APPENDIX E – SUMMARY OF MONITORING FOR SOLID WASTE MANAGEMENT UNIT 108

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Table E-1. Solid Waste Management Unit 108 Sampling Summary, 1985-1997

Date	Sample Location	Parameters
12/85, 2/86, 4/86	W9, W10, W11, W12, Ash Pond	Polychlorinated biphenyls (PCBs), Total Organic Carbon and Total Organic Halogens TOX
11/86	W9, W10, W11, W12	Nutrients, Metals
2/87	W9, W10, W11, W12	Volatiles & Semivolatiles, Cyanides, Phenols, Radioactivity
3/87	W9, W10, W11, W12	Pesticides
6/89	PZ-1A, PZ-3A, PZ-9A, PZ-11A, PZ-l2A	Volatiles & Semivolatiles, Metals, Nutrients, Cyanides, Phenols, Sulfides, Major Cations & Anions, Radioactivity
10/89	Pond Creek Surface Water & Sediments	Volatiles & Semivolatiles, Pesticides & PCBs Metals, Nutrients, Major Cations & Anions
7/90	W9, W11, W12, W13, W16, W18, PZ-1A, PZ-1C, PZ-2B, PZ-2D, PZ-9B, PZ-11A, PZ-12B	Volatiles & Semivolatiles, Metals, Nutrients, Cyanides, Phenols, Sulfides, Metals, Radioactivity
11/90	W13	Radioactivity
7/91	W9, W11, W12, PZ-11C	Volatiles, Pesticides/ Herbicides, PCBs, Base-Neutral Extractables
7/91 - 12/94	W10, PZ-1, PZ-9, PZ-11, PZ-12	Nitrate+Nitrite (quarterly)
6/92	PZ-11, PZ-12	Nitrate, Chloride
5/97	Pond Creek Sediments	Cadmium, Lead, Volatile Organic Compounds, Coal-Range PAHs
5/97, 8/97, 11/97	PZ-1, PZ-9, PZ-11, PZ-12, PZ-31 to PZ-35, PZ-39, PZ40	Total Phosphorous, Total Phosphate, Nitrate+Nitrite, Cadmium, Lead, Selected Volatile Organic Compounds
11/97	Borings A, B, & C	Volatile Organic Compounds

Source: Tennessee Valley Authority. 1998. *TVA Environmental Research Center, RCRA Facility Investigation Final Report, EPA ID No. AL3-6i40-090-004.* Muscle Shoals, Ala.: Tennessee Valey Authority, Environmental Research Center, May 1998.

Table E-2. List of Substances From 40 Code of Federal Regulations Part 264, Appendix IX, From the Resource Conservation and Recovery Act Facility Investigation

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Acenaphthene	83-32-9	6.00E-02	r	IRIS	2.1E+00	DWEL	4.8E+03	08-01-94
Acenaphthylene	208-96-8				N/C		N/C	
Acetone	67-64-1	1.00E-01	r	IRIS	3.5E+00	DWEL	8.0E+03	08-01-94
Acetophenone	98-86-2	1.00E-01	r	IRIS	3.5E+00	DWEL	8.0E+03	08-01-94
Acetonitrile; Methyl cyanide	75-05-8	6.00E-03	r	IRIS	2.1E-01	DWEL	4.8E+02	08-01-94
2-Acetylaminofluorene; 2-AAF	53-96-3				N/C		N/C	
Acrolein	107-02-8	2.00E-02	r	HEAST	7.0E-01	DWEL	1.6E+03	08-01-94
Acrylonitrile	107-13-1	5.40E-01	c	IRIS	6.5E-05	DWEL	1.3E+00	08-01-94
Aldrin	309-00-2	1.70E+01	c	IRIS	2.1E-06	DWEL	4.1E-02	08-01-94
Allyl chloride	107-05-1				N/C		N/C	
4-Aminobiphenyl	92-67-1				N/C		N/C	
Aniline	62-53-3	5.70E-03	c	IRIS	6.1E-03	DWEL	1.2E+02	08-01-94
Anthracene	120-12-7	3.00E-01	r	IRIS	1.1E+01	DWEL	2.4E+04	08-01-94
Antimony	7440-36-0	4.00E-04	r	IRIS	6.0E-03	MCL	3.2E+01	08-01-94
Aramite	140-57-8	2.50E-02	c	IRIS	1.4E-03	DWEL	2.8E+01	08-01-94
Arsenic	7440-38-2	1.50E+00	r	IRIS	5.0E-02	MCL	2.4E+01	08-01-94
Barium	7440-39-3	7.00E-02	r	IRIS	2.0E+00	MCL	5.6E+03	08-01-94
Benzene	71-43-2	2.90E-02	c	IRIS	5.0E-03	MCL	2.4E+01	08-01-94
Benzidine	92-87-5	2.30E+02	c	IRIS	1.5E-07	DWEL	3.0E-03	05-22-95
Benzoic Acid	65-85-0	4.00E+00	r	IRIS	1.4E+02	DWEL	3.2E+05	05-22-95
Benzo(a)anthracene	56-55-3	7.30E-01	c	EPA RPF	1.0E-04	MCL	9.6E-01	08-01-94
Benzo(b)fluoranthene	205-99-2	7.30E-01	c	EPA RPF	2.0E-04	MCL	9.6E-01	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Benzo(k)fluoranthene	207-08-9	7.30E-02	c	EPA RPF	2.0E-04	B(a)P MCL	9.6E+00	08-01-94
Benzo(g,h,i)perylene	191-24-2				2.0E-04	B(a)P MCL	N/C	
Benzo(a)pyrene	50-32-8	7.30E+00	c	IRIS	2.0E-04	MCL	9.6E-02	08-01-94
Benzyl Alcohol	100-51-6	3.00E-01	r	HEAST	1.1E+01	DWEL	2.4E+04	08-01-94
Beryllium	7440-41-7	4.30E+00	c	IRIS	4.0E-03	MCL	1.1E+00	08-01-94
Bis(2-chloroethoxy)methane	111-91-1				N/C		N/C	
Bis(2-chloroethyl)ether	111-44-4	1.10E+00	c	IRIS	3.2E-05	DWEL	6.4E-01	08-01-94
Bis(2-chloroisopropyl)ether	39638-32-9	7.00E-02	c	HEAST	5.0E-04	DWEL	1.0E+01	08-01-94
Bis(2-chloro-1-methylethyl)ether	108-60-1	7.00E-02	c	EPA Region III	5.0E-04	DWEL	1.0E+01	08-01-94
Bis(2-ethylhexyl)phthalate	117-81-7	1.40E-02	c	IRIS	6.0E-03	MCL	5.0E+01	08-01-94
Bromodichloromethane	75-27-4	6.20E-02	c	IRIS	1.0E-01	MCL	1.1E+01	08-01-94
n-Butylbenzene	104-51-8				3.5E-01		N/C	
Cadmium	7440-43-9	5.00E-04	r	IRIS	5.0E-03	MCL	4.0E+01	08-01-94
Carbon disulfide	75-15-0	1.00E-01	r	IRIS	3.5E+00	DWEL	8.0E+03	08-01-94
Carbon tetrachloride	56-23-5	1.30E-01	c	IRIS	5.0E-03	MCL	5.4E+00	08-01-94
Chlordane	57-74-9	1.30E+00	c	IRIS	2.0E-03	MCL	5.4E-01	08-01-94
p-Chloroaniline	106-47-8	4.00E-03	r	IRIS	1.4E-01	DWEL	3.2E+02	08-01-94
Chlorobenzene	108-90-7	2.00E-02	r	IRIS	7.0E-01	DWEL	1.6E+03	08-01-94
Chlorobenzilate	510-15-6	2.00E-02	r	IRIS	7.0E-01	DWEL	1.6E+03	08-01-94
p-Chloro-m-cresol	59-50-7				N/C		N/C	
Chloroethane	75-00-3	4.00E-01	r	EPA Region III	1.4E+01	DWEL	3.2E+04	09-14-94
2-Chloroethylvinyl ether	110-75-8	2.50E-02	r	EPA Region III	8.8E-01	DWEL	2.0E+03	05-22-95
Chloroform	67-66-3	6.10E-03	c	IRIS	1.0E-01	MCL	1.1E+02	08-01-94
2-Chloronaphthalene	91-58-7	8.00E-02	r	IRIS	2.8E+00	DWEL	6.4E+03	08-01-94
2-Chlorophenol	95-57-8	5.00E-03	r	IRIS	1.8E-01	DWEL	4.0E+02	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
4-Chlorophenyl phenyl ether	7005-72-3				N/C		N/C	
Chloroprene	126-99-8				N/C		N/C	
Chromium	7440-47-3	5.00E-03	r	IRIS	1.0E-01	MCL	4.0E+02	08-01-94
Chrysene	218-01-9	7.30E-03	c	EPA RPF	2.0E-04	B(a)P MCL	9.6E+01	08-01-94
Cobalt	7440-48-4	1.80E-01	r	EPA Region III	6.3E+00	DWEL	1.4E+04	08-01-94
Copper	7440-50-8	3.71E-02	r	HEAST	1.3E+00	DWEL	3.0E+03	08-01-94
m-Cresol; 3-Methyl phenol	108-39-4	5.00E-02	r	IRIS	1.8E+00	DWEL	4.0E+03	08-01-94
o-Cresol; 2-Methyl phenol	95-48-7	5.00E-02	r	IRIS	1.8E+00	DWEL	4.0E+03	08-01-94
p-Cresol, 4-Methyl phenol	106-44-5	5.00E-03	r	HEAST	1.8E-01	DWEL	4.0E+02	08-01-94
Cyanide	57-12-5	2.00E-02	r	IRIS	2.0E-01	MCL	1.6E+03	08-01-94
2,4-Dichlorophenoxyacetic acid	94-75-7	1.00E-02	r	IRIS	7.0E-02	MCL	8.0E+02	08-01-94
4,4'-DDD	75-54-8	2.40E-01	c	IRIS	1.5E-04	DWEL	2.9E+00	08-01-94
4,4'-DDE	72-55-9	3.40E-01	c	IRIS	1.0E-04	DWEL	2.1E+00	08-01-94
4,4'-DDT	50-29-3	3.40E-01	c	IRIS	1.0E-04	DWEL	2.1E+00	08-01-94
Diallate	2303-16-4	6.10E-02	c	HEAST	5.7E-04	DWEL	1.1E+01	08-01-94
Dibenz[a,h]anthracene	53-70-3	7.30E+00	c	EPA RPF	3.0E-04	MCL	9.6E-02	08-01-94
Dibenzofuran	132-64-9				N/C		N/C	
Dibromochloromethane	124-48-1	8.40E-02	c	IRIS	4.2E-04	DWEL	8.3E+00	08-01-94
1,2-Dibromo-3-chloropropane	96-12-8	1.40E+00	c	HEAST	2.0E-04	MCL	5.0E-01	08-01-94
1,3-Dichlorobenzene	541-73-1	8.90E-02	r	EPA Region III	6.0E-01	MCL	7.1E+03	08-01-94
3,3'-Dichlorobenzidine	91-94-1	4.50E-01	c	IRIS	7.8E-05	DWEL	1.6E+00	08-01-94
trans-1,4-Dichloro-2-butene	110-57-6				N/C		N/C	
Dichlorodifluoromethane	75-71-8	2.00E-01	r	IRIS	7.0E+00	DWEL	1.6E+04	08-01-94
1,1-Dichloroethane	75-34-3	1.00E-01	r	HEAST	3.5E+00	DWEL	8.0E+03	08-01-94
1,2-Dichloroethane	107-06-2	9.10E-02	c	IRIS	5.0E-03	MCL	7.7E+00	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
1,1-Dichloroethylene	75-35-4	6.00E-01	c	IRIS	7.0E-03	MCL	1.2E+01	08-01-94
trans-1,2-Dichloroethylene	156-60-5	2.00E-02	r	IRIS	1.0E-01	MCL	1.6E+03	08-01-94
2,4-Dichlorophenol	120-83-2	3.00E-03	r	IRIS	1.1E-01	DWEL	2.4E+02	08-01-94
2,6-Dichlorophenol	87-65-0				N/C		N/C	
1,2-Dichloropropane	78-87-5	6.80E-02	c	HEAST	5.0E-03	MCL	1.0E+01	08-01-94
1,3-Dichloropropene	542-75-6	1.75E-01	c	HEAST	2.0E-04	DWEL	4.0E+00	08-01-94
Dieldrin	60-57-1	1.60E+01	c	IRIS	2.2E-06	DWEL	4.4E-02	08-01-94
Diethyl phthalate	84-66-2	8.00E-01	r	IRIS	2.8E+01	DWEL	6.4E+04	08-01-94
0,0-Diethyl 0-2-pyrazinyl phosphoro-	297-97-2				N/C		N/C	
Thioate; Thionazin								
Dimethoate	60-51-5	2.00E-04	r	IRIS	7.0E-03	DWEL	1.6E+01	08-01-94
p-(Dimethylamino)azobenzene	60-11-7				N/C		N/C	
7,12-Dimethlbenz[a]anthracene	57-97-6				N/C		N/C	
3,3'-Dimethylbenzidine	119-93-7	9.20E+00	c	HEAST	3.8E-06	DWEL	7.6E-02	08-01-94
alpha, alpha-Dimethylphenethylamine	122-09-8				N/C		N/C	
2,4-Dimethylphenol	105-67-9	2.00E-02	r	IRIS	7.0E-01	DWEL	1.6E+03	08-01-94
Dimethyl phthalate	131-11-3				N/C		N/C	
m-Dinitrobenzene; 1,3-Dinitrobenzene	99-65-0	1.00E-04	r	IRIS	3.5E-03	DWEL	8.0E+00	08-01-94
4-6-Dinitro-o-cresol	534-52-1				N/C		N/C	
2,4-Dinitrophenol	51-28-5	2.00E-03	r	IRIS	7.0E-02	DWEL	1.6E+02	08-01-94
2,4-Dinitrotoluene	121-14-2	2.00E-03	r	IRIS	7.0E-02	DWEL	1.6E+02	08-01-94
2,6-Dinitrotoluene	606-20-2	1.00E-03	r	HEAST	3.5E-02	DWEL	8.0E+01	08-01-94
Dinoseb	88-85-7	1.00E-03	r	IRIS	7.0E-03	MCL	8.0E+01	08-01-94
Di-n-octyl phthalate	117-84-0	2.00E-02	r	HEAST	7.0E-01	DWEL	1.6E+03	08-01-94
1,4-Dioxane	123-91-1	1.10E-02	c	IRIS	3.2E-03	CMAL	6.4E+01	08-01-94
Diphenylamine	122-39-4	2.50E-02	r	IRIS	8.8E-01	DWEL	2.0E+03	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Disulfoton	298-04-4	4.00E-05	r	IRIS	1.4E-03	DWEL	3.2E+00	08-01-94
Endosulfan	115-29-7	6.00E-03	r	HEAST	2.1E-01	DWEL	4.8E+02	08-01-94
Endosulfan I	959-98-8				N/C		N/C	
Endosulfan II	33213-65-9				N/C		N/C	
Endosulfan sulfate	1031-07-8				N/C		N/C	
Endrin	72-20-8	3.00E-04	r	IRIS	2.0E-03	MCL	2.4E+01	08-01-94
Ethylbenzene	100-41-4	1.00E-01	r	IRIS	7.0E-01	MCL	8.0E+03	08-01-94
Ethyl ether; diethyl ether	60-29-7	2.00E-01	r	IRIS	7.0E+00	DWEL	1.6E+04	08-01-94
Ethyl methacrylate	97-63-2	9.00E-02	r	HEAST	3.2E+00	DWEL	7.2E+03	08-01-94
Ethyl methanesulfonate	62-50-0				N/C		N/C	
Famphur	52-85-7				N/C		N/C	
Fluoranthene	206-44-0	4.00E-02	r	IRIS	1.4E+00	DWEL	3.2E+03	08-01-94
Fluorene	86-73-7	4.00E-02	r	IRIS	1.4E+00	DWEL	3.2E+03	08-01-94
Heptachlor	76-44-8	4.50E+00	c	IRIS	4.0E-04	MCL	1.6E-01	08-01-94
Heptachlor epoxide	1024-57-3	9.10E+00	c	IRIS	2.0E-04	MCL	7.7E-02	08-01-94
Hexachlorobenzene	118-74-1	1.60E+00	c	IRIS	1.0E-03	MCL	4.4E-01	08-01-94
Hexachlorobutadiene	87-68-3	7.80E-02	c	IRIS	4.5E-03	DWEL	9.0E+01	08-01-94
alpha-BHC	319-84-6	6.30E+00	c	IRIS	5.6E-06	DWEL	1.1E-01	08-01-94
beta-BHC	319-85-7	1.80E+00	c	IRIS	1.9E-04	DWEL	3.9E+00	08-01-94
delta-BHC	319-86-8				N/C		N/C	
gamma-BHC; Lindane	58-89-9	1.30E+00	c	HEAST	2.0E-04	MCL	5.4E-01	08-01-94
Hexachlorocyclopentadiene	77-47-4	7.00E-03	r	IRIS	5.0E-02	MCL	5.6E+02	08-01-94
Hexachloroethane	67-72-1	1.40E-02	c	IRIS	2.5E-03	DWEL	5.0E+01	08-01-94
Hexachlorophene	70-30-4	3.00E-04	r	IRIS	1.1E-02	DWEL	2.4E+01	08-01-94
Hexachloropropene	1888-71-7				N/C		N/C	

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
2-Hexanone	591-78-6				N/C		N/C	
Indeno(1,2,3-cd)pyrene	193-39-5	7.30E-01	c	EPA RPF	4.0E-04	MCL	9.6E-01	08-01-94
Isobutyl alcohol	78-83-1	3.00E-01	r	IRIS	1.1E+01	DWEL	2.4E+04	08-01-94
Isodrin	465-73-6				N/C		N/C	
Isophorone	78-59-1	9.50E-04	c	IRIS	3.7E-02	DWEL	7.4E+02	08-01-94
Isosafrole	120-58-1				N/C		N/C	
Kepone	143-50-0	1.80E+01	c	EPA Region III	1.9E-06	DWEL	3.9E-02	08-01-94
Lead	7439-92-1				1.5E-02	TT*	4.0E+02	09-12-94
Mercury	7439-97-6	3.00E-04	r	HEAST	2.0E-03	MCL	2.4E+01	08-01-94
Methacrylonitrile	126-98-7	1.00E-04	r	IRIS	3.5E-03	DWEL	8.0E+00	08-01-94
Methapyriline	91-80-5				N/C		N/C	
Methoxychlor	72-43-5	5.00E-03	r	IRIS	4.0E-02	MCL	4.0E+02	08-01-94
Methyl bromide; Bromomethane	74-83-9	1.40E-03	r	IRIS	4.9E-02	DWEL	1.1E+02	08-01-94
Methyl chloride; Chloromethane	74-87-3	1.30E-02	c*	HEAST	2.7E-02	DWEL	5.4E+02	09-14-94
3-Methylcholanthrene	56-49-5				N/C		N/C	
Methylene bromide	74-95-3	1.00E-02	r	EPA Region III	3.5E-01	DWEL	8.0E+02	09-14-94
Methylene chloride	75-09-2	7.50E-03	c	IRIS	4.7E-03	DWEL	9.3E+01	08-01-94
2-Butanone	78-93-3	6.00E-01	r	IRIS	2.1E+01	DWEL	4.8E+04	08-01-94
Methyl iodide; Iodomethane	74-88-4				N/C		N/C	
Methyl methacrylate	80-62-6	8.00E-02	r	HEAST	2.8E+00	DWEL	6.4E+03	09-14-94
Methyl methanesulfonate	66-27-3				N/C		N/C	
2-Methylnaphthalene	91-57-6				N/C		N/C	
Methyl parathion	298-00-0	2.50E-04	r	IRIS	8.8E-03	DWEL	2.0E+01	08-01-94
4-Methyl-2-pentanone; MIBK	108-10-1	8.00E-02	r	HEAST	2.8E+00	DWEL	6.4E+03	08-01-94
Naphthalene	91-20-3	4.00E-02	r	EPA Region III	1.4E+00	DWEL	3.2E+03	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
1,4-Naphthoquinone	130-15-4				N/C		N/C	
1-Naphthylamine	134-32-7				N/C		N/C	
2-Naphthylamine	91-59-8	1.30E+02	c	EPA Region III	2.7E-07	DWEL	5.4E-03	08-01-94
Nickel	7440-02-0	2.00E-02	r	IRIS	1.0E-01	DWEL	1.6E+03	08-01-94
o-Nitroaniline	88-74-4	6.00E-05	r	EPA Region III	2.1E-03	DWEL	4.8E+00	08-01-94
m-Nitroaniline	99-09-2	3.00E-03	r	EPA Region III	1.1E-01	DWEL	2.4E+02	08-01-94
p-Nitroaniline	100-01-6	3.00E-03	r	EPA Region III	1.1E-01	DWEL	2.4E+02	08-01-94
Nitrobenzene	98-95-3	5.00E-04	r	IRIS	1.8E-02	DWEL	4.0E+01	08-01-94
o-Nitrophenol	88-75-5				N/C		N/C	
4-Nitrophenol	100-02-7	6.20E-02	r	EPA Region III	2.2E+00	DWEL	5.0E+03	08-01-94
4-Nitroquinoline 1-oxide	56-57-5				N/C		N/C	
N-Nitroso-di-n-butylamine	924-16-3	5.40E+00	c	IRIS	6.5E-06	DWEL	1.3E-01	08-01-94
N-Nitrosodiethylamine	55-18-5	1.50E+02	c	IRIS	2.3E-07	DWEL	4.7E-03	08-01-94
N-Nitrosodimethylamine	62-75-9	5.10E+01	c	IRIS	6.9E-07	DWEL	1.4E-02	08-01-94
N-Nitrosodiphenylamine	86-30-6	4.90E-03	c	IRIS	7.1E-03	DWEL	1.4E+02	08-01-94
N-Nitrosodipropylamine	621-64-7	7.00E+00	c	IRIS	5.0E-06	DWEL	1.0E-01	08-01-94
N-Nitrosomethylethylamine	10595-95-6	2.20E+01	c	IRIS	1.6E-06	DWEL	3.2E-02	08-01-94
N-Nitrosomorpholine	59-89-2				N/C		N/C	
N-Nitrosopiperidine	100-75-4				N/C		N/C	
N-Nitrosopyrrolidine	930-55-2	2.10E+00	c	IRIS	1.7E-05	DWEL	3.3E-01	08-01-94
5-Nitro-o-toluidine	99-55-8				N/C		N/C	
Parathion	56-38-2	6.00E-03	r	HEAST	2.1E-01	DWEL	4.8E+02	08-01-94
Pentachlorobenzene	608-93-5	8.00E-04	r	IRIS	2.8E-02	DWEL	6.4E+01	08-01-94
Pentachloroethane	76-01-7				N/C		N/C	
Pentachloronitrobenzene	82-68-8	2.60E-01	c	HEAST	1.3E-04	DWEL	2.7E+00	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Pentachlorophenol	87-86-5	1.20E-01	c	IRIS	1.0E-03	MCL	5.8E+00	08-01-94
Phenacetin	62-44-2				N/C		N/C	
Phenanthrene	85-01-8				N/C		N/C	
Phenol	108-95-2	6.00E-01	r	IRIS	2.1E+01	DWEL	4.8E+04	08-01-94
p-Phenylenediamine	106-50-3	1.90E-01	r	HEAST	6.7E+00	DWEL	1.5E+04	08-01-94
Phorate	298-02-2	2.00E-04	r	HEAST	7.0E-03	DWEL	1.6E+01	08-01-94
2-Picoline	109-06-8				N/C		N/C	
Polychlorinated biphenyls (PCBs)	1336-36-3	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-01-94
PCB-1016	12672-11-2	7.00E-05	r	IRIS	5.0E-04	MCL	5.6E+00	08-12-94
PCB-1221	11104-28-2	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-12-94
PCB-1232	11141-16-5	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-12-94
PCB-1242	53469-21-9	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-12-94
PCB-1248	12672-29-6	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-12-94
PCB-1254	11097-69-1	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-12-94
PCB-1260	11096-82-5	7.70E+00	c	IRIS	5.0E-04	MCL	1.0E+00	08-12-94
Polychlorinated dibenzo-p-dioxins (PCDDs)					N/C		N/C	
Polychlorinated dibenzofurans (PCDFs)					N/C		N/C	
Pronamide	23950-58-5	7.50E-02	r	IRIS	2.6E+00	DWEL	6.0E+03	08-01-94
Propionitrile; Ethyl cyanide	107-12-0				N/C		N/C	
Pyrene	129-00-0	3.00E-02	r	IRIS	1.1E+00	DWEL	2.4E+03	08-01-94
Pyridine	110-86-1	1.00E-03	r	IRIS	3.5E-02	DWEL	8.0E+01	08-01-94
Safrole	94-59-7				N/C		N/C	
Selenium	7782-49-2	5.00E-03	r	IRIS	5.0E-02	MCL	4.0E+02	08-01-94
Silver	7440-22-4	5.00E-03	r	IRIS	1.8E-01	DWEL	4.0E+02	09-14-94
Silvex; 2,4,5-TP	93-72-1	8.00E-03	r	IRIS	5.0E-02	MCL	6.4E+02	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Styrene	100-42-5	2.00E-01	r	IRIS	1.0E-01	MCL	1.6E+04	08-01-94
Sulfide	18496-25-8			SW-846	N/C		5.0E+02	08-01-94
2,4,5-T	93-76-5	1.00E-02	r	IRIS	3.5E-01	DWEL	8.0E+02	09-14-94
2,3,7,8-TCDD; Dioxin	1746-01-6	1.56E+05	c	HEAST	3.0E-08	MCL	4.5E-06	08-01-94
1,2,4,5-Tetrachlorobenzene	95-94-3	3.00E-04	r	IRIS	1.1E-02	DWEL	2.4E+01	08-01-94
1,1,1,2-Tetrachloroethane	630-20-6	2.60E-02	c	IRIS	1.3E-02	DWEL	2.7E+02	08-01-94
1,1,2,2-Tetrachloroethane	79-34-5	2.00E-01	c	IRIS	1.8E-04	DWEL	3.5E+00	08-01-94
Tetrachloroethylene	127-18-4	5.20E-02	c	EPA Region III	5.0E-03	MCL	1.3E+01	08-01-94
2,3,4,6-Tetrachlorophenol	58-90-2	3.00E-02	r	IRIS	1.1E+00	DWEL	2.4E+03	08-01-94
Tetraethyl dithiopyrophosphate; Sulfotepp	3689-24-5	5.00E-04	r	IRIS	1.8E-02	DWEL	4.0E+01	08-01-94
Thallium	7440-28-0	8.00E-05	r	IRIS	2.0E-03	MCL	5.1E+00	08-01-94
Tin	7440-31-5	6.00E-01	r	HEAST	2.1E+01	DWEL	4.8E+04	08-01-94
Toluene	108-88-3	2.00E-01	r	IRIS	1.0E+00	MCL	1.6E+04	09-14-94
o-Toluidine	95-53-4				N/C		N/C	
Toxaphene	8001-35-2	1.10E+00	c	IRIS	3.0E-03	MCL	6.4E-01	09-14-94
1,2,4-Trichlorobenzene	120-82-1	1.00E-02	r	IRIS	7.0E-02	MCL	8.0E+02	08-01-94
1,1,1-Trichloroethane	71-55-6	9.00E-02	r	EPA Region III	2.0E-01	MCL	7.2E+03	08-01-94
1,1,2-Trichloroethane	79-00-5	5.70E-02	c	IRIS*	5.0E-03	MCL	1.2E+02	08-01-94
Trichloroethene	79-01-6	1.10E-02	c	EPA Region III	5.0E-03	MCL	6.4E+01	08-01-94
Trichlorofluoromethane	75-69-4	3.00E-01	r	IRIS	1.1E+01	DWEL	2.4E+04	08-01-94
2,4,5-Trichlorophenol	95-95-4	1.00E-01	r	IRIS	3.5E+00	DWEL	8.0E+03	08-01-94
2,4,6-Trichlorophenol	88-06-2	1.10E-02	c	IRIS	3.2E-03	DWEL	6.4E+01	08-01-94
1,2,3-Trichloropropane	96-18-4	7.00E+00	c	IRIS	5.0E-06	DWEL	1.0E-01	08-01-94
0,0,0-Triethyl phosphorothioate	126-68-1				N/C		N/C	
sym-Trinitrobenzene	99-35-4	5.00E-05	r	IRIS	1.8E-03	DWEL	4.0E+00	08-01-94

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Vanadium	7440-62-2	7.00E-03	r	HEAST	2.5E-01	DWEL	5.6E+02	08-01-94
Vinyl acetate	108-05-4	1.00E+00	r	HEAST	3.5E+01	DWEL	8.0E+04	08-01-94
Vinyl chloride	75-01-4	1.90E+00	c	HEAST	2.0E-03	MCL	3.7E-01	08-01-94
Xylene (total)	1330-20-7	2.00E+00	r	IRIS	1.0E+01	MCL	1.6E+05	08-01-94
Zinc	7440-66-6	3.00E-01	r	IRIS	5.0E+00	SMCL	2.4E+04	08-01-94
Calcium					N/C		N/C	
Iron					N/C		N/C	
Aluminum					N/C		N/C	
n-butyl Benzene	104-51-8	1.00E-02	r	EPA Region III	3.5E-01	DWEL	8.0E+02	09-19-94
1,2,4-Trimethyl benzene	95-63-6	5.00E-04	r	EPA Region III	1.8E-02	DWEL	4.0E+01	09-19-94
Corrosivity					2.5E+02		N/C	
Nitrate (NO_3)					1.0E+01		N/C	
Sulfate (SO_4)					N/C		N/C	
Phosphate (PO_4)					N/C		N/C	
Fluoride					N/C		N/C	
Chloride					N/C		N/C	
1,2,3-Trichlorobenzene	87-61-6				N/C		N/C	
Cis-1,3-Dichloropropene	10061-01-5				N/C		N/C	
Trans-1,3-Dichloropropene	10061-02-6				N/C		N/C	
m/p-Xylene					1.0E+01		1.6E+05	
o-Xylene	95-47-6				1.0E+01		1.6E+05	
1,2-Dichloroethene	540-59-0				7.20E+02		N/C	
1,4-Dichloro-2-butene	764-41-0				N/C		N/C	
Endrin Aldehyde	7421-93-4				N/C		N/C	
1,1-Dichloropropene					N/C		N/C	

Appendix IX Compound	CAS No.	RfD (r) CSF (c)		RFI Action Levels			Soil Level (mg/kg)	Date Last Revised
				Source[1]	Water Level (mg/L)	Source[1]		
Endrin Ketone	53494-70-5				N/C		N/C	
T-As	7440-38-2				N/C		5.00	
T-Ba	7440-39-3				N/C		100.00	
T-Cd	7440-43-9				N/C		1.00	
T-Cr	7440-47-3				N/C		5.00	
T-Pb	7439-92-1				N/C		5.00	
T-Hg	7439-97-6				N/C		0.20	
T-Se	7782-49-2				N/C		1.00	
T-Ag	7440-22-4				N/C		5.00	

Resource Conservation and Recovery Act facility investigation (RFI) action levels are concentrations above those that may require a corrective measures study.

[1]RFI Action Level Sources

DWEL = Drinking water equivalent level calculated from oral RfD or cancer slope factor

HEAST = U.S. Environmental Protection Agency Health Effects Assessment Summary Tables

IRIS = Integrated Risk Information System

MCL = Safe Drinking Water Act (SDWA) Maximum Contaminant Levels

SMCL = Secondary Maximum Contaminant Level

RPF = Relative potency factor. This is used to calculate action levels for carcinogenic polycyclic aromatic hydrocarbons in relation to benzo(a)pyrene. From the "Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (PAHs)," USEPA.

N/C = No criteria to develop action level.

Table E-2 (continued)
Noncarcinogenic toxicity action levels for National Fertilizer and Environmental Research Center (NFERC) and Power Service Center (PSC) soils were calculated using the formula:

$$C.A.L. = \frac{RfD \times BW}{I}$$

where:

C.A.L. = corrective action level

RfD = reference dose

BW = body weight (kg) assumed to be a 16 kg child

I = intake or amount of soil ingested daily (200 mg for 16 kg child)

Carcinogenic action levels for TVAERC and Power Service Center (PSC) soils were calculated using the formula:

$$C.A.L. = \frac{Risk\ (1 \times 10E\text{-}6) \times BW}{CSF} \times \frac{70\ kg}{I}$$

where:

C.A.L. = corrective action level

CSF = Carcinogenic slope factor

BW = body weight (kg) assumed to be a 70 kg adult

I = intake or amount of soil ingested daily (100 mg for 70 kg adult)

ED = exposure duration is 70 years

EF = exposure frequency is 70 years

Drinking water equivalent levels (DWELs) are calculated using the above equations

Substituting 2 liters per day for the daily intake and 70 kg for the body weight

Table E-3. Solid Waste Management Unit 108 Summary of July 1990 Groundwater Monitoring Data

Parameter	Units	W9	W11	W12	W13	W16	W18	PZ1A	PZ1C	PZ2B	PZ2D	PZ9B	PZ11A	PZ12B
Inorganic Chemistry Results														
Carbon, Total Organic	mg/L	2.5	12	25	18	2.5	1	1.3	1.3	1.8	5	3.4	1.6	2
Cyanide	mg/L	0	0	0.014	0.032	0	0	0	0.019	0	0	0	0	0
Nitrogen, Ammonia	mg/L	1.1	2.4	1.6	8	0.93	0.73	0.15	2.6	0	0	0.045	2.4	0.044
Nitrogen, Nitrate-Nitrite	mg/L	12	11	210	150	17	0.52	11	100	1.1	2.2	0.49	29	94
Phenolics	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Phosphorus	mg/L	0.048	0.067	0.17	0.07	0	8.5	0.14	0.17	0.036	0.14	0.023	0.085	0
Organic Chemistry Results														
1,1,1-Trichloroethane	µg/L	33	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	µg/L	590	10	0	420	0	0	0	0	260	0	22	99	33
bis(2-Ethylhexyl) phthalate	µg/L	120	15	20	0	0	0	120	0	0	0	0	0	17
1,2-Dichloroethene	µg/L	0	0	0	150	0	0	0	0	0	0	0	0	0
Trichloroethene	µg/L	0	0	0	35	0	0	0	0	0	0	0	0	0
Carbon tetrachloride	µg/L	0	0	0	0	0	0	0	0	0	6	0	0	0
Chloroform	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	22
Radioactivity Results														
Gross Alpha	pCi/L	0	3	3	132	23	14	2	4	0	0	0	3	8
Gross Beta	pCi/L	0	0	45	253	50	20	0	4	0	5	0	7	5
Radium	pCi/L	0	2	2	97	27	11	2	2	2	2	2	2	6

Table E-3 (continued)

Parameter	Units	W9	W11	W12	W13	W16	W18	PZ1A	PZ1C	PZ2B	PZ2D	PZ9B	PZ11A	PZ12B
Metal Analysis Results														
Aluminum	mg/L	0	0	0	1400	210	240	13	0.9	0.7	0.6	1.2	100	19
Barium	mg/L	0	0	0	1.8	0.8	0.6	0.1	0	0	0	0	0.6	0.2
Iron	mg/L	0.3	0.5	0.2	1100	89	300	7.5	2	1	1.2	1.2	72	12
Copper	mg/L	0	0	0.02	0.66	0.1	0.19	0	0.03	0	0	0	0.11	0.02
Manganese	mg/L	0.28	0.43	23	171	1.7	4	0.27	0.21	0.48	0.11	0.94	2.2	1.4
Mercury	mg/L	0	0	0	0.003	0.0008	0.0018	0	0	0	0	0	0.0013	0
Nickel	mg/L	0	0	0	0.97	0.16	0.19	0	0.82	0	0	0.04	0.94	0.08
Zinc	mg/L	0	0	0.17	3.9	0.37	0.61	0.03	0.03	0	0.04	0.082	0.7	0.15
Antimony	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	mg/L	0	0	0	0.5	0.032	0.081	0	0	0	0	0	0.039	0
Berylliun	mg/L	0	0	0	0.066	0.008	0.013	0	0	0	0	0	0.005	0
Cadmium	mg/L	0	0.003	0.003	0.006	0	0.002	0	0.002	0	0	0.003	0.002	0
Chromium	mg/L	0	0	0	1.6	0.14	0.6	0.015	0	0	0	0	0.23	0.02
Lead	mg/L	0.007	0.021	0.005	0.29	0.098	0	0.007	0.012	0.008	0.015	0.008	0.21	0.021
Selenium	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Silver	mg/L	0	0	0	0	0	0	0	0.022	0	0	0	0	0
Thallium	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0
Field Parameters														
Alkalinity	mg/L	142	185	20	84	108	119	20	191	17	49	47	50	41
Electrical Conductivity	µmhos/cm	585	770	3000	2790	2480	551	244	977	144	519	128	830	1240
Temperature	°C	17.8	18.8	20.3	22.0	17.9	17.6	18.9	18.5	18.8	18.0	20.6	20.7	22.8
Dissolved Oxygen	mg/L	1.3	0.1	1.3	0.4	4.5	0.1	0.9	1.2	1.5	4.4	1.2	2.8	3.7
pH		6.5	6.7	5.1	5.5	5.7	6.6	4.9	6.3	5.2	5.9	5.7	7.1	5.3

Source: Young, S. C., and H. E. Julian. 1991. *Assessment of Groundwater Impacts From Solid Waste Management Unit 108*. Norris, Tenn.: TVA Engineering Laboratory, TVA Report No. WR28-1-520-167.

Abbreviations:

µg/L = Micrograms per liter
µmhos/cm = Microhos per centimeter
°C = Degree Celsius
mg/L = Milligrams per liter
pCi/L = Pico-curies per liter

Table E-4. Solid Waste Management Unit 108 Summary of Predominant Volatile Organic Compounds 1987-1997

Well	North (feet)	East (feet)	Top Screen	Mid Screen	Bottom Screen	Tetrachloroethylene						Trichloroethylene				
						Feb 1987	June 1989	July 1990	June 1991	Aug 1997	Nov 1997	Feb 1987	July 1990	June 1991	Aug 1997	Nov 1997
PZ 1A	-646	1545	516.4	513.9	511.4			0.000		0.000	0.000		0.000		0.000	0.000
PZ 1B	-653	1550	491.4	488.9	486.4					0.000	0.000				0.000	0.000
PZ 1C	-654	1544	469.2	466.7	464.2			0.000		0.004	**0.007**		0.000		0.000	0.000
PZ 2A	-170	1514	524.1	521.6	519.1											
PZ 2B	-175	1512	514.1	511.6	509.1			**0.260**					0.000			
PZ 2C	-174	1521	484.1	481.6	479.1											
PZ 2D	-179	1518	468.5	466.0	463.5			0.000					0.000			
PZ 3A	-449	2017	518.5	516.0	513.5											
PZ 9A[1]	-1222	1540	509.5	507.0	504.5	**0.684**	**0.290**			**1.100**	**0.780**	0.000			**0.006**	**0.005**
PZ 9B[2]	-1228	1539	498.7	496.2	493.7	**0.550**		**0.022**		**2.000**	**2.200**	0.000	0.000		**0.007**	0.000
PZ 9C	-1221	1534	476.7	474.2	471.7					**0.200**	**0.520**				0.000	0.003
PZ 11A	-1423	1877	493.5	491.0	488.5	**0.014**	**0.300**	**0.099**		**4.500**	**2.200**	0.000	0.000		**0.014**	**0.019**
PZ 11B	-1415	1878	484.0	481.5	479.0	**0.011**				**0.094**	**0.110**	0.000			**0.008**	**0.008**
PZ 11C[3]	-1411	1886	468.8	466.3	463.8				**0.038**	**0.120**	**0.400**				**0.010**	**0.008**
PZ 11D	-1417	1900	473.6	463.6	453.6					0.001	**0.400**				0.000	0.003
PZ 12A	-975	2210	509.8	507.3	504.8	**0.012**	**0.021**			**0.041**	**0.120**	0.002			0.000	0.000
PZ 12B	-970	2214	499.6	497.1	494.6	**0.012**		**0.033**		**0.050**	**0.200**	0.002	0.000		0.000	0.000
PZ 12C[4]	-966	2217	484.6	482.1	479.6					**0.011**	**0.033**				0.000	0.000
PZ 12D	-968	2190	469.4	459.4	449.4					**0.020**	**0.100**				0.000	0.003
PZ 31A	-626	2319	514.2	504.2	494.2					0.000	0.000				0.000	0.000
PZ 31B	-621	2321	593.9	583.9	573.9					0.000	0.000				0.000	0.000
PZ 32A	-1106	1688	509.0	499.0	489.0					**9.500**	**14.000**				**0.016**	0.000
PZ 32B[5]	-1069	1710	496.7	486.7	476.7					**1.800**	**3.700**				**0.032**	**0.095**
PZ 33A[6]	-1447	1630	500.0	490.0	480.0					**8.500**	**2.600**				**0.006**	0.000
PZ 33B	-1438	1649	481.4	476.4	471.4					**20.000**	**0.008**				**0.078**	**0.067**
PZ 33C	-1430	1648	471.2	466.2	461.2					**6.800**	**3.700**				0.003	0.000

Table E-4 (continued)

Well	North (feet)	East (feet)	Top Screen	Mid Screen	Bottom Screen	Tetrachloroethylene						Trichloroethylene				
						Feb 1987	June 1989	July 1990	June 1991	Aug 1997	Nov 1997	Feb 1987	July 1990	June 1991	Aug 1997	Nov 1997
PZ 34A	-1190	2243	497.1	487.1	477.1					0.001	0.000				0.000	0.000
PZ 34B	-1183	2247	476.6	466.6	456.6					0.000	0.000				0.000	0.000
PZ 34C	-1190	2252	457.2	452.2	447.2					0.000	**0.013**				0.000	0.000
PZ 35A	-1084	2370	500.1	490.1	480.1					**0.007**	0.000				0.000	0.000
PZ 35B	-1075	2373	479.7	469.7	459.7					**0.007**	**0.008**				0.000	0.000
PZ 35C	-1071	2366	459.6	454.6	449.6					**0.008**	0.000				0.000	0.000
PZ 39A	-1674	1689	477.3	474.8	472.3						**0.005**					0.000
PZ 39B	-1675	1695	464.0	461.5	459.0						0.000					0.000
PZ 40A	-1590	1449	477.7	475.2	472.7						**0.013**					0.000
PZ 40B	-1588	1451	458.7	456.2	453.7						**0.008**					0.000

Miscellaneous Organic Detects:

[1]cis-1,2-Dichloroethylene = .016 mg/L (Aug. 1997)

[2]cis-1,2-Dichloroethylene = .006 mg/L (Aug. 1997)

[3]Dibromochloromethane = 0.004 mg/L (Aug. 1997)

[4]Ethylbenzene = .016 mg/L (Nov. 1997)

[5]cis-1,2 & trans-1,2-Dichloroethylene = .032 and .001 mg/L, respectively (Aug. 1997)

6cis-1,2 & trans-1,2-Dichloroethylene = .027 and .001 mg/L, respectively (Aug. 1997)

Table E-4 (continued)

Well	Carbon Tetrachloride						Chloroform					
	Feb 1987	June 1989	July 1990	June 1991	Aug 1997	Nov 1997	Feb 1987	June 1989	July 1990	June 1991	Aug 1997	Nov 1997
PZ 1A			0.000		0.000	0.000			0.000		0.000	0.000
PZ 1B					0.000	0.000					0.002	0.000
PZ 1C			0.000		0.000	0.000			0.000		0.000	0.000
PZ 2A												
PZ 2B			0.000						0.000			
PZ 2C												
PZ 2D			**0.006**						0.000			
PZ 3A								**0.160**				
PZ 9A[1]	**0.025**	**0.054**			**0.020**	**0.013**	0.003				0.003	0.000
PZ 9B[2]	**0.021**		0.000		**0.210**	**0.245**	0.002		0.000		0.012	0.011
PZ 9C					**0.009**	**0.030**					0.003	0.006
PZ 11A	**0.001**		0.000		**0.350**	**0.270**	0.001		0.000		**0.240**	**0.220**
PZ 11B	**0.001**				**0.015**	**0.011**	0.000				0.000	0.003
PZ 11C[3]					0.000	**0.059**					0.011	0.011
PZ 11D					0.000	**0.025**					0.000	0.006
PZ 12A	0.000				0.000	0.000	0.003				0.000	0.000
PZ 12B	0.000		0.000		0.000	**0.021**	**0.005**		0.022		0.000	0.000
PZ 12C[4]					0.000	0.000					0.000	0.000
PZ 12D					0.000	0.000					0.000	0.003
PZ 31A					0.000	0.000					0.000	0.000
PZ 31B					0.000	0.000					0.012	0.000
PZ 32A					**1.800**	**13.000**					**0.470**	**0.140**
PZ 32B[5]					**0.040**	**0.220**					0.015	0.014
PZ 33A[6]					**0.990**	**0.700**					0.015	0.009
PZ 33B					**2.400**	**10.500**					**2.600**	**2.000**

Table E-4 (continued)

Well	Carbon Tetrachloride						Chloroform					
	Feb 1987	June 1989	July 1990	June 1991	Aug 1997	Nov 1997	Feb 1987	June 1989	July 1990	June 1991	Aug 1997	Nov 1997
PZ 33C					**5.200**	**4.200**					**0.180**	**0.140**
PZ 34A					0.000	0.000					0.005	0.000
PZ 34B					0.000	0.000					0.000	0.000
PZ 34C					0.000	0.000					0.006	0.000
PZ 35A					0.000	0.000					0.000	0.000
PZ 35B					0.000	0.000					0.012	0.000
PZ 35C					0.000	0.000					0.000	0.000
PZ 39A						0.000						0.014
PZ 39B						0.000						0.000
PZ 40A						0.000						0.004
PZ 40B						0.000						0.000
Miscellaneous Organic Detects:												
[1]cis-1,2-Dichloroethylene = .016 mg/L (Aug. 1997)												
[2]cis-1,2-Dichloroethylene = .006 mg/L (Aug. 1997)												
[3]Dibromochloromethane = 0.004 mg/L (Aug. 1997)												
[4]Ethylbenzene = .016 mg/L (Nov. 1997)												
[5]cis-1,2 & trans-1,2-Dichloroethylene = .032 and .001 mg/L, respectively (Aug. 1997)												
6cis-1,2 & trans-1,2-Dichloroethylene = .027 and .001 mg/L, respectively (Aug. 1997)												

Source: Tennessee Valley Authority. 1998. *TVA Environmental Research Center, RCRA Facility Investigation Final Report, EPA ID No. AL3-6i40-090-004.* Muscle Shoals, Ala.: Tennessee Valey Authority, Environmental Research Center, May 1998.

Table E-5. Solid Waste Management Unit 108 Summary of Nitrate Data 1989-1997

						Total Phosphorous				Total Phosphate			Nitrate+Nitrite											
Well	North (ft)	East (ft)	Top screen	Mid screen	Bottom screen	July 1990	May 1997	Aug 1997	Nov 1997	May 1997	Aug 1997	Nov 1997	June 1989	July 1990	July 1991	Dec 1991	June 1992	May 1993	Jan 1994	June 1994	Dec 1994	May 1997	Aug 1997	Nov 1997
PZ 1A	-646	1545	516.4	513.9	511.4	0.14	0.01	0.00	0.03	0.05	0.00	0.09	12.80	11.00	9.80			12.70	12.00	13.00	12.00	7.90	7.90	9.70
PZ 1B	-653	1550	491.4	488.9	486.4		0.05	0.00	0.14	0.15	0.00	0.43			1.40			1.94	2.00	1.70	2.10	1.60	2.00	2.20
PZ 1C	-654	1544	469.2	466.7	464.2	0.17	0.04	0.00	0.02	0.12	0.00	0.06		100.00	96.10			99.90	110.00	108.00	120.00	110.00	100.00	84.00
PZ 2A	-170	1514	524.1	521.6	519.1										2.70									
PZ 2B	-175	1512	514.1	511.6	509.1	0.04							1.10	1.10	2.20									
PZ 2C	-174	1521	484.1	481.6	479.1										0.70									
PZ 2D	-179	1518	468.5	466.0	463.5	0.14								2.20	1.80									
PZ 3A	-449	2017	518.5	516.0	513.5		0.02			0.06			10.60									2.70		
PZ 3B	-453	2013	493.5	491.0	488.5		0.04			0.12												9.00		
PZ 9A	-1222	1540	509.5	507.0	504.5		0.02	0.25	0.19	0.06	0.76	0.58			6.70			0.46	56.00	52.00	46.00	9.50	53.00	19.00
PZ 9B	-1228	1539	498.7	496.2	493.7		0.02	0.12		0.06	0.37			0.49	0.50			57.60	11.00	9.90	11.00	0.41	14.00	
PZ 9C	-1221	1534	476.7	474.2	471.7		0.03	0.01		0.09	0.03				76.80			9.31	0.45	0.46	0.31	34.00	0.44	
PZ 11A	-1423	1877	493.5	491.0	488.5	0.09	0.55	0.41	0.12	1.70	1.20	0.37	51.10	29.00	23.00	34.00	71.47	70.60	85.00	77.00	140.00	99.00	94.00	130.00
PZ 11B	-1415	1878	484.0	481.5	479.0		0.11	0.38	0.61	0.34	1.20	1.90			0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.17	0.10	0.00
PZ 11C	-1411	1886	468.8	466.3	463.8		0.03	0.05	0.05	0.09	0.15	0.15			1.20	0.00	0.15	0.00	0.00	0.13	0.04	0.26	0.18	0.09
PZ 11D	-1417	1900	473.6	463.6	453.6		0.43	0.07	0.45	1.30	0.21	1.38				24.00	14.13	27.80	30.00	24.00	10.00	14.00	11.00	10.00
PZ 12A	-975	2210	509.8	507.3	504.8		13.00	14.20	7.00	40.00	43.00	21.00	253.00		208.00	188.00	165.30	165.00	220.00	130.00	150.00	1.90	120.00	65.00
PZ 12B	-970	2214	499.6	497.1	494.6	0.00	2.00	2.80	2.90	6.10	8.60	8.90		94.00	83.20	110.00	78.48	113.00	120.00	130.00	85.00	26.00	32.00	3.50
PZ 12C	-966	2217	484.6	482.1	479.6		2.10	2.50	6.30	6.40	7.60	19.00			9.60	28.00	26.80	27.30	24.00	23.00	1.70	8.60	0.00	0.00
PZ 12D	-968	2190	469.4	459.4	449.4		6.50	0.70	1.60	21.00	2.10	4.90				40.00	30.77	14.40	14.00	6.70	22.00	1.70	53.00	67.00
PZ 31A	-626	2319	514.2	504.2	494.2		0.35	0.39	0.52	1.07	1.20	1.60										1.10	1.10	2.40
PZ 31B	-621	2321	593.9	583.9	573.9		3.00	0.08	0.10	9.20	0.24	0.30										1.00	2.30	2.50
PZ 32A	-1106	1688	509.0	499.0	489.0			0.03			0.09												100.00	
PZ 32B	-1069	1710	496.7	486.7	476.7			0.16			0.49												82.00	
PZ 33A	-1447	1630	500.0	490.0	480.0		0.06	0.04	0.04	0.18	0.12	0.12										75.00	77.00	68.00
PZ 33B	-1438	1649	481.4	476.4	471.4		0.22	0.05	0.00	0.67	0.15	0.00										6.20	0.97	2.00
PZ 33C	-1430	1648	471.2	466.2	461.2		0.05	0.00	0.01	0.15	0.00	0.03										3.40	1.60	1.80
PZ 34A	-1190	2243	497.1	487.1	477.1		0.64	0.00	0.01	2.00	0.00	0.03										3.30	3.40	4.00
PZ 34B	-1183	2247	476.6	466.6	456.6		0.04	0.05	0.03	0.12	0.15	0.09										0.04	0.00	1.00
PZ 34C	-1190	2252	457.2	452.2	447.2		0.17	0.01	0.08	0.52	0.03	0.24										0.40	0.43	26.00
PZ 35A	-1084	2370	500.1	490.1	480.1		11.00	0.01	0.26	33.00	0.03	0.80										0.00	1.50	2.50
PZ 35B	-1075	2373	479.7	469.7	459.7		0.14	0.01	0.12	0.43	0.03	0.37										0.17	0.43	1.10
PZ 35C	-1071	2366	459.6	454.6	449.6		0.20	0.05	0.13	0.61	0.15	0.40										16.80	16.80	5.60

Source: Tennessee Valley Authority. 1998. *TVA Environmental Research Center, RCRA Facility Investigation Final Report, EPA ID No. AL3-6i40-090-004.* Muscle Shoals, Ala.: Tennessee Valey Authority, Environmental Research Center, May 1998.

Table E-6. Solid Waste Management Unit 108 Cadmium and Lead Monitoring Results 1997

Well	May 7-28				August 12-14				06-Nov			
	Cd	Dissolved Cd	Pb	Dissolved Pb	Cd	Dissolved Cd	Pb	Dissolved Pb	Cd	Dissolved Cd	Pb	Dissolved Pb
PZ-1A	0.0005		< 0.001		0.0003	0.0002	0.001	< 0.001	0.0005		0.002	
PZ-1B	< 0.0001		0.007		0.0006	0.0005	0.003	0.001	0.001		0.006	
PZ-1C	0.0008		0.006		0.0009	0.0009	< 0.001	< 0.001	0.0008		0.002	
PZ-3A	0.0004		< 0.001									
PZ-3B	**0.005**		0.003									
PZ-9A	< 0.0001	< 0.0001	< 0.001	< 0.001	0.0004	0.0002	0.001	< 0.001	0.003	0.0026	0.002	< 0.001
PZ-9B	0.0003	< 0.0001	< 0.001	< 0.001	0.0006	0.0006	0.006	< 0.001	0.0029	0.0029	0.002	< 0.001
PZ-9C	0.0004		< 0.001		0.0005		< 0.001		0.0007	< 0.0001	0.002	< 0.001
PZ-11A	< 0.0001		0.012		0.001		0.008		0.0013		< 0.001	
PZ-11B	< 0.0001		0.002		0.0004		0.002		< 0.0001		< 0.001	
PZ-11C	0.0002		0.001		0.0006		0.003		0.0004		< 0.001	
PZ-11D	0.0007		0.006		0.0008		0.005		0.0006		0.006	
PZ-12A	0.0011	0.0009	0.011	0.007	0.0007	0.0002	0.004	< 0.001	0.0003	< 0.0001	0.01	< 0.001
PZ-12B	< 0.0001	< 0.0001	0.002	0.002	0.0008	< 0.0001	**0.029**	< 0.001	< 0.0001	< 0.0001	0.009	< 0.001
PZ-12C	0.0003		**0.025**		0.0002		0.008		0.0004		**0.018**	
PZ-12D	**0.005**		**0.065**		0.0036		0.006		**0.0052**		**0.026**	
PZ-31A	< 0.0001		< 0.001		< 0.0001	< 0.0001	< .001	< 0.001	< 0.0001		0.001	
PZ-31B	0.0045		**0.032**		0.0017	0.0015	0.003	< 0.001	0.0007		0.004	
PZ-32A					0.001	0.0009	< 0.001	< 0.001	0.001	0.0006	0.005	< 0.001
PZ-32B					0.0009	0.0003	0.004	< 0.001	0.0006	0.0006	0.003	< 0.001

Well	May 7-28				August 12-14				06-Nov			
	Cd	Dissolved Cd	Pb	Dissolved Pb	Cd	Dissolved Cd	Pb	Dissolved Pb	Cd	Dissolved Cd	Pb	Dissolved Pb
PZ-33A	0.0004	0.0004	< 0.001	< 0.001	0.0003	0.0002	0.001	< 0.001	< 0.0001	< 0.0001	< 0.001	< 0.001
PZ-33B	0.0028	0.002	0.003	0.002	0.0004	0.0004	0.001	< 0.001	0.0006	0.0005	0.003	0.001
PZ-33C	0.0007		< 0.001		0.0004		< 0.001		< 0.0001		< 0.001	
PZ-34A	**0.012**		**0.018**		0.0003		< 0.001					
PZ-34B	**0.011**		**0.018**		0.0005		0.007					
PZ-34C	0.0014		0.004		0.0005		0.003					
PZ-35A					0.0029		**0.028**					
PZ-35B					0.0003		0.001					
PZ-35C					0.0013		0.001					

Source: Tennessee Valley Authority. 1998. *TVA Environmental Research Center, RCRA Facility Investigation Final Report, EPA ID No. AL3-6i40-090-004.* Muscle Shoals, Ala.: Tennessee Valey Authority, Environmental Research Center, May 1998.

Table E-7. Historical Groundwater Measurements at Concentrations in Excess of Resource Conservation and Recovery Act Action Limits Through June 1997

Date	Parameter	Highest Measured Concentration	Units	RCRA Action Limit (mg/L)	Location
1987	Volatile Organics				
	Carbon tetrachloride	25	µg/L	0.005	W9
	Chloroform	5	µg/L	18.0	W12
	Tetrachloroethylene	684	µg/L	N/C	W9
	Radioactive Elements				
	Radium-226	5.7	pCi/L	*	W10
	Radium-228	8.4	pCi/L	*	W10
1989	Volatile Organics				
	Carbon tetrachloride	54	µg/L	0.005	PZ-9A
	Chloroform	160	µg/L	0.1	PZ-3A
	Dibromochloromethane	310	µg/L	0.00042	PZ-11A
	Dioctylphthalate	13	µg/L	*	PZ-12A
	Tetrachloroethylene	300	µg/L	0.005	PZ-11A
	Inorganics				
	Iron	7.0	mg/L	N/C	PZ-1A
	Manganese	6.9	mg/L	*	PZ-12A
	Nitrate-N	243	mg/L	10.0	PZ-12A
	Silver	0.08	mg/L	18.0	PZ-1A
	Sulfate	253	mg/L	N/C	PZ-12A
1990	Volatile Organics				
	1,1,1-Trichloroethane	33	µg/L	0.2	W9
	1,2-Dichloroethane	150	µg/L	720	W13
	Bis(2-ethylhexyl)phthalate	120	µg/L	0.006	W9
	Carbon tetrachloride	6	µg/L	0.005	PZ-2D
	Chloroform	22	µg/L	0.1	PZ-12B
	Tetrachloroethylene	590	µg/L	0.005	W9
	Trichloroethylene	35	µg/L	0.005	W13
	Inorganics				
	Aluminum	1400	mg/L	N/C	W13
	Arsenic	0.50	mg/L	0.05	W13
	Beryllium	0.066	mg/L	0.004	W13
	Cadmium	0.06	mg/L	0.005	W13
	Chromium	1.6	mg/L	0.1	W13
	Iron	1100	mg/L	N/C	W13
	Lead	0.29	mg/L	0.015	W13
	Manganese	23	mg/L	*	W12
	Mercury	0.003	mg/L	0.002	W13
	Nitrate-N	210	mg/L	10	W12

Date	Parameter	Highest Measured Concentration	Units	RCRA Action Limit (mg/L)	Location
1991	Volatile Organics				
	Bis(2-ethylhexyl)phthalate	5	µg/L	0.006	W9
	Carbon tetrachloride	26	µg/L	0.005	W9
	Tetrachloroethylene	600	µg/L	0.005	W9
	Vinyl chloride	110	µg/L	0.002	W9
	Inorganics				
	Nitrate-N	218	mg/L	10	W12
1992	Inorganics				
	Nitrate-N	165	mg/L	10	PZ-12A
1997	Volatile Organics				
	Carbon tetrachloride	13	mg/L	0.005	PZ-32A
	Chloroform	2	mg/L	0.1	PZ-33B
	Tetrachloroethylene	14	mg/L	0.005	PZ-32A
	Trichloroethylene	0.095	mg/L	0.005	PZ-32B
	Inorganics				
	Cadmium	0.008	mg/L	0.005	PZ-1C
	Lead	0.026	mg/L	0.02	PZ-12D
	Nitrate+Nitrite	130	mg/L	10	PZ-11A

*No RCRA action limit established for this parameter

Adapted from: Tennessee Valley Authority. 1998. *TVA Environmental Research Center, RCRA Facility Investigation Final Report, EPA ID No. AL3-6i40-090-004.* Muscle Shoals, Ala.: Tennessee Valey Authority, Environmental Research Center, May 1998.

Abbreviations:

µg/L = Micrograms per liter
mg/L = Milligrams per liter
pCi/L = Pico-curies per liter