

APPENDIX H

OPTION A – LEACHATE SEEPAGE AND COC MASS LOADING ESTIMATES

Table H1. Option A – Leachate Seepage Estimates for Disposal Facility Subregions

Facility Subregion	Start Date	End Date	Waste	Surface Area (sq ft)	Mean Seepage (%P) ¹	Mean Seepage (Lpd)	Model Applied for Seepage Estimate	Subregion Figure No. (Appendix F)
Phase 1 - Ash Dredge Cells 1&3 - Top Working Area	2004	2014	wet ash	1,596,662	11.6	67,618	HELP	F-1
Phase 1 - Ash Dredge Cells 1&3 - Side Slopes	2004	2014	wet ash	1,799,163	30.7	200,760	HELP	F-1
Phase 1 - Ash Dredge Cell 2 (active pond)	2004	2014	wet ash	798,350	--	156,757	MODFLOW	F-1
Phase 1 - Ash Dredge Cells 1-3 - Top Working Area	2015	2016	dipped ash	1,965,662	13.5	90,215	HELP	F-2
Phase 1 - Ash Dredge Cells 1-3 - Side Slopes	2015	2016	dipped ash	2,581,418	17.4	153,283	HELP	F-2
Closure of Ash Dredge Cells 1-3 - Upper Cap	2017	2046	mixed ash	1,965,662	19.2	132,247	HELP	F-3
Closure of Ash Dredge Cells 1-3 - Side Slopes	2017	2046	mixed ash	2,581,418	17.2	155,163	HELP	F-3
Phase 1 - Dredge Cell Lateral Expansion Area - Top	2004	2014	wet ash	496,898	16.9	12,454	HELP	F-4
Phase 1 - Dredge Cell Lateral Expansion Area - Slope	2004	2014	wet ash	502,432	24.4	44,483	HELP	F-4
Phase 2 - Gypsum Pond A (inactive) - NO BUFFER	2009	2018	gypsum	417,835	24.6	37,940	HELP	F-5
Phase 2 - Gypsum Pond A (inactive) - BUFFER	2009	2018	gypsum	417,835	16.2	24,962	HELP	F-5
Phase 2 - Gypsum Pond B (active) - NO BUFFER	2009	2018	wet gypsum	405,015	--	24,347	MODFLOW	F-5
Phase 2 - Gypsum Pond B (active) - BUFFER	2009	2018	wet gypsum	405,015	--	16,545	MODFLOW	F-5
Phase 2 - Ash Pond (active) - NO BUFFER	2009	2018	wet ash	449,658	--	21,844	MODFLOW	F-5
Phase 2 - Ash Pond (active) - BUFFER	2009	2018	wet ash	449,658	--	17,370	MODFLOW	F-5
Phase 3 - Gypsum Pond A (inactive) - NO BUFFER	2019	2028	gypsum	384,240	27.5	38,890	HELP	F-6
Phase 3 - Gypsum Pond A (inactive) - BUFFER	2019	2028	gypsum	384,240	16.2	22,955	HELP	F-6
Phase 3 - Gypsum Pond B (active) - NO BUFFER	2019	2028	wet gypsum	363,363	--	21,844	MODFLOW	F-6
Phase 3 - Gypsum Pond B (active) - BUFFER	2019	2028	wet gypsum	363,363	--	14,843	MODFLOW	F-6
Dry Ash Stack between Phase 2&3 - NO BUFFER	2019	2028	dry ash	249,655	11.2	10,268	HELP	F-7
Dry Ash Stack between Phase 2&3 - BUFFER	2019	2028	dry ash	249,655	9.0	8,243	HELP	F-7
Closure of Phase 2&3 Areas - Upper Cap - NO BUFFER	2029	2058	60:40 ash/gypsum	1,538,324	12.0	65,409	HELP	F-8
Closure of Phase 2&3 Areas - Upper Cap - BUFFER	2029	2058	60:40 ash/gypsum	1,538,324	12.2	66,629	HELP	F-8
Closure of Phase 2&3 Areas - Side Slopes - NO BUFFER	2029	2058	60:40 ash/gypsum	2,709,399	11.9	114,047	HELP	F-8
Closure of Phase 2&3 Areas - Side Slopes - BUFFER	2029	2058	60:40 ash / gypsum	2,709,399	12.1	115,311	HELP	F-9

¹Percent of mean annual precipitation

Table H2. Option A – COC Mass Loading Estimates

Facility	Start Date	End Date	Waste	Ammonia			Arsenic			Cadmium		
				Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)	Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)	Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)
Phase 1 - Ash Dredge Cells 1-3	2004	2014	wet ash	1.00	0.4237	0.4237	0.004	0.0016	0.3189	0.001	0.0004	0.0004
Phase 1 - Ash Dredge Cells 1-3	2015	2016	dipped ash	1.13	0.2754	0.2754	0.004	0.0009	0.1826	0.001	0.0002	0.0002
Closure of Ash Dredge Cells 1-3	2017	2046	mixed ash	1.13	0.3250	0.3250	0.004	0.0011	0.0503	0.001	0.0003	0.0003
Phase 1 - Dredge Cell Lateral Expansion Area	2004	2014	wet ash	2.64	--	0.1503	0.0037	0.0002	0.0427	0.001	--	0.0001
Phase 2 - Gypsum Ponds A&B - NO BUFFER	2009	2018	gypsum	0.000	--	0.000	0.001	0.000	0.000	0.012	--	0.0007
Phase 2 - Gypsum Ponds A&B - BUFFER	2009	2018	gypsum	0.000	--	0.000	0.001	0.000	0.000	0.012	--	0.0005
Phase 2 - Ash Dredge Cell - NO BUFFER	2009	2018	wet ash	2.64	--	0.0577	0.7500	0.0164	0.0164	0.002	--	4.37E-05
Phase 2 - Ash Dredge Cell - BUFFER	2009	2018	wet ash	2.64	--	0.0459	0.7500	0.0130	0.0130	0.002	--	3.47E-05
Phase 3 - Gypsum Ponds A&B - NO BUFFER	2019	2028	gypsum	0.00	--	0.0000	0.0005	0.0000	0.0000	0.012	--	0.0007
Phase 3 - Gypsum Ponds A&B - BUFFER	2019	2028	gypsum	0.00	--	0.0000	0.0005	0.0000	0.0000	0.012	--	0.0005
Phase 2&3 Dry Ash Stack - NO BUFFER	2019	2028	dry ash	733.00	--	7.5263	0.7500	0.0077	0.0077	0.002	--	2.05E-05
Phase 2&3 Dry Ash Stack - BUFFER	2019	2028	dry ash	733.00	--	6.0425	0.7500	0.0062	0.0062	0.002	--	1.65E-05
Closure of Phase 2&3 Areas - NO BUFFER	2029	2058	60:40 ash/gyp	284.69	--	50.6395	0.3496	0.0627	0.0113	0.007	--	0.0013
Closure of Phase 2&3 Areas - BUFFER	2029	2058	60:40 ash/gyp	284.69	--	51.0886	0.3496	0.0622	0.0105	0.007	--	0.0013

Table H2. Option A – COC Mass Loading Estimates (cont.)

Facility	Start Date	End Date	Waste	Copper			Mercury			Nickel		
				Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)	Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)	Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)
Phase 1 - Ash Dredge Cells 1-3	2004	2014	wet ash	0.025	0.0108	0.0108	0.0006	2.55E-04	2.55E-04	0.0466	1.98E-02	1.98E-02
Phase 1 - Ash Dredge Cells 1-3	2015	2016	dipped ash	0.025	0.0062	0.0062	0.0006	1.46E-04	1.46E-04	0.0466	1.13E-02	1.13E-02
Closure of Ash Dredge Cells 1-3	2017	2046	mixed ash	0.025	0.0073	0.0073	0.0006	1.72E-04	1.72E-04	0.0466	1.34E-02	1.34E-02
Phase 1 - Dredge Cell Lateral Expansion Area	2004	2014	wet ash	0.025	--	0.0014	0.0006	--	3.42E-05	0.0466	--	0.0027
Phase 2 - Gypsum Ponds A&B - NO BUFFER	2009	2018	gypsum	0.006	--	0.0003	0.0034	--	2.12E-04	0.107	--	0.0066
Phase 2 - Gypsum Ponds A&B - BUFFER	2009	2018	gypsum	0.006	--	0.0002	0.0034	--	1.41E-04	0.107	--	0.0044
Phase 2 - Ash Dredge Cell - NO BUFFER	2009	2018	wet ash	0.005	--	1.09E-04	0.0001	--	2.18E-06	0.003	--	6.55E-05
Phase 2 - Ash Dredge Cell - BUFFER	2009	2018	wet ash	0.005	--	8.69E-05	0.0001	--	1.74E-06	0.003	--	5.21E-05
Phase 3 - Gypsum Ponds A&B - NO BUFFER	2019	2028	gypsum	0.006	--	0.0003	0.0034	--	2.06E-04	0.107	--	0.0065
Phase 3 - Gypsum Ponds A&B - BUFFER	2019	2028	gypsum	0.006	--	0.0002	0.0034	--	1.29E-04	0.107	--	0.0040
Phase 2&3 Dry Ash Stack - NO BUFFER	2019	2028	dry ash	0.005	--	0.0001	0.0001	--	1.03E-06	0.003	--	3.08E-05
Phase 2&3 Dry Ash Stack - BUFFER	2019	2028	dry ash	0.005	--	0.0000	0.0001	--	8.24E-07	0.003	--	2.47E-05
Closure of Phase 2&3 Areas - NO BUFFER	2029	2058	60:40 ash/gyp	0.005	--	0.0009	0.0019	--	3.34E-04	0.058	--	0.0105
Closure of Phase 2&3 Areas - BUFFER	2029	2058	60:40 ash/gyp	0.005	--	0.0009	0.0019	--	3.31E-04	0.058	--	0.0104

Table H2. Option A – COC Mass Loading Estimates (cont.)

Facility	Start Date	End Date	Waste	Selenium			Zinc		
				Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)	Weighted Average Leachate Conc. (mg/L)	Mass Loading SPC (kg/day)	Mass Loading Emory River (kg/day)
Phase 1 - Ash Dredge Cells 1-3	2004	2014	wet ash	0.001	0.0004	4.25E-04	0.209	0.0889	0.0889
Phase 1 - Ash Dredge Cells 1-3	2015	2016	dipped ash	0.001	0.0002	2.43E-04	0.209	0.0509	0.0509
Closure of Ash Dredge Cells 1-3	2017	2046	mixed ash	0.001	0.0003	2.87E-04	0.209	0.0601	0.0601
Phase 1 - Dredge Cell Lateral Expansion Area	2004	2014	wet ash	0.001	--	5.69E-05	0.209	--	0.0119
Phase 2 - Gypsum Ponds A&B - NO BUFFER	2009	2018	gypsum	0.137	--	8.53E-03	0.715	--	0.0445
Phase 2 - Gypsum Ponds A&B - BUFFER	2009	2018	gypsum	0.137	--	5.69E-03	0.715	--	0.0297
Phase 2 - Ash Dredge Cell - NO BUFFER	2009	2018	wet ash	0.001	--	1.09E-05	0.005	--	1.09E-04
Phase 2 - Ash Dredge Cell - BUFFER	2009	2018	wet ash	0.001	--	8.69E-06	0.005	--	8.69E-05
Phase 3 - Gypsum Ponds A&B - NO BUFFER	2019	2028	gypsum	0.137	--	8.32E-03	0.715	--	0.0434
Phase 3 - Gypsum Ponds A&B - BUFFER	2019	2028	gypsum	0.137	--	5.18E-03	0.715	--	0.0270
Phase 2&3 Dry Ash Stack - NO BUFFER	2019	2028	dry ash	0.001	--	5.13E-06	0.005	--	0.0001
Phase 2&3 Dry Ash Stack - BUFFER	2019	2028	dry ash	0.001	--	4.12E-06	0.005	--	0.0000
Closure of Phase 2&3 Areas - NO BUFFER	2029	2058	60:40 ash/gyp	0.073	--	1.32E-02	0.3843	--	0.0690
Closure of Phase 2&3 Areas - BUFFER	2029	2058	60:40 ash/gyp	0.073	--	1.31E-02	0.3843	--	0.0684