	2	0.114	0.0865	0.10025	0.3	0
Lithium, ICAP	(mg/L)		2	2	0.027	0.0264	0.0267	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.027	0.0268	0.0269	NR	NA
Magnesium, ICAP	(mg/L)		2	2	11	9.96	10.48	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	11.4	10.3	10.85	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.123	0.0892	0.1061	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.126	0.0937	0.10985	0.05	2
Potassium, ICAP	(mg/L)		2	2	3.4	3.28	3.34	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3.32	3.21	3.265	NR	NA
Sodium, ICAP	(mg/L)		2	2	33.5	31.4	32.45	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	34.6	32.6	33.6	NR	NA
Strontium, ICAP	(mg/L)		2	2	1.28	1.17	1.225	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	1.32	1.2	1.26	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	400	389	394.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	1.26	0.11	0.685	NR	NA
pH, field measurement	(pH)		2	NA	8.18	7.76	7.97	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	-190	-228	-209	NR	NA
S tatic Water Level	(ft - toc)		2	NA	-5.95	-6.32	-6.135	NR	NA

Table 2.75 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Temperature, field measurement	(Deg C)		2	NA	19.7	16.6	18.15	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	228	220	224	NR	NA
Conductivity	(umhos/cm)		2	2	469	461	465	NR	NA
Dissolved Solids	(mg/L)		2	2	293	259	276	500	0
pH	(pH)		2	2	8.21 L	7.69 L	7.95	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	1	1.2	1.2	1.2	NR	NA
Turbidity	(NTU)		2	2	5.84	1.85	3.845	1	2
Gross Alpha	(pCi/L)		2	2	1.6	1.2	1.4	15 f	0
Gross Beta	(pCi/L)		2	2	6.6	0.63	3.615	50 a	0

Table 2.76. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location K2

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	1.79	1.75	1.77	250	0
Fluoride	(mg/L)		2	2	0.36	0.25	0.305	2	0
Sulfate	(mg/L)		2	2	15.9	15.2	15.55	250	0
Barium, ICAP	(mg/L)		2	2	0.143	0.139	0.141	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.14	0.133	0.1365	2	0
Boron, ICAP	(mg/L)		2	1	0.11	0.11	0.11	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.107	0.107	0.107	NR	NA
Calcium, ICAP	(mg/L)		2	2	35.9	32.5	34.2	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	35	32.1	33.55	NR	NA
Iron, ICAP	(mg/L)		2	1	0.342	0.342	0.342	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	1	0.32	0.32	0.32	0.3	1
Lead, PMS	(mg/L)	FILTERED	2	1	0.0006	0.0006	0.0006	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.0224	0.0208	0.0216	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.0219	0.0195	0.0207	NR	NA
Magnesium, ICAP	(mg/L)		2	2	6.96	6.47	6.715	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	6.77	6.31	6.54	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.0135	0.00837	0.010935	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.0134	0.00826	0.01083	0.05	0
Potassium, ICAP	(mg/L)		2	1	2.01	2.01	2.01	NR	NA
Sodium, ICAP	(mg/L)		2	2	55.8	45.9	50.85	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	54.3	44.2	49.25	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.451	0.423	0.437	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.438	0.414	0.426	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	392	325	358.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	1.03	0.39	0.71	NR	NA
pH, field measurement	(pH)		2	NA	7.86	7.62	7.74	6.5/8.5	0

Table 2.76 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		2	NA	158	-129	14.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-4.35	-5.59	-4.97	NR	NA
Temperature, field measurement	(Deg C)		2	NA	21.9	14.5	18.2	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	202	200	201	NR	NA
Conductivity	(umhos/cm)		2	2	414	403	408.5	NR	NA
Dissolved Solids	(mg/L)		2	2	252	225	238.5	500	0
pH	(pH)		2	2	7.98 L	7.66 L	7.82	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	1	1	1	1	NR	NA
Turbidity	(NTU)		2	2	2.08	0.582	1.331	1	1
Gross Alpha	(pCi/L)		2	2	2	0.36	1.18	15 f	0
Gross Beta	(pCi/L)		2	2	2.4	1.9	2.15	50 a	0

Table 2.77. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Grid J Primary

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	57.1	55.996	56.548	250	0
Fluoride	(mg/L)		2	2	0.29	0.23	0.26	2	0
Sulfate	(mg/L)		2	2	3.269	2.78	3.0245	250	0
Barium, ICAP	(mg/L)		2	2	0.0472	0.0431	0.04515	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.0486	0.044	0.0463	2	0
Calcium, ICAP	(mg/L)		2	2	107	99.6	103.3	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	109	103	106	NR	NA
Iron, ICAP	(mg/L)		2	2	24.5	21.3	22.9	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	24.7	21.4	23.05	0.3	2
Lead, PMS	(mg/L)		2	1	0.0007	0.0007	0.0007	NR	NA
Magnesium, ICAP	(mg/L)		2	2	14	13.6	13.8	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	14.3	14	14.15	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.845	0.725	0.785	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.864	0.749	0.8065	0.05	2
Sodium, ICAP	(mg/L)		2	2	14.4	13.6	14	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	14.7	14	14.35	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.206	0.184	0.195	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.211	0.191	0.201	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	688	648	668	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.48	0.37	0.425	NR	NA
pH, field measurement	(pH)		2	NA	6.98	6.66	6.82	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	-77	-116	-96.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-9.97	-10.51	-10.24	NR	NA
Temperature, field measurement	(Deg C)		2	NA	21	18.6	19.8	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	270	270	270	NR	NA
Conductivity	(umhos/cm)		2	2	703	678	690.5	NR	NA

Table 2.77 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Dissolved Solids	(mg/L)		2	2	389	387	388	500	0
pH	(pH)		2	2	6.84 L	6.69 L	6.765	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	42	23	32.5	NR	NA
Turbidity	(NTU)		2	2	208	202	205	1	2
Gross Alpha	(pCi/L)		2	2	1.6	-0.095	0.7525	15 f	0
Gross Beta	(pCi/L)		2	2	5.1	-3.2	0.95	50 a	0
Acetone	(ug/L)		2	2	4 J	4 J	4	NR	NA
Vinyl chloride	(ug/L)		2	2	2 J	2 J	2	2	0

Table 2.78. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=New Hope Pond

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	144	11.237	51.7618	250	0
Fluoride	(mg/L)		10	8	0.31	0.12	0.185	2	0
Nitrate Nitrogen	(mg/L)		10	6	4.43	0.76	1.546333	10	0
Sulfate	(mg/L)		10	10	33.486	10.99	19.4941	250	0
Aluminum, ICAP	(mg/L)		10	2	0.431	0.301	0.366	0.2	2
Barium, ICAP	(mg/L)		10	10	0.59	0.0289	0.20606	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.567	0.0284	0.19619	2	0
Boron, ICAP	(mg/L)		10	1	0.104	0.104	0.104	NR	NA
Calcium, ICAP	(mg/L)		10	10	171	33.5	79.31	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	163	33.3	77.01	NR	NA
Chromium, ICAP	(mg/L)		10	2	0.228	0.0572	0.1426	0.1	1
Iron, ICAP	(mg/L)		10	7	2.08	0.0597	0.749243	0.3	5
Iron, ICAP	(mg/L)	FILTERED	10	3	1.3	0.473	0.8	0.3	3
Lead, PMS	(mg/L)		10	2	0.0007	0.0006	0.00065	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	1	0.0008	0.0008	0.0008	NR	NA
Lithium, ICAP	(mg/L)		10	2	0.016	0.0156	0.0158	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	2	0.0159	0.0128	0.01435	NR	NA
Magnesium, ICAP	(mg/L)		10	10	25.9	10.3	16.17	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	25.6	9.7	15.83	NR	NA
Manganese, ICAP	(mg/L)		10	9	0.404	0.00801	0.126446	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	10	6	0.373	0.0286	0.160967	0.05	5
Nickel, ICAP	(mg/L)		10	2	0.434	0.194	0.314	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	10	2	0.39	0.181	0.2855	0.1 d	2
Potassium, ICAP	(mg/L)		10	8	3.21	2.03	2.58875	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	8	3.21	2.15	2.55375	NR	NA
Selenium, PMS	(mg/L)		10	1	0.0165	0.0165	0.0165	0.05	0
Selenium, PMS	(mg/L)	FILTERED	10	1	0.0165	0.0165	0.0165	0.05	0
Sodium, ICAP	(mg/L)		10	10	105	4.7	25.05	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	106	4.56	24.784	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.58	0.0374	0.3211	NR	NA

Table 2.78 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.554	0.0375	0.31119	NR	NA
Uranium, PMS	(mg/L)		10	6	0.0014	0.0009	0.001133	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	6	0.0014	0.001	0.001167	NR	NA
Conductivity, field measurement	(umhos/cm)		10	NA	808	357	544.3	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	5.8	0.08	1.228	NR	NA
pH, field measurement	(pH)		10	NA	7.75	6.43	7.184	6.5/8.5	1
REDOX, field measurement	(mV)		10	NA	321	-78	114.3	NR	NA
Static Water Level	(ft - toc)		10	NA	-8.49	-20.37	-12.948	NR	NA
Temperature, field measurement	(Deg C)		10	NA	19.1	15.3	17.25	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	344	162	229.6	NR	NA
Conductivity	(umhos/cm)		10	10	921	413	600.5	NR	NA
Dissolved Solids	(mg/L)		10	10	580	217	340.2	500	2
pH	(pH)		10	10	7.87 L	6.78 L	7.368	6.5/8.5	0
Total Suspended Solids	(mg/L)		10	6	4	1	2.533333	NR	NA
Turbidity	(NTU)		10	10	18.6	0.352	5.9103	1	8
Gross Alpha	(pCi/L)		10	10	2.3	-0.5	1.342	15 f	0
Gross Beta	(pCi/L)		10	10	6.9	-3.2	2.444	50 a	0
1,1-Dichloroethene	(ug/L)		10	2	3 J	3 J	3	7	0
1,2-Dichloroethene (Total)	(ug/L)		10	6	122 J	2 J	44.16667	NR b	NA
Acetone	(ug/L)		10	2	4 J	2 J	3	NR	NA
Bromodichloromethane	(ug/L)		10	1	7	7	7	100 i	0
Bromoform	(ug/L)		10	1	25	25	25	100 i	0
Carbon tetrachloride	(ug/L)		10	4	600 D	86	341.5	5	4
Chlorodibromomethane	(ug/L)		10	1	16	16	16	100 i	0
Chloroform	(ug/L)		10	4	38	4 J	19.75	100 i	0
cis-1,2-Dichloroethene	(ug/L)		10	6	120	2 J	43.66667	70	2

Table 2.78 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Tetrachloroethene	(ug/L)		10	6	440 D	3 J	154.8333	5	5
trans-1,2-Dichloroethene	(ug/L)		10	2	2 J	1 J	1.5	100	0
Trichloroethene	(ug/L)		10	5	170	2 J	68	5	3
Trichlorofluoromethane	(ug/L)		10	2	2 J	1 J	1.5	NR	NA
Vinyl chloride	(ug/L)		10	2	2 J	2 J	2	2	0

Table 2.79. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=S-2 Site

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	9.026	5.28	7.153	250	0
Fluoride	(mg/L)		2	2	1.75	1.12	1.435	2	0
Nitrate Nitrogen	(mg/L)		2	2	89.565	31.6	60.5825	10	2
Sulfate	(mg/L)		2	2	23.441	9.73	16.5855	250	0
Barium, ICAP	(mg/L)		2	2	0.123	0.0514	0.0872	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.124	0.0499	0.08695	2	0
Cadmium, PMS	(mg/L)		2	2	0.16	0.0471	0.10355	0.005	2
Cadmium, PMS	(mg/L)	FILTERED	2	2	0.164	0.048	0.106	0.005	2
Calcium, ICAP	(mg/L)		2	2	130	88.9	109.45	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	128	87.4	107.7	NR	NA
Cobalt, ICAP	(mg/L)		2	1	0.0267	0.0267	0.0267	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	2	1	0.0254	0.0254	0.0254	NR	NA
Copper, ICAP	(mg/L)		2	2	0.336	0.11	0.223	1	0
Copper, ICAP	(mg/L)	FILTERED	2	2	0.317	0.103	0.21	1	0
Iron, ICAP	(mg/L)		2	1	0.115	0.115	0.115	0.3	0
Lead, PMS	(mg/L)		2	2	0.0013	0.0006	0.00095	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.0006	0.0006	0.0006	NR	NA
Magnesium, ICAP	(mg/L)		2	2	17.8	11.9	14.85	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	17.6	11.7	14.65	NR	NA
Manganese, ICAP	(mg/L)		2	2	5.02	1.04	3.03	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	4.95	1.02	2.985	0.05	2
Potassium, ICAP	(mg/L)		2	1	3.55	3.55	3.55	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	1	3.65	3.65	3.65	NR	NA
Sodium, ICAP	(mg/L)		2	2	19.2	7.83	13.515	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	19.7	7.62	13.66	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.273	0.112	0.1925	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.274	0.109	0.1915	NR	NA
Thallium, PMS	(mg/L)		2	2	0.0031	0.0011	0.0021	NR	NA
Thallium, PMS	(mg/L)	FILTERED	2	2	0.0032	0.0011	0.00215	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0063	0.0033	0.0048	NR	NA

Table 2.79 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0063	0.0033	0.0048	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.0695	0.0695	0.0695	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.0718	0.0718	0.0718	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	969	600	784.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.45	0.23	0.34	NR	NA
pH, field measurement	(pH)		2	NA	6.59	6.29	6.44	6.5/8.5	1
REDOX, field measurement	(mV)		2	NA	280	259	269.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-16.73	-26.88	-21.805	NR	NA
Temperature, field measurement	(Deg C)		2	NA	18.4	14.9	16.65	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	190	154	172	NR	NA
Conductivity	(umhos/cm)		2	2	1093	649	871	NR	NA
Dissolved Solids	(mg/L)		2	2	807	420	613.5	500	1
pH	(pH)		2	2	6.85 L	6.32 L	6.585	6.5/8.5	1
Total Suspended Solids	(mg/L)		2	1	1	1	1	NR	NA
Turbidity	(NTU)		2	2	2.87	0.351	1.6105	1	1
Gross Alpha	(pCi/L)		2	2	8.5	8.3	8.4	15 f	0
Gross Beta	(pCi/L)		2	2	8.7	3.2	5.95	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	1	11	11	11	NR b	NA
Carbon tetrachloride	(ug/L)		2	1	19	19	19	5	1
Chloroform	(ug/L)		2	2	14	7	10.5	100 i	0
cis-1,2-Dichloroethene	(ug/L)		2	1	11	11	11	70	0
Tetrachloroethene	(ug/L)		2	2	410 D	66	238	5	2
Trichloroethene	(ug/L)		2	2	200 D	29	114.5	5	2

Table 2.80. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=S-3 Site

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	132	130	131	250	0
Nitrate Nitrogen	(mg/L)		2	2	11800	10700	11250	10	2
Arsenic, PMS	(mg/L)		2	1	0.012	0.012	0.012	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	2	1	0.011	0.011	0.011	NR	NA
Barium, ICAP	(mg/L)		2	2	110	110	110	2	2
Barium, ICAP	(mg/L)	FILTERED	2	2	110	108	109	2	2
Cadmium, PMS	(mg/L)		1	1	0.0019	0.0019	0.0019	0.005	0
Cadmium, PMS	(mg/L)	FILTERED	1	1	0.0016	0.0016	0.0016	0.005	0
Calcium, ICAP	(mg/L)		2	2	13100	13000	13050	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	13100	13000	13050	NR	NA
Lead, PMS	(mg/L)		2	2	0.001	0.0006	0.0008	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.0083	0.0083	0.0083	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.368	0.26	0.314	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.36	0.356	0.358	NR	NA
Magnesium, ICAP	(mg/L)		2	2	1220	1200	1210	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	1200	1200	1200	NR	NA
Manganese, ICAP	(mg/L)		2	2	140	133	136.5	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	140	131	135.5	0.05	2
Potassium, ICAP	(mg/L)		2	1	49	49	49	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	1	57	57	57	NR	NA
Selenium, PMS	(mg/L)		1	1	0.0399	0.0399	0.0399	0.05	0
Selenium, PMS	(mg/L)	FILTERED	1	1	0.0634	0.0634	0.0634	0.05	1
Sodium, ICAP	(mg/L)		2	2	560	544	552	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	570	538	554	NR	NA
Strontium, ICAP	(mg/L)		2	2	40	37.7	38.85	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	39	37.4	38.2	NR	NA
Uranium, PMS	(mg/L)		2	2	0.02	0.0186	0.0193	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.02	0.0157	0.01785	NR	NA

Table 2.80 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity, field measurement	(umhos/cm)		2	NA	52100	50000	51050	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	2.27	0.52	1.395	NR	NA
pH, field measurement	(pH)		2	NA	5.66	5.01	5.335	6.5/8.5	2
REDOX, field measurement	(mV)		2	NA	258	185	221.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-8	-8.2	-8.1	NR	NA
Temperature, field measurement	(Deg C)		2	NA	21.1	15.7	18.4	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	732	730	731	NR	NA
Conductivity	(umhos/cm)		2	2	55700	55500	55600	NR	NA
Dissolved Solids	(mg/L)		2	2	61884	60200	61042	500	2
pH	(pH)		2	2	5.7 L	5.58 L	5.64	6.5/8.5	2
Total Suspended Solids	(mg/L)		2	2	7	4	5.5	NR	NA
Turbidity	(NTU)		2	2	1.49	1.02	1.255	1	2
Technetium-99	(pCi/L)		2	2	22000	21000	21500	4000	2
Gross Alpha	(pCi/L)		2	2	73	-35	19	15 f	1
Gross Beta	(pCi/L)		2	2	14000	10000	12000	50 a	2
2-Butanone	(ug/L)		2	1	2 J	2 J	2	NR	NA
Acetone	(ug/L)		2	2	19	14 B	16.5	NR	NA
Bromoform	(ug/L)		2	2	3 J	3 J	3	100 i	0
Chloroform	(ug/L)		2	2	30	29	29.5	100 i	0
Methylene chloride	(ug/L)		2	2	51	51	51	5	2
Tetrachloroethene	(ug/L)		2	1	1 J	1 J	1	5	0
Trichloroethene	(ug/L)		2	2	3 J	3 J	3	5	0

Table 2.81. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Tank 2331-U, near Building 9201-1

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	5.15	4.24	4.695	250	0
Fluoride	(mg/L)		2	2	0.52	0.51	0.515	2	0
Sulfate	(mg/L)		2	2	68.8	4.27	36.535	250	0
Barium, ICAP	(mg/L)		2	2	0.109	0.1	0.1045	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.11	0.108	0.109	2	0
Boron, ICAP	(mg/L)		2	1	0.065	0.065	0.065	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.066	0.066	0.066	NR	NA
Calcium, ICAP	(mg/L)		2	2	94.4 k	88	91.2	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	91	87	89	NR	NA
Iron, ICAP	(mg/L)		2	1	0.0072	0.0072	0.0072	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	1	0.0099	0.0099	0.0099	0.3	0
Lead, PMS	(mg/L)		2	1	0.0015	0.0015	0.0015	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.0005	0.0005	0.0005	NR	NA
Magnesium, ICAP	(mg/L)		2	2	19	18.7 k	18.85	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	19	18.4	18.7	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.526	0.44	0.483	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.506	0.44	0.473	0.05	2
Potassium, ICAP	(mg/L)		2	2	6.8	6.73	6.765	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	7.22	6.6	6.91	NR	NA
Sodium, ICAP	(mg/L)		2	2	6.07 k	5.3	5.685	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	5.82	5.3	5.56	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.47	0.468	0.469	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.47	0.461	0.4655	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0023	0.001	0.00165	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0023	0.0011	0.0017	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	583	561	572	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	0.13	0.12	0.125	NR	NA
pH, field measurement	(pH)		2	NA	7.71	6.44	7.075	6.5/8.5	1

Table 2.81 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		2	NA	-238	-275	-256.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-8.61	-8.77	-8.69	NR	NA
Temperature, field measurement	(Deg C)		2	NA	23.7	14.1	18.9	NR	NA
Alkalinit y as HCO3	(mg/L)		2	2	310	238	274	NR	NA
Conductivity	(umhos/cm)		2	2	608	600	604	NR	NA
Dissolved Solids	(mg/L)		2	2	371	323	347	500	0
pH	(pH)		2	2	7.6 L	7.52 L	7.56	6.5/8.5	0
Turbidity	(NTU)		2	2	59.5	31.4	45.45	1	2
Technetium-99	(pCi/L)		2	2	3.6	-1.1	1.25	4000	0
Gross Alpha	(pCi/L)		2	2	2.7	0.99	1.845	15 f	0
Gross Beta	(pCi/L)		2	2	9.3	1.1	5.2	50 a	0
Benzene	(ug/L)		2	2	120	89	104.5	5	2
Ethylbenzene	(ug/L)		2	2	13	5	9	700	0
Toluene	(ug/L)		2	2	2 J	2 J	2	1000	0
Xylenes	(ug/L)		2	2	9 J	4 J	6.5	10000	0
Xylenes	(ug/L)		2	2	9 J	4 J	6.5	10000	0

Table 2.82. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Waste Coolant Processing Area

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		1	1	6.67	6.67	6.67	250	0
Nitrate Nitrogen	(mg/L)		1	1	1.78	1.78	1.78	10	0
Sulfate	(mg/L)		1	1	8.02	8.02	8.02	250	0
Aluminum, ICAP	(mg/L)		1	1	0.029	0.029	0.029	0.2	0
Barium, ICAP	(mg/L)		1	1	0.091	0.091	0.091	2	0
Barium, ICAP	(mg/L)	FILTERED	1	1	0.095	0.095	0.095	2	0
Boron, ICAP	(mg/L)		1	1	0.052	0.052	0.052	NR	NA
Boron, ICAP	(mg/L)	FILTERED	1	1	0.054	0.054	0.054	NR	NA
Calcium, ICAP	(mg/L)		1	1	20	20	20	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	1	1	21	21	21	NR	NA
Iron, ICAP	(mg/L)		1	1	0.042	0.042	0.042	0.3	0
Lithium, ICAP	(mg/L)		1	1	0.0042	0.0042	0.0042	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	1	1	0.0041	0.0041	0.0041	NR	NA
Magnesium, ICAP	(mg/L)		1	1	3.1	3.1	3.1	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	1	1	3.2	3.2	3.2	NR	NA
Manganese, ICAP	(mg/L)		1	1	0.0087	0.0087	0.0087	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	1	1	0.0068	0.0068	0.0068	0.05	0
Potassium, ICAP	(mg/L)		1	1	1.1	1.1	1.1	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	1	1	1.4	1.4	1.4	NR	NA
Sodium, ICAP	(mg/L)		1	1	6.7	6.7	6.7	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	1	1	7	7	7	NR	NA
Strontium, ICAP	(mg/L)		1	1	0.084	0.084	0.084	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	1	1	0.088	0.088	0.088	NR	NA
Zinc, ICAP	(mg/L)		1	1	0.0031	0.0031	0.0031	5	0
Zinc, ICAP	(mg/L)	FILTERED	1	1	0.0034	0.0034	0.0034	5	0
Conductivity, field measurement	(umhos/cm)		1	NA	164	164	164	NR	NA
Dissolved Oxygen, field measurement	(ppm)		1	NA	1.24	1.24	1.24	NR	NA
pH, field measurement	(pH)		1	NA	5.85	5.85	5.85	6.5/8.5	1

Table 2.82 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
REDOX, field measurement	(mV)		1	NA	212	212	212	NR	NA
Static Water Level	(ft - toc)		1	NA	-10.52	-10.52	-10.52	NR	NA
Temperature, field measurement	(Deg C)		1	NA	15.5	15.5	15.5	NR	NA
Alkalinity as HCO3	(mg/L)		1	1	48	48	48	NR	NA
Conductivity	(umhos/cm)		1	1	170.6	170.6	170.6	NR	NA
Dissolved Solids	(mg/L)		1	1	101	101	101	500	0
pH	(pH)		1	1	6.01 L	6.01 L	6.01	6.5/8.5	1
Turbidity	(NTU)		1	1	0.651	0.651	0.651	1	0
Gross Alpha	(pCi/L)		1	1	0.99	0.99	0.99	15 f	0
Gross Beta	(pCi/L)		1	1	3.9	3.9	3.9	50 a	0
1,1,1-Trichloroethane	(ug/L)		1	1	16	16	16	200	0
1,1-Dichloroethane	(ug/L)		1	1	20	20	20	NR	NA
1,1-Dichloroethene	(ug/L)		1	1	28	28	28	7	1
1,2-Dichloroethene (Total)	(ug/L)		1	1	1001 D	1001 D	1001	NR b	NA
Acetone	(ug/L)		1	1	40 B	40 B	40	NR	NA
cis-1,2-Dichloroethene	(ug/L)		1	1	990 D	990 D	990	70	1
Tetrachloroethene	(ug/L)		1	1	660 D	660 D	660	5	1
trans-1,2-Dichloroethene	(ug/L)		1	1	11	11	11	100	0
Trichloroethene	(ug/L)		1	1	120	120	120	5	1
Trichlorofluoromethane	(ug/L)		1	1	15	15	15	NR	NA
Vinyl chloride	(ug/L)		1	1	20	20	20	2	1

Table 2.83. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=EF AREA NAME=Westbay

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		23	23	145	1.96	27.69783	250	0
Fluoride	(mg/L)		21	16	1.22	0.2	0.53625	2	0
Nitrate Nitrogen	(mg/L)		23	16	3.36	0.234	1.648375	10	0
Sulfate	(mg/L)		23	22	48.5	0.26	21.80909	250	0
Aluminum, ICAP	(mg/L)		21	8	0.67	0.061	0.310875	0.2	6
Aluminum, ICAP	(mg/L)	FILTERED	21	4	0.12	0.036	0.0655	0.2	0
Arsenic, PMS	(mg/L)		21	1	0.0067	0.0067	0.0067	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	21	2	0.006	0.0051	0.00555	NR	NA
Barium, ICAP	(mg/L)		21	21	0.33	0.034	0.096438	2	0
Barium, ICAP	(mg/L)	FILTERED	21	21	0.31	0.034	0.094586	2	0
Boron, ICAP	(mg/L)		21	12	0.64	0.0042	0.177392	NR	NA
Boron, ICAP	(mg/L)	FILTERED	21	13	0.67	0.0052	0.174523	NR	NA
Calcium, ICAP	(mg/L)		21	21	77	22.1	53.5619	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	21	21	78	19.5	50.69524	NR	NA
Iron, ICAP	(mg/L)		21	19	2.8	0.12	0.573895	0.3	10
Iron, ICAP	(mg/L)	FILTERED	21	14	2	0.013	0.365957	0.3	2
Lead, PMS	(mg/L)		21	12	0.919	0.0006	0.07815	NR	NA
Lead, PMS	(mg/L)	FILTERED	21	13	0.008	0.0006	0.001429	NR	NA
Lithium, ICAP	(mg/L)		21	17	0.12	0.0047	0.028506	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	21	16	0.13	0.005	0.033094	NR	NA
Magnesium, ICAP	(mg/L)		21	21	30	10	20.55714	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	21	21	30	10	20.57619	NR	NA
Manganese, ICAP	(mg/L)		21	19	0.14	0.003	0.023054	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	21	16	0.14	0.0018	0.02554	0.05	2
Potassium, ICAP	(mg/L)		21	16	5.5	0.68	2.760625	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	21	21	10.1	0.69	4.502857	NR	NA
Selenium, PMS	(mg/L)		10	5	0.0584	0.011	0.02554	0.05	1
Selenium, PMS	(mg/L)	FILTERED	10	4	0.0414	0.0104	0.02085	0.05	0
Sodium, ICAP	(mg/L)		21	21	160	0.7	28.61681	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	21	21	170	0.852	30.8801	NR	NA

Table 2.83 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)		21	21	4.1	0.072	1.132267	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	21	21	4.3	0.079	1.17421	NR	NA
Thallium, PMS	(mg/L)		21	1	0.0005	0.0005	0.0005	NR	NA
Thallium, PMS	(mg/L)	FILTERED	21	1	0.0005	0.0005	0.0005	NR	NA
Uranium, PMS	(mg/L)		21	5	0.0006	0.0005	0.000564	NR	NA
Uranium, PMS	(mg/L)	FILTERED	21	4	0.0014	0.0005	0.000775	NR	NA
Zinc, ICAP	(mg/L)		21	21	2.1	0.037	0.528714	5	0
Zinc, ICAP	(mg/L)	FILTERED	21	20	0.349	0.024	0.10481	5	0
Conductivity, field measurement	(umhos/cm)		21	NA	896	255	470.0476	NR	NA
Dissolved Oxygen, field measurement	(ppm)		21	NA	8.62	2.01	5.418095	NR	NA
pH, field measurement	(pH)		21	NA	7.78	6.94	7.272381	6.5/8.5	0
REDOX, field measurement	(mV)		21	NA	217	-159	47.7619	NR	NA
Static Water Level	(ft - toc)		10	NA	-56.55	-63.87	-59.993	NR	NA
Temperature, field measurement	(Deg C)		21	NA	23.8	11.62	16.63905	NR	NA
Alka linity as HCO3	(mg/L)		21	21	264	140	215.2381	NR	NA
Conductivity	(umhos/cm)		21	21	1025	280	532.5714	NR	NA
Dissolved Solids	(mg/L)		21	21	556	15	267.9524	500	1
pH	(pH)		21	21	8.11 L	7.4 L	7.79381	6.5/8.5	0
Total Suspended Solids	(mg/L)		21	18	33	1	8.783333	NR	NA
Turbidity	(NTU)		21	21	29.9	1.04	10.40238	1	21
Gross Alpha	(pCi/L)		21	21	4.8	-1.3	1.105238	15 f	0
Gross Beta	(pCi/L)		21	21	9.7	-2.5	2.904762	50 a	0
1,1,1-Trichloroethane	(ug/L)		21	8	5	2 J	3.5	200	0
1,1-Dichloroethane	(ug/L)		21	6	2 J	1 J	1.333333	NR	NA
1,1-Dichloroethene	(ug/L)		21	9	5	1 J	2.555556	7	0
1,2-Dichloroethene (Total)	(ug/L)		21	10	10	2 J	5.7	NR b	NA

Table 2.83 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
2-Butanone	(ug/L)		21	10	7 J	3 BJ	3.8	NR	NA
Acetone	(ug/L)		21	20	40 B	1 J	7.6	NR	NA
Acrylonitrile	(ug/L)		21	5	32	2 J	15.2	NR	NA
Benzene	(ug/L)		21	3	2 J	1 J	1.333333	5	0
Carbon disulfide	(ug/L)		21	1	1 J	1 J	1	NR	NA
Carbon tetrachloride	(ug/L)		21	11	1100 D	1 J	487.6364	5	10
Chloroform	(ug/L)		21	15	56	2 J	27.66667	100 i	0
cis-1,2-Dichloroethene	(ug/L)		21	10	10	2 J	5.7	70	0
Ethylbenzene	(ug/L)		21	3	3 J	1 J	2.333333	700	0
Styrene	(ug/L)		21	2	3 J	3 J	3	100	0
Tetrachloroethene	(ug/L)		21	10	75	8	44	5	10
Toluene	(ug/L)		21	2	5	4 J	4.5	1000	0
Trichloroethene	(ug/L)		21	11	10	1 J	5.454545	5	7
Trichlorofluoromethane	(ug/L)		21	10	16	1 J	8.5	NR	NA
Xylenes	(ug/L)		21	2	2 J	2 J	2	10000	0
Xylenes	(ug/L)		21	2	2 J	2 J	2	10000	0

Table 2.84. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1998

REGIME=SP AREA NAME=Special Request

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		1	1	9.16	9.16	9.16	250	0
Fluoride	(mg/L)		1	1	0.1	0.1	0.1	2	0
Sulfate	(mg/L)		1	1	15.3	15.3	15.3	250	0
Barium, ICAP	(mg/L)		2	2	0.111 z	0.0582	0.0846	2	0
Barium, ICAP	(mg/L)	FILTERED	1	1	0.056	0.056	0.056	2	0
Boron, ICAP	(mg/L)		2	1	0.139	0.139	0.139	NR	NA
Boron, ICAP	(mg/L)	FILTERED	1	1	0.138	0.138	0.138	NR	NA
Calcium, ICAP	(mg/L)		2	2	96.9 k	52.8	74.85	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	1	1	93.7	93.7	93.7	NR	NA
Iron, ICAP	(mg/L)		2	2	0.302	0.118	0.21	0.3	1
Lead, PMS	(mg/L)	FILTERED	1	1	0.0008	0.0008	0.0008	NR	NA
Lithium, ICAP	(mg/L)		2	1	0.0103	0.0103	0.0103	NR	NA
Magnesium, ICAP	(mg/L)		2	2	27.9	9.38 k	18.64	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	1	1	9.18	9.18	9.18	NR	NA
Manganese, ICAP	(mg/L)		2	1	0.0895	0.0895	0.0895	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	1	1	0.0384	0.0384	0.0384	0.05	0
Nickel, ICAP	(mg/L)		2	1	0.189	0.189	0.189	0.1 d	1
Nickel, ICAP	(mg/L)	FILTERED	1	1	0.176	0.176	0.176	0.1 d	1
Potassium, ICAP	(mg/L)		2	1	3.73	3.73	3.73	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	1	1	3.46	3.46	3.46	NR	NA
Sodium, ICAP	(mg/L)		2	2	15.7 k	11.3	13.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	1	1	17.4	17.4	17.4	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.512	0.16	0.336	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	1	1	0.156	0.156	0.156	NR	NA
Uranium, PMS	(mg/L)		2	2	0.229	0.0005	0.11475	NR	NA
Uranium, PMS	(mg/L)	FILTERED	1	1	0.264	0.264	0.264	NR	NA
Conductivity, field measurement	(umhos/cm)		2	NA	590	472	531	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	1.75	1.23	1.49	NR	NA

Table 2.84 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
pH, field measurement	(pH)		2	NA	7.56	7	7.28	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	188	63	125.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-13.59	-25.19	-19.39	NR	NA
Temperature, field measurement	(Deg C)		2	NA	27.8	16.4	22.1	NR	NA
Alkalinity as HCO3	(mg/L)		1	1	288	288	288	NR	NA
Conductivity	(umhos/cm)		1	1	584	584	584	NR	NA
Dissolved Solids	(mg/L)		2	2	306	276	291	500	0
pH	(pH)		1	1	7.55 L	7.55 L	7.55	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	1	4	4	4	NR	NA
Turbidity	(NTU)		2	2	6.23	1.42	3.825	1	2
Iodine-129	(pCi/L)		1	1	7.9	7.9	7.9	NR	NA
Cesium-137	(pCi/L)		1	1	-1.2	-1.2	-1.2	120	0
Radium - Total Alpha	(pCi/L)		1	1	2.7	2.7	2.7	5 g	0
Thorium-228	(pCi/L)		1	1	0.68	0.68	0.68	16	0
Thorium-230	(pCi/L)		1	1	0.9	0.9	0.9	12	0
Thorium-231+234	(pCi/L)		1	1	98	98	98	400	0
Thorium-232	(pCi/L)		1	1	0.008	0.008	0.008	2	0
Uranium-234	(pCi/L)		1	1	14	14	14	20	0
Uranium-235	(pCi/L)		1	1	0.81	0.81	0.81	24	0
Neptunium-237	(pCi/L)		1	1	-0.01	-0.01	-0.01	1.2	0
Plutonium-238	(pCi/L)		1	1	-0.1	-0.1	-0.1	1.6	0
Uranium-238	(pCi/L)		1	1	98	98	98	24	1
Plutonium-239	(pCi/L)		1	1	-0.008	-0.008	-0.008	1.2	0
Americium-241	(pCi/L)		1	1	-0.02	-0.02	-0.02	1.2	0
Cobalt-60	(pCi/L)		1	1	-0.73	-0.73	-0.73	NR	NA
Strontium-89/90	(pCi/L)		1	1	0	0	0	8	0
Technetium-99	(pCi/L)		1	1	6.4	6.4	6.4	4000	0
Gross Alpha	(pCi/L)		2	2	90	2.4	46.2	15 f	1
Gross Beta	(pCi/L)		2	2	48	6.8	27.4	50 a	0

Table 2.84 (continued)

VARIABLE		FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Tritium	(pCi/L)		1	1	93	93	93	20000	0
1,1,1-Trichloroethane	(ug/L)		2	1	6	6	6	200	0
1,1-Dichloroethane	(ug/L)		2	1	2 J	2 J	2	NR	NA
1,1-Dichloroethene	(ug/L)		2	1	5	5	5	7	0
1,2-Dichloroethene (Total)	(ug/L)		2	1	10	10	10	NR b	NA
Acetone	(ug/L)		2	1	3 J	3 J	3	NR	NA
Carbon tetrachloride	(ug/L)		2	1	1600 D	1600 D	1600	5	1
Chloroform	(ug/L)		2	1	60	60	60	100 i	0
cis-1,2-Dichloroethene	(ug/L)		2	1	10	10	10	70	0
Tetrachloroethene	(ug/L)		2	1	85	85	85	5	1
Trichloroethene	(ug/L)		2	1	12	12	12	5	1
Trichlorofluoromethane	(ug/L)		2	1	19	19	19	NR	NA

Table 2.85. 1998 HYDROGEOLOGIC REGIME AND AREA SUMMARY

REGIME	SITE	WELL	SAMPLE NUMBER(S)
BC	Background	GW-115	A980150123 A980150124 A981940137 A981940138
	Bear Creek Burial Grounds WMA	GW-046	A980290157 A980290158 A982030281 A982030282
		GW-053	A980710050 A980710053 A982460014 A982460017
		GW-287	A980610247 A980610249 A982470004 A982470005
		GW-627	A980710051 A980710054 A982450003 A982450007
		GW-653	A980690180 A980690183 A982450002 A982450006
	Exit Pathway Monitoring Location A	GW-056	A980340033 A980340035 A982090010 A982090012
		GW-683	A980480114 A980480116 A982150118 A982150122
		GW-684	A980480001 A980480002 A980480004 A980480005
			A982160054 A982160055 A982160058 A982160059
		GW-685	A980360265 A980360266 A982090009 A982090011
	Exit Pathway Monitoring Location B	GW-621	A980340034 A980340036 A982100257 A982100260
		GW-695	A980480115 A980480117 A982110102 A982110105
		GW-703	A980480003 A980480006 A982220061 A982220063
		GW-704	A980050124 A980050125 A982250135 A982250136
		GW-706	A980050127 A980050128 A982220062 A982220064
	Exit Pathway Monitoring Location C	GW-724	A980640073 A980640076 A982450004 A982450008
		GW-725	A980690181 A980690184 A982460015 A982460018
		GW-738	A980630142 A980630144 A982450005 A982450009
		GW-740	A980630143 A980630145 A982440012 A982440017
	Exit Pathway Monitoring Location W	GW-712	A980200126 A980200129 A981960005 A981960007
		GW-713	A980200127 A980200128 A980200130 A980200131
			A981960100 A981960101 A981960102 A981960103
		GW-714	A980210075 A980210077 A981960006 A981960008
		GW-715	A980210076 A980210078 A981980010 A981980014
	Exit Pathway Spring/Surface Water	BCK-00.63	A980490308 A980490315 A982100258 A982100261
		BCK-04.55	A980490313 A980490320 A982100259 A982100262
		BCK-07.75	A980490312 A980490319 A982110104 A982110107
		BCK-07.87	A982230113 A982230114
		BCK-09.40	A980490310 A980490311 A980490317 A980490318
			A982150119 A982150120 A982150123 A982150124
		BCK-10.60	A980500110 A980500115
		BCK-11.97	A980500112 A980500117 A982160057 A982160061
		NT-01	A980500108 A980500113 A982170090 A982170092
		SS-1	A980500109 A980500114 A982170091 A982170093
		SS-4	A980500111 A980500116 A982160056 A982160060
		SS-5	A980490309 A980490316 A982150121 A982150125
		SS-6	A980490314 A980490321 A982110103 A982110106

Table 2.85 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
	Oil Landfarm WMA	GW-008	A980260098 A980260099 A982020039 A982020040
		GW-085	A980620200 A980620203 A982440009 A982440014
		GW-226	A980690179 A980690182 A982460012 A982460016
		GW-537	A980620201 A980620202 A980620204 A980620205 A982440010 A982440011 A982440015 A982440016
		GW-829	A980640074 A980640077 A982440008 A982440013
	Rust Spoil Area	GW-311	A980640072 A980640075 A982390096 A982390098
	S-3 Site	GW-276	A980230001 A980230002 A981980011 A981980015
	Spoil Area I	GW-315	A980610248 A980610250 A982390095 A982390097
CR	C. Ridge Borrow Area Waste Pile	GW-301	A980070012 A980070014 A981910044 A981910046
	C. Ridge Security Pits	GW-322	A980130014 A980130018
		GW-609	A980050130 A980050131 A981980012 A981980016
		GW-798	A980130013 A980130017 A981900173 A981900174
		GW-831	A980070013 A980070015 A981910043 A981910045
	C. Ridge Sediment Disposal Basin	GW-156	A981030163 A981030165 A981040235 A981040237 A981050117 A981050119 A981060052 A981060053 A981060055 A981060056 A982990032 A982990036 A983000190 A983000226 A983010169 A983010173 A983020273 A983020274 A983020287 A983020288
		GW-159	A981040014 A981040016 A981040241 A981040244 A981050113 A981050115 A981060128 A981060130 A982990033 A982990037 A983000191 A983000227 A983010170 A983010174 A983020275 A983020289
		GW-731	A981040015 A981040017 A981040239 A981040240 A981040242 A981040243 A981050112 A981050114 A981060127 A981060129 A983000192 A983000193 A983000228 A983000229 A983010171 A983010175 A983020276 A983020290 A983030081 A983030082
		GW-732	A981030162 A981030164 A981040236 A981040238 A981050116 A981050118 A981060051 A981060054 A982990034 A982990038 A983000194 A983000230 A983010172 A983010176 A983020277 A983020291
	Const./Debris Landfill VI	GW-540	A980710049 A980710052
		GW-542	A981110939 A981110943 A982870168 A982870198
		GW-543	A981120078 A981120080 A982880148 A982880150
		GW-544	A981120079 A981120081 A982880149 A982880151
		GW-827	A981110938 A981110942 A982870167 A982870197

Table 2.85 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
	Exit Pathway Spring/Surface Water	SCR2.1SP	A980130093 A980130095 A981890215 A981890220
		SCR2.2SP	A980130016 A980130020 A981890217 A981890222
		SCR3.4SP	A980130094 A980130096 A981890218 A981890223
		SCR5.1SP	A980130064 A980130066 A981890216 A981890221
		SCR5.4SP	A980130065 A980130067 A981890219 A981890224
	Industrial Landfill II	GW-540	A981101758 A981101760 A982860160 A982860170
		GW-709	A981101759 A981101761 A982860163 A982860171
		GW-757	A981110936 A981110937 A981110940 A981110941
			A982860161 A982860162 A982860168 A982860169
	Industrial Landfill IV	GW-141	A980080140 A980080141 A980080143 A980080144
			A981900176 A981900177 A981900180 A981900181
		GW-217	A980070169 A980070171 A981890434 A981890435
		GW-305	A980130068 A980130069 A981940020 A981940022
		GW-521	A980070170 A980070172 A981900178 A981900182
		GW-522	A980080139 A980080142 A981900179 A981900183
	Industrial Landfill V	GW-557	A980130101 A980130102 A980130105 A980130106
			A981960023 A981960024 A981960027 A981960028
		GW-796	A980140170 A980140172 A981960129 A981960132
		GW-797	A980140171 A980140173 A981960130 A981960133
		GW-799	A980130103 A980130107 A981960022 A981960026
		GW-801	A980130104 A980130108 A981960131 A981960134
		SCR4.3SP	A980130062 A980130063 A981960025 A981960029
	Kerr Hollow Quarry	GW-142	A981170147 A981170150 A981180128 A981180131
			A981190140 A981190141 A981190144 A981190145
			A981200067 A981200070 A982920390 A982920393
			A982930233 A982930239 A982940184 A982940185
			A982940190 A982940191 A982950602 A982950618
		GW-143	A981170148 A981170151 A981180129 A981180132
			A981190142 A981190146 A981200068 A981200071
			A982920391 A982920394 A982930234 A982930240
			A982940186 A982940192 A982950603 A982950619
		GW-144	A981170149 A981170152 A981180130 A981180133
			A981190143 A981190147 A981200069 A981200072
			A982920392 A982920395 A982930235 A982930241
			A982940183 A982940189 A982950604 A982950620
		GW-145	A981170158 A981170160 A981180106 A981180109
			A981190152 A981190154 A981200064 A981200066
			A982920378 A982920380 A982930236 A982930242
			A982940182 A982940188 A982950606 A982950622
		GW-231	A981170159 A981170161 A981180104 A981180105
			A981180107 A981180108 A981190151 A981190153
			A981200063 A981200065 A982920377 A982920379
			A982930237 A982930238 A982930243 A982930244
			A982940181 A982940187 A982950605 A982950621
		OUTFALL301	A982930079

Table 2.85 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
EF	Beta-4 Security Pits	GW-192	A981470001 A981470004 A983340101 A983340103
	Building 9201-2	GW-818	A980851893 A980851896
		GW-819	A980851894 A980851897
		GW-820	A980851895 A980851898
	Building 9202	59-1A	A980760128 A980760129
		59-1B	A980780002 A980780004
		59-1C	A980780003 A980780005
	CPT	GW-686	A980830031 A980830034
		GW-687	A980840004 A980840008
	Exit Pathway Monitoring Location E	GW-618	A981530002 A981530004 A983340102 A983340104
	Exit Pathway Monitoring Location I	GW-605	A980710124 A980710127 A982090002 A982090004
		GW-606	A980710125 A980710128 A982100248 A982100252
	Exit Pathway Monitoring Location J	GW-733	A980710123 A980710126 A982090001 A982090003
		GW-735	A981560001 A981560002 A981560004 A981560005 A983480215 A983480216 A983480218 A983480219
		GW-750	A981560003 A981560006 A983480217 A983480220
	Exit Pathway Scarboro Road/Pine Rid	GW-207	A981590044 A981590046 A983430336 A983430351
		GW-208	A981590045 A981590047 A983430337 A983430352
		GW-816	A981540274 A981540277 A983420217 A983420219
	Exit Pathway Spring/Surface Water	LRSPW	A981540009 A981540010 A983440297 A983440298
	Fire Training Facility	GW-620	A981470003 A981470006 A983360462 A983360470
	GW Monitoring Plan Grid Location C3	56-2A	A980830029 A980830032
		56-2B	A980830030 A980830033
		56-2C	A980840001 A980840005
	GW Monitoring Plan Grid Location D2	GW-791	A981400150 A981400153 A983200089 A983200091
		GW-792	A981400149 A981400152 A983200090 A983200092
	GW Monitoring Plan Grid Location E3	GW-781	A981400158 A981400160 A983150344 A983150347
		GW-782	A981400148 A981400151 A983160122 A983160124
		GW-783	A981400159 A981400161 A983160123 A983160125
	GW Monitoring Plan Grid Location F3	GW-788	A981340048 A981340049 A983130128 A983130130
		GW-789	A981390011 A981390012 A983130129 A983130131
	GW Monitoring Plan Grid Location G3	GW-769	A981400002 A981400003 A981400005 A981400006 A983150342 A983150343 A983150345 A983150346
		GW-770	A981400001 A981400004 A983140433 A983140440

Table 2.85 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
	GW Monitoring Plan Grid Location H3	GW-775	A981680143 A981680146 A983220809 A983220812
		GW-776	A981680144 A981680151 A983220810 A983220813
	GW Monitoring Plan Grid Location K1	GW-744	A981540275 A981540278 A983440301 A983440302
	GW Monitoring Plan Grid Location K2	GW-747	A981540276 A981540279 A983490118 A983490119
	Grid J Primary	GW-763	A981480025 A981480027 A983370104 A983370106
	New Hope Pond	GW-148	A981480026 A981480028 A983370103 A983370105
		GW-153	A981480101 A981480103 A983410180 A983410182
		GW-220	A981480102 A981480104 A983410181 A983410183
		GW-380	A981540002 A981540004 A983440299 A983440300
		GW-383	A981530001 A981530003 A983420216 A983420218
	S-2 Site	GW-251	A981470002 A981470005 A983360461 A983360469
	S-3 Site	GW-108	A980760005 A980760006 A980760008 A980760009 A982100250 A982100251 A982100254 A982100255
	Tank 2331-U, near Building 9201-1	GW-193	A980760007 A980760010 A982100249 A982100253
	Waste Coolant Processing Area	GW-332	A980840002 A980840003 A980840006 A980840007
	Westbay	GW-722-06	A980490230 A980490237 A982110022 A982110024
		GW-722-10	A980500046 A980500049 A982150114 A982150116
		GW-722-14	A980500184 A980500186 A982170087 A982170088
		GW-722-17	A980571039 A980571041 A982230144 A982230146
		GW-722-20	A980560034 A980560036 A982300190 A982300199
		GW-722-22	A980571155 A980571157 A982320027 A982320028
		GW-722-26	A980571158 A980571159 A982370166 A982370167
		GW-722-30	A980340167 A980560086 A980560088 A982380088 A982380089 A982380099 A982380100
		GW-722-32	A980340168 A980640049 A980640051 A982460408 A982460409
		GW-722-33	A980220059 A980220060 A980220062 A980220063 A980640052 A980640053 A982460410 A982460411
SP	Special Request	GW-219	A982470085 A982470086
		GW-845	A981410244

Footnote Definitions *(Bear Creek Regime)*

[a]Regulatory guide for assessing compliance without further analysis.
[b]See cis-Dichloroethene and trans-Dichloroethene.
[d]EPA has deleted the MCL for nickel from the Code of Federal Regulations. The state of Tennessee retains a nickel MCL of 100 [g/L in its currently effective drinking water regulations.
[f]Excludes radon and naturally occurring uranium.
[g]Applies to combined ^{226}Ra and ^{228}Ra.
[i]Limit for total trihalomethanes (bromodichloromethane + bromoform + chloroform + dibromochloromethane).

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[g] Applies to combined ^{226}Ra and ^{228}Ra.
[i] Limit for total trihalomethanes (bromodichloromethane + bromoform + chloroform + dibromochloromethane).

Qualifier Definitions *(Bear Creek Regime)*

k - Sample concentration is greater than 4 times the spike level for this sample batch
B - Analyte found in blank as well as sample
D - Compounds identified in an analysis at a secondary dilution factor
J - Indicates an estimated value
L - Sample received by ACD with expired holding time

Qualifier Definitions *(Chestnut Ridge Regime)*

h - Duplicate analysis outside control limits
h - Procedure performed past regulatory holding time
k - Sample concentration is greater than 4 times the spike level for this sample batch
B - Analyte found in blank as well as sample
D - Compounds identified in an analysis at a secondary dilution factor
J - Indicates an estimated value (VOA)
L - Sample received by ACD with expired holding time
X - Sample received by ACD with expired holding time

Qualifier Definitions *(East Fork Regime)*

k - Sample concentration is greater than 4 times the spike level for this sample batch
B - Analyte found in blank as well as sample
D - Compounds identified in an analysis at a secondary dilution factor
J - Indicates an estimated value
L - Sample received by ACD with expired holding time
X - Sample received by ACD with expired holding time

Qualifier Definitions *(Special Request Group)*

k - Sample concentration is greater than 4 times the spike level for this sample batch
z - Analyte reported, but not required or requested; use for qualitative purposes only
D - Compounds identified in an analysis at a secondary dilution factor
J - Indicates an estimated value (VOA)
L - Sample received by ACD with expired holding time

Table 3.1. Major sources of radiological airborne emissions at ORNL, 1998 (in curies)[a]

Isotope	Stack				
	2026	3020	3039	7512	7911
^{3}H	3.0E-001		1.2E+001		9.6E+001
^{7}Be	6.5E-007	6.1E-007	3.2E-005	4.09E-07	6.9E-007
^{41}Ar					8.0E+003
^{141}Ce					5.5E-006
^{60}Co			2.8E-005		9.1E-006
^{203}Hg			5.7E-005		
^{85}Kr					2.6E+002
^{85m}Kr					1.6E+001
^{87}Kr					3.8E+001
^{88}Kr					6.6E+001
^{89}Kr					4.4E+001
Total Sr	4.8E-007	2.3E-006	9.2E-005		1.8E-004
^{125}I					9.3E-007
^{129}I					3.8E-004
^{131}I			7.3E-005		6.2E-002
^{132}I					3.9E-001
^{132m}I					1.5E+000
^{133}I		6.5E-006	3.3E-005		2.3E-001
^{135}I			5.9E-005		9.5E-001
^{192}Ir			4.8E-006		
^{194}Ir					1.2E-005
^{105}Ru					1.1E-002
^{90}Sr				8.52E-08	
^{131m}Xe					2.7E+001
^{133}Xe	2.1E-005	3.1E-005			3.2E+002
^{133m}Xe		2.1E-005			2.3E+000
^{135}Xe			1.2E-004		1.9E+002
^{135m}Xe					1.2E+002
^{137}Xe					3.0E+002
^{138}Xe					7.7E+002
^{137}Cs	3.2E-006	3.0E-006	5.8E-004	4.28E-09	8.3E-001
^{138}Cs					4.7E+003
^{137m}Ba				4.28E-09	
^{139}Ba			9.4E-005		6.7E-003
^{140}Ba			9.8E-006		4.8E-004
^{191}Os		1.6E-003	4.8E-001		
^{212}Pb	1.7E-001	6.8E-001	9.1E-001	1.65E-01	1.7E-001
^{228}Th	1.9E-008	9.5E-009	8.6E-006	3.21E-09	5.9E-008
^{230}Th		-6.2E-010	1.5E-008	6.80E-10	3.5E-008
^{232}Th	3.1E-009	4.9E-009	2.0E-008	7.86E-10	6.3E-008
^{234}U	3.3E-007	2.3E-007	2.5E-007	2.63E-08	3.1E-007
^{235}U	3.1E-008	3.2E-008	2.1E-008		7.9E-008
^{238}U	6.4E-008	3.7E-008	3.4E-008		9.0E-008
^{238}Pu	4.6E-008	1.1E-008	1.8E-007	7.71E-09	7.0E-009
^{239}Pu	1.5E-007	3.2E-007	3.3E-007	2.60E-08	6.8E-009
^{241}Am	1.2E-007	4.1E-007	1.7E-007	2.23E-08	2.4E-008
^{244}Cm	1.5E-006	4.1E-008	1.2E-007	1.71E-07	4.9E-007
^{152}Eu			1.1E-006		
^{154}Eu			3.2E-007		
^{140}La					2.8E-005

[a] 1 Ci = 3.7E+10 Bq.

Table 3.2. NPDES Permit Number TN 0002941, 1998 ORNL ambient and facility discharge points

Parameter	N det/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Sewage Treatment Plant (X01)					
Anions (mg/L)					
Ammonia, as N	31/157	2.1	<0.20	~0.27	0.018
Field Measurements					
Chlorine, total residual (mg/L)	0/156	<0.050	<0.050	~0.050	0
Dissolved oxygen (mg/L)	156/156	9.7	7.0	8.0	0.043
Flow (mgd)	253/253	0.42	0.10	0.19	0.0030
pH (Std Unit)	156/156	8.0	6.8	7.3	0.020
Metals (mg/L)					
Cadmium, total	3/13	0.00020	<0.00010	~0.00012	0.000010
Cyanide, total	4/13	0.016	<0.0050	~0.0081	0.0013
Mercury, total	0/24	<0.00020	<0.00020	~0.00020	0
Silver, total	1/13	0.00010	<0.00010	~0.00010	0
Others (mg/L)					
Carbonaceous biological oxygen demand	0/157	<5.0	<5.0	~5.0	0
Oil and grease	0/156	<7.7	<5.3	~5.5	0.024
Physical					
Fecal coliform (col/100ml)[d]	132/156	900	<1.0	~13	1.1
Total suspended solids (mg/L)	29/157	4.2	<1.0	~1.2	0.041
Radionuclides (pCi/L)					
Gross alpha	4/12	4.0*	-0.35	1.4*	0.39
Gross beta	12/12	540*	160*	320*	43
Toxicity (%)[e]					
96 hour LC50 for Ceriodaphnia	NA/4	>100	>41	~85	15
96 hour LC50 for Fathead Minnow	NA/4	>100	>41	~85	15
No-observed effect concentration, Ceriodaphnia	NA/4	100	12	63	22
No-observed effect concentration, Fathead Minnow	NA/4	100	41	85	15
Coal Yard Runoff Treatment Facility (X02)					
Anions (mg/L)					
Sulfate, as SO_4	13/13	1,900	970	1,500	81
Field Measurements					
Flow (mgd)	253/253	0.27	0	0.033	0.0027
pH (Std Unit)	52/52	8.4	6.7	7.5	0.051
Metals (mg/L)					
Antimony, total	22/24	0.0022	0.00020	~0.00068	0.000093
Arsenic, total	22/24	0.0071	<0.0010	~0.0028	0.00028
Cadmium, total	12/24	0.00023	<0.00010	~0.00013	0.0000096
Chromium, total	18/24	0.0055	<0.00050	~0.0015	0.00029
Copper, total	24/24	0.015	0.0041	0.0071	0.00058
Iron, total	18/24	0.68	<0.25	~0.35	0.024
Lead, total	10/24	0.00056	<0.00010	~0.00016	0.000024
Mercury, total	0/13	<0.00020	<0.00020	~0.00020	0

Selenium, total	23/24	0.036	<0.0020	~0.0079	0.0016
Silver, total	0/24	<0.00010	<0.00010	~0.00010	0
Zinc, total	24/24	0.040	0.0085	0.019	0.0014

Table 3.2 (continued)

Parameter	N det/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Others (mg/L)					
Oil and grease	0/52	<7.7	<5.3	~5.6	0.044
Physical					
Total suspended solids (mg/L)	48/52	11	<1.0	~3.2	0.32
Radionuclides (pCi/L)					
Gross alpha	2/12	31*	-41	2.3	4.7
Gross beta	10/12	200*	36	130*	16
Toxicity (%)[e]					
96 hour LC50 for Ceriodaphnia	NA/4	>100	>4.2	~76	24
96 hour LC50 for Fathead Minnow	NA/4	>100	>4.2	~76	24
No-observed effect concentration, Ceriodaphnia[f]	NA/2	4.2	3.4	3.8	0.42
No-observed effect concentration, Fathead Minnow[f]	NA/2	100	100	100	0
Nonradiological Wastewater Treatment Facility (X12)					
Anions (mg/L)					
Sulfate, as SO_4	5/5	120	78	110	7.8
Field Measurements					
Flow (mgd)	253/253	0.90	0.034	0.54	0.0073
Temperature (°C)	156/156	27	13	21	0.30
pH (Std Unit)	156/156	8.1	7.0	7.5	0.017
Metals (mg/L)					
Arsenic, total	8/52	0.0020	<0.0010	~0.0011	0.000027
Cadmium, total	31/52	0.0052	<0.00010	~0.00028	0.00010
Chromium, total	38/52	0.0032	<0.00050	~0.0011	0.000090
Copper, total	52/52	0.033	0.0030	0.0085	0.00073
Cyanide, total	0/5	<0.0050	<0.0050	~0.0050	0
Iron, total	1/52	0.34	<0.25	~0.25	0.0017
Lead, total	52/52	0.0081	0.00040	0.0017	0.00021
Mercury, total	1/52	0.00026	<0.00020	~0.00020	0.0000012
Nickel, total	35/52	0.0024	<0.0010	~0.0013	0.000050
Selenium, total	6/52	0.0042	<0.0020	~0.0021	0.000055
Silver, total	34/52	0.00050	<0.00010	~0.00015	0.000013
Zinc, total	52/52	0.11	0.018	0.046	0.0027
Others (mg/L)					
Oil and grease	0/52	<5.9	<5.4	~5.5	0.015
Total toxic organics	0/13	<0.010	<0.010	~0.010	0
Physical					
Total suspended solids (mg/L)	0/5	<1.0	<1.0	~1.0	0
Radionuclides (pCi/L)					
Gross alpha	11/12	390*	6.0*	77*	32
Gross beta	12/12	1,000*	270*	470*	67
Toxicity (%)[e]					
96 hour LC50 for Ceriodaphnia	NA/4	>100	>100	~100	0

96 hour LC50 for Fathead Minnow	NA/4	>100	>100	~100	0
No-observed effect concentration, Ceriodaphnia	NA/4	100	80	95	5.0
No-observed effect concentration, Fathead Minnow	NA/4	100	100	100	0

Table 3.2 (continued)

Parameter	N det/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Melton Branch 1 (X13)					
Field Measurements					
Flow (mgd)	157/157	25	0.16	2.0	0.28
White Oak Creek (X14)					
Field Measurements					
Flow (mgd)	157/157	70	2.1	6.5	0.69
White Oak Dam (X15)					
Field Measurements					
Flow (mgd)	157/157	100	3.5	10	1.0

[a]Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit, and ">" indicates that the actual value was above the given value.

[b]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[c]Standard error of the mean.

[d]The geometric mean is computed rather than the average.

[e]Toxicity tests during first quarter 1998 through third quarter 1998 were conducted using full-strength effluent. To reduce costs, beginning with fourth quarter 1998, toxicity tests are conducted only at the concentrations required by the NPDES permit. Number of detected is not applicable for toxicity results.

[f]Because of the batch mode discharge process at the Coal Yard Runoff Treatment Facility (X02), if the discharge is not long enough for the 96 hour LC-50 test, a 48 hour LC50 test is calculated from the data and reported. The No-observed effect concentration is not reported when a 48 hour calculation is done.

Table 3.3. NPDES Permit Number TN 0002941, 1998 ORNL outfall monitoring

Parameter	N det/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Category 1 outfalls					
Field Measurements					
Flow (mgd)	27/27	0.043	0.00014	0.010	0.0025
pH (Std Unit)	27/27	9.1	7.3	8.0	0.077
Category 2 outfalls					
Field Measurements					
Flow (mgd)	23/23	0.36	0.00036	0.029	0.016
pH (Std Unit)	23/23	8.2	6.6	7.6	0.080
Category 3 outfalls					
Field Measurements					
Flow (mgd)	58/58	0.052	0.00036	0.010	0.0015
pH (Std Unit)	58/58	8.8	7.1	7.7	0.038
Category 4 outfalls					
Field Measurements					
Flow (mgd)	328/328	0.43	0.00014	0.071	0.0051
Temperature (°C)	328/328	36	8.0	20	0.32
pH (Std Unit)	326/326	9.6	6.8	7.6	0.020
Cooling Tower Blowdown outfalls					
Field Measurements					
Flow (mgd)	2/2	0.058	0.029	0.044	0.015
Temperature (°C)	2/2	28	22	25	3.0
Total residual oxidant (mg/L)	0/2	<0.050	<0.050	~0.050	0
pH (Std Unit)	2/2	9.0	8.5	8.8	0.25
Physical					
Total suspended solids (mg/L)	2/2	28	1.2	15	14
Cooling Tower Blowdown/Cooling Water outfalls					
Field Measurements					
Flow (mgd)	48/48	0.18	0.0065	0.077	0.0079
Total residual oxidant (mg/L)	1/48	0.20	<0.050	~0.053	0.0031
pH (Std Unit)	48/48	8.0	6.7	7.6	0.050
Groundwater/Pumpwater outfalls					
Field Measurements					
Flow (mgd)	7/7	0.0060	0.00014	0.0024	0.00096
pH (Std Unit)	7/7	8.0	7.3	7.7	0.086

Table 3.3 (continued)

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Standard error[c]
Steam Condensate outfalls					
Field Measurements					
Flow (mgd)	16/16	0.0065	0.00014	0.0016	0.00053
Temperature (°C)	16/16	60	12	37	5.1
pH (Std Unit)	16/16	8.3	7.0	7.8	0.089

[a]Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.

[b]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[c]Standard error of the mean.

Table 3.4. Permit Number TN 0002941, 1998 ORNL Instream Chlorine monitoring

Parameter	N det/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Fifth Creek					
Field Measurements					
Temperature (°C)	72/72	21	12	16	0.37
Total residual oxidant (mg/L)	0/72	<0.050	<0.050	~0.050	0
pH (Std Unit)	72/72	8.3	7.2	7.8	0.027
First Creek					
Field Measurements					
Temperature (°C)	48/48	24	10	16	0.64
Total residual oxidant (mg/L)	0/48	<0.050	<0.050	~0.050	0
pH (Std Unit)	48/48	8.1	7.1	7.6	0.034
White Oak Creek					
Field Measurements					
Temperature (°C)	144/144	25	8.7	18	0.42
Total residual oxidant (mg/L)	0/144	<0.050	<0.050	~0.050	0
pH (Std Unit)	144/144	8.3	7.2	7.8	0.019

[a]Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.

[b]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[c]Standard error of the mean.

Table 3.5.1998 ORNL Chlorine Control Strategy monitoring

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Standard error[c]
Category 1 outfalls					
Field Measurements					
Flow (gpm)	40/40	35	0.10	8.7	1.4
Total residual oxidant (mg/L)	4/40	1.4	<0.050	~0.12	0.040
Category 2 outfalls					
Field Measurements					
Flow (gpm)	32/32	40	0.10	7.0	2.0
Total residual oxidant (mg/L)	2/32	1.3	<0.050	~0.11	0.043
Category 3 outfalls					
Field Measurements					
Flow (gpm)	62/62	36	0.10	6.0	0.89
Total residual oxidant (mg/L)	8/62	0.76	<0.050	~0.13	0.026
Category 4 outfalls					
Field Measurements					
Flow (gpm)	212/212	300	0.10	65	3.9
Total residual oxidant (mg/L)	12/212	0.74	<0.050	~0.065	0.0055
Groundwater/Pumpwater outfalls					
Field Measurements					
Flow (gpm)	7/7	4.0	0.10	1.7	0.65
Total residual oxidant (mg/L)	0/7	<0.050	<0.050	~0.050	0
Steam Condensate outfalls					
Field Measurements					
Flow (gpm)	15/15	4.5	0.10	1.2	0.38
Total residual oxidant (mg/L)	4/15	0.86	<0.050	~0.20	0.076

[a]Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.

[b]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[c]Standard error of the mean.

Table 3.6. 1998 ORNL Storm Water Pollution Prevention Plan monitoring

Parameter	Sample Type	Value[a]	Uncertainty	MDA
		Category 1 Outfall 113		
Anions (mg/L)				
Kjeldahl Nitrogen	Composite	0.77	b	b
Kjeldahl Nitrogen	Grab	1.2	b	b
Nitrate/Nitrite as Nitrogen	Composite	3,100	b	b
Nitrate/Nitrite as Nitrogen	Grab	0.46	b	b
Field Measurements				
Flow (gpm)	Estimated	0.75	b	b
pH (Std Unit)	Grab	8.2	b	b
Temperature (°C)	Grab	8.0	b	b
Metals (mg/L)				
Aluminum, total	Composite	2.0	b	b
Aluminum, total	Grab	3.0	b	b
Antimony, total	Composite	0.00020	b	b
Antimony, total	Grab	0.00021	b	b
Arsenic, total	Composite	0.0022	b	b
Arsenic, total	Grab	0.0024	b	b
Beryllium, total	Composite	<0.00010	b	b
Beryllium, total	Grab	0.00011	b	b
Cadmium, total	Composite	0.00058	b	b
Cadmium, total	Grab	0.00067	b	b
Chromium, total	Composite	0.0081	b	b
Chromium, total	Grab	0.011	b	b
Copper, total	Composite	0.0083	b	b
Copper, total	Grab	0.0090	b	b
Iron, total	Composite	2.8	b	b
Iron, total	Grab	3.3	b	b
Lead, total	Composite	0.017	b	b
Lead, total	Grab	0.020	b	b
Manganese, total	Composite	0.087	b	b
Manganese, total	Grab	0.091	b	b
Nickel, total	Composite	0.0053	b	b
Nickel, total	Grab	0.0059	b	b
Phosphorus, total	Composite	<0.10	b	b
Phosphorus, total	Grab	<0.10	b	b
Selenium, total	Composite	<0.0020	b	b
Selenium, total	Grab	<0.0020	b	b
Silver, total	Composite	<0.00010	b	b
Silver, total	Grab	<0.00010	b	b
Zinc, total	Composite	0.23	b	b
Zinc, total	Grab	0.21	b	b
Others (mg/L)				
Biochemical oxygen demand	Composite	<5.0	b	b
Biochemical oxygen demand	Grab	<5.0	b	b
Chemical oxygen demand	Composite	32	b	b

Table 3.6 (continued)

Parameter	Sample Type	Value[a]	Uncertainty	MDA
Chemical oxygen demand	Grab	31	b	b
Oil and grease	Grab	<5.6	b	b
Physical (mg/L)				
Total suspended solids	Composite	75	b	b
Total suspended solids	Grab	110	b	b
Radionuclides (pCi/L)				
Co-60	Composite	2.6*	2.0	3.8
Cs-137	Composite	-0.13	2.0	3.5
Gross alpha	Composite	0	1.3	3.8
Gross beta	Composite	6.2*	3.8	12
H-3	Composite	51	510	840
Category 1 Outfall 209				
Anions (mg/L)				
Kjeldahl Nitrogen	Composite	0.94	b	b
Kjeldahl Nitrogen	Grab	5.7	b	b
Nitrate/Nitrite as Nitrogen	Composite	0.33	b	b
Nitrate/Nitrite as Nitrogen	Grab	<0.25	b	b
Field Measurements				
Flow (gpm)	Estimated	6.5	b	b
pH (Std Unit)	Grab	8.4	b	b
Temperature (°C)	Grab	8.1	b	b
Metals (mg/L)				
Aluminum, total	Composite	1.2	b	b
Aluminum, total	Grab	1.6	b	b
Antimony, total	Composite	0.00024	b	b
Antimony, total	Grab	0.00033	b	b
Arsenic, total	Composite	0.0020	b	b
Arsenic, total	Grab	0.0024	b	b
Beryllium, total	Composite	<0.00010	b	b
Beryllium, total	Grab	0.00014	b	b
Cadmium, total	Composite	0.00019	b	b
Cadmium, total	Grab	0.00024	b	b
Chromium, total	Composite	0.0055	b	b
Chromium, total	Grab	0.0078	b	b
Copper, total	Composite	0.0052	b	b
Copper, total	Grab	0.0068	b	b
Iron, total	Composite	1.2	b	b
Iron, total	Grab	1.7	b	b
Lead, total	Composite	0.0083	b	b
Lead, total	Grab	0.0095	b	b
Manganese, total	Composite	0.049	b	b
Manganese, total	Grab	0.063	b	b

Table 3.6 (continued)

Parameter	Sample Type	Value[a]	Uncertainty	MDA
Nickel, total	Composite	0.0028	b	b
Nickel, total	Grab	0.0035	b	b
Phosphorus, total	Composite	<0.10	b	b
Phosphorus, total	Grab	<0.10	b	b
Selenium, total	Composite	<0.0020	b	b
Selenium, total	Grab	<0.0020	b	b
Silver, total	Composite	<0.00010	b	b
Silver, total	Grab	<0.00010	b	b
Zinc, total	Composite	0.051	b	b
Zinc, total	Grab	0.065	b	b
Others (mg/L)				
Biochemical oxygen demand	Composite	<5.0	b	b
Biochemical oxygen demand	Grab	<5.0	b	b
Chemical oxygen demand	Composite	26	b	b
Chemical oxygen demand	Grab	25	b	b
Oil and grease	Grab	<5.6	b	b
Physical (mg/L)				
Total suspended solids	Composite	54	b	b
Total suspended solids	Grab	44	b	b
Radionuclides (pCi/L)				
Co-60	Composite	-2.0	3.0	3.7
Cs-137	Composite	2.1*	2.1	3.7
Gross alpha	Composite	0.29	1.0	2.8
Gross beta	Composite	8.6*	4.3	12
H-3	Composite	-52	530	900
Category 4 Outfall 217				
Anions (mg/L)				
Kjeldahl Nitrogen	Composite	<0.20	b	b
Kjeldahl Nitrogen	Grab	0.39	b	b
Nitrate/Nitrite as Nitrogen	Composite	0.44	b	b
Nitrate/Nitrite as Nitrogen	Grab	<0.050	b	b
Field Measurements				
Flow (gpm)	Estimated	8.0	b	b
pH (Std Unit)	Grab	8.0	b	b
Temperature (°C)	Grab	18	b	b
Metals (mg/L)				
Aluminum, total	Composite	0.041	b	b
Aluminum, total	Grab	0.070	b	b
Antimony, total	Composite	<0.00010	b	b
Antimony, total	Grab	0.00012	b	b
Arsenic, total	Composite	0.0013	b	b

Table 3.6 (continued)

Parameter	Sample Type	Value[a]	Uncertainty	MDA
Arsenic, total	Grab	0.0018	b	b
Beryllium, total	Composite	<0.00010	b	b
Beryllium, total	Grab	<0.00010	b	b
Cadmium, total	Composite	<0.00010	b	b
Cadmium, total	Grab	<0.00010	b	b
Chromium, total	Composite	<0.00050	b	b
Chromium, total	Grab	<0.00050	b	b
Copper, total	Composite	0.014	b	b
Copper, total	Grab	0.035	b	b
Iron, total	Composite	<0.25	b	b
Iron, total	Grab	<0.25	b	b
Lead, total	Composite	0.00069	b	b
Lead, total	Grab	0.0015	b	b
Manganese, total	Composite	0.0053	b	b
Manganese, total	Grab	0.097	b	b
Nickel, total	Composite	<0.0010	b	b
Nickel, total	Grab	<0.0010	b	b
Phosphorus, total	Composite	<0.10	b	b
Phosphorus, total	Grab	<0.10	b	b
Selenium, total	Composite	<0.0020	b	b
Selenium, total	Grab	<0.0020	b	b
Silver, total	Composite	<0.00010	b	b
Silver, total	Grab	<0.00010	b	b
Zinc, total	Composite	0.016	b	b
Zinc, total	Grab	0.028	b	b
Others (mg/L)				
Biochemical oxygen demand	Composite	<5.0	b	b
Biochemical oxygen demand	Grab	<5.0	b	b
Chemical oxygen demand	Composite	8.0	b	b
Chemical oxygen demand	Grab	13	b	b
Oil and grease	Grab	<5.5	b	b
Physical (mg/L)				
Total suspended solids	Composite	1.7	b	b
Total suspended solids	Grab	3.2	b	b
Radionuclides (pCi/L)				
Co-60	Composite	1.3*	1.5	2.7
Cs-137	Composite	-0.045	1.7	2.9
Gross alpha	Composite	0.40	1.7	4.3
Gross beta	Composite	-2.1	3.1	13
H-3	Composite	-16	540	850

Table 3.6 (continued)

Parameter	Sample Type	Value[a]	Uncertainty	MDA
	Category 3 Outfall 219			
Anions (mg/L)				
Kjeldahl Nitrogen	Composite	0.22	b	b
Kjeldahl Nitrogen	Grab	0.20	b	b
Nitrate/Nitrite as Nitrogen	Composite	<0.050	b	b
Nitrate/Nitrite as Nitrogen	Grab	<0.050	b	b
Field Measurements				
Flow (gpm)	Estimated	4.0	b	b
pH (Std Unit)	Grab	8.0	b	b
Temperature (°C)	Grab	13	b	b
Metals (mg/L)				
Aluminum, total	Composite	0.049	b	b
Aluminum, total	Grab	0.42	b	b
Antimony, total	Composite	<0.00010	b	b
Antimony, total	Grab	0.00015	b	b
Arsenic, total	Composite	0.0012	b	b
Arsenic, total	Grab	<0.0010	b	b
Beryllium, total	Composite	<0.00010	b	b
Beryllium, total	Grab	<0.00010	b	b
Cadmium, total	Composite	<0.00010	b	b
Cadmium, total	Grab	<0.00010	b	b
Chromium, total	Composite	<0.00050	b	b
Chromium, total	Grab	0.00072	b	b
Copper, total	Composite	0.013	b	b
Copper, total	Grab	0.0044	b	b
Iron, total	Composite	<0.25	b	b
Iron, total	Grab	0.78	b	b
Lead, total	Composite	0.00074	b	b
Lead, total	Grab	0.0045	b	b
Manganese, total	Composite	0.0051	b	b
Manganese, total	Grab	0.015	b	b
Nickel, total	Composite	<0.0010	b	b
Nickel, total	Grab	0.0021	b	b
Phosphorus, total	Composite	0.18	b	b
Phosphorus, total	Grab	0.26	b	b
Selenium, total	Composite	<0.0020	b	b
Selenium, total	Grab	<0.0020	b	b
Silver, total	Composite	<0.00010	b	b
Silver, total	Grab	<0.00010	b	b
Zinc, total	Composite	0.018	b	b
Zinc, total	Grab	0.093	b	b
Others (mg/L)				
Biochemical oxygen demand	Composite	<5.0	b	b
Biochemical oxygen demand	Grab	<5.0	b	b
Chemical oxygen demand	Composite	12	b	b
Chemical oxygen demand	Grab	6.0	b	b
Oil and grease	Grab	<5.8	b	b

Table 3.6 (continued)

Parameter	Sample Type	Value[a]	Uncertainty	MDA
Physical (mg/L)				
Total suspended solids	Composite	2.2	b	b
Total suspended solids	Grab	20	b	b
Radionuclides (pCi/L)				
Co-60	Composite	2.1*	1.6	3.1
Cs-137	Composite	1.7*	1.7	3.1
Gross alpha	Composite	0.98	1.4	2.7
Gross beta	Composite	3.8*	3.8	12
H-3	Composite	-280	530	850
Category 2 Outfall 232				
Anions (mg/L)				
Kjeldahl Nitrogen	Composite	0.20	b	b
Kjeldahl Nitrogen	Grab	0.26	b	b
Nitrate/Nitrite as Nitrogen	Composite	0.27	b	b
Nitrate/Nitrite as Nitrogen	Grab	<0.25	b	b
Base Neutral/Acid Extractable Organic (ug/L)				
Acenaphthene	Grab	U10	b	b
Acenaphthylene	Grab	U10	b	b
Anthracene	Grab	U10	b	b
Benzo(a)anthracene	Grab	U10	b	b
Benzo(a)pyrene	Grab	U10	b	b
Benzo(b)fluoranthene	Grab	U10	b	b
Benzo(ghi)perylene	Grab	U10	b	b
Benzo(k)fluoranthene	Grab	U10	b	b
Chrysene	Grab	U10	b	b
Dibenz(a,h)anthracene	Grab	U10	b	b
Fluoranthene	Grab	U10	b	b
Fluorene	Grab	U10	b	b
Indeno(1,2,3-cd)pyrene	Grab	U10	b	b
Naphthalene	Grab	U10	b	b
Phenanthrene	Grab	U10	b	b
Pyrene	Grab	U10	b	b
Field Measurements				
Flow (gpm)	Estimated	8.0	b	b
pH (Std Unit)	Grab	7.4	b	b
Temperature (°C)	Grab	8.0	b	b
Metals (mg/L)				
Aluminum, total	Composite	0.16	b	b
Aluminum, total	Grab	0.11	b	b
Antimony, total	Composite	0.00031	b	b
Antimony, total	Grab	0.00033	b	b
Arsenic, total	Composite	<0.0010	b	b
Arsenic, total	Grab	<0.0010	b	b

Table 3.6 (continued)

Parameter	Sample Type	Value[a]	Uncertainty	MDA
Beryllium, total	Composite	<0.00010	b	b
Beryllium, total	Grab	<0.00010	b	b
Cadmium, total	Composite	<0.00010	b	b
Cadmium, total	Grab	<0.00010	b	b
Chromium, total	Composite	0.0023	b	b
Chromium, total	Grab	0.0016	b	b
Copper, total	Composite	0.0034	b	b
Copper, total	Grab	0.0031	b	b
Iron, total	Composite	0.34	b	b
Iron, total	Grab	<0.25	b	b
Lead, total	Composite	0.0015	b	b
Lead, total	Grab	0.0013	b	b
Manganese, total	Composite	0.010	b	b
Manganese, total	Grab	0.0080	b	b
Nickel, total	Composite	0.0024	b	b
Nickel, total	Grab	0.0019	b	b
Phosphorus, total	Composite	<0.10	b	b
Phosphorus, total	Grab	<0.10	b	b
Selenium, total	Composite	<0.0020	b	b
Selenium, total	Grab	<0.0020	b	b
Silver, total	Composite	<0.00010	b	b
Silver, total	Grab	<0.00010	b	b
Zinc, total	Composite	0.062	b	b
Zinc, total	Grab	0.045	b	b
Others (mg/L)				
Biochemical oxygen demand	Composite	5.6	b	b
Biochemical oxygen demand	Grab	<5.0	b	b
Chemical oxygen demand	Composite	15	b	b
Chemical oxygen demand	Grab	12	b	b
Oil and grease	Grab	<5.6	b	b
Physical (mg/L)				
Total suspended solids	Composite	8.8	b	b
Total suspended solids	Grab	3.6	b	b
Radionuclides (pCi/L)				
Co-60	Composite	0.20	1.7	3.0
Cs-137	Composite	0.70	1.8	3.2
Gross alpha	Composite	1.2	1.5	2.6
Gross beta	Composite	1.8	3.7	13
H-3	Composite	130	560	900

[a]Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit. Radionuclide values significantly greater than zero are identified by an *.
[b]Not applicable.

Table 3.7. 1998 radionuclide concentrations at ORNL NPDES locations

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
Sewage Treatment Plant (X01)							
Co-60	3/12	23*	0.077	5.9*	1.9	5,000	0.12
Cs-137	4/12	19*	0.56	8.5*	1.4	3,000	0.28
Gross alpha	4/12	4.0*	-0.35	1.4*	0.39	f	f
Gross beta	12/12	540*	160*	320*	43	f	f
Total rad Sr	12/12	260*	65*	150*	23	1,000	15
Coal Yard Runoff Treatment Facility (X02)							
Gross alpha	2/12	31*	-41	2.3	4.7	f	f
Gross beta	10/12	200*	36	130*	16	f	f
Nonradiological Wastewater Treatment Facility (X12)							
Co-60	8/12	26*	3.7	12*	1.7	5,000	0.24
Cs-137	12/12	1,400*	220*	500*	93	3,000	17
Gross alpha	11/12	390*	6.0*	77*	32	f	f
Gross beta	12/12	1,000*	270*	470*	67	f	f
H-3	12/12	110,000*	34,000*	68,000*	7,400	2,000,000	3.4
Total rad Sr	12/12	110*	26*	56*	8.3	1,000	5.6
Total uranium	4/4	460*	66*	210	90	500	f
U-234	4/4	430*	63*	190	83	500	f
U-235	3/4	0.76*	-0.022	0.37	0.18	600	f
U-236	3/4	0.33*	0	0.19*	0.069	500	0.039
U-238	4/4	19*	3.2*	8.7*	3.7	600	1.5
Melton Branch 1 (X13)							
Co-60	1/12	15*	-9.0	3.8*	1.9	5,000	0.077
Cs-137	1/12	11*	-8.8	2.3	1.9	3,000	f
H-3	12/12	390,000*	44,000*	260,000*	33,000	2,000,000	13
Total rad Sr	12/12	240*	46*	140*	16	1,000	14
White Oak Creek (X14)							
Co-60	5/12	14*	-0.72	6.4*	1.4	5,000	0.13
Cs-137	9/12	41*	-0.20	23*	3.3	3,000	0.75
H-3	12/12	92,000*	6,900*	29,000*	8,600	2,000,000	1.5
Total rad Sr	12/12	91*	28*	60*	6.7	1,000	6.0
White Oak Dam (X15)							
Co-60	33/52	5.9*	-1.1	2.5*	0.23	5,000	0.051
Cs-137	52/52	34*	5.7*	17*	1.0	3,000	0.55
Gross alpha	52/52	52*	3.1*	13*	1.7	f	f
Gross beta	52/52	320*	110*	210*	7.4	f	f

Table 3.7 (continued)

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
H-3	12/12	100,000*	15,000*	54,000*	9,300	2,000,000	2.7
Total rad Sr	12/12	130*	60*	92*	7.0	1,000	9.2
Total uranium	6/6	48*	20*	32*	4.2	500	6.3
U-234	6/6	45*	19*	30*	4.0	500	6.0
U-235	3/6	0.13*	0.031	0.079*	0.016	600	0.013
U-236	0/6	0.050	0.017	0.031*	0.0050	500	0.0061
U-238	6/6	2.5*	1.1*	1.6*	0.22	600	0.27

[a]Individual radionuclide concentrations significantly greater than zero are identified by an *.

[b]Average radionuclide concentrations significantly greater than zero are identified by an *.

[c]Standard error of the mean.

[d]Derived concentration guide for ingestion of water. From DOE Order 5400.5.

[e]Average concentration as a percentage of the derived concentration guide (DCG), calculated only when a DCG exists and the average concentration is significantly greater than zero.

[f]Not applicable.

Table 3.8. 1998 radionuclide concentrations in surface waters around ORNL

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
Melton Hill Dam							
Co-60	5/12	26*	-1.7	8.0*	2.5	5,000	0.16
Cs-137	2/12	20*	-6.4	4.3*	2.0	3,000	0.14
Gross alpha	4/12	3.0*	-0.83	1.2*	0.34	f	f
Gross beta	4/12	6.9*	-3.7	2.7*	0.81	f	f
White Oak Creek Headwaters							
Co-60	4/12	22*	-0.10	8.8*	2.2	5,000	0.18
Cs-137	1/12	18	-7.2	3.3	1.9	3,000	f
Gross alpha	6/12	3.3*	-0.49	1.2*	0.33	f	f
Gross beta	3/12	7.9*	-0.87	2.4*	0.73	f	f
7500 Road Bridge							
Co-60	6/12	25*	-0.43	9.7*	2.5	5,000	0.19
Cs-137	9/12	48*	5.0	28*	3.8	3,000	0.95
H-3	12/12	17,000*	1,800*	8,100*	1,500	2,000,000	0.40
Total rad Sr	12/12	32*	18*	27*	1.1	1,000	2.7
First Creek							
Co-60	3/12	19*	-8.6	5.0*	2.5	5,000	0.099
Cs-137	0/12	11	-3.5	4.4*	1.3	3,000	0.15
Total rad Sr	12/12	470*	15*	140*	39	1,000	14
Fifth Creek							
Co-60	5/12	21*	-3.7	7.8*	2.0	5,000	0.16
Cs-137	2/12	18*	-9.9	2.9	2.8	3,000	f
Total rad Sr	12/12	20*	11*	16*	0.87	1,000	1.6
Northwest Tributary							
Co-60	4/12	23*	-11	7.0*	3.0	5,000	0.14
Cs-137	3/12	21*	-7.6	3.4	2.6	3,000	f
Total rad Sr	12/12	48*	2.8*	28*	5.4	1,000	2.8

Table 3.8 (continued)

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
			Raccoon Creek				
Co-60	2/12	28*	-7.8	6.5*	3.1	5,000	0.13
Cs-137	3/12	29*	-1.4	11*	2.4	3,000	0.36
Total rad Sr	11/12	49*	0.25	18*	5.4	1,000	1.8

[a]Individual radionuclide concentrations significantly greater than zero are identified by an *.

[b]Average radionuclide concentrations significantly greater than zero are identified by an *.

[c]Standard error of the mean.

[d]Derived concentration guide for ingestion of water. From DOE Order 5400.5.

[e]Average concentration as a percentage of the derived concentration guide (DCG), calculated only when a DCG exists and the average concentration is significantly greater than zero.

[f]Not applicable.

Table 3.9. 1998 analyses for ORNL reference surface waters

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Standard error[c]	Ref. Value[d]	Percent of Ref. Value[e]
Melton Hill Dam							
Anions (mg/L)							
Sulfate, as SO_4	12/12	23	17	20	0.67	f	f
Field Measurements							
Conductivity (mS/cm)	12/12	0.36	0.13	0.22	0.016	f	f
Dissolved oxygen (mg/L)	12/12	12	6.1	8.1	0.50	f	f
pH (SU)	12/12	8.3	7.2	7.8	0.075	f	f
Temperature (°C)	12/12	22	8.6	16	1.4	f	f
Turbidity (NTU)	12/12	46	2.0	14	3.3	f	f
Metals (mg/L)							
Antimony, total	9/12	0.00080	<0.00010	~0.00045	0.000076	0.006	7.5
Arsenic, total	3/12	0.0015	<0.0010	~0.0011	0.000047	0.05	2.2
Cadmium, total	0/12	<0.00010	<0.00010	~0.00010	0	0.005	f
Chromium, total	7/12	0.0013	<0.00050	~0.00064	0.000073	0.1	0.64
Copper, total	11/12	0.0035	<0.0010	~0.0021	0.00018	f	f
Iron, total	1/12	0.25	<0.25	~0.25	0	f	f
Lead, total	10/12	0.0010	<0.00010	~0.00030	0.000077	0.005	6.0
Nickel, total	5/12	0.0021	<0.0010	~0.0011	0.000092	0.1	1.1
Selenium, total	0/12	<0.0020	<0.0020	~0.0020	0	0.05	f
Silver, total	0/12	<0.00010	<0.00010	~0.00010	0	f	f
Zinc, total	12/12	0.011	0.0048	0.0072	0.00049	f	f
Others (mg/L)							
Oil and grease	0/12	<6.0	<5.4	~5.6	0.042	f	f
Physical (mg/L)							
Total suspended solids	7/12	10	<1.0	~2.4	0.74	f	f
White Oak Creek Headwaters							
Anions (mg/L)							
Sulfate, as SO_4	12/12	4.6	1.7	2.7	0.26	f	f
Field Measurements							
Conductivity (mS/cm)	12/12	0.26	0.033	0.18	0.021	f	f
Dissolved oxygen (mg/L)	12/12	9.7	7.9	8.8	0.14	f	f
pH (SU)	12/12	8.2	7.0	7.7	0.091	f	f
Temperature (°C)	12/12	18	8.3	14	0.89	f	f
Turbidity (NTU)	12/12	210	0	40	19	f	f
Metals (mg/L)							
Antimony, total	7/12	0.00080	<0.00010	~0.00036	0.000067	f	f
Arsenic, total	0/12	<0.0010	<0.0010	~0.0010	0	f	f
Cadmium, total	2/12	0.0016	<0.00010	~0.00023	0.00013	0.0039	5.8
Chromium, total	6/12	0.0026	<0.00050	~0.00094	0.00019	f	f
Copper, total	4/12	0.12	<0.0010	~0.011	0.0097	0.0177	62
Iron, total	8/12	1.7	<0.25	~0.55	0.13	f	f

Table 3.9 (continued)

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Standard error[c]	Ref. Value[d]	Percent of Ref. Value[e]
Lead, total	11/12	0.0038	<0.00010	~0.0011	0.00032	0.0817	1.4
Nickel, total	2/12	0.0040	<0.0010	~0.0014	0.00027	1.418	0.096
Selenium, total	0/12	<0.0020	<0.0020	~0.0020	0	0.02	f
Silver, total	0/12	<0.00010	<0.00010	~0.00010	0	0.0041	f
Zinc, total	12/12	0.069	0.0063	0.016	0.0051	0.117	13
Others (mg/L)							
Oil and grease	0/12	<6.0	<5.4	~5.6	0.048	f	f
Physical (mg/L)							
Total suspended solids	11/12	130	<1.0	~38	11	f	f

[a]Prefix "<" indicates the value of a parameter (excluding organics) was not quantifiable at the analytical detection limit.

[b]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[c]Standard error of the mean.

[d]Tennessee General Water Quality Criteria for Domestic Water Supply is used as a reference value for Melton Hill Dam; Tennessee General Water Quality Criteria for Fish and Aquatic Life is used as a reference value for White Oak Creek headwaters.

[e]Average concentration as a percentage of the reference value, calculated when a reference exists, the parameter is a contaminant, and the parameter is detected.

[f]Not applicable.

Table 3.10. 1998 radionuclide concentrations for ORNL reference surface waters

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
			Melton Hill Dam				
Co-60	5/12	26*	-1.7	8.0*	2.5	5,000	0.16
Cs-137	2/12	20*	-6.4	4.3*	2.0	3,000	0.14
Gross alpha	4/12	3.0*	-0.83	1.2*	0.34	f	f
Gross beta	4/12	6.9*	-3.7	2.7*	0.81	f	f
			White Oak Creek Headwaters				
Co-60	4/12	22*	-0.10	8.8*	2.2	5,000	0.18
Cs-137	1/12	18	-7.2	3.3	1.9	3,000	f
Gross alpha	6/12	3.3*	-0.49	1.2*	0.33	f	f
Gross beta	3/12	7.9*	-0.87	2.4*	0.73	f	f

[a]Individual radionuclide concentrations significantly greater than zero are identified by an *.

[b]Average radionuclide concentrations significantly greater than zero are identified by an *.

[c]Standard error of the mean.

[d]Derived concentration guide for ingestion of water. From DOE Order 5400.5.

[e]Average concentration as a percentage of the derived concentration guide (DCG), calculated only when a DCG exists and the average concentration is significantly greater than zero.

[f]Not applicable.

Table 3.11. 1998 analyses for ORNL Off-site monitoring at the Gallaher and Kingston Water Treatment Plants

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DWS[d]	Percent of DWS[e]
			Gallaher				
Co-60	0/4	1.7	-2.1	0.17	0.84	200	f
Cs-137	1/4	1.7*	-0.80	0.85	0.56	120	f
Gross alpha	2/4	2.0*	0	0.89	0.45	15	f
Gross beta	0/4	2.9	0.25	1.8*	0.61	50	3.5
H-3	2/4	430*	270	340*	36	20,000	1.7
Pu-238	0/4	0.10	-0.027	0.024	0.027	1.6	f
Pu-239/240	0/4	0.029	-0.014	0.018	0.011	1.2	f
Total rad Sr	0/4	0.99	-1.9	0.010	0.66	8	f
Total uranium	0/4	0.22	0.10	0.16*	0.025	20	0.78
			Kingston				
Co-60	1/4	2.2*	-2.6	0.18	1.0	200	f
Cs-137	0/4	1.4	-1.2	0.37	0.60	120	f
Gross alpha	0/4	1.5	0	0.68	0.34	15	f
Gross beta	1/4	3.0*	-1.7	0.77	1.1	50	f
H-3	1/4	290*	-130	130	97	20,000	f
Pu-238	0/4	0.062	0.0062	0.037*	0.014	1.6	2.3
Pu-239/240	0/4	0	-0.031	-0.011	0.0074	1.2	f
Total rad Sr	0/4	1.6	-0.75	0.31	0.50	8	f
Total uranium	1/4	0.40*	0.10	0.24*	0.068	20	1.2

[a]Individual radionuclide concentrations significantly greater than zero are identified by an *.

[b]Average radionuclide concentrations significantly greater than zero are identified by an *.

[c]Standard error of the mean.

[d]Drinking Water Standards (from 40 CFR Parts 141 and 143, and the Tennessee General Water Quality Criteria for Domestic Water Supply). For radionuclides that do not have a drinking water standard, 4% of DCG for ingestion of water (from DOE Order 5400.5) is used.

[e]Average concentration as a percentage of the drinking water standards, calculated when a reference exists and the parameter is a contaminant. For radionuclides, percentage of DWS is calculated only when a reference exists and the average concentration is significantly greater than zero.

[f]Not applicable

Table 3.12. Constituents in Waste Area Grouping (WAG) 1 groundwater at ORNL, March 3-5, 1998

Parameter	N det/ N total	Concentration			Reference value	Number of values exceeding reference [ref][b]
		Max	Min	Av[a]		
Downgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	4/4	1.2	0.65	0.95	c	[c]
Dissolved oxygen (mg/L)	4/4	16	14	15	c	[c]
Redox (mV)	4/4	170	36	90	c	[c]
Temperature (EC)	4/4	14	12	13	30.5	0[1]
Turbidity (JTU)	4/4	47	4.0	17	1	4[2]
pH (SU)	4/4	8.3	6.6	7.1	(6.0, 9.0)	0[1]
Radionuclides, Unfiltered (pCi/L)[d]						
H-3	2/4	11,000*	-200	3,000	20,000	0[2]
Total rad Sr	1/4	5.1*	-1.6	1.9	8	0[2]
Total uranium	2/3	1.8*	0.23	1.2	20	0[4]
U-234	3/3	1.1*	0.20*	0.77	20	0[4]
U-238	2/3	0.71*	0.0070	0.39	24	0[4]

[a]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[b]If a reference limit exists, the source is coded as:
1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria,Domestic Water Supply, as amended.
2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.

[c]Not applicable.

[d]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 3.13. Constituents in Waste Area Grouping (WAG) 2 groundwater at ORNL, January 30-February 12, 1998

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
Downgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	8/8	0.84	0.24	0.56	d	[d]
Dissolved oxygen (mg/L)	8/8	15	13	14	d	[d]
Redox (mV)	8/8	510	68	220	d	[d]
Temperature (EC)	8/8	16	14	15	30.5	0[1]
Turbidity (JTU)	8/8	10	0	6.0	1	7[2]
pH (SU)	8/8	9.3	6.1	7.3	(6.0, 9.0)	1[1]
Metals, Unfiltered (mg/L)						
Aluminum, total	2/4	0.086	<0.020	~0.037	(0.05, 0.20)	3[3]
Arsenic, total	2/4	0.0093	<0.0010	~0.0032	0.05	0[1]
Barium, total	4/4	0.98	0.14	0.38	2	0[1]
Boron, total	4/4	0.041	0.015	0.028	d	[d]
Calcium, total	4/4	140	52	94	d	[d]
Chromium, total	2/4	1.6	<0.010	~0.43	0.1	1[1]
Cobalt, total	1/4	0.011	<0.0050	~0.0065	d	[d]
Copper, total	3/4	0.0051	<0.0040	~0.0045	1.3	0[2]
Iron, total	4/4	16	1.1	7.8	0.3	4[3]
Lead, total	4/4	0.0054	0.0010	0.0022	0.005	1[1]
Lithium, total	2/4	0.023	<0.0040	~0.011	d	[d]
Magnesium, total	4/4	20	5.4	12	d	[d]
Manganese, total	4/4	0.32	0.0092	0.14	0.05	3[3]
Nickel, total	2/4	0.077	<0.010	~0.032	0.1	0[1]
Potassium, total	4/4	3.2	1.1	1.9	d	[d]
Sodium, total	4/4	15	11	13	d	[d]
Strontium, total	4/4	0.73	0.099	0.32	d	[d]
Zinc, total	4/4	0.0094	0.0048	0.0068	5	0[3]
Radionuclides, Unfiltered (pCi/L)[e]						
Gross alpha	2/8	4.2*	-1.7	1.3*	15	0[2]
Gross beta	1/8	600*	1.8	79	50	1[2]
H-3	5/8	120,000*	-51	37,000*	20,000	3[2]
Total rad Sr	1/8	310*	-1.4	40	8	1[2]
Volatile organics, Unfiltered (Fg/L)						
1,2-Dichloroethene	1/4	U5.0	J1.0	~4.0	d	[d]
2-Butanone	4/4	JB4.0	JB3.0	~3.5	d	[d]
Acetone	4/4	J8.0	J1.0	~4.5	d	[d]
Tetrachloroethene	1/4	U5.0	J3.0	~4.5	5	0[1]
Trichloroethene	1/4	U5.0	J2.0	~4.3	5	0[1]
cis-1,2-Dichloroethene	1/4	U5.0	J1.0	~4.0	d	[d]
Upgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	12/12	0.69	0.26	0.50	d	[d]
Dissolved oxygen (mg/L)	12/12	18	6.6	14	d	[d]
Redox (mV)	12/12	470	140	260	d	[d]
Temperature (EC)	12/12	14	11	13	30.5	0[1]
Turbidity (JTU)	12/12	10	3.0	8.8	1	12[2]
pH (SU)	12/12	8.9	6.4	7.3	(6.0, 9.0)	0[1]

Table 3.13 (continued)

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
Radionuclides, Unfiltered (pCi/L)[e]						
Co-60	1/12	59*	-0.98	5.9	200	0[4]
Gross alpha	6/12	7.6*	-0.37	3.3*	15	0[2]
Gross beta	2/12	320*	-0.82	31	50	1[2]
H-3	6/12	390,000*	-270	34,000	20,000	1[2]
K-40	3/12	79*	-42	18	280	0[4]
Total rad Sr	1/12	4.7*	-2.2	0.45	8	0[2]

[a]Prefix "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank; and "U" indicates the value for an organic parameter was undetected at the analytical detection limit.

[b]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[c]If a reference limit exists, the source is coded as:

1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.

2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.

3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.

4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.

[d]Not applicable.

[e]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 3.14. Constituents in Waste Area Groupings (WAGs) 8&9 groundwater at ORNL, January 12-20, 1998

Parameter	N det/ N total	Max	Min	Av	Reference value	Number of values exceeding reference [ref][a]
Downgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	9/9	0.89	0.27	0.52	b	[b]
Dissolved oxygen (mg/L)	9/9	19	0.060	8.1	b	[b]
Redox (mV)	9/9	290	160	230	b	[b]
Temperature (EC)	9/9	16	12	15	30.5	0[1]
Turbidity (JTU)	9/9	10	10	10	1	9[2]
pH (SU)	9/9	9.5	6.2	7.4	(6.0, 9.0)	1[1]
Radionuclides, Unfiltered (pCi/L)[c]						
Gross alpha	2/9	6.7*	2.5	4.2*	15	0[2]
Gross beta	3/9	1,400*	-1.2	350*	50	3[2]
H-3	2/9	53,000*	-310	6,100	20,000	1[2]
Total rad Sr	3/9	630*	-1.8	120	8	2[2]
Upgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	2/2	0.38	0.37	0.38	b	[b]
Dissolved oxygen (mg/L)	2/2	3.2	1.8	2.5	b	[b]
Redox (mV)	2/2	310	200	260	b	[b]
Temperature (EC)	2/2	15	15	15	30.5	0[1]
Turbidity (JTU)	2/2	19	1.0	10	1	1[2]
pH (SU)	2/2	8.6	6.5	7.6	(6.0, 9.0)	0[1]

[a]If a reference limit exists, the source is coded as:
1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.
2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.

[b]Not applicable.

[c]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 3.15. Constituents in Waste Area Grouping (WAG) 17 groundwater at ORNL, February 18-26, 1998

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref[c]]
Downgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	4/4	0.75	0.45	0.64	d	[d]
Dissolved oxygen (mg/L)	4/4	15	10	13	d	[d]
Redox (mV)	4/4	300	220	250	d	[d]
Temperature (EC)	4/4	19	12	16	30.5	0[1]
Turbidity (JTU)	4/4	9.0	1.0	4.0	1	3[2]
pH (SU)	4/4	7.1	6.7	6.9	(6.0, 9.0)	0[1]
Radionuclides, Unfiltered (pCi/L)[e]						
Gross alpha	1/4	4.9*	-0.41	2.0	15	0[2]
H-3	3/3	5,500*	1,100*	3,000	20,000	0[2]
Volatile organics, Unfiltered (Fg/L)						
1,1,1-Trichloroethane	1/4	U5.0	J3.0	~4.5	200	0[1]
1,1-Dichloroethene	1/4	21	U5.0	~9.0	7	1[1]
1,2-Dichloroethene	3/4	3,000	J1.0	~760	d	[d]
2-Butanone	3/4	U10	JB3.0	~5.3	d	[d]
Acetone	3/4	U10	JB2.0	~4.5	d	[d]
Benzene	1/4	12	U5.0	~6.8	5	1[1]
Tetrachloroethene	1/4	23	U5.0	~9.5	5	1[1]
Trichloroethene	4/4	14,000	J1.0	~3,500	5	2[1]
Vinyl chloride	1/4	96	U10	~32	2	4[1]
cis-1,2-Dichloroethene	3/4	3,000	J1.0	~760	d	[d]
trans-1,2-Dichloroethene	1/4	16	U5.0	~7.8	d	[d]
Upgradient Wells						
Field measurements, Unfiltered						
Conductivity (mS/cm)	4/4	0.66	0.45	0.57	d	[d]
Dissolved oxygen (mg/L)	4/4	15	14	14	d	[d]
Redox (mV)	4/4	340	150	280	d	[d]
Temperature (EC)	4/4	14	13	14	30.5	0[1]
Turbidity (JTU)	4/4	10	0	3.3	1	2[2]
pH (SU)	4/4	7.3	6.7	7.1	(6.0, 9.0)	0[1]
Radionuclides, Unfiltered (pCi/L)[e]						
Gross alpha	1/4	6.2*	0.082	2.2	15	0[2]
H-3	4/4	4,900*	1,700*	3,300*	20,000	0[2]
Total rad Sr	1/4	4.4*	-1.7	1.2	8	0[2]

Table 3.15 (continued)

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref[c]
Volatile organics, Unfiltered (Fg/L)						
2-Butanone	3/4	U10	JB3.0	~5.0	d	[d]
Acetone	3/4	U10	JB2.0	~4.0	d	[d]
Carbon tetrachloride	1/4	U5.0	J1.0	~4.0	5	0[1]

[a]Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank; and "U" indicates the value for an organic parameter was undetected at the analytical detection limit.

[b]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[c]If a reference limit exists, the source is coded as:

1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.

2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.

3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.

4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.

[d]Not applicable.

[e]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.1. ORNL Plant Perimeter Monitoring summary statistics from 1998 sampling events

Parameter	N det/ N total	Concentration			Reference value	Number of values exceeding reference [ref][c]
		Max[a]	Min[a]	Av[b]		
Melton Valley Exit Pathway						
Field Measurements -- Unfiltered						
Conductivity (mS/cm)	11/11	0.86	0.010	0.38	d	[d]
Dissolved oxygen (ppm)	11/11	14	0.35	7.4	d	[d]
Temperature (EC)	11/11	17	15	16	30.5	0[2]
pH (SU)	11/11	9.3	4.4	6.9	(6.0, 9.0)	3[2]
Metals (mg/L) -- Unfiltered						
Aluminum	5/10	0.89	< 0.020	~ 0.22	(0.05, 0.20)	6[4]
Arsenic	2/4	0.0093	< 0.0010	~ 0.0032	0.05	0[2]
Barium	10/10	0.98	0.011	0.21	2	0[2]
Boron	6/10	0.68	0.015	~ 0.15	d	[d]
Calcium	10/10	140	0.54	43	d	[d]
Chromium	2/10	1.6	< 0.010	~ 0.18	0.1	1[2]
Cobalt	1/10	< 0.020	< 0.0050	~ 0.015	d	[d]
Copper	3/10	< 0.020	< 0.0040	~ 0.014	1.3	0[3]
Iron	8/10	16	< 0.050	~ 3.2	0.3	5[4]
Lead	4/4	0.0054	0.0010	0.0022	0.005	1[2]
Lithium	4/10	0.034	< 0.0040	~ 0.015	d	[d]
Magnesium	10/10	20	0.49	6.4	d	[d]
Manganese	9/10	0.32	< 0.0050	~ 0.066	0.05	3[4]
Nickel	2/10	0.077	< 0.010	~ 0.043	0.1	0[2]
Potassium	4/10	3.2	1.1	~ 2.0	d	[d]
Sodium	10/10	220	1.0	34	d	[d]
Strontium	8/10	0.73	< 0.0050	~ 0.18	d	[d]
Sulfur	4/6	12	< 0.50	~ 3.3	d	[d]
Zinc	4/10	< 0.050	0.0048	~ 0.033	5	0[4]
Radionuclides (pCi/L) -- Filtered[e]						
Cs-137	1/1	17*	17*	17	120	0[1]
Gross alpha	1/1	16*	16*	16	15	1[3]
Gross beta	1/1	150*	150*	150	50	1[3]
H-3	1/1	33,000*	33,000*	33,000	80,000	0[1]
Total rad Sr	1/1	57*	57*	57	40	1[1]
Total uranium	1/1	13*	13*	13	d	[d]
U-234	1/1	13*	13*	13	20	0[1]
U-238	1/1	0.65*	0.65*	0.65	24	0[1]
Radionuclides (pCi/L) -- Unfiltered[e]						
Be-7	1/9	12*	-140	-19	40,000	0[1]
Co-60	4/11	4.7	-0.65	1.5*	200	0[1]
Cs-137	2/11	16*	-7.6	1.1	120	0[1]
Gross alpha	7/11	17*	-0.67	4.8*	15	1[3]
Gross beta	9/11	600*	-0.58	73	50	2[3]
H-3	8/11	110,000*	-540	19,000	80,000	1[1]
Total rad Sr	2/11	310*	-2.8	34	40	2[1]
Total uranium	4/4	15*	0.080*	4.4	d	[d]
U-234	3/4	14*	0.041	4.0	20	0[1]
U-235	3/4	0.11*	0*	0.056	24	0[1]
U-236	1/2	0.022	0*	0.011	20	0[1]
U-238	4/4	0.81*	0*	0.37	24	0[1]

Table 4.1 (continued)

Parameter	N det/ N total	Concentration Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
Volatile Organics (Fg/L) -- Unfiltered						
1,2-Dichloroethene	1/11	U 5.0	J 1.0	~ 4.6	d	[d]
2-Butanone	4/11	U 10	JB 3.0	~ 7.6	d	[d]
Acetone	7/11	U 10	JB 1.0	~ 5.9	d	[d]
Tetrachloroethene	1/11	U 5.0	J 3.0	~ 4.8	5	0[2]
Trichloroethene	1/11	U 5.0	J 2.0	~ 4.7	5	0[2]
cis-1,2-Dichloroethene	1/11	U 5.0	J 1.0	~ 4.6	d	[d]

[a]Prefix "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank; and "U" indicates the value for an organic parameter was undetected at the analytical detection limit.

[b]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[c]If a reference limit exists, the source is coded as:

1 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.

2 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.

3 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.

4 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.

[d]Not applicable.

[e]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.2. 1998 surface water analyses at EMP surface water locations[a]

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
First Creek just upstream of Northwest Tributary (1STCK)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	11	5.5	8.4	2.9	f
pH (SU)	2/2	8.2	7.8	8.0	0.20	f
Temperature (EC)	2/2	20	13	16	3.6	f
Radionuclides (pCi/L)[g]						
Cs-137	1/2	1.4*	1.4	1.4	0	120
Gross alpha	1/2	31*	1.1	16	15	f
Gross beta	2/2	600*	14*	310	290	f
H-3	2/2	200*	180*	190*	10	80,000
Total rad Sr	2/2	230*	12*	120	110	40
Total uranium	1/1	28*	28*	28	f	20
U-234	1/1	28*	28*	28	f	20
U-238	1/1	0.52*	0.52*	0.52	f	24
Bear Creek downstream from all possible DOE inputs (BCK 0.6)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	12	3.2	7.4	4.2	f
pH (SU)	2/2	8.1	7.6	7.9	0.25	f
Temperature (EC)	2/2	18	9.4	14	4.4	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	3.1*	1.7	2.4	0.70	200
Gross alpha	2/2	6.1*	5.2*	5.7*	0.45	f
Gross beta	2/2	5.7*	4.6*	5.2*	0.55	f
Total uranium	1/1	5.2*	5.2*	5.2	f	20
U-234	2/2	2.0*	1.9*	2.0*	0.050	20
U-235	1/2	0.080*	0.080	0.080	0	24
U-238	2/2	4.2*	3.1*	3.7*	0.55	24
Clinch River downstream from all DOE inputs (CRK 16)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	4.0	7.7	0.53	f
pH (SU)	12/12	8.3	7.2	7.8	0.092	f
Temperature (EC)	12/12	23	8.0	17	1.4	f
Metals (mg/L)						
Aluminum, total	6/12	0.95	<0.20	~0.33	0.062	f
Barium, total	8/12	<0.10	0.029	~0.055	0.0096	f
Calcium, total	12/12	38	28	32	0.95	f
Iron, total	12/12	0.86	0.063	0.28	0.064	f
Magnesium, total	12/12	10	6.7	8.7	0.35	f
Manganese, total	12/12	0.14	0.037	0.058	0.0081	f
Potassium, total	5/12	2.5	1.4	~1.9	0.094	f
Sodium, total	12/12	5.6	3.5	4.3	0.20	f
Zinc, total	1/12	<0.050	<0.020	~0.041	0.0040	f
Radionuclides (pCi/L)[g]						
Be-7	2/11	20*	-23	2.2	3.7	40,000
Co-60	2/12	5.1*	-1.9	1.1*	0.50	200
Cs-137	2/12	2.5*	-0.59	0.68*	0.26	120

Table 4.2 (continued)

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Gross alpha	3/12	1.2*	-0.93	0.26	0.17	f
Gross beta	11/12	7.2*	2.1*	3.3*	0.51	f
K-40	5/12	250*	-36	47	27	280
Volatile Organics (Fg/L)						
Benzene	1/12	U10	J1.0	~7.6	0.92	12
Ethylbenzene	1/12	U10	J1.0	~7.6	0.92	3,100
Toluene	1/12	U10	U5.0	~8.2	0.69	6,800
Water supply intake for the K-25 Site (CRK 23)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	4.2	8.1	0.59	f
pH (SU)	12/12	8.4	7.2	7.9	0.092	f
Temperature (EC)	12/12	22	7.1	16	1.5	f
Metals (mg/L)						
Aluminum, total	7/12	0.68	0.15	~0.28	0.046	f
Barium, total	8/12	<0.10	0.028	~0.055	0.0097	f
Calcium, total	12/12	38	29	33	0.78	f
Iron, total	12/12	0.71	0.067	0.24	0.060	f
Magnesium, total	12/12	10	7.6	9.1	0.29	f
Manganese, total	12/12	0.092	0.029	0.048	0.0060	f
Potassium, total	6/12	2.2	1.6	~1.9	0.059	f
Sodium, total	12/12	6.3	3.6	4.7	0.27	f
Radionuclides (pCi/L)[g]						
Be-7	2/11	27*	-23	3.5	3.8	40,000
Co-60	4/12	2.9*	-4.6	0.72	0.56	200
Cs-137	6/12	3.9*	-0.15	1.4*	0.36	120
Gross alpha	1/12	0.91*	-1.3	0.17	0.18	f
Gross beta	7/12	9.6*	-0.78	2.6*	0.83	f
H-3	5/12	940*	-110	230*	97	80,000
K-40	2/12	200*	-56	11	20	280
Radium-228	1/1	14*	14*	14	f	f
Total rad Sr	1/12	2.8*	-0.82	0.54	0.33	40
Volatile Organics (Fg/L)						
Tetrachloroethene	1/12	U10	J1.0	~8.0	0.90	8
Toluene	1/12	U10	J2.0	~7.7	0.86	6,800
Clinch River downstream from ORNL (CRK 32)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	5.0	8.0	0.56	f
pH (SU)	12/12	8.4	7.3	7.9	0.10	f
Temperature (EC)	12/12	22	7.3	16	1.5	f
Radionuclides (pCi/L)[g]						
Co-60	1/12	3.3	-3.0	0.76	0.47	200
Gross alpha	2/12	2.4*	-0.66	0.49*	0.21	f

Gross beta	9/12	18*	-0.28	4.0*	1.4	f

Table 4.2 (continued)

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
H-3	8/12	6,900*	60	920	550	80,000
K-40	1/12	150	-22	21	13	280
Total rad Sr	5/12	5.6*	-0.44	1.8*	0.64	40
Water supply intake for Knox County (CRK 58)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	4.9	8.0	0.54	f
pH (SU)	12/12	8.6	7.0	7.7	0.14	f
Temperature (EC)	12/12	27	8.0	17	1.7	f
Radionuclides (pCi/L)[g]						
Co-60	3/12	3.2*	-1.7	0.81*	0.44	200
Cs-137	5/12	4.8*	-1.4	1.6*	0.54	120
Gross alpha	2/12	1.7*	-0.36	0.50*	0.19	f
Gross beta	7/12	5.4*	-1.1	2.1*	0.54	f
K-40	2/12	250*	-35	26	22	280
Melton Hill Reservoir above City of Oak Ridge water intake (CRK 66)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	4.9	8.0	0.54	f
pH (SU)	12/12	8.4	7.0	7.6	0.15	f
Temperature (EC)	12/12	27	7.6	17	1.6	f
Radionuclides (pCi/L)[g]						
Be-7	1/11	15*	-4.7	4.7*	1.9	40,000
Co-60	5/12	2.4*	-1.7	0.81*	0.42	200
Cs-137	1/12	2.3*	-1.3	0.41	0.31	120
Gross beta	6/12	4.6*	-1.7	1.9*	0.53	f
K-40	3/12	110*	-41	26*	13	280
Radium-228	1/1	28*	28*	28	f	f
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	9.9	5.0	7.6	0.55	f
pH (SU)	12/12	8.3	6.9	7.6	0.15	f
Temperature (EC)	12/12	26	7.3	17	1.5	f
Metals (mg/L)						
Aluminum, total	5/12	1.1	<0.10	~0.35	0.096	f
Barium, total	8/12	<0.10	0.029	~0.055	0.0097	f
Calcium, total	12/12	37	29	33	0.87	f
Copper, total	1/12	<0.020	<0.0040	~0.015	0.0022	f
Iron, total	12/12	1.2	0.052	0.33	0.12	f
Lead, total	1/12	0.13	<0.050	~0.086	0.0080	f
Magnesium, total	12/12	11	7.8	9.4	0.32	f
Manganese, total	12/12	0.16	0.033	0.066	0.011	f
Potassium, total	5/12	2.1	1.5	~1.9	0.060	f

Table 4.2 (continued)

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Sodium, total	12/12	7.2	3.5	5.0	0.35	f
Zinc, total	3/12	0.095	<0.020	~0.045	0.0060	f
Radionuclides (pCi/L)[g]						
Be-7	1/11	15*	-21	0.38	3.0	40,000
Co-60	1/12	2.8*	-0.55	0.84*	0.25	200
Cs-137	1/12	1.9*	-42	-3.6	3.5	120
Gross alpha	2/12	1.3	-0.20	0.57*	0.14	f
Gross beta	9/12	5.4*	0.31	2.6*	0.45	f
H-3	3/12	210*	-110	45	32	80,000
K-40	2/12	130*	-51	9.4	15	280
Volatile Organics (Fg/L)						
1,1,1-Trichloroethane	1/12	U10	J2.0	~7.7	0.86	f
East Fork Polpar Creek prior to entering Poplar Creek (EFK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	6.5	3.3	4.9	1.6	f
pH (SU)	2/2	8.1	7.7	7.9	0.20	f
Temperature (EC)	2/2	21	15	18	2.7	f
Radionuclides (pCi/L)[g]						
Gross alpha	2/2	3.0*	2.1*	2.6	0.45	f
Gross beta	1/2	5.4*	-0.57	2.4	3.0	f
Total uranium	1/1	2.5*	2.5*	2.5	f	20
U-234	1/1	1.0*	1.0*	1.0	f	20
U-238	1/1	1.4*	1.4*	1.4	f	24
East Fork Poplar Creek downstream from floodplain (EFK 5.4)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	9.3	7.0	8.2	1.2	f
pH (SU)	2/2	8.2	7.4	7.8	0.40	f
Temperature (EC)	2/2	20	11	16	4.5	f
Radionuclides (pCi/L)[g]						
Co-60	2/2	3.0*	2.8*	2.9*	0.10	200
Gross alpha	1/2	2.5*	1.3	1.9	0.60	f
Gross beta	2/2	4.5*	4.2*	4.4*	0.15	f
Total uranium	1/1	3.0*	3.0*	3.0	f	20
U-234	1/1	1.5*	1.5*	1.5	f	20
U-238	1/1	1.4*	1.4*	1.4	f	24
Fifth Creek just upstream of White Oak Creek at ORNL (FIFTHCK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	11	8.0	9.3	1.3	f
pH (SU)	2/2	8.4	7.8	8.1	0.30	f
Temperature (EC)	2/2	19	14	16	2.9	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	2.9*	1.2	2.1	0.85	200

Table 4.2 (continued)

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Cs-137	1/2	1.8*	0.65	1.2	0.58	120
Gross alpha	1/2	2.4*	1.1	1.8	0.65	f
Gross beta	2/2	42*	29*	36	6.5	f
H-3	2/2	740*	320*	530	210	80,000
Total rad Sr	2/2	18*	9.9*	14	4.1	40
Total uranium	1/1	1.6*	1.6*	1.6	f	20
U-234	2/2	1.4*	0.37*	0.89	0.52	20
U-235	1/2	0.062	0*	0.031	0.031	24
U-238	2/2	0.22*	0.22*	0.22	0	24
Grassy Creek upstream of SEG and IT Corp. at CRK 23 (GCK 3.6)						
Field Measurements						
Dissolved oxygen (ppm)	1/1	13	13	13	f	f
pH (SU)	1/1	7.3	7.3	7.3	f	f
Temperature (EC)	1/1	9.8	9.8	9.8	f	f
Ish Creek prior to entering CRK 30.8 (ICK 0.7)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	11	8.5	9.7	1.2	f
pH (SU)	2/2	8.4	7.4	7.9	0.50	f
Temperature (EC)	2/2	15	14	14	0.35	f
Radionuclides (pCi/L)[g]						
Cs-137	2/2	3.2*	2.6*	2.9*	0.30	120
McCoy Branch prior to entering CRK 60.3 (MCCBK 1.8)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	10	3.6	6.9	3.3	f
pH (SU)	2/2	7.7	7.6	7.7	0.050	f
Temperature (EC)	2/2	16	9.6	13	3.0	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	2.7*	0.90	1.8	0.90	200
Melton Branch downstream from ORNL (MEK 0.2)						
Field Measurements						
Dissolved oxygen (ppm)	6/6	11	7.0	8.6	0.73	f
pH (SU)	6/6	8.1	7.1	7.6	0.18	f
Temperature (EC)	6/6	26	8.8	16	2.8	f
Radionuclides (pCi/L)[g]						
Co-60	4/6	2.4*	-0.17	1.6*	0.36	200
Cs-137	1/6	2.1*	-0.85	0.26	0.47	120
Gross alpha	3/6	1.8*	0.23	1.1*	0.23	f
Gross beta	6/6	620*	88*	390*	83	f
H-3	6/6	800,000*	50,000*	350,000*	100,000	80,000
K-40	1/6	38*	-48	3.6	14	280
Total rad Sr	6/6	410*	28*	230*	55	40

Total uranium	1/1	11*	11*	11	f	20

Table 4.2 (continued)

Parameter	N det/ N total	Concentration				
		Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
U-234	2/2	11*	0.20*	5.6	5.4	20
U-238	2/2	1.2*	0.58*	0.89	0.31	24
Mitchell Branch upstream from the K-25 Site (MIK 1.4)						
Field Measurements						
Dissolved oxygen (ppm)	4/4	9.7	4.0	6.9	1.2	f
pH (SU)	4/4	8.5	7.6	7.9	0.21	f
Temperature (EC)	4/4	20	6.8	14	2.8	f
Radionuclides (pCi/L)[g]						
Gross alpha	2/4	2.0*	0.18	0.94*	0.39	f
Gross beta	1/4	2.9	0.81	1.7*	0.46	f
Total uranium	1/1	27*	27*	27	f	20
U-234	1/1	25*	25*	25	f	20
U-238	1/1	1.1*	1.1*	1.1	f	24
Northwest Tributary prior to entering 1st Creek at ORNL (NWTK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	9.0	5.3	7.2	1.9	f
pH (SU)	2/2	8.2	7.9	8.1	0.15	f
Temperature (EC)	2/2	20	12	16	4.3	f
Radionuclides (pCi/L)[g]						
Be-7	2/2	18*	18*	18	0	40,000
Co-60	1/2	3.2*	-0.39	1.4	1.8	200
Cs-137	1/2	2.3*	0.74	1.5	0.78	120
Gross beta	2/2	88*	6.0*	47	41	f
H-3	1/2	1,700*	91	900	800	80,000
Total rad Sr	1/2	40*	1.6	21	19	40
Raccoon Creek sampling station prior to entering CRK 31 (RCK 2.0)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	9.6	1.2	5.4	4.2	f
pH (SU)	2/2	7.4	7.4	7.4	0	f
Temperature (EC)	2/2	17	10	14	3.6	f
Radionuclides (pCi/L)[g]						
Gross beta	2/2	110*	7.4*	59	51	f
H-3	2/2	330*	200*	270	65	80,000
Total rad Sr	1/2	45*	1.5	23	22	40
Field Measurements						
Dissolved oxygen (ppm)	1/1	11	11	11	f	f
pH (SU)	1/1	8.1	8.1	8.1	f	f
Temperature (EC)	1/1	11	11	11	f	f

Table 4.2 (continued)

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
White Oak Lake at White Oak Dam (WCK 1.0)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	10	2.8	7.0	0.68	f
pH (SU)	12/12	8.2	7.0	7.7	0.11	f
Temperature (EC)	12/12	29	8.9	19	2.1	f
Radionuclides (pCi/L)[g]						
Be-7	1/11	19*	-17	1.1	3.3	40,000
Co-60	8/12	5.9*	0.54	2.4*	0.44	200
Cs-137	11/12	200*	0.85	34*	16	120
Gross alpha	11/12	27*	1.4	10*	2.5	f
Gross beta	12/12	330*	140*	220*	17	f
H-3	12/12	140,000*	16,000*	68,000*	10,000	80,000
Total rad Sr	12/12	130*	65*	95*	6.9	40
Total uranium	4/4	35*	6.3*	17*	6.4	20
U-233	1/1	5.4*	5.4*	5.4	f	f
U-234	9/9	32*	3.5*	12*	3.3	20
U-235	3/9	0.58*	0.012	0.12*	0.060	24
U-236	2/2	0.089*	0*	0.045	0.045	20
U-238	10/10	9.8*	0.56*	1.9*	0.89	24
White Oak Creek downstream from ORNL (WCK 2.6)						
Field Measurements						
Dissolved oxygen (ppm)	6/6	10	6.6	8.6	0.58	f
pH (SU)	6/6	8.3	7.3	7.8	0.17	f
Temperature (EC)	6/6	24	13	18	2.0	f
Radionuclides (pCi/L)[g]						
Co-60	2/6	3.7*	-1.5	0.99	0.73	200
Cs-137	6/6	24*	9.4*	17*	2.0	120
Gross alpha	5/6	34*	-0.074	8.9	5.2	f
Gross beta	6/6	200*	74*	140*	23	f
H-3	6/6	43,000*	800*	12,000	6,400	80,000
K-40	1/6	78*	-47	11	18	280
Total rad Sr	6/6	92*	20*	59*	13	40
Total uranium	1/1	9.9*	9.9*	9.9	f	20
U-234	4/4	38*	1.1*	13	8.7	20
U-235	2/4	0.010	-0.023	-0.0033	0.0070	24
U-236	2/2	0.076*	0*	0.038	0.038	20
U-238	4/4	1.9*	0.43*	0.97*	0.33	24
White Oak Creek upstream from ORNL (WCK 6.8)						
Field Measurements						
Dissolved oxygen (ppm)	4/4	11	7.1	9.0	0.83	f
pH (SU)	4/4	7.9	7.2	7.6	0.15	f
Temperature (EC)	4/4	16	9.9	13	1.3	f

Table 4.2 (continued)

Parameter	N det/ N total	Concentration				
		Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Radionuclides (pCi/L)[g]						
Co-60	2/4	2.7*	-4.0	0.11	1.5	200
Gross alpha	1/4	0.89*	-0.34	0.48	0.28	f
Gross beta	1/4	1.6*	0.53	1.2*	0.23	f
H-3	2/4	160*	-74	92	55	80,000

[a]All values were included in the calculations. Only parameters that have one or more samples detected are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.

[b]Prefix "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "U" indicates the value for an organic parameter was undetected at the analytical detection limit; and "J" indicates the value was estimated at or below the analytical detection limit by the laboratory.

[c]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[d]Standard error of the mean.

[e]Tennessee General Water Quality Criteria for Recreation and Domestic Use, as amended (CRK 16, CRK 23, CRK 32, CRK 58, CRK 66, CRK 70) or Tennessee General Water Quality Criteria for Freshwater Fish and Aquatic Life, as amended (BCK 0.6, EFK 0.1, EFK 5.4, MEK 0.2, WCK 1.0, WCK 2.6, WCK 6.8). 4% of DOE DCG used for radionuclides, where applicable.

[f]Not applicable.

[g]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.3. 1998 tissue concentrations in Catfish[a]

Parameter	Concentration
Clinch River downstream from all DOE inputs (CRK 16)	
Metals (mg/kg wet wt)	
Mercury, total	0.20
Nickel, total	5.9
Zinc, total	8.1
Pesticides (Fg/kg wet wt)	
4,4'-DDE	36
PCBs (Fg/kg wet wt)	
Aroclor-1260	420
Radionuclides (pCi/g ash wt)[b]	
Cs-137	0.41*
Gross alpha	2.5*
Gross beta	87*
K-40	89*
Radionuclides (pCi/g wet wt)[b]	
Cs-137	0.013*
Gross alpha	0.080*
Gross beta	2.8*
K-40	2.8*
Clinch River downstream from ORNL (CRK 32)	
Metals (mg/kg wet wt)	
Mercury, total	0.11
Zinc, total	7.5
Pesticides (Fg/kg wet wt)	
4,4'-DDE	100
PCBs (Fg/kg wet wt)	
Aroclor-1260	1,600
Radionuclides (pCi/g ash wt)[b]	
Cs-137	1.4*
Gross alpha	1.7*
Gross beta	140*
K-40	200*
Radionuclides (pCi/g wet wt)[b]	
Cs-137	0.028*
Gross alpha	0.034*
Gross beta	2.8*
K-40	4.0*
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)	
Metals (mg/kg wet wt)	
Mercury, total	0.12
Zinc, total	15
Pesticides (Fg/kg wet wt)	
4,4'-DDE	39

Table 4.3 (continued)

Parameter	Concentration
PCBs (Fg/kg wet wt)	
Aroclor-1260	370
Radionuclides (pCi/g ash wt)[b]	
Gross beta	110*
K-40	160*
Radionuclides (pCi/g wet wt)[b]	
Gross beta	2.8*
K-40	4.0*

[a]Only parameters that are detected are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.

[b]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.4. 1998 tissue concentrations in Sunfish[a]

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]
Clinch River downstream from all DOE inputs (CRK 16)					
Metals (mg/kg wet wt)					
Mercury, total	6/6	0.080	0.046	0.058	0.0054
Zinc, total	6/6	18	8.9	12	1.4
Pesticides (Fg/kg wet wt)					
Dieldrin	4/6	U480	JN5.7	~89	78
Dieldrin[e]	3/3	JP9.1	JP6.7	~8.1	0.71
PCBs (Fg/kg wet wt)					
Aroclor-1260	6/6	J73	J38	~55	5.4
Radionuclides (pCi/g)[f]					
Co-60	1/3	0.19*	0.0098	0.081	0.055
Cs-137	3/3	0.81*	0.54*	0.69*	0.079
Gross beta	3/3	160*	140*	150*	6.7
K-40	3/3	220*	190*	210*	8.8
Total rad Sr	2/3	9.6*	4.6	7.7*	1.6
Clinch River downstream from ORNL (CRK 32)					
Metals (mg/kg wet wt)					
Mercury, total	1/6	0.030	<0.017	~0.024	0.0017
Zinc, total	6/6	24	9.6	14	2.3
Pesticides (Fg/kg wet wt)					
Dieldrin	4/6	U19	JP9.2	~14	1.9
Dieldrin[e]	4/4	JP15	JP9.2	~11	1.4
Endosulfan I	6/6	JP9.1	JP4.6	~6.6	0.70
Endosulfan II[e]	5/5	JP9.1	JP4.6	~6.5	0.85
PCBs (Fg/kg wet wt)					
Aroclor-1260	6/6	140	J58	~88	14
Radionuclides (pCi/g)[f]					
Cs-137	3/3	4.5*	2.5*	3.4*	0.59
Gross beta	3/3	190*	170*	180*	5.8
K-40	3/3	220*	190*	200*	8.8
Total rad Sr	3/3	9.8*	6.9*	8.7*	0.91
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)					
Metals (mg/kg wet wt)					
Mercury, total	6/6	0.048	0.022	0.037	0.0040
Zinc, total	6/6	21	8.2	12	2.0
Pesticides (Fg/kg wet wt)					
Dieldrin	4/6	U25	J1.1	~13	3.4
Dieldrin[e]	3/3	JP12	JP9.3	~11	0.79
Endosulfan I	4/6	U15	JP4.8	~9.7	1.5
Endosulfan II[e]	4/4	JP9.7	JP4.8	~7.6	1.1

Table 4.4 (continued)

Parameter	N det/ N total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]
PCBs (Fg/kg wet wt)					
Aroclor-1260	6/6	J100	J39	~59	11
Radionuclides (pCi/g)[f]					
Co-60	2/3	0.23*	0.028	0.15	0.063
Cs-137	1/3	0.19*	0.034	0.12	0.047
Gross beta	3/3	180*	150*	160*	10
K-40	3/3	200*	160*	180*	12
Total rad Sr	1/3	9.4*	1.5	5.5	2.3

[a]All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.

[b]Prefix "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "U" indicates the value for an organic parameter was undetected at the analytical detection limit; "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; and “JN” indicates that the pesticide was run on two columns and both peaked however there was a discrepancy between the two columns above the allowed % difference and the higher value was reported.

[c]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.

[d]Standard error of the mean.

[e]These pesticides are identified with a “JP” prefix. This indicates that something is there but the two columns disagreed by at least 50%. The value is acceptable but what compound it is is in question.

[f]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.5. Radiological constituents in settleable solids sites near the ORR, 1998[a]

Event	Co-60	Cs-137	Gross alpha	Gross beta
Melton Branch upstream from ORNL (MEK 2.1)				
March	b	b	15,000	31,000
June	b	b	480	910
White Oak Lake at White Oak Dam (WCK 1.0)				
March	6,600	560,000	44,000	590,000
June	1,400	84,000	2,500	85,000
White Oak Creek downstream from ORNL (WCK 2.6)				
March	b	720,000	26,000	680,000
June	820	140,000	3,800	140,000

[a]All data are given in picocuries per kilogram (1 pCi = 3.7E-02 Bq).
[b]No significant result.

Table 4.6. 1998 concentrations at EMP sediment locations[a]

Parameter	Concentration[b]
Clinch River downstream from all DOE inputs (CRK 16)	
Radionuclides (pCi/kg)	
Co-60	19*
Cs-137	68*
K-40	7,900*
Clinch River downstream from ORNL (CRK 32)	
Radionuclides (pCi/kg)	
Be-7	92*
Co-60	18*
Cs-137	950*
K-40	14,000*
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)	
Radionuclides (pCi/kg)	
Be-7	94*
K-40	5,300*

[a]All values were included in the calculations. Only parameters that have one or more samples detected are listed in the table. The sampling and analysis plan contains a complete list of analyses preformed.

[b]Individual radionuclide concentrations significantly greater that zero are identified by an *.