

Appendix V6-5I

Predicted Metal Concentrations in Soil from
Dust Deposition during the Operational Phase



Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D06 (0-10)			D06 (10-20)			D10 (0-10)			D10 (10-20)			D20 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	15200	4.27E+01	15242.65881	14300	4.27E+01	14342.65881	7230	4.37E+01	7273.693944	7250	4.37E+01	7293.693944	10300	3.21E+01	10332.10779
Antimony	0.1 - 10	5	1.47E-04	5.000147099	5	1.47E-04	5.000147099	5	1.51E-04	5.000150669	5	1.51E-04	5.000150669	5	1.11E-04	5.000110717
Arsenic	0.05 - 5	2.5	7.35E-04	2.500735497	2.5	7.35E-04	2.500735497	2.5	7.53E-04	2.500753344	5.6	7.53E-04	5.600753344	2.5	5.54E-04	2.500553583
Barium	0.5 - 1	82.7	4.41E-03	82.70441298	76.2	4.41E-03	76.20441298	21.8	4.52E-03	21.80452006	29.2	4.52E-03	29.20452006	81.4	3.32E-03	81.4033215
Beryllium	0.2 - 0.5	0.25	4.85E-04	0.250485428	0.25	4.85E-04	0.250485428	0.25	4.97E-04	0.250497207	0.25	4.97E-04	0.250497207	0.25	3.65E-04	0.250365364
Bismuth	0.2 - 20	10	1.47E-04	10.0001471	10	1.47E-04	10.0001471	10	1.51E-04	10.00015067	10	1.51E-04	10.00015067	10	1.11E-04	10.00011072
Cadmium	0.05 - 0.5	0.25	1.47E-04	0.250147099	0.25	1.47E-04	0.250147099	0.25	1.51E-04	0.250150669	0.25	1.51E-04	0.250150669	0.25	1.11E-04	0.250110717
Calcium	50	3040	4.71E+01	3087.07179	3170	4.71E+01	3217.07179	1780	4.82E+01	1828.214007	2120	4.82E+01	2168.214007	11100	3.54E+01	11135.42928
Chromium	0.5 - 2	47.6	2.21E-01	47.82064902	48.1	2.21E-01	48.32064902	23.8	2.26E-01	24.02600316	22.1	2.26E-01	22.32600316	81.8	1.66E-01	81.96607476
Cobalt	0.1 - 2	9.8	5.15E-02	9.851484771	11.9	5.15E-02	11.95148477	7.9	5.27E-02	7.952734071	8.3	5.27E-02	8.352734071	16.7	3.88E-02	16.73875078
Copper	0.5 - 1	20.1	1.62E-01	20.26180928	16.9	1.62E-01	17.06180928	21.3	1.66E-01	21.46573565	31.4	1.66E-01	31.56573565	38.2	1.22E-01	38.32178816
Iron	50	23200	7.21E+01	23272.07868	23800	7.21E+01	23872.07868	15100	7.38E+01	15173.8277	15100	7.38E+01	15173.8277	23600	5.43E+01	23654.25109
Lead	0.5 - 30	15	8.83E-04	15.0008826	15	8.83E-04	15.0008826	15	9.04E-04	15.00090401	15	9.04E-04	15.00090401	15	6.64E-04	15.0006643
Magnesium	20 - 50	8480	3.38E+01	8513.832849	7980	3.38E+01	8013.832849	4710	3.47E+01	4744.653818	4790	3.47E+01	4824.653818	7790	2.55E+01	7815.464796
Manganese	1	243	1.37E+00	244.3680239	340	1.37E+00	341.3680239	212	1.40E+00	213.4012196	192	1.40E+00	193.4012196	790	1.03E+00	791.0296635
Mercury	0.005 - 0.005	0.0094	1.47E-05	0.00941471	0.0025	1.47E-05	0.00251471	0.0069	1.51E-05	0.006915067	0.0025	1.51E-05	0.002515067	0.0543	1.11E-05	0.054311072
Molybdenum	0.5 - 4	2	7.35E-04	2.000735497	2	7.35E-04	2.000735497	2	7.53E-04	2.000753344	2	7.53E-04	2.000753344	2	5.54E-04	2.000553583
Nickel	0.5 - 5	24.7	1.06E-01	24.80591153	25.2	1.06E-01	25.30591153	15.2	1.08E-01	15.30848152	16	1.08E-01	16.10848152	53.5	7.97E-02	53.57971588
Phosphorus	50	395	3.24E-01	395.3236186	413	3.24E-01	413.3236186	235	3.31E-01	235.3314713	269	3.31E-01	269.3314713	715	2.44E-01	715.2435763
Potassium	100 - 200	2950	1.47E-01	2950.147099	2520	1.47E-01	2520.147099	550	1.51E-01	550.1506688	820	1.51E-01	820.1506688	1110	1.11E-01	1110.110717
Selenium	0.2 - 0.5	0.25	7.35E-04	0.250735497	0.25	7.35E-04	0.250735497	0.25	7.53E-04	0.250753344	0.25	7.53E-04	0.250753344	0.25	5.54E-04	0.250553583
Silver	0.1 - 2	1	1.47E-04	1.000147099	1	1.47E-04	1.000147099	1	1.51E-04	1.000150669	1	1.51E-04	1.000150669	1	1.11E-04	1.000110717
Sodium	100 - 200	480	3.68E-01	480.3677484	310	3.68E-01	310.3677484	100	3.77E-01	100.3766719	100	3.77E-01	100.3766719	100	2.77E-01	100.2767913
Strontium	0.5	21.3	2.06E-02	21.32059391	19.5	2.06E-02	19.52059391	8.21	2.11E-02	8.231093628	9.02	2.11E-02	9.041093628	33.3	1.55E-02	33.31550031
Thallium	0.05 - 1	0.5	1.47E-04	0.500147099	0.5	1.47E-04	0.500147099	0.5	1.51E-04	0.500150669	0.5	1.51E-04	0.500150669	0.5	1.11E-04	0.500110717
Tin	5-Feb	2.5	2.94E-03	2.502941987	2.5	2.94E-03	2.502941987	2.5	3.01E-03	2.503013375	2.5	3.01E-03	2.503013375	2.5	2.21E-03	2.50221433
Titanium	1	1180	3.24E+00	1183.236186	1060	3.24E+00	1063.236186	509	3.31E+00	512.314713	527	3.31E+00	530.314713	351	2.44E+00	353.4357631
Uranium	0.05	1.37	1.47E-04	1.370147099	1.32	1.47E-04	1.320147099	0.297	1.51E-04	0.297150669	0.37	1.51E-04	0.370150669	0.378	1.11E-04	0.378110717
Vanadium	0.2 - 2	51.2	1.47E-01	51.34709934	50.9	1.47E-01	51.04709934	32	1.51E-01	32.15066877	32.8	1.51E-01	32.95066877	46.3	1.11E-01	46.41071651
Zinc	1	44.7	8.68E-02	44.78678861	39.7	8.68E-02	39.78678861	25.3	8.89E-02	25.38889458	30.1	8.89E-02	30.18889458	47.1	6.53E-02	47.16532274

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

	Detection Limit (mg/kg)	D20 (10-20)			D21 (0-10)			D21 (10-20)			D29 (0-10)			D29 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals																
Aluminum	50	12200	3.21E+01	12232.10779	21100	7.96E+00	21107.95929	19500	7.96E+00	19507.95929	18600	8.49E+00	18608.48965	20900	8.49E+00	20908.48965
Antimony	0.1 - 10	5	1.11E-04	5.000110717	5	2.74E-05	5.000027446	5	2.74E-05	5.000027446	5	2.93E-05	5.000029275	5	2.93E-05	5.000029275
Arsenic	0.05 - 5	2.5	5.54E-04	2.500553583	2.5	1.37E-04	2.500137229	2.5	1.37E-04	2.500137229	2.5	1.46E-04	2.500146373	5.2	1.46E-04	5.200146373
Barium	0.5 - 1	39.7	3.32E-03	39.7033215	112	8.23E-04	112.0008234	107	8.23E-04	107.0008234	100	8.78E-04	100.0008782	121	8.78E-04	121.0008782
Beryllium	0.2 - 0.5	0.25	3.65E-04	0.250365364	0.64	9.06E-05	0.640090571	0.59	9.06E-05	0.590090571	0.53	9.66E-05	0.530096606	0.58	9.66E-05	0.580096606
Bismuth	0.2 - 20	10	1.11E-04	10.00011072	10	2.74E-05	10.00002745	10	2.74E-05	10.00002745	10	2.93E-05	10.00002927	10	2.93E-05	10.00002927
Cadmium	0.05 - 0.5	0.25	1.11E-04	0.250110717	0.25	2.74E-05	0.250027446	0.25	2.74E-05	0.250027446	0.25	2.93E-05	0.250029275	0.25	2.93E-05	0.250029275
Calcium	50	7590	3.54E+01	7625.429282	3760	8.78E+00	3768.782666	3630	8.78E+00	3638.782666	9020	9.37E+00	9029.367894	7320	9.37E+00	7329.367894
Chromium	0.5 - 2	74.5	1.66E-01	74.66607476	62.8	4.12E-02	62.84116875	58.6	4.12E-02	58.64116875	51.8	4.39E-02	51.843912	60.6	4.39E-02	60.643912
Cobalt	0.1 - 2	17.1	3.88E-02	17.13875078	11.4	9.61E-03	11.40960604	10.1	9.61E-03	10.10960604	10.3	1.02E-02	10.31024613	12.9	1.02E-02	12.91024613
Copper	0.5 - 1	67.7	1.22E-01	67.82178816	25.4	3.02E-02	25.43019041	24.4	3.02E-02	24.43019041	28.4	3.22E-02	28.43220213	31	3.22E-02	31.03220213
Iron	50	26700	5.43E+01	26754.25109	29000	1.34E+01	29013.44846	27400	1.34E+01	27413.44846	25500	1.43E+01	25514.34459	30500	1.43E+01	30514.34459
Lead	0.5 - 30	15	6.64E-04	15.0006643	15	1.65E-04	15.00016467	15	1.65E-04	15.00016467	15	1.76E-04	15.00017565	15	1.76E-04	15.00017565
Magnesium	20 - 50	10700	2.55E+01	10725.4648	10900	6.31E+00	10906.31254	10200	6.31E+00	10206.31254	10000	6.73E+00	10006.73317	11700	6.73E+00	11706.73317
Manganese	1	619	1.03E+00	620.0296635	255	2.55E-01	255.2552462	225	2.55E-01	225.2552462	358	2.72E-01	358.2722544	368	2.72E-01	368.2722544
Mercury	0.005 - 0.005	0.0155	1.11E-05	0.015511072	0.0159	2.74E-06	0.015902745	0.01	2.74E-06	0.010002745	0.0263	2.93E-06	0.026302927	0.0141	2.93E-06	0.014102927
Molybdenum	0.5 - 4	2	5.54E-04	2.000553583	2	1.37E-04	2.000137229	2	1.37E-04	2.000137229	2	1.46E-04	2.000146373	2	1.46E-04	2.000146373
Nickel	0.5 - 5	48.3	7.97E-02	48.37971588	31.1	1.98E-02	31.119761	28.6	1.98E-02	28.619761	26.2	2.11E-02	26.22107776	32.5	2.11E-02	32.52107776
Phosphorus	50	321	2.44E-01	321.2435763	602	6.04E-02	602.0603808	552	6.04E-02	552.0603808	536	6.44E-02	536.0644043	516	6.44E-02	516.0644043
Potassium	100 - 200	1160	1.11E-01	1160.110717	4390	2.74E-02	4390.027446	3930	2.74E-02	3930.027446	3330	2.93E-02	3330.029275	3790	2.93E-02	3790.029275
Selenium	0.2 - 0.5	0.25	5.54E-04	0.250553583	0.25	1.37E-04	0.250137229	0.25	1.37E-04	0.250137229	0.25	1.46E-04	0.250146373	0.25	1.46E-04	0.250146373
Silver	0.1 - 2	1	1.11E-04	1.000110717	1	2.74E-05	1.000027446	1	2.74E-05	1.000027446	1	2.93E-05	1.000029275	1	2.93E-05	1.000029275
Sodium	100 - 200	100	2.77E-01	100.2767913	510	6.86E-02	510.0686146	480	6.86E-02	480.0686146	1030	7.32E-02	1030.073187	730	7.32E-02	730.0731867
Strontium	0.5	23.4	1.55E-02	23.41550031	30	3.84E-03	30.00384242	28	3.84E-03	28.00384242	36.4	4.10E-03	36.40409845	29.8	4.10E-03	29.80409845
Thallium	0.05 - 1	0.5	1.11E-04	0.500110717	0.5	2.74E-05	0.500027446	0.5	2.74E-05	0.500027446	0.5	2.93E-05	0.500029275	0.5	2.93E-05	0.500029275
Tin	5-Feb	2.5	2.21E-03	2.50221433	2.5	5.49E-04	2.500548917	2.5	5.49E-04	2.500548917	2.5	5.85E-04	2.500585493	2.5	5.85E-04	2.500585493
Titanium	1	746	2.44E+00	748.4357631	1440	6.04E-01	1440.603808	1340	6.04E-01	1340.603808	1210	6.44E-01	1210.644043	1400	6.44E-01	1400.644043
Uranium	0.05	0.774	1.11E-04	0.774110717	1.63	2.74E-05	1.630027446	1.62	2.74E-05	1.620027446	1.03	2.93E-05	1.030029275	1.47	2.93E-05	1.470029275
Vanadium	0.2 - 2	50.3	1.11E-01	50.41071651	64.3	2.74E-02	64.32744583	60.2	2.74E-02	60.22744583	53.8	2.93E-02	53.82927467	64.6	2.93E-02	64.62927467
Zinc	1	46.5	6.53E-02	46.56532274	54.2	1.62E-02	54.21619304	50.4	1.62E-02	50.41619304	55.8	1.73E-02	55.81727205	60.9	1.73E-02	60.91727205

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D32 (0-10)			D32 (10-20)			D38 (0-10)			D38 (10-20)			D43 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	8640	8.45E+00	8648.445538	8250	8.45E+00	8258.445538	3380	7.70E+00	3387.702356	3630	7.70E+00	3637.702356	16400	4.88E+01	16448.82588
Antimony	0.1 - 10	5	2.91E-05	5.000029123	5	2.91E-05	5.000029123	5	2.66E-05	5.00002656	5	2.66E-05	5.00002656	5	1.68E-04	5.000168365
Arsenic	0.05 - 5	2.5	1.46E-04	2.500145613	2.5	1.46E-04	2.500145613	2.5	1.33E-04	2.500132799	2.5	1.33E-04	2.500132799	2.5	8.42E-04	2.500841826
Barium	0.5 - 1	39.7	8.74E-04	39.70087368	44	8.74E-04	44.00087368	12.8	7.97E-04	12.8007968	15.4	7.97E-04	15.4007968	93	5.05E-03	93.00505095
Beryllium	0.2 - 0.5	0.25	9.61E-05	0.250096104	0.25	9.61E-05	0.250096104	0.25	8.76E-05	0.250087648	0.25	8.76E-05	0.250087648	0.56	5.56E-04	0.560555605
Bismuth	0.2 - 20	10	2.91E-05	10.00002912	10	2.91E-05	10.00002912	10	2.66E-05	10.00002656	10	2.66E-05	10.00002656	10	1.68E-04	10.00016837
Cadmium	0.05 - 0.5	0.25	2.91E-05	0.250029123	0.25	2.91E-05	0.250029123	0.25	2.66E-05	0.25002656	0.25	2.66E-05	0.25002656	0.25	1.68E-04	0.250168365
Calcium	50	2270	9.32E+00	2279.319215	2120	9.32E+00	2129.319215	984	8.50E+00	992.4991517	1270	8.50E+00	1278.499152	9410	5.39E+01	9463.876838
Chromium	0.5 - 2	26.2	4.37E-02	26.24368382	25.7	4.37E-02	25.74368382	8.2	3.98E-02	8.239839773	9.6	3.98E-02	9.639839773	45.7	2.53E-01	45.95254768
Cobalt	0.1 - 2	6.1	1.02E-02	6.110192891	5.2	1.02E-02	5.210192891	2.7	9.30E-03	2.709295947	3.6	9.30E-03	3.609295947	9.4	5.89E-02	9.458927791
Copper	0.5 - 1	12.1	3.20E-02	12.1320348	13.8	3.20E-02	13.8320348	2.5	2.92E-02	2.529215834	3.7	2.92E-02	3.729215834	16.5	1.85E-01	16.68520163
Iron	50	15300	1.43E+01	15314.27005	13100	1.43E+01	13114.27005	7800	1.30E+01	7813.014326	8610	1.30E+01	8623.014326	22800	8.25E+01	22882.49891
Lead	0.5 - 30	15	1.75E-04	15.00017474	15	1.75E-04	15.00017474	15	1.59E-04	15.00015936	15	1.59E-04	15.00015936	15	1.01E-03	15.00101019
Magnesium	20 - 50	5280	6.70E+00	5286.698185	4810	6.70E+00	4816.698185	2040	6.11E+00	2046.108765	2320	6.11E+00	2326.108765	9550	3.87E+01	9588.723977
Manganese	1	132	2.71E-01	132.2708397	116	2.71E-01	116.2708397	68.3	2.47E-01	68.5470066	84.3	2.47E-01	84.5470066	248	1.57E+00	249.5657956
Mercury	0.005 - 0.005	0.0056	2.91E-06	0.005602912	0.0082	2.91E-06	0.008202912	0.0025	2.66E-06	0.002502656	0.0025	2.66E-06	0.002502656	0.0175	1.68E-05	0.017516837
Molybdenum	0.5 - 4	2	1.46E-04	2.000145613	2	1.46E-04	2.000145613	2	1.33E-04	2.000132799	2	1.33E-04	2.000132799	2	8.42E-04	2.000841826
Nickel	0.5 - 5	14.6	2.10E-02	14.62096823	14.1	2.10E-02	14.12096823	2.5	1.91E-02	2.519123091	5.3	1.91E-02	5.319123091	24.3	1.21E-01	24.42122289
Phosphorus	50	478	6.41E-02	478.0640696	456	6.41E-02	456.0640696	125	5.84E-02	125.0584317	211	5.84E-02	211.0584317	406	3.70E-01	406.3704033
Potassium	100 - 200	1220	2.91E-02	1220.029123	1280	2.91E-02	1280.029123	380	2.66E-02	380.0265598	410	2.66E-02	410.0265598	3960	1.68E-01	3960.168365
Selenium	0.2 - 0.5	0.25	1.46E-04	0.250145613	0.25	1.46E-04	0.250145613	0.25	1.33E-04	0.250132799	0.25	1.33E-04	0.250132799	0.25	8.42E-04	0.250841826
Silver	0.1 - 2	1	2.91E-05	1.000029123	1	2.91E-05	1.000029123	1	2.66E-05	1.00002656	1	2.66E-05	1.00002656	1	1.68E-04	1.000168365
Sodium	100 - 200	240	7.28E-02	240.0728064	250	7.28E-02	250.0728064	100	6.64E-02	100.0663996	100	6.64E-02	100.0663996	630	4.21E-01	630.4209128
Strontium	0.5	13	4.08E-03	13.00407716	12.5	4.08E-03	12.50407716	5.88	3.72E-03	5.883718379	6.67	3.72E-03	6.673718379	79.9	2.36E-02	79.92357112
Thallium	0.05 - 1	0.5	2.91E-05	0.500029123	0.5	2.91E-05	0.500029123	0.5	2.66E-05	0.50002656	0.5	2.66E-05	0.50002656	0.5	1.68E-04	0.500168365
Tin	5-Feb	2.5	5.82E-04	2.500582451	2.5	5.82E-04	2.500582451	2.5	5.31E-04	2.500531197	2.5	5.31E-04	2.500531197	2.5	3.37E-03	2.503367302
Titanium	1	584	6.41E-01	584.640696	527	6.41E-01	527.640696	335	5.84E-01	335.5843167	344	5.84E-01	344.5843167	996	3.70E+00	999.7040326
Uranium	0.05	0.748	2.91E-05	0.748029123	0.735	2.91E-05	0.735029123	0.249	2.66E-05	0.24902656	0.332	2.66E-05	0.33202656	0.837	1.68E-04	0.837168365
Vanadium	0.2 - 2	31.8	2.91E-02	31.82912255	29.2	2.91E-02	29.22912255	19.1	2.66E-02	19.12655985	20.9	2.66E-02	20.92655985	47.2	1.68E-01	47.36836512
Zinc	1	28.9	1.72E-02	28.9171823	30.6	1.72E-02	30.6171823	10.7	1.57E-02	10.71567031	11.6	1.57E-02	11.61567031	51	9.93E-02	51.09933542

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D43 (10-20)			D54 (0-10)			D54 (10-20)			D57 (0-10)			D57 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	16000	4.88E+01	16048.82588	626	9.73E+00	635.7337459	2390	9.73E+00	2399.733746	17400	4.50E+01	17444.98528	19700	4.50E+01	19744.98528
Antimony	0.1 - 10	5	1.68E-04	5.000168365	5	3.36E-05	5.000033565	5	3.36E-05	5.000033565	5	1.55E-04	5.000155122	5	1.55E-04	5.000155122
Arsenic	0.05 - 5	2.5	8.42E-04	2.500841826	2.5	1.68E-04	2.500167823	2.5	1.68E-04	2.500167823	2.5	7.76E-04	2.500775608	2.5	7.76E-04	2.500775608
Barium	0.5 - 1	102	5.05E-03	102.005051	36	1.01E-03	36.00100694	48.4	1.01E-03	48.40100694	116	4.65E-03	116.0046536	136	4.65E-03	136.0046536
Beryllium	0.2 - 0.5	0.53	5.56E-04	0.530555605	0.25	1.11E-04	0.250110763	0.25	1.11E-04	0.250110763	0.56	5.12E-04	0.560511901	0.63	5.12E-04	0.630511901
Bismuth	0.2 - 20	10	1.68E-04	10.00016837	10	3.36E-05	10.00003356	10	3.36E-05	10.00003356	10	1.55E-04	10.00015512	10	1.55E-04	10.00015512
Cadmium	0.05 - 0.5	0.25	1.68E-04	0.250168365	0.25	3.36E-05	0.250033565	0.25	3.36E-05	0.250033565	0.25	1.55E-04	0.250155122	0.25	1.55E-04	0.250155122
Calcium	50	9000	5.39E+01	9053.876838	11700	1.07E+01	11710.74069	14000	1.07E+01	14010.74069	4610	4.96E+01	4659.638927	4580	4.96E+01	4629.638927
Chromium	0.5 - 2	43.6	2.53E-01	43.85254768	1	5.03E-02	1.050346962	5.8	5.03E-02	5.850346962	53	2.33E-01	53.23268247	62.4	2.33E-01	62.63268247
Cobalt	0.1 - 2	8.9	5.89E-02	8.958927791	3.6	1.17E-02	3.611747624	5.8	1.17E-02	5.811747624	11.5	5.43E-02	11.55429258	13.2	5.43E-02	13.25429258
Copper	0.5 - 1	21.8	1.85E-01	21.98520163	5.6	3.69E-02	5.636921105	9.1	3.69E-02	9.136921105	23.8	1.71E-01	23.97063381	26.5	1.71E-01	26.67063381
Iron	50	21900	8.25E+01	21982.49891	4080	1.64E+01	4096.446674	25200	1.64E+01	25216.44667	25500	7.60E+01	25576.00961	30300	7.60E+01	30376.00961
Lead	0.5 - 30	15	1.01E-03	15.00101019	15	2.01E-04	15.00020139	15	2.01E-04	15.00020139	15	9.31E-04	15.00093073	15	9.31E-04	15.00093073
Magnesium	20 - 50	9200	3.87E+01	9238.723977	2530	7.72E+00	2537.719867	2100	7.72E+00	2107.719867	10100	3.57E+01	10135.67798	11500	3.57E+01	11535.67798
Manganese	1	246	1.57E+00	247.5657956	226	3.12E-01	226.3121512	112	3.12E-01	112.3121512	308	1.44E+00	309.4426313	337	1.44E+00	338.4426313
Mercury	0.005 - 0.005	0.0108	1.68E-05	0.010816837	0.158	3.36E-06	0.158003356	0.0695	3.36E-06	0.069503356	0.0165	1.55E-05	0.016515512	0.0091	1.55E-05	0.009115512
Molybdenum	0.5 - 4	2	8.42E-04	2.000841826	2	1.68E-04	2.000167823	2	1.68E-04	2.000167823	2	7.76E-04	2.000775608	2	7.76E-04	2.000775608
Nickel	0.5 - 5	23.5	1.21E-01	23.62122289	2.5	2.42E-02	2.524166542	15.1	2.42E-02	15.12416654	28.1	1.12E-01	28.21168759	34.4	1.12E-01	34.51168759
Phosphorus	50	356	3.70E-01	356.3704033	674	7.38E-02	674.0738422	943	7.38E-02	943.0738422	591	3.41E-01	591.3412676	607	3.41E-01	607.3412676
Potassium	100 - 200	3140	1.68E-01	3140.168365	830	3.36E-02	830.0335646	100	3.36E-02	100.0335646	4370	1.55E-01	4370.155122	4840	1.55E-01	4840.155122
Selenium	0.2 - 0.5	0.25	8.42E-04	0.250841826	0.25	1.68E-04	0.250167823	0.25	1.68E-04	0.250167823	0.25	7.76E-04	0.250775608	0.25	7.76E-04	0.250775608
Silver	0.1 - 2	1	1.68E-04	1.000168365	1	3.36E-05	1.000033565	1	3.36E-05	1.000033565	1	1.55E-04	1.000155122	1	1.55E-04	1.000155122
Sodium	100 - 200	640	4.21E-01	640.4209128	540	8.39E-02	540.0839116	380	8.39E-02	380.0839116	530	3.88E-01	530.3878041	450	3.88E-01	450.3878041
Strontium	0.5	77.3	2.36E-02	77.32357112	54.3	4.70E-03	54.30469905	61.9	4.70E-03	61.90469905	31.4	2.17E-02	31.42171703	31.5	2.17E-02	31.52171703
Thallium	0.05 - 1	0.5	1.68E-04	0.500168365	0.5	3.36E-05	0.500033565	0.5	3.36E-05	0.500033565	0.5	1.55E-04	0.500155122	0.5	1.55E-04	0.500155122
Tin	5-Feb	2.5	3.37E-03	2.503367302	2.5	6.71E-04	2.500671293	2.5	6.71E-04	2.500671293	2.5	3.10E-03	2.503102433	2.5	3.10E-03	2.503102433
Titanium	1	945	3.70E+00	948.7040326	18.7	7.38E-01	19.4384221	64.4	7.38E-01	65.1384221	1200	3.41E+00	1203.412676	1250	3.41E+00	1253.412676
Uranium	0.05	0.988	1.68E-04	0.988168365	0.025	3.36E-05	0.025033565	0.219	3.36E-05	0.219033565	1.88	1.55E-04	1.880155122	1.97	1.55E-04	1.970155122
Vanadium	0.2 - 2	47.2	1.68E-01	47.36836512	1	3.36E-02	1.033564641	9.4	3.36E-02	9.433564641	57.3	1.55E-01	57.45512165	64.9	1.55E-01	65.05512165
Zinc	1	48.6	9.93E-02	48.69933542	26.5	1.98E-02	26.51980314	9	1.98E-02	9.019803138	50.9	9.15E-02	50.99152177	59.1	9.15E-02	59.19152177

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D59 (0-10)			D59 (10-20)			D61 (0-10)			D61 (10-20)			D70 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	5000	1.32E+01	5013.190311	3680	1.32E+01	3693.190311	14200	7.92E+00	14207.91766	11200	7.92E+00	11207.91766	3580	1.06E+01	3590.615991
Antimony	0.1 - 10	5	4.55E-05	5.000045484	5	4.55E-05	5.000045484	5	2.73E-05	5.000027302	5	2.73E-05	5.000027302	5	3.66E-05	5.000036607
Arsenic	0.05 - 5	2.5	2.27E-04	2.500227419	2.5	2.27E-04	2.500227419	2.5	1.37E-04	2.500136511	2.5	1.37E-04	2.500136511	2.5	1.83E-04	2.500183034
Barium	0.5 - 1	22.4	1.36E-03	22.40136451	21.7	1.36E-03	21.70136451	77.1	8.19E-04	77.10081907	60	8.19E-04	60.00081907	21.3	1.10E-03	21.30109821
Beryllium	0.2 - 0.5	0.25	1.50E-04	0.250150097	0.25	1.50E-04	0.250150097	0.25	9.01E-05	0.250090098	0.25	9.01E-05	0.250090098	0.25	1.21E-04	0.250120803
Bismuth	0.2 - 20	10	4.55E-05	10.00004548	10	4.55E-05	10.00004548	10	2.73E-05	10.0000273	10	2.73E-05	10.0000273	10	3.66E-05	10.00003661
Cadmium	0.05 - 0.5	0.25	4.55E-05	0.250045484	0.25	4.55E-05	0.250045484	0.25	2.73E-05	0.250027302	0.25	2.73E-05	0.250027302	0.25	3.66E-05	0.250036607
Calcium	50	2470	1.46E+01	2484.554826	2410	1.46E+01	2424.554826	6190	8.74E+00	6198.73673	4210	8.74E+00	4218.73673	1800	1.17E+01	1811.714197
Chromium	0.5 - 2	17.5	6.82E-02	17.56822575	13.8	6.82E-02	13.86822575	41.3	4.10E-02	41.34095342	34.7	4.10E-02	34.74095342	9	5.49E-02	9.0549103
Cobalt	0.1 - 2	6.2	1.59E-02	6.215919341	4.9	1.59E-02	4.915919341	7.2	9.56E-03	7.209555798	6.6	9.56E-03	6.609555798	1	1.28E-02	1.012812403
Copper	0.5 - 1	22.1	5.00E-02	22.15003221	16.2	5.00E-02	16.25003221	13	3.00E-02	13.03003251	12.6	3.00E-02	12.63003251	5.9	4.03E-02	5.940267554
Iron	50	10700	2.23E+01	10722.28708	8910	2.23E+01	8932.287077	19700	1.34E+01	19713.37812	17300	1.34E+01	17313.37812	6690	1.79E+01	6707.937365
Lead	0.5 - 30	15	2.73E-04	15.0002729	15	2.73E-04	15.0002729	15	1.64E-04	15.00016381	15	1.64E-04	15.00016381	15	2.20E-04	15.00021964
Magnesium	20 - 50	3740	1.05E+01	3750.461281	2370	1.05E+01	2380.461281	7990	6.28E+00	7996.279525	6340	6.28E+00	6346.279525	1650	8.42E+00	1658.419579
Manganese	1	108	4.23E-01	108.4229996	83.8	4.23E-01	84.22299962	240	2.54E-01	240.2539112	182	2.54E-01	182.2539112	41.5	3.40E-01	41.84044386
Mercury	0.005 - 0.005	0.0025	4.55E-06	0.002504548	0.0025	4.55E-06	0.002504548	0.0201	2.73E-06	0.02010273	0.0059	2.73E-06	0.00590273	0.0099	3.66E-06	0.009903661
Molybdenum	0.5 - 4	2	2.27E-04	2.000227419	2	2.27E-04	2.000227419	2	1.37E-04	2.000136511	2	1.37E-04	2.000136511	2	1.83E-04	2.000183034
Nickel	0.5 - 5	15.2	3.27E-02	15.23274836	10.5	3.27E-02	10.53274836	20	1.97E-02	20.01965764	16	1.97E-02	16.01965764	2.5	2.64E-02	2.526356944
Phosphorus	50	325	1.00E-01	325.1000644	363	1.00E-01	363.1000644	490	6.01E-02	490.060065	579	6.01E-02	579.060065	326	8.05E-02	326.0805351
Potassium	100 - 200	540	4.55E-02	540.0454838	490	4.55E-02	490.0454838	2890	2.73E-02	2890.027302	2640	2.73E-02	2640.027302	230	3.66E-02	230.0366069
Selenium	0.2 - 0.5	0.25	2.27E-04	0.250227419	0.25	2.27E-04	0.250227419	0.25	1.37E-04	0.250136511	0.25	1.37E-04	0.250136511	0.25	1.83E-04	0.250183034
Silver	0.1 - 2	1	4.55E-05	1.000045484	1	4.55E-05	1.000045484	1	2.73E-05	1.000027302	1	2.73E-05	1.000027302	1	3.66E-05	1.000036607
Sodium	100 - 200	100	1.14E-01	100.1137096	100	1.14E-01	100.1137096	510	6.83E-02	510.0682557	380	6.83E-02	380.0682557	210	9.15E-02	210.0915172
Strontium	0.5	8.52	6.37E-03	8.526367736	8.67	6.37E-03	8.676367736	32	3.82E-03	32.00382232	24.8	3.82E-03	24.80382232	8.51	5.12E-03	8.515124961
Thallium	0.05 - 1	0.5	4.55E-05	0.500045484	0.5	4.55E-05	0.500045484	0.5	2.73E-05	0.500027302	0.5	2.73E-05	0.500027302	0.5	3.66E-05	0.500036607
Tin	5-Feb	2.5	9.10E-04	2.500909677	2.5	9.10E-04	2.500909677	2.5	5.46E-04	2.500546046	2.5	5.46E-04	2.500546046	2.5	7.32E-04	2.500732137
Titanium	1	381	1.00E+00	382.0006443	357	1.00E+00	358.0006443	815	6.01E-01	815.6006502	740	6.01E-01	740.6006502	235	8.05E-01	235.8053511
Uranium	0.05	0.345	4.55E-05	0.345045484	0.38	4.55E-05	0.380045484	1.1	2.73E-05	1.100027302	1.27	2.73E-05	1.270027302	0.344	3.66E-05	0.344036607
Vanadium	0.2 - 2	23.7	4.55E-02	23.74548383	20.9	4.55E-02	20.94548383	43.3	2.73E-02	43.32730228	40.3	2.73E-02	40.32730228	15.1	3.66E-02	15.13660687
Zinc	1	18.4	2.68E-02	18.42683546	15.5	2.68E-02	15.52683546	57.3	1.61E-02	57.31610835	33.7	1.61E-02	33.71610835	9.6	2.16E-02	9.621598051

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

	Detection Limit (mg/kg)	D70 (10-20)			D72 (0-10)			D72 (10-20)			D76 (0-10)			D76 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals																
Aluminum	50	3810	1.06E+01	3820.615991	16600	6.38E+01	16663.78318	16600	6.38E+01	16663.78318	16700	2.38E+01	16723.82423	8450	2.38E+01	8473.824231
Antimony	0.1 - 10	5	3.66E-05	5.000036607	5	2.20E-04	5.000219942	5	2.20E-04	5.000219942	5	8.22E-05	5.000082153	5	8.22E-05	5.000082153
Arsenic	0.05 - 5	2.5	1.83E-04	2.500183034	2.5	1.10E-03	2.50109971	2.5	1.10E-03	2.50109971	2.5	4.11E-04	2.500410763	2.5	4.11E-04	2.500410763
Barium	0.5 - 1	20.5	1.10E-03	20.50109821	73.1	6.60E-03	73.10659826	81.9	6.60E-03	81.90659826	102	2.46E-03	102.0024646	52.6	2.46E-03	52.60246458
Beryllium	0.2 - 0.5	0.25	1.21E-04	0.250120803	0.25	7.26E-04	0.250725809	0.51	7.26E-04	0.510725809	0.25	2.71E-04	0.250271103	0.25	2.71E-04	0.250271103
Bismuth	0.2 - 20	10	3.66E-05	10.00003661	10	2.20E-04	10.00021994	10	2.20E-04	10.00021994	10	8.22E-05	10.00008215	10	8.22E-05	10.00008215
Cadmium	0.05 - 0.5	0.25	3.66E-05	0.250036607	0.25	2.20E-04	0.250219942	0.25	2.20E-04	0.250219942	0.25	8.22E-05	0.250082153	0.25	8.22E-05	0.250082153
Calcium	50	1740	1.17E+01	1751.714197	3280	7.04E+01	3350.381437	3150	7.04E+01	3220.381437	2550	2.63E+01	2576.288807	2260	2.63E+01	2286.288807
Chromium	0.5 - 2	9	5.49E-02	9.0549103	47.1	3.30E-01	47.42991298	47.9	3.30E-01	48.22991298	39.9	1.23E-01	40.02322878	22.8	1.23E-01	22.92322878
Cobalt	0.1 - 2	1	1.28E-02	1.012812403	6.4	7.70E-02	6.476979696	6.6	7.70E-02	6.676979696	8.4	2.88E-02	8.428753382	5	2.88E-02	5.028753382
Copper	0.5 - 1	4.7	4.03E-02	4.740267554	28.6	2.42E-01	28.84193619	30.4	2.42E-01	30.64193619	26.2	9.04E-02	26.29036777	12.7	9.04E-02	12.79036777
Iron	50	5160	1.79E+01	5177.937365	19400	1.08E+02	19507.77157	19200	1.08E+02	19307.77157	22900	4.03E+01	22940.25474	13800	4.03E+01	13840.25474
Lead	0.5 - 30	15	2.20E-04	15.00021964	15	1.32E-03	15.00131965	15	1.32E-03	15.00131965	15	4.93E-04	15.00049292	15	4.93E-04	15.00049292
Magnesium	20 - 50	1810	8.42E+00	1818.419579	6430	5.06E+01	6480.586658	6590	5.06E+01	6640.586658	7200	1.89E+01	7218.89508	4210	1.89E+01	4228.89508
Manganese	1	44.8	3.40E-01	45.14044386	135	2.05E+00	137.0454605	130	2.05E+00	132.0454605	147	7.64E-01	147.7640184	108	7.64E-01	108.7640184
Mercury	0.005 - 0.005	0.0025	3.66E-06	0.002503661	0.0193	2.20E-05	0.019321994	0.0116	2.20E-05	0.011621994	0.0206	8.22E-06	0.020608215	0.0065	8.22E-06	0.006508215
Molybdenum	0.5 - 4	2	1.83E-04	2.000183034	2	1.10E-03	2.00109971	2	1.10E-03	2.00109971	2	4.11E-04	2.000410763	2	4.11E-04	2.000410763
Nickel	0.5 - 5	2.5	2.64E-02	2.526356944	17.4	1.58E-01	17.55835823	18	1.58E-01	18.15835823	20.8	5.91E-02	20.85914981	10.9	5.91E-02	10.95914981
Phosphorus	50	386	8.05E-02	386.0805351	531	4.84E-01	531.4838724	473	4.84E-01	473.4838724	412	1.81E-01	412.1807355	405	1.81E-01	405.1807355
Potassium	100 - 200	230	3.66E-02	230.0366069	1810	2.20E-01	1810.219942	1680	2.20E-01	1680.219942	3110	8.22E-02	3110.082153	1710	8.22E-02	1710.082153
Selenium	0.2 - 0.5	0.25	1.83E-04	0.250183034	0.25	1.10E-03	0.25109971	0.25	1.10E-03	0.25109971	0.25	4.11E-04	0.250410763	0.25	4.11E-04	0.250410763
Silver	0.1 - 2	1	3.66E-05	1.000036607	1	2.20E-04	1.000219942	1	2.20E-04	1.000219942	1	8.22E-05	1.000082153	1	8.22E-05	1.000082153
Sodium	100 - 200	100	9.15E-02	100.0915172	290	5.50E-01	290.549855	250	5.50E-01	250.549855	290	2.05E-01	290.2053813	220	2.05E-01	220.2053813
Strontium	0.5	7.89	5.12E-03	7.895124961	27.4	3.08E-02	27.43079188	23.8	3.08E-02	23.83079188	21.5	1.15E-02	21.51150135	15.1	1.15E-02	15.11150135
Thallium	0.05 - 1	0.5	3.66E-05	0.500036607	0.5	2.20E-04	0.500219942	0.5	2.20E-04	0.500219942	0.5	8.22E-05	0.500082153	0.5	8.22E-05	0.500082153
Tin	5-Feb	2.5	7.32E-04	2.500732137	2.5	4.40E-03	2.50439884	2.5	4.40E-03	2.50439884	2.5	1.64E-03	2.50164305	2.5	1.64E-03	2.50164305
Titanium	1	283	8.05E-01	283.8053511	1080	4.84E+00	1084.838724	992	4.84E+00	996.8387238	977	1.81E+00	978.8073555	646	1.81E+00	647.8073555
Uranium	0.05	0.393	3.66E-05	0.393036607	1.63	2.20E-04	1.630219942	1.71	2.20E-04	1.710219942	1.12	8.22E-05	1.120082153	0.79	8.22E-05	0.790082153
Vanadium	0.2 - 2	13.3	3.66E-02	13.33660687	50.6	2.20E-01	50.81994199	50.3	2.20E-01	50.51994199	46	8.22E-02	46.08215252	30.1	8.22E-02	30.18215252
Zinc	1	8.9	2.16E-02	8.921598051	34.6	1.30E-01	34.72976577	35.4	1.30E-01	35.52976577	46.3	4.85E-02	46.34846999	22.9	4.85E-02	22.94846999

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D108 (0-10)			D108 (10-20)			D109 (0-10)			D109 (10-20)			D96 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	10200	1.18E+01	10211.82829	9060	1.18E+01	9071.828289	907	9.30E+00	916.3005503	6910	9.30E+00	6919.30055	2390	4.39E+01	2433.900662
Antimony	0.1 - 10	5	4.08E-05	5.000040787	5	4.08E-05	5.000040787	5	3.21E-05	5.000032071	5	3.21E-05	5.000032071	5	1.51E-04	5.000151382
Arsenic	0.05 - 5	2.5	2.04E-04	2.500203936	2.5	2.04E-04	2.500203936	2.5	1.60E-04	2.500160354	2.5	1.60E-04	2.500160354	2.5	7.57E-04	2.500756908
Barium	0.5 - 1	30.2	1.22E-03	30.20122362	30.3	1.22E-03	30.30122362	24	9.62E-04	24.00096213	33.7	9.62E-04	33.70096213	9.3	4.54E-03	9.304541448
Beryllium	0.2 - 0.5	0.25	1.35E-04	0.250134598	0.25	1.35E-04	0.250134598	0.25	1.06E-04	0.250105834	0.25	1.06E-04	0.250105834	0.25	5.00E-04	0.250499559
Bismuth	0.2 - 20	10	4.08E-05	10.00004079	10	4.08E-05	10.00004079	10	3.21E-05	10.00003207	10	3.21E-05	10.00003207	10	1.51E-04	10.00015138
Cadmium	0.05 - 0.5	0.25	4.08E-05	0.250040787	0.25	4.08E-05	0.250040787	0.25	3.21E-05	0.250032071	0.25	3.21E-05	0.250032071	0.25	1.51E-04	0.250151382
Calcium	50	3560	1.31E+01	3573.051905	4940	1.31E+01	4953.051905	4630	1.03E+01	4640.262676	2760	1.03E+01	2770.262676	1110	4.84E+01	1158.442109
Chromium	0.5 - 2	24.3	6.12E-02	24.3611808	23.7	6.12E-02	23.7611808	1	4.81E-02	1.048106294	14.5	4.81E-02	14.54810629	6.5	2.27E-01	6.727072387
Cobalt	0.1 - 2	9	1.43E-02	9.014275521	6.4	1.43E-02	6.414275521	1	1.12E-02	1.011224802	2.3	1.12E-02	2.311224802	1	5.30E-02	1.052983557
Copper	0.5 - 1	20.9	4.49E-02	20.94486592	23.7	4.49E-02	23.74486592	4.3	3.53E-02	4.335277949	4.9	3.53E-02	4.935277949	1.6	1.67E-01	1.766519751
Iron	50	18400	2.00E+01	18419.98573	17100	2.00E+01	17119.98573	1200	1.57E+01	1215.714723	9750	1.57E+01	9765.714723	4620	7.42E+01	4694.17698
Lead	0.5 - 30	15	2.45E-04	15.00024472	15	2.45E-04	15.00024472	15	1.92E-04	15.00019243	15	1.92E-04	15.00019243	15	9.08E-04	15.00090829
Magnesium	20 - 50	5460	9.38E+00	5469.381057	3400	9.38E+00	3409.381057	1100	7.38E+00	1107.376298	1390	7.38E+00	1397.376298	1380	3.48E+01	1414.817766
Manganese	1	327	3.79E-01	327.379321	201	3.79E-01	201.379321	10.4	2.98E-01	10.69825903	24.9	2.98E-01	25.19825903	59.7	1.41E+00	61.1078488
Mercury	0.005 - 0.005	0.0504	4.08E-06	0.050404079	0.062	4.08E-06	0.062004079	0.104	3.21E-06	0.104003207	0.0442	3.21E-06	0.044203207	0.0025	1.51E-05	0.002515138
Molybdenum	0.5 - 4	2	2.04E-04	2.000203936	2	2.04E-04	2.000203936	2	1.60E-04	2.000160354	2	1.60E-04	2.000160354	2	7.57E-04	2.000756908
Nickel	0.5 - 5	15.9	2.94E-02	15.92936679	12.8	2.94E-02	12.82936679	2.5	2.31E-02	2.523091021	8.1	2.31E-02	8.123091021	2.5	1.09E-01	2.608994746
Phosphorus	50	425	8.97E-02	425.0897318	770	8.97E-02	770.0897318	530	7.06E-02	530.0705559	735	7.06E-02	735.0705559	193	3.33E-01	193.3330395
Potassium	100 - 200	410	4.08E-02	410.0407872	370	4.08E-02	370.0407872	440	3.21E-02	440.0320709	590	3.21E-02	590.0320709	270	1.51E-01	270.1513816
Selenium	0.2 - 0.5	0.25	2.04E-04	0.250203936	0.25	2.04E-04	0.250203936	0.25	1.60E-04	0.250160354	0.25	1.60E-04	0.250160354	0.25	7.57E-04	0.250756908
Silver	0.1 - 2	1	4.08E-05	1.000040787	1	4.08E-05	1.000040787	1	3.21E-05	1.000032071	1	3.21E-05	1.000032071	1	1.51E-04	1.000151382
Sodium	100 - 200	100	1.02E-01	100.101968	100	1.02E-01	100.101968	100	8.02E-02	100.0801772	100	8.02E-02	100.0801772	100	3.78E-01	100.378454
Strontium	0.5	16.2	5.71E-03	16.20571021	19.3	5.71E-03	19.30571021	29.3	4.49E-03	29.30448992	23.5	4.49E-03	23.50448992	5.01	2.12E-02	5.031193423
Thallium	0.05 - 1	0.5	4.08E-05	0.500040787	0.5	4.08E-05	0.500040787	0.5	3.21E-05	0.500032071	0.5	3.21E-05	0.500032071	0.5	1.51E-04	0.500151382
Tin	5-Feb	2.5	8.16E-04	2.500815744	2.5	8.16E-04	2.500815744	2.5	6.41E-04	2.500641417	2.5	6.41E-04	2.500641417	2.5	3.03E-03	2.503027632
Titanium	1	719	8.97E-01	719.8973185	454	8.97E-01	454.8973185	36.4	7.06E-01	37.10555898	260	7.06E-01	260.705559	165	3.33E+00	168.330395
Uranium	0.05	0.428	4.08E-05	0.428040787	0.798	4.08E-05	0.798040787	0.062	3.21E-05	0.062032071	0.609	3.21E-05	0.609032071	0.219	1.51E-04	0.219151382
Vanadium	0.2 - 2	36	4.08E-02	36.0407872	30.7	4.08E-02	30.7407872	2.5	3.21E-02	2.532070863	14.6	3.21E-02	14.63207086	9.9	1.51E-01	10.05138159
Zinc	1	38.6	2.41E-02	38.62406445	26.7	2.41E-02	26.72406445	17.3	1.89E-02	17.31892181	10.6	1.89E-02	10.61892181	9.7	8.93E-02	9.789315139

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D96 (10-20)			D99 (0-10)			D99 (10-20)			D82 (0-10)			D82 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	2300	4.39E+01	2343.900662	16300	1.95E+01	16319.46318	16600	1.95E+01	16619.46318	3030	2.38E+01	3053.824231	3480	2.38E+01	3503.824231
Antimony	0.1 - 10	5	1.51E-04	5.000151382	5	6.71E-05	5.000067114	5	6.71E-05	5.000067114	5	8.22E-05	5.000082153	5	8.22E-05	5.000082153
Arsenic	0.05 - 5	2.5	7.57E-04	2.500756908	2.5	3.36E-04	2.500335572	2.5	3.36E-04	2.500335572	2.5	4.11E-04	2.500410763	2.5	4.11E-04	2.500410763
Barium	0.5 - 1	9.5	4.54E-03	9.504541448	104	2.01E-03	104.0020134	105	2.01E-03	105.0020134	17.8	2.46E-03	17.80246458	23.1	2.46E-03	23.10246458
Beryllium	0.2 - 0.5	0.25	5.00E-04	0.250499559	0.25	2.21E-04	0.250221478	0.25	2.21E-04	0.250221478	0.25	2.71E-04	0.250271103	0.25	2.71E-04	0.250271103
Bismuth	0.2 - 20	10	1.51E-04	10.00015138	10	6.71E-05	10.00006711	10	6.71E-05	10.00006711	10	8.22E-05	10.00008215	10	8.22E-05	10.00008215
Cadmium	0.05 - 0.5	0.25	1.51E-04	0.250151382	0.25	6.71E-05	0.250067114	0.25	6.71E-05	0.250067114	0.25	8.22E-05	0.250082153	0.25	8.22E-05	0.250082153
Calcium	50	1200	4.84E+01	1248.442109	4250	2.15E+01	4271.476609	4470	2.15E+01	4491.476609	1620	2.63E+01	1646.288807	1930	2.63E+01	1956.288807
Chromium	0.5 - 2	6.5	2.27E-01	6.727072387	46.3	1.01E-01	46.40067161	47.3	1.01E-01	47.40067161	11.1	1.23E-01	11.22322878	10.6	1.23E-01	10.72322878
Cobalt	0.1 - 2	1	5.30E-02	1.052983557	8.8	2.35E-02	8.823490042	10.2	2.35E-02	10.22349004	2.2	2.88E-02	2.228753382	2.6	2.88E-02	2.628753382
Copper	0.5 - 1	1.3	1.67E-01	1.466519751	18.8	7.38E-02	18.87382584	17.7	7.38E-02	17.77382584	4.4	9.04E-02	4.490367773	7	9.04E-02	7.090367773
Iron	50	4700	7.42E+01	4774.17698	23100	3.29E+01	23132.88606	22800	3.29E+01	22832.88606	7960	4.03E+01	8000.254735	8310	4.03E+01	8350.254735
Lead	0.5 - 30	15	9.08E-04	15.00090829	15	4.03E-04	15.00040269	15	4.03E-04	15.00040269	15	4.93E-04	15.00049292	15	4.93E-04	15.00049292
Magnesium	20 - 50	1400	3.48E+01	1434.817766	7720	1.54E+01	7735.436313	8000	1.54E+01	8015.436313	1760	1.89E+01	1778.89508	1920	1.89E+01	1938.89508
Manganese	1	47.1	1.41E+00	48.5078488	202	6.24E-01	202.624164	249	6.24E-01	249.624164	56.4	7.64E-01	57.16401844	63.8	7.64E-01	64.56401844
Mercury	0.005 - 0.005	0.0025	1.51E-05	0.002515138	0.0079	6.71E-06	0.007906711	0.009	6.71E-06	0.009006711	0.0025	8.22E-06	0.002508215	0.0071	8.22E-06	0.007108215
Molybdenum	0.5 - 4	2	7.57E-04	2.000756908	2	3.36E-04	2.000335572	2	3.36E-04	2.000335572	2	4.11E-04	2.000410763	2	4.11E-04	2.000410763
Nickel	0.5 - 5	2.5	1.09E-01	2.608994746	21.6	4.83E-02	21.64832237	21.7	4.83E-02	21.74832237	2.5	5.91E-02	2.559149815	2.5	5.91E-02	2.559149815
Phosphorus	50	216	3.33E-01	216.3330395	523	1.48E-01	523.1476517	559	1.48E-01	559.1476517	292	1.81E-01	292.1807355	280	1.81E-01	280.1807355
Potassium	100 - 200	250	1.51E-01	250.1513816	3850	6.71E-02	3850.067114	3970	6.71E-02	3970.067114	510	8.22E-02	510.0821525	420	8.22E-02	420.0821525
Selenium	0.2 - 0.5	0.25	7.57E-04	0.250756908	0.25	3.36E-04	0.250335572	0.25	3.36E-04	0.250335572	0.25	4.11E-04	0.250410763	0.25	4.11E-04	0.250410763
Silver	0.1 - 2	1	1.51E-04	1.000151382	1	6.71E-05	1.000067114	1	6.71E-05	1.000067114	1	8.22E-05	1.000082153	1	8.22E-05	1.000082153
Sodium	100 - 200	100	3.78E-01	100.378454	370	1.68E-01	370.167786	380	1.68E-01	380.167786	100	2.05E-01	100.2053813	100	2.05E-01	100.2053813
Strontium	0.5	5.08	2.12E-02	5.101193423	25.2	9.40E-03	25.20939602	26.4	9.40E-03	26.40939602	7.27	1.15E-02	7.281501353	8.89	1.15E-02	8.901501353
Thallium	0.05 - 1	0.5	1.51E-04	0.500151382	0.5	6.71E-05	0.500067114	0.5	6.71E-05	0.500067114	0.5	8.22E-05	0.500082153	0.5	8.22E-05	0.500082153
Tin	5-Feb	2.5	3.03E-03	2.503027632	2.5	1.34E-03	2.501342288	2.5	1.34E-03	2.501342288	2.5	1.64E-03	2.50164305	2.5	1.64E-03	2.50164305
Titanium	1	187	3.33E+00	190.330395	1210	1.48E+00	1211.476517	1230	1.48E+00	1231.476517	348	1.81E+00	349.8073555	357	1.81E+00	358.8073555
Uranium	0.05	0.218	1.51E-04	0.218151382	1.22	6.71E-05	1.220067114	1.21	6.71E-05	1.210067114	0.397	8.22E-05	0.397082153	0.453	8.22E-05	0.453082153
Vanadium	0.2 - 2	10.2	1.51E-01	10.35138159	53.2	6.71E-02	53.2671144	54.2	6.71E-02	54.2671144	19.4	8.22E-02	19.48215252	20	8.22E-02	20.08215252
Zinc	1	7.3	8.93E-02	7.389315139	46.2	3.96E-02	46.2395975	48.4	3.96E-02	48.4395975	8.8	4.85E-02	8.848469987	9.8	4.85E-02	9.848469987

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D88 (0-10)			D88 (10-20)			D65 (0-10)			D65 (10-20)			D119 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	3280	4.39E+01	3323.900662	2910	4.39E+01	2953.900662	2650	1.06E+01	2660.615991	3670	1.06E+01	3680.615991	2960	1.18E+01	2971.828289
Antimony	0.1 - 10	5	1.51E-04	5.000151382	5	1.51E-04	5.000151382	5	3.66E-05	5.000036607	5	3.66E-05	5.000036607	5	4.08E-05	5.000040787
Arsenic	0.05 - 5	2.5	7.57E-04	2.500756908	2.5	7.57E-04	2.500756908	2.5	1.83E-04	2.500183034	2.5	1.83E-04	2.500183034	2.5	2.04E-04	2.500203936
Barium	0.5 - 1	18.3	4.54E-03	18.30454145	19.1	4.54E-03	19.10454145	16.6	1.10E-03	16.60109821	18.1	1.10E-03	18.10109821	21.3	1.22E-03	21.30122362
Beryllium	0.2 - 0.5	0.25	5.00E-04	0.250499559	0.25	5.00E-04	0.250499559	0.25	1.21E-04	0.250120803	0.25	1.21E-04	0.250120803	0.25	1.35E-04	0.250134598
Bismuth	0.2 - 20	10	1.51E-04	10.00015138	10	1.51E-04	10.00015138	10	3.66E-05	10.00003661	10	3.66E-05	10.00003661	10	4.08E-05	10.00004079
Cadmium	0.05 - 0.5	0.25	1.51E-04	0.250151382	0.25	1.51E-04	0.250151382	0.25	3.66E-05	0.250036607	0.25	3.66E-05	0.250036607	0.25	4.08E-05	0.250040787
Calcium	50	1270	4.84E+01	1318.442109	1310	4.84E+01	1358.442109	1440	1.17E+01	1451.714197	1340	1.17E+01	1351.714197	1230	1.31E+01	1243.051905
Chromium	0.5 - 2	8.5	2.27E-01	8.727072387	8.2	2.27E-01	8.427072387	8.8	5.49E-02	8.8549103	12	5.49E-02	12.0549103	10.3	6.12E-02	10.3611808
Cobalt	0.1 - 2	2.7	5.30E-02	2.752983557	3	5.30E-02	3.052983557	1	1.28E-02	1.012812403	2.6	1.28E-02	2.612812403	1	1.43E-02	1.014275521
Copper	0.5 - 1	5.7	1.67E-01	5.866519751	18.4	1.67E-01	18.56651975	5.2	4.03E-02	5.240267554	4.8	4.03E-02	4.840267554	2.3	4.49E-02	2.344865923
Iron	50	7500	7.42E+01	7574.17698	7100	7.42E+01	7174.17698	6310	1.79E+01	6327.937365	7460	1.79E+01	7477.937365	7600	2.00E+01	7619.98573
Lead	0.5 - 30	15	9.08E-04	15.00090829	15	9.08E-04	15.00090829	15	2.20E-04	15.00021964	15	2.20E-04	15.00021964	15	2.45E-04	15.00024472
Magnesium	20 - 50	2000	3.48E+01	2034.817766	1740	3.48E+01	1774.817766	1620	8.42E+00	1628.419579	2450	8.42E+00	2458.419579	1960	9.38E+00	1969.381057
Manganese	1	59.5	1.41E+00	60.9078488	62.3	1.41E+00	63.7078488	48.8	3.40E-01	49.14044386	57.9	3.40E-01	58.24044386	54.8	3.79E-01	55.17932099
Mercury	0.005 - 0.005	0.0025	1.51E-05	0.002515138	0.0025	1.51E-05	0.002515138	0.0025	3.66E-06	0.002503661	0.0129	3.66E-06	0.012903661	0.0025	4.08E-06	0.002504079
Molybdenum	0.5 - 4	2	7.57E-04	2.000756908	2	7.57E-04	2.000756908	2	1.83E-04	2.000183034	2	1.83E-04	2.000183034	2	2.04E-04	2.000203936
Nickel	0.5 - 5	2.5	1.09E-01	2.608994746	2.5	1.09E-01	2.608994746	2.5	2.64E-02	2.526356944	5.4	2.64E-02	5.426356944	2.5	2.94E-02	2.529366786
Phosphorus	50	203	3.33E-01	203.3330395	259	3.33E-01	259.3330395	360	8.05E-02	360.0805351	267	8.05E-02	267.0805351	214	8.97E-02	214.0897318
Potassium	100 - 200	520	1.51E-01	520.1513816	470	1.51E-01	470.1513816	420	3.66E-02	420.0366069	530	3.66E-02	530.0366069	700	4.08E-02	700.0407872
Selenium	0.2 - 0.5	0.25	7.57E-04	0.250756908	0.25	7.57E-04	0.250756908	0.25	1.83E-04	0.250183034	0.25	1.83E-04	0.250183034	0.25	2.04E-04	0.250203936
Silver	0.1 - 2	1	1.51E-04	1.000151382	1	1.51E-04	1.000151382	1	3.66E-05	1.000036607	1	3.66E-05	1.000036607	1	4.08E-05	1.000040787
Sodium	100 - 200	100	3.78E-01	100.378454	100	3.78E-01	100.378454	100	9.15E-02	100.0915172	100	9.15E-02	100.0915172	100	1.02E-01	100.101968
Strontium	0.5	6.86	2.12E-02	6.881193423	6.12	2.12E-02	6.141193423	6.58	5.12E-03	6.585124961	8.22	5.12E-03	8.225124961	6.74	5.71E-03	6.745710208
Thallium	0.05 - 1	0.5	1.51E-04	0.500151382	0.5	1.51E-04	0.500151382	0.5	3.66E-05	0.500036607	0.5	3.66E-05	0.500036607	0.5	4.08E-05	0.500040787
Tin	5-Feb	2.5	3.03E-03	2.503027632	2.5	3.03E-03	2.503027632	2.5	7.32E-04	2.500732137	2.5	7.32E-04	2.500732137	2.5	8.16E-04	2.500815744
Titanium	1	357	3.33E+00	360.330395	279	3.33E+00	282.330395	231	8.05E-01	231.8053511	377	8.05E-01	377.8053511	407	8.97E-01	407.8973185
Uranium	0.05	0.392	1.51E-04	0.392151382	0.324	1.51E-04	0.324151382	0.422	3.66E-05	0.422036607	0.344	3.66E-05	0.344036607	0.281	4.08E-05	0.281040787
Vanadium	0.2 - 2	16.4	1.51E-01	16.55138159	14.9	1.51E-01	15.05138159	14.3	3.66E-02	14.33660687	17.5	3.66E-02	17.53660687	19.8	4.08E-02	19.8407872
Zinc	1	9.9	8.93E-02	9.989315139	8.3	8.93E-02	8.389315139	7.8	2.16E-02	7.821598051	11.2	2.16E-02	11.22159805	9.9	2.41E-02	9.92406445

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		D119 (10-20)			D122 (0-10)			D122 (10-20)			D132 (0-10)			D132 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	3480	1.18E+01	3491.828289	6280	1.23E+01	6292.271392	8800	1.23E+01	8812.271392	3470	8.39E+00	3478.388991	2850	8.39E+00	2858.388991
Antimony	0.1 - 10	5	4.08E-05	5.000040787	5	4.23E-05	5.000042315	5	4.23E-05	5.000042315	5	2.89E-05	5.000028928	5	2.89E-05	5.000028928
Arsenic	0.05 - 5	2.5	2.04E-04	2.500203936	2.5	2.12E-04	2.500211576	2.5	2.12E-04	2.500211576	2.5	1.45E-04	2.500144638	2.5	1.45E-04	2.500144638
Barium	0.5 - 1	28	1.22E-03	28.00122362	35	1.27E-03	35.00126945	46.1	1.27E-03	46.10126945	21.4	8.68E-04	21.40086783	15.1	8.68E-04	15.10086783
Beryllium	0.2 - 0.5	0.25	1.35E-04	0.250134598	0.25	1.40E-04	0.25013964	0.25	1.40E-04	0.25013964	0.25	9.55E-05	0.250095461	0.25	9.55E-05	0.250095461
Bismuth	0.2 - 20	10	4.08E-05	10.00004079	10	4.23E-05	10.00004232	10	4.23E-05	10.00004232	10	2.89E-05	10.00002893	10	2.89E-05	10.00002893
Cadmium	0.05 - 0.5	0.25	4.08E-05	0.250040787	0.25	4.23E-05	0.250042315	0.25	4.23E-05	0.250042315	0.25	2.89E-05	0.250028928	0.25	2.89E-05	0.250028928
Calcium	50	1350	1.31E+01	1363.051905	2070	1.35E+01	2083.540846	2550	1.35E+01	2563.540846	1710	9.26E+00	1719.256818	1340	9.26E+00	1349.256818
Chromium	0.5 - 2	13.1	6.12E-02	13.1611808	18.6	6.35E-02	18.66347272	24.9	6.35E-02	24.96347272	10.5	4.34E-02	10.54339133	9.2	4.34E-02	9.243391334
Cobalt	0.1 - 2	2.5	1.43E-02	2.514275521	3.2	1.48E-02	3.214810301	3.7	1.48E-02	3.714810301	3.4	1.01E-02	3.410124645	2.4	1.01E-02	2.410124645
Copper	0.5 - 1	5.7	4.49E-02	5.744865923	6.9	4.65E-02	6.94654666	8.8	4.65E-02	8.84654666	9.1	3.18E-02	9.131820312	7.1	3.18E-02	7.131820312
Iron	50	7890	2.00E+01	7909.98573	9940	2.07E+01	9960.734421	13000	2.07E+01	13020.73442	7340	1.42E+01	7354.174502	6590	1.42E+01	6604.174502
Lead	0.5 - 30	15	2.45E-04	15.00024472	15	2.54E-04	15.00025389	15	2.54E-04	15.00025389	15	1.74E-04	15.00017357	15	1.74E-04	15.00017357
Magnesium	20 - 50	2270	9.38E+00	2279.381057	3070	9.73E+00	3079.732483	3910	9.73E+00	3919.732483	1910	6.65E+00	1916.653338	1590	6.65E+00	1596.653338
Manganese	1	60.6	3.79E-01	60.97932099	70.9	3.94E-01	71.29353085	92	3.94E-01	92.39353085	64.8	2.69E-01	65.06902627	51.1	2.69E-01	51.36902627
Mercury	0.005 - 0.005	0.0025	4.08E-06	0.002504079	0.0099	4.23E-06	0.009904232	0.016	4.23E-06	0.016004232	0.0117	2.89E-06	0.011702893	0.0025	2.89E-06	0.002502893
Molybdenum	0.5 - 4	2	2.04E-04	2.000203936	2	2.12E-04	2.000211576	2	2.12E-04	2.000211576	2	1.45E-04	2.000144638	2	1.45E-04	2.000144638
Nickel	0.5 - 5	5	2.94E-02	5.029366786	8.3	3.05E-02	8.330466904	10.9	3.05E-02	10.9304669	5.6	2.08E-02	5.62082784	2.5	2.08E-02	2.52082784
Phosphorus	50	243	8.97E-02	243.0897318	489	9.31E-02	489.0930933	582	9.31E-02	582.0930933	295	6.36E-02	295.0636406	269	6.36E-02	269.0636406
Potassium	100 - 200	750	4.08E-02	750.0407872	890	4.23E-02	890.0423151	1130	4.23E-02	1130.042315	480	2.89E-02	480.0289276	360	2.89E-02	360.0289276
Selenium	0.2 - 0.5	0.25	2.04E-04	0.250203936	0.25	2.12E-04	0.250211576	0.25	2.12E-04	0.250211576	0.25	1.45E-04	0.250144638	0.25	1.45E-04	0.250144638
Silver	0.1 - 2	1	4.08E-05	1.000040787	1	4.23E-05	1.000042315	1	4.23E-05	1.000042315	1	2.89E-05	1.000028928	1	2.89E-05	1.000028928
Sodium	100 - 200	240	1.02E-01	240.101968	100	1.06E-01	100.1057879	240	1.06E-01	240.1057879	100	7.23E-02	100.0723189	100	7.23E-02	100.0723189
Strontium	0.5	7.77	5.71E-03	7.775710208	14.7	5.92E-03	14.70592412	19.3	5.92E-03	19.30592412	7.84	4.05E-03	7.844049858	5.5	4.05E-03	5.504049858
Thallium	0.05 - 1	0.5	4.08E-05	0.500040787	0.5	4.23E-05	0.500042315	0.5	4.23E-05	0.500042315	0.5	2.89E-05	0.500028928	0.5	2.89E-05	0.500028928
Tin	5-Feb	2.5	8.16E-04	2.500815744	2.5	8.46E-04	2.500846303	2.5	8.46E-04	2.500846303	2.5	5.79E-04	2.500578551	2.5	5.79E-04	2.500578551
Titanium	1	403	8.97E-01	403.8973185	415	9.31E-01	415.9309332	514	9.31E-01	514.9309332	280	6.36E-01	280.6364062	240	6.36E-01	240.6364062
Uranium	0.05	0.412	4.08E-05	0.412040787	0.807	4.23E-05	0.807042315	0.923	4.23E-05	0.923042315	0.482	2.89E-05	0.482028928	0.319	2.89E-05	0.319028928
Vanadium	0.2 - 2	20.7	4.08E-02	20.7407872	21.7	4.23E-02	21.74231515	27.3	4.23E-02	27.34231515	16.7	2.89E-02	16.72892756	15.3	2.89E-02	15.32892756
Zinc	1	12.2	2.41E-02	12.22406445	23.3	2.50E-02	23.32496594	33.4	2.50E-02	33.42496594	9.6	1.71E-02	9.617067258	7.7	1.71E-02	7.717067258

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		8 (0-10)			8 (10-20)			13 (0-10)			13 (10-20)			14 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	17300	3.36E+01	17333.57697	19100	3.36E+01	19133.57697	2700	1.60E+01	2716.019017	3350	1.60E+01	3366.019017	18700	1.59E+01	18715.8919
Antimony	0.1 - 10	5	1.16E-04	5.000115783	5	1.16E-04	5.000115783	5	5.52E-05	5.000055238	5	5.52E-05	5.000055238	5	5.48E-05	5.0000548
Arsenic	0.05 - 5	2.5	5.79E-04	2.500578913	2.5	5.79E-04	2.500578913	2.5	2.76E-04	2.50027619	2.5	2.76E-04	2.50027619	2.5	2.74E-04	2.500273998
Barium	0.5 - 1	93.2	3.47E-03	93.20347348	106	3.47E-03	106.0034735	15.3	1.66E-03	15.30165714	22.6	1.66E-03	22.60165714	117	1.64E-03	117.001644
Beryllium	0.2 - 0.5	0.25	3.82E-04	0.250382083	0.52	3.82E-04	0.520382083	0.25	1.82E-04	0.250182285	0.25	1.82E-04	0.250182285	0.59	1.81E-04	0.590180839
Bismuth	0.2 - 20	10	1.16E-04	10.00011578	10	1.16E-04	10.00011578	10	5.52E-05	10.00005524	10	5.52E-05	10.00005524	10	5.48E-05	10.0000548
Cadmium	0.05 - 0.5	0.25	1.16E-04	0.250115783	0.25	1.16E-04	0.250115783	0.25	5.52E-05	0.250055238	0.25	5.52E-05	0.250055238	0.25	5.48E-05	0.2500548
Calcium	50	4100	3.71E+01	4137.050453	5130	3.71E+01	5167.050453	1210	1.77E+01	1227.676156	1850	1.77E+01	1867.676156	4620	1.75E+01	4637.535894
Chromium	0.5 - 2	52.2	1.74E-01	52.373674	56.8	1.74E-01	56.973674	9.4	8.29E-02	9.482856983	10.5	8.29E-02	10.58285698	58.8	8.22E-02	58.88219951
Cobalt	0.1 - 2	10.4	4.05E-02	10.44052393	11.9	4.05E-02	11.94052393	1	1.93E-02	1.019333296	3.1	1.93E-02	3.119333296	13.8	1.92E-02	13.81917988
Copper	0.5 - 1	13.8	1.27E-01	13.92736093	17	1.27E-01	17.12736093	4.7	6.08E-02	4.760761788	7.8	6.08E-02	7.860761788	19.1	6.03E-02	19.16027964
Iron	50	26300	5.67E+01	26356.73351	29100	5.67E+01	29156.73351	7130	2.71E+01	7157.066615	7950	2.71E+01	7977.066615	29700	2.69E+01	29726.85184
Lead	0.5 - 30	15	6.95E-04	15.0006947	15	6.95E-04	15.0006947	15	3.31E-04	15.00033143	15	3.31E-04	15.00033143	15	3.29E-04	15.0003288
Magnesium	20 - 50	10200	2.66E+01	10226.63001	11400	2.66E+01	11426.63001	1760	1.27E+01	1772.704737	2250	1.27E+01	2262.704737	11300	1.26E+01	11312.60392
Manganese	1	286	1.08E+00	287.0767788	362	1.08E+00	363.0767788	47.7	5.14E-01	48.2137133	67.2	5.14E-01	67.7137133	330	5.10E-01	330.5096369
Mercury	0.005 - 0.005	0.0107	1.16E-05	0.010711578	0.0205	1.16E-05	0.020511578	0.0025	5.52E-06	0.002505524	0.0025	5.52E-06	0.002505524	0.0079	5.48E-06	0.00790548
Molybdenum	0.5 - 4	2	5.79E-04	2.000578913	2	5.79E-04	2.000578913	2	2.76E-04	2.00027619	2	2.76E-04	2.00027619	2	2.74E-04	2.000273998
Nickel	0.5 - 5	23.3	8.34E-02	23.38336352	27.3	8.34E-02	27.38336352	2.5	3.98E-02	2.539771352	5.3	3.98E-02	5.339771352	29.8	3.95E-02	29.83945576
Phosphorus	50	402	2.55E-01	402.2547219	512	2.55E-01	512.2547219	310	1.22E-01	310.1215236	393	1.22E-01	393.1215236	584	1.21E-01	584.1205593
Potassium	100 - 200	3890	1.16E-01	3890.115783	4380	1.16E-01	4380.115783	510	5.52E-02	510.055238	760	5.52E-02	760.055238	4400	5.48E-02	4400.0548
Selenium	0.2 - 0.5	0.25	5.79E-04	0.250578913	0.25	5.79E-04	0.250578913	0.25	2.76E-04	0.25027619	0.25	2.76E-04	0.25027619	0.25	2.74E-04	0.250273998
Silver	0.1 - 2	1	1.16E-04	1.000115783	1	1.16E-04	1.000115783	1	5.52E-05	1.000055238	1	5.52E-05	1.000055238	1	5.48E-05	1.0000548
Sodium	100 - 200	520	2.89E-01	520.2894567	510	2.89E-01	510.2894567	100	1.38E-01	100.138095	100	1.38E-01	100.138095	460	1.37E-01	460.1369992
Strontium	0.5	23.2	1.62E-02	23.21620957	29.5	1.62E-02	29.51620957	5.22	7.73E-03	5.227733318	7.1	7.73E-03	7.107733318	24.7	7.67E-03	24.70767195
Thallium	0.05 - 1	0.5	1.16E-04	0.500115783	0.5	1.16E-04	0.500115783	0.5	5.52E-05	0.500055238	0.5	5.52E-05	0.500055238	0.5	5.48E-05	0.5000548
Tin	5-Feb	2.5	2.32E-03	2.502315653	2.5	2.32E-03	2.502315653	2.5	1.10E-03	2.50110476	2.5	1.10E-03	2.50110476	2.5	1.10E-03	2.501095993
Titanium	1	1220	2.55E+00	1222.547219	1330	2.55E+00	1332.547219	255	1.22E+00	256.2152358	325	1.22E+00	326.2152358	1230	1.21E+00	1231.205593
Uranium	0.05	1.06	1.16E-04	1.060115783	1.26	1.16E-04	1.260115783	0.396	5.52E-05	0.396055238	0.547	5.52E-05	0.547055238	1.75	5.48E-05	1.7500548
Vanadium	0.2 - 2	58	1.16E-01	58.11578266	63.5	1.16E-01	63.61578266	16.7	5.52E-02	16.75523799	17.6	5.52E-02	17.65523799	64.6	5.48E-02	64.65479967
Zinc	1	47.4	6.83E-02	47.46831177	54.8	6.83E-02	54.86831177	8.4	3.26E-02	8.432590414	10.4	3.26E-02	10.43259041	51.3	3.23E-02	51.33233181

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		14 (10-20)			18 (0-10)			18 (10-20)			21 (0-10)			21 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	19200	1.59E+01	19215.8919	9170	2.27E+01	9192.651585	10900	2.27E+01	10922.65159	22500	1.47E+01	22514.67191	23200	1.47E+01	23214.67191
Antimony	0.1 - 10	5	5.48E-05	5.0000548	5	7.81E-05	5.000078109	5	7.81E-05	5.000078109	5	5.06E-05	5.000050593	5	5.06E-05	5.000050593
Arsenic	0.05 - 5	2.5	2.74E-04	2.500273998	2.5	3.91E-04	2.500390545	2.5	3.91E-04	2.500390545	2.5	2.53E-04	2.500252964	2.5	2.53E-04	2.500252964
Barium	0.5 - 1	112	1.64E-03	112.001644	46.3	2.34E-03	46.30234327	53.5	2.34E-03	53.50234327	127	1.52E-03	127.0015178	135	1.52E-03	135.0015178
Beryllium	0.2 - 0.5	0.59	1.81E-04	0.590180839	0.25	2.58E-04	0.250257759	0.25	2.58E-04	0.250257759	0.61	1.67E-04	0.610166956	0.63	1.67E-04	0.630166956
Bismuth	0.2 - 20	10	5.48E-05	10.0000548	10	7.81E-05	10.00007811	10	7.81E-05	10.00007811	10	5.06E-05	10.00005059	10	5.06E-05	10.00005059
Cadmium	0.05 - 0.5	0.25	5.48E-05	0.2500548	0.25	7.81E-05	0.250078109	0.25	7.81E-05	0.250078109	0.25	5.06E-05	0.250050593	0.25	5.06E-05	0.250050593
Calcium	50	4860	1.75E+01	4877.535894	2560	2.50E+01	2584.994853	3180	2.50E+01	3204.994853	5470	1.62E+01	5486.189693	5650	1.62E+01	5666.189693
Chromium	0.5 - 2	60.9	8.22E-02	60.98219951	29.2	1.17E-01	29.31716337	33.1	1.17E-01	33.21716337	65.3	7.59E-02	65.37588918	65.8	7.59E-02	65.87588918
Cobalt	0.1 - 2	13.5	1.92E-02	13.51917988	5.4	2.73E-02	5.42733812	5.9	2.73E-02	5.92733812	13.6	1.77E-02	13.61770748	14.4	1.77E-02	14.41770748
Copper	0.5 - 1	17.8	6.03E-02	17.86027964	10.5	8.59E-02	10.58591981	12.4	8.59E-02	12.48591981	24.8	5.57E-02	24.85565207	27.7	5.57E-02	27.75565207
Iron	50	30600	2.69E+01	30626.85184	14600	3.83E+01	14638.27337	16200	3.83E+01	16238.27337	33100	2.48E+01	33124.79047	33800	2.48E+01	33824.79047
Lead	0.5 - 30	15	3.29E-04	15.0003288	15	4.69E-04	15.00046865	15	4.69E-04	15.00046865	15	3.04E-04	15.00030356	15	3.04E-04	15.00030356
Magnesium	20 - 50	11300	1.26E+01	11312.60392	5870	1.80E+01	5887.965051	6740	1.80E+01	6757.965051	13700	1.16E+01	13711.63634	14200	1.16E+01	14211.63634
Manganese	1	324	5.10E-01	324.5096369	122	7.26E-01	122.7264129	138	7.26E-01	138.7264129	345	4.71E-01	345.4705129	413	4.71E-01	413.4705129
Mercury	0.005 - 0.005	0.0069	5.48E-06	0.00690548	0.0025	7.81E-06	0.002507811	0.0025	7.81E-06	0.002507811	0.0078	5.06E-06	0.007805059	0.0099	5.06E-06	0.009905059
Molybdenum	0.5 - 4	2	2.74E-04	2.000273998	2	3.91E-04	2.000390545	2	3.91E-04	2.000390545	2	2.53E-04	2.000252964	2	2.53E-04	2.000252964
Nickel	0.5 - 5	29.4	3.95E-02	29.43945576	14.8	5.62E-02	14.85623842	17.3	5.62E-02	17.35623842	32.3	3.64E-02	32.33642681	34.7	3.64E-02	34.73642681
Phosphorus	50	600	1.21E-01	600.1205593	448	1.72E-01	448.1718396	529	1.72E-01	529.1718396	446	1.11E-01	446.1113041	531	1.11E-01	531.1113041
Potassium	100 - 200	4500	5.48E-02	4500.0548	2140	7.81E-02	2140.078109	2660	7.81E-02	2660.078109	5480	5.06E-02	5480.050593	6020	5.06E-02	6020.050593
Selenium	0.2 - 0.5	0.25	2.74E-04	0.250273998	0.25	3.91E-04	0.250390545	0.25	3.91E-04	0.250390545	0.25	2.53E-04	0.250252964	0.25	2.53E-04	0.250252964
Silver	0.1 - 2	1	5.48E-05	1.0000548	1	7.81E-05	1.000078109	1	7.81E-05	1.000078109	1	5.06E-05	1.000050593	1	5.06E-05	1.000050593
Sodium	100 - 200	490	1.37E-01	490.1369992	310	1.95E-01	310.1952723	410	1.95E-01	410.1952723	710	1.26E-01	710.126482	680	1.26E-01	680.126482
Strontium	0.5	27.1	7.67E-03	27.10767195	15.3	1.09E-02	15.31093525	20.4	1.09E-02	20.41093525	30.2	7.08E-03	30.20708299	33.3	7.08E-03	33.30708299
Thallium	0.05 - 1	0.5	5.48E-05	0.5000548	0.5	7.81E-05	0.500078109	0.5	7.81E-05	0.500078109	0.5	5.06E-05	0.500050593	0.5	5.06E-05	0.500050593
Tin	5-Feb	2.5	1.10E-03	2.501095993	2.5	1.56E-03	2.501562178	2.5	1.56E-03	2.501562178	2.5	1.01E-03	2.501011856	2.5	1.01E-03	2.501011856
Titanium	1	1330	1.21E+00	1331.205593	660	1.72E+00	661.7183961	757	1.72E+00	758.7183961	1540	1.11E+00	1541.113041	1490	1.11E+00	1491.113041
Uranium	0.05	1.64	5.48E-05	1.6400548	0.841	7.81E-05	0.841078109	0.961	7.81E-05	0.961078109	1.57	5.06E-05	1.570050593	1.59	5.06E-05	1.590050593
Vanadium	0.2 - 2	66.6	5.48E-02	66.65479967	32.9	7.81E-02	32.97810892	37.2	7.81E-02	37.27810892	72.7	5.06E-02	72.75059279	72	5.06E-02	72.05059279
Zinc	1	52	3.23E-02	52.03233181	23.8	4.61E-02	23.84608426	29	4.61E-02	29.04608426	57.1	2.98E-02	57.12984975	61.2	2.98E-02	61.22984975

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		22 (0-10)			22 (10-20)			23 (0-10)			23 (10-20)			29 (0-10)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	8630	1.37E+01	8643.736179	12800	1.37E+01	12813.73618	21900	2.66E+01	21926.63682	22500	2.66E+01	22526.63682	12500	1.73E+01	12517.33924
Antimony	0.1 - 10	5	4.74E-05	5.000047366	5	4.74E-05	5.000047366	5	9.19E-05	5.000091851	5	9.19E-05	5.000091851	5	5.98E-05	5.00005979
Arsenic	0.05 - 5	2.5	2.37E-04	2.500236831	2.5	2.37E-04	2.500236831	2.5	4.59E-04	2.500459256	2.5	4.59E-04	2.500459256	2.5	2.99E-04	2.500298952
Barium	0.5 - 1	33.6	1.42E-03	33.60142098	69.4	1.42E-03	69.40142098	134	2.76E-03	134.0027555	131	2.76E-03	131.0027555	71	1.79E-03	71.00179371
Beryllium	0.2 - 0.5	0.25	1.56E-04	0.250156308	0.25	1.56E-04	0.250156308	0.66	3.03E-04	0.660303109	0.65	3.03E-04	0.650303109	0.25	1.97E-04	0.250197309
Bismuth	0.2 - 20	10	4.74E-05	10.00004737	10	4.74E-05	10.00004737	10	9.19E-05	10.00009185	10	9.19E-05	10.00009185	10	5.98E-05	10.00005979
Cadmium	0.05 - 0.5	0.25	4.74E-05	0.250047366	0.25	4.74E-05	0.250047366	0.25	9.19E-05	0.250091851	0.25	9.19E-05	0.250091851	0.25	5.98E-05	0.25005979
Calcium	50	3100	1.52E+01	3115.157163	3940	1.52E+01	3955.157163	4320	2.94E+01	4349.392354	5040	2.94E+01	5069.392354	4000	1.91E+01	4019.132957
Chromium	0.5 - 2	34.5	7.10E-02	34.5710492	42.7	7.10E-02	42.7710492	65.6	1.38E-01	65.73777666	67.2	1.38E-01	67.33777666	35.8	8.97E-02	35.88968574
Cobalt	0.1 - 2	9.2	1.66E-02	9.216578147	11.3	1.66E-02	11.31657815	12.9	3.21E-02	12.93214789	14.7	3.21E-02	14.73214789	8.7	2.09E-02	8.720926672
Copper	0.5 - 1	22.6	5.21E-02	22.65210275	35.1	5.21E-02	35.15210275	26.2	1.01E-01	26.30103622	25.6	1.01E-01	25.70103622	15.3	6.58E-02	15.36576954
Iron	50	16800	2.32E+01	16823.20941	22300	2.32E+01	22323.20941	30900	4.50E+01	30945.00704	32700	4.50E+01	32745.00704	19900	2.93E+01	19929.29734
Lead	0.5 - 30	15	2.84E-04	15.0002842	15	2.84E-04	15.0002842	15	5.51E-04	15.00055111	15	5.51E-04	15.00055111	15	3.59E-04	15.00035874
Magnesium	20 - 50	6540	1.09E+01	6550.894211	9770	1.09E+01	9780.894211	13000	2.11E+01	13021.12575	13200	2.11E+01	13221.12575	8750	1.38E+01	8763.751813
Manganese	1	278	4.41E-01	278.440505	301	4.41E-01	301.440505	294	8.54E-01	294.8542153	360	8.54E-01	360.8542153	230	5.56E-01	230.5560516
Mercury	0.005 - 0.005	0.0067	4.74E-06	0.006704737	0.0025	4.74E-06	0.002504737	0.0101	9.19E-06	0.010109185	0.0106	9.19E-06	0.010609185	0.0273	5.98E-06	0.027305979
Molybdenum	0.5 - 4	2	2.37E-04	2.000236831	2	2.37E-04	2.000236831	2	4.59E-04	2.000459256	2	4.59E-04	2.000459256	2	2.99E-04	2.000298952
Nickel	0.5 - 5	23.2	3.41E-02	23.23410362	30.2	3.41E-02	30.23410362	35	6.61E-02	35.0661328	35.7	6.61E-02	35.7661328	19.7	4.30E-02	19.74304915
Phosphorus	50	284	1.04E-01	284.1042055	442	1.04E-01	442.1042055	490	2.02E-01	490.2020724	578	2.02E-01	578.2020724	385	1.32E-01	385.1315391
Potassium	100 - 200	1040	4.74E-02	1040.047366	2630	4.74E-02	2630.047366	4770	9.19E-02	4770.091851	4710	9.19E-02	4710.091851	3580	5.98E-02	3580.05979
Selenium	0.2 - 0.5	0.25	2.37E-04	0.250236831	0.25	2.37E-04	0.250236831	0.25	4.59E-04	0.250459256	0.25	4.59E-04	0.250459256	0.25	2.99E-04	0.250298952
Silver	0.1 - 2	1	4.74E-05	1.000047366	1	4.74E-05	1.000047366	1	9.19E-05	1.000091851	1	9.19E-05	1.000091851	1	5.98E-05	1.00005979
Sodium	100 - 200	240	1.18E-01	240.1184153	510	1.18E-01	510.1184153	510	2.30E-01	510.2296278	520	2.30E-01	520.2296278	530	1.49E-01	530.1494762
Strontium	0.5	11.1	6.63E-03	11.10663126	17.3	6.63E-03	17.30663126	26.8	1.29E-02	26.81285915	29.1	1.29E-02	29.11285915	24.2	8.37E-03	24.20837067
Thallium	0.05 - 1	0.5	4.74E-05	0.500047366	0.5	4.74E-05	0.500047366	0.5	9.19E-05	0.500091851	0.5	9.19E-05	0.500091851	0.5	5.98E-05	0.50005979
Tin	5-Feb	2.5	9.47E-04	2.500947323	2.5	9.47E-04	2.500947323	2.5	1.84E-03	2.501837022	2.5	1.84E-03	2.501837022	2.5	1.20E-03	2.50119581
Titanium	1	523	1.04E+00	524.0420549	744	1.04E+00	745.0420549	1470	2.02E+00	1472.020724	1510	2.02E+00	1512.020724	928	1.32E+00	929.3153908
Uranium	0.05	0.342	4.74E-05	0.342047366	0.416	4.74E-05	0.416047366	2.23	9.19E-05	2.230091851	2.05	9.19E-05	2.050091851	1.35	5.98E-05	1.35005979
Vanadium	0.2 - 2	35.2	4.74E-02	35.24736613	46	4.74E-02	46.04736613	71.7	9.19E-02	71.79185111	73.3	9.19E-02	73.39185111	43.6	5.98E-02	43.65979049
Zinc	1	22.8	2.79E-02	22.82794602	37.9	2.79E-02	37.92794602	59	5.42E-02	59.05419215	61	5.42E-02	61.05419215	36.8	3.53E-02	36.83527639

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		29 (10-20)			11 (0-10)			11 (10-20)			16 (0-10)			16 (10-20)		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	21300	1.73E+01	21317.33924	3450	2.12E+01	3471.213226	9250	2.12E+01	9271.213226	2190	4.83E+01	2238.328589	13600	4.83E+01	13648.32859
Antimony	0.1 - 10	5	5.98E-05	5.00005979	5	7.31E-05	5.000073149	5	7.31E-05	5.000073149	5	1.67E-04	5.00016665	5	1.67E-04	5.00016665
Arsenic	0.05 - 5	2.5	2.99E-04	2.500298952	2.5	3.66E-04	2.500365745	2.5	3.66E-04	2.500365745	2.5	8.33E-04	2.500833252	2.5	8.33E-04	2.500833252
Barium	0.5 - 1	128	1.79E-03	128.0017937	19.2	2.19E-03	19.20219447	60.5	2.19E-03	60.50219447	13.8	5.00E-03	13.80499951	109	5.00E-03	109.0049995
Beryllium	0.2 - 0.5	0.56	1.97E-04	0.560197309	0.25	2.41E-04	0.250241392	0.25	2.41E-04	0.250241392	0.25	5.50E-04	0.250549946	0.25	5.50E-04	0.250549946
Bismuth	0.2 - 20	10	5.98E-05	10.00005979	10	7.31E-05	10.00007315	10	7.31E-05	10.00007315	10	1.67E-04	10.00016665	10	1.67E-04	10.00016665
Cadmium	0.05 - 0.5	0.25	5.98E-05	0.25005979	0.25	7.31E-05	0.250073149	0.25	7.31E-05	0.250073149	0.25	1.67E-04	0.25016665	0.25	1.67E-04	0.25016665
Calcium	50	5910	1.91E+01	5929.132957	1070	2.34E+01	1093.407697	3580	2.34E+01	3603.407697	1240	5.33E+01	1293.328098	13800	5.33E+01	13853.3281
Chromium	0.5 - 2	59.4	8.97E-02	59.48968574	8.5	1.10E-01	8.609723581	30.5	1.10E-01	30.60972358	7.6	2.50E-01	7.84997546	41.8	2.50E-01	42.04997546
Cobalt	0.1 - 2	13.7	2.09E-02	13.72092667	2.2	2.56E-02	2.225602169	8.3	2.56E-02	8.325602169	2	5.83E-02	2.058327607	9.3	5.83E-02	9.358327607
Copper	0.5 - 1	27.6	6.58E-02	27.66576954	6.2	8.05E-02	6.280463959	19.4	8.05E-02	19.48046396	5.7	1.83E-01	5.883315337	40.3	1.83E-01	40.48331534
Iron	50	32000	2.93E+01	32029.29734	7470	3.58E+01	7505.843036	16200	3.58E+01	16235.84304	6020	8.17E+01	6101.65865	20400	8.17E+01	20481.65865
Lead	0.5 - 30	15	3.59E-04	15.00035874	15	4.39E-04	15.00043889	15	4.39E-04	15.00043889	15	1.00E-03	15.0009999	15	1.00E-03	15.0009999
Magnesium	20 - 50	13900	1.38E+01	13913.75181	1910	1.68E+01	1926.824282	6360	1.68E+01	6376.824282	1390	3.83E+01	1428.329571	8730	3.83E+01	8768.329571
Manganese	1	369	5.56E-01	369.5560516	48.2	6.80E-01	48.8802862	211	6.80E-01	211.6802862	39.7	1.55E+00	41.24984785	234	1.55E+00	235.5498479
Mercury	0.005 - 0.005	0.0084	5.98E-06	0.008405979	0.0064	7.31E-06	0.006407315	0.0025	7.31E-06	0.002507315	0.0025	1.67E-05	0.002516665	0.0239	1.67E-05	0.023916665
Molybdenum	0.5 - 4	2	2.99E-04	2.000298952	2	3.66E-04	2.000365745	2	3.66E-04	2.000365745	2	8.33E-04	2.000833252	2	8.33E-04	2.000833252
Nickel	0.5 - 5	32	4.30E-02	32.04304915	2.5	5.27E-02	2.552667319	18.9	5.27E-02	18.95266732	2.5	1.20E-01	2.619988221	28.5	1.20E-01	28.61998822
Phosphorus	50	538	1.32E-01	538.1315391	177	1.61E-01	177.1609279	303	1.61E-01	303.1609279	288	3.67E-01	288.3666307	521	3.67E-01	521.3666307
Potassium	100 - 200	5200	5.98E-02	5200.05979	480	7.31E-02	480.0731491	1910	7.31E-02	1910.073149	370	1.67E-01	370.1666503	2860	1.67E-01	2860.16665
Selenium	0.2 - 0.5	0.25	2.99E-04	0.250298952	0.25	3.66E-04	0.250365745	0.25	3.66E-04	0.250365745	0.25	8.33E-04	0.250833252	0.25	8.33E-04	0.250833252
Silver	0.1 - 2	1	5.98E-05	1.00005979	1	7.31E-05	1.000073149	1	7.31E-05	1.000073149	1	1.67E-04	1.00016665	1	1.67E-04	1.00016665
Sodium	100 - 200	840	1.49E-01	840.1494762	100	1.83E-01	100.1828726	320	1.83E-01	320.1828726	100	4.17E-01	100.4166258	550	4.17E-01	550.4166258
Strontium	0.5	35.3	8.37E-03	35.30837067	6.93	1.02E-02	6.940240868	13.7	1.02E-02	13.71024087	4.56	2.33E-02	4.583331043	30.9	2.33E-02	30.92333104
Thallium	0.05 - 1	0.5	5.98E-05	0.50005979	0.5	7.31E-05	0.500073149	0.5	7.31E-05	0.500073149	0.5	1.67E-04	0.50016665	0.5	1.67E-04	0.50016665
Tin	5-Feb	2.5	1.20E-03	2.50119581	2.5	1.46E-03	2.501462981	2.5	1.46E-03	2.501462981	2.5	3.33E-03	2.503333006	2.5	3.33E-03	2.503333006
Titanium	1	1470	1.32E+00	1471.315391	309	1.61E+00	310.6092792	665	1.61E+00	666.6092792	176	3.67E+00	179.6663067	746	3.67E+00	749.6663067
Uranium	0.05	1.94	5.98E-05	1.94005979	0.379	7.31E-05	0.379073149	1.06	7.31E-05	1.060073149	0.345	1.67E-04	0.34516665	1.3	1.67E-04	1.30016665
Vanadium	0.2 - 2	69.9	5.98E-02	69.95979049	16.8	7.31E-02	16.87314905	35.6	7.31E-02	35.67314905	14	1.67E-01	14.16665031	41.3	1.67E-01	41.46665031
Zinc	1	59.4	3.53E-02	59.43527639	10.5	4.32E-02	10.54315794	25.1	4.32E-02	25.14315794	6.9	9.83E-02	6.998323681	36.4	9.83E-02	36.49832368

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		REFA-01			REFA-02			REFA-03			REFB-01			REFB-02		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	7330	7.72E+00	7337.719753	19600	7.71E+00	19607.71374	5570	8.16E+00	5578.158985	4750	7.55E+00	4757.551095	9360	7.54E+00	9367.535149
Antimony	0.1 - 10	0.05	2.66E-05	0.05002662	0.05	2.66E-05	0.050026599	0.05	2.81E-05	0.050028134	0.05	2.60E-05	0.050026038	0.05	2.60E-05	0.050025983
Arsenic	0.05 - 5	2.44	1.33E-04	2.440133099	2.39	1.33E-04	2.390132995	0.724	1.41E-04	0.724140672	0.921	1.30E-04	0.921130191	0.949	1.30E-04	0.949129916
Barium	0.5 - 1	23.7	7.99E-04	23.7007986	131	7.98E-04	131.000798	14.5	8.44E-04	14.50084403	16	7.81E-04	16.00078115	18.7	7.79E-04	18.7007795
Beryllium	0.2 - 0.5	0.1	8.78E-05	0.100087845	0.64	8.78E-05	0.640087777	0.1	9.28E-05	0.100092844	0.1	8.59E-05	0.100085926	0.1	8.57E-05	0.100085745
Bismuth	0.2 - 20	0.1	2.66E-05	0.10002662	0.21	2.66E-05	0.210026599	0.1	2.81E-05	0.100028134	0.1	2.60E-05	0.100026038	0.1	2.60E-05	0.100025983
Cadmium	0.05 - 0.5	0.025	2.66E-05	0.02502662	0.06	2.66E-05	0.060026599	0.025	2.81E-05	0.025028134	0.025	2.60E-05	0.025026038	0.062	2.60E-05	0.062025983
Calcium	50	2660	8.52E+00	2668.518348	6160	8.51E+00	6168.511708	2040	9.00E+00	2049.003018	1510	8.33E+00	1518.332243	1970	8.31E+00	1978.314647
Chromium	0.5 - 2	17.1	3.99E-02	17.13992976	54.4	3.99E-02	54.43989863	11.1	4.22E-02	11.14220165	9.93	3.91E-02	9.969057389	17.2	3.90E-02	17.23897491
Cobalt	0.1 - 2	4.35	9.32E-03	4.359316944	11.9	9.31E-03	11.90930968	4.1	9.85E-03	4.109847051	4.28	9.11E-03	4.289113391	5.85	9.09E-03	5.859094145
Copper	0.5 - 1	4.33	2.93E-02	4.359281823	25.2	2.93E-02	25.22925899	9.86	3.09E-02	9.890947876	9.95	2.86E-02	9.978642085	10	2.86E-02	10.0285816
Iron	50	12900	1.30E+01	12913.04372	28500	1.30E+01	28513.03355	10500	1.38E+01	10513.78587	8460	1.28E+01	8472.758747	15600	1.27E+01	15612.7318
Lead	0.5 - 30	3.02	1.60E-04	3.020159719	7.93	1.60E-04	7.930159595	1.66	1.69E-04	1.660168807	1.5	1.56E-04	1.50015623	2.96	1.56E-04	2.9601559
Magnesium	20 - 50	4220	6.12E+00	4226.122563	12600	6.12E+00	12606.11779	3400	6.47E+00	3406.470919	3260	5.99E+00	3265.9888	4810	5.98E+00	4815.976153
Manganese	1	126	2.48E-01	126.2475645	348	2.47E-01	348.2473715	101	2.62E-01	101.2616502	96.3	2.42E-01	96.54215581	157	2.42E-01	157.2416444
Mercury	0.005 - 0.005	0.0066	2.66E-06	0.006602662	0.0025	2.66E-06	0.00250266	0.006	2.81E-06	0.006002813	0.0025	2.60E-06	0.002502604	0.0287	2.60E-06	0.028702598
Molybdenum	0.5 - 4	0.73	1.33E-04	0.730133099	0.55	1.33E-04	0.550132995	0.25	1.41E-04	0.250140672	0.25	1.30E-04	0.250130191	0.25	1.30E-04	0.250129916
Nickel	0.5 - 5	8.56	1.92E-02	8.579166284	29.9	1.92E-02	29.91915134	7.67	2.03E-02	7.690256791	8.11	1.87E-02	8.128747547	13.5	1.87E-02	13.51870796
Phosphorus	50	254	5.86E-02	254.0585636	714	5.85E-02	714.058518	299	6.19E-02	299.0618958	249	5.73E-02	249.0572842	282	5.72E-02	282.0571632
Potassium	100 - 200	900	2.66E-02	900.0266198	5830	2.66E-02	5830.026599	510	2.81E-02	510.0281344	590	2.60E-02	590.0260383	650	2.60E-02	650.0259833
Selenium	0.2 - 0.5	0.1	1.33E-04	0.100133099	0.1	1.33E-04	0.100132995	0.1	1.41E-04	0.100140672	0.1	1.30E-04	0.100130191	0.1	1.30E-04	0.100129916
Silver	0.1 - 2	0.05	2.66E-05	0.05002662	0.05	2.66E-05	0.050026599	0.05	2.81E-05	0.050028134	0.05	2.60E-05	0.050026038	0.05	2.60E-05	0.050025983
Sodium	100 - 200	300	6.65E-02	300.0665496	1450	6.65E-02	1450.066498	150	7.03E-02	150.0703361	50	6.51E-02	50.06509565	110	6.50E-02	110.0649582
Strontium	0.5	14.6	3.73E-03	14.60372678	39.7	3.72E-03	39.70372387	9.37	3.94E-03	9.373938821	7.65	3.65E-03	7.653645356	11.7	3.64E-03	11.70363766
Thallium	0.05 - 1	0.059	2.66E-05	0.05902662	0.258	2.66E-05	0.258026599	0.025	2.81E-05	0.025028134	0.025	2.60E-05	0.025026038	0.025	2.60E-05	0.025025983
Tin	5-Feb	1	5.32E-04	1.000532397	1	5.32E-04	1.000531982	1	5.63E-04	1.000562689	1	5.21E-04	1.000520765	1	5.20E-04	1.000519665
Titanium	1	727	5.86E-01	727.5856365	1490	5.85E-01	1490.58518	481	6.19E-01	481.6189575	348	5.73E-01	348.5728417	746	5.72E-01	746.571632
Uranium	0.05	0.495	2.66E-05	0.49502662	1.69	2.66E-05	1.690026599	0.329	2.81E-05	0.329028134	0.326	2.60E-05	0.326026038	0.417	2.60E-05	0.417025983
Vanadium	0.2 - 2	32.5	2.66E-02	32.52661984	62.3	2.66E-02	62.32659909	24.1	2.81E-02	24.12813443	17.5	2.60E-02	17.52603826	31.3	2.60E-02	31.32598327
Zinc	1	17.6	1.57E-02	17.61570571	58.7	1.57E-02	58.71569346	15.6	1.66E-02	15.61659932	15.3	1.54E-02	15.31536257	28.5	1.53E-02	28.51533013

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		REFB-03			REFC-01			REFC-02			REFC-03			LSA-01		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	6780	7.53E+00	6787.533361	17000	7.66E+00	17007.66245	4620	8.14E+00	4628.140256	5650	8.17E+00	5658.174897	9480	3.03E+01	9510.312153
Antimony	0.1 - 10	0.05	2.60E-05	0.050025977	0.05	2.64E-05	0.050026422	0.05	2.81E-05	0.05002807	0.05	2.82E-05	0.050028189	0.05	1.05E-04	0.050104525
Arsenic	0.05 - 5	1.08	1.30E-04	1.080129886	2.93	1.32E-04	2.930132111	0.87	1.40E-04	0.870140349	0.917	1.41E-04	0.917140947	2.97	5.23E-04	2.970522623
Barium	0.5 - 1	18.7	7.79E-04	18.70077931	77	7.93E-04	77.00079267	16.8	8.42E-04	16.8008421	15.4	8.46E-04	15.40084568	35.3	3.14E-03	35.30313574
Beryllium	0.2 - 0.5	0.1	8.57E-05	0.100085724	0.44	8.72E-05	0.440087193	0.1	9.26E-05	0.100092631	0.1	9.30E-05	0.100093025	0.1	3.45E-04	0.100344931
Bismuth	0.2 - 20	0.1	2.60E-05	0.100025977	0.1	2.64E-05	0.100026422	0.1	2.81E-05	0.10002807	0.1	2.82E-05	0.100028189	0.1	1.05E-04	0.100104525
Cadmium	0.05 - 0.5	0.025	2.60E-05	0.025025977	0.025	2.64E-05	0.025026422	0.025	2.81E-05	0.02502807	0.025	2.82E-05	0.025028189	0.025	1.05E-04	0.025104525
Calcium	50	2620	8.31E+00	2628.312675	5090	8.46E+00	5098.455118	2050	8.98E+00	2058.982352	1860	9.02E+00	1869.020576	3470	3.34E+01	3503.447893
Chromium	0.5 - 2	21.8	3.90E-02	21.83896566	43.6	3.96E-02	43.63963336	13.6	4.21E-02	13.64210477	17.3	4.23E-02	17.34228395	40.9	1.57E-01	41.056787
Cobalt	0.1 - 2	7.47	9.09E-03	7.479091988	10.5	9.25E-03	10.50924779	4.46	9.82E-03	4.469824447	4.99	9.87E-03	4.999866255	9.92	3.66E-02	9.956583633
Copper	0.5 - 1	11.6	2.86E-02	11.62857482	16.8	2.91E-02	16.82906447	4.84	3.09E-02	4.870876835	11.4	3.10E-02	11.43100823	23.5	1.15E-01	23.61497713
Iron	50	13200	1.27E+01	13212.72878	25100	1.29E+01	25112.9469	9910	1.38E+01	9923.754226	10700	1.38E+01	10713.81276	19100	5.12E+01	19151.21709
Lead	0.5 - 30	2.07	1.56E-04	2.070155863	6.16	1.59E-04	6.160158533	1.65	1.68E-04	1.650168419	1.64	1.69E-04	1.640169136	2.43	6.27E-04	2.430627148
Magnesium	20 - 50	4480	5.97E+00	4485.974735	7530	6.08E+00	7536.077116	2700	6.46E+00	2706.456065	3730	6.48E+00	3736.483539	6660	2.40E+01	6684.040673
Manganese	1	237	2.42E-01	237.2415871	253	2.46E-01	253.2457269	105	2.61E-01	105.2610496	125	2.62E-01	125.2621605	283	9.72E-01	283.9720794
Mercury	0.005 - 0.005	0.0025	2.60E-06	0.002502598	0.0101	2.64E-06	0.010102642	0.0025	2.81E-06	0.002502807	0.0025	2.82E-06	0.002502819	0.0084	1.05E-05	0.008410452
Molybdenum	0.5 - 4	0.25	1.30E-04	0.250129886	0.25	1.32E-04	0.250132111	0.25	1.40E-04	0.250140349	0.25	1.41E-04	0.250140947	0.25	5.23E-04	0.250522623
Nickel	0.5 - 5	11.7	1.87E-02	11.71870352	21.9	1.90E-02	21.91902401	6.63	2.02E-02	6.650210292	10.2	2.03E-02	10.2202963	27.2	7.53E-02	27.27525776
Phosphorus	50	398	5.71E-02	398.0571496	414	5.81E-02	414.0581289	350	6.18E-02	350.0617537	282	6.20E-02	282.0620165	242	2.30E-01	242.2299543
Potassium	100 - 200	520	2.60E-02	520.0259771	2730	2.64E-02	2730.026422	590	2.81E-02	590.0280698	580	2.82E-02	580.0281893	1050	1.05E-01	1050.104525
Selenium	0.2 - 0.5	0.1	1.30E-04	0.100129886	0.1	1.32E-04	0.100132111	0.1	1.40E-04	0.100140349	0.1	1.41E-04	0.100140947	0.1	5.23E-04	0.100522623
Silver	0.1 - 2	0.05	2.60E-05	0.050025977	0.05	2.64E-05	0.050026422	0.05	2.81E-05	0.05002807	0.05	2.82E-05	0.050028189	0.05	1.05E-04	0.050104525
Sodium	100 - 200	200	6.49E-02	200.0649428	460	6.61E-02	460.0660556	140	7.02E-02	140.0701746	120	7.05E-02	120.0704733	240	2.61E-01	240.2613117
Strontium	0.5	13.7	3.64E-03	13.7036368	34.8	3.70E-03	34.80369911	11.6	3.93E-03	11.60392978	9.21	3.95E-03	9.213946502	14.9	1.46E-02	14.91463345
Thallium	0.05 - 1	0.025	2.60E-05	0.025025977	0.168	2.64E-05	0.168026422	0.025	2.81E-05	0.02502807	0.025	2.82E-05	0.025028189	0.056	1.05E-04	0.056104525
Tin	5-Feb	1	5.20E-04	1.000519542	1	5.28E-04	1.000528445	1	5.61E-04	1.000561397	1	5.64E-04	1.000563786	1	2.09E-03	1.002090493
Titanium	1	695	5.71E-01	695.5714964	1210	5.81E-01	1210.581289	478	6.18E-01	478.6175367	462	6.20E-01	462.6201646	594	2.30E+00	596.2995427
Uranium	0.05	0.909	2.60E-05	0.909025977	1.44	2.64E-05	1.440026422	0.415	2.81E-05	0.41502807	0.336	2.82E-05	0.336028189	0.476	1.05E-04	0.476104525
Vanadium	0.2 - 2	28.6	2.60E-02	28.62597711	53.3	2.64E-02	53.32642224	23	2.81E-02	23.02806985	23.1	2.82E-02	23.1281893	38.6	1.05E-01	38.70452467
Zinc	1	21.9	1.53E-02	21.91532649	41.1	1.56E-02	41.11558912	13.3	1.66E-02	13.31656121	16.8	1.66E-02	16.81663169	34.3	6.17E-02	34.36166955

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		LSA-02			LSA-03			LSA-04			LSA-05			LSA-06		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	27200	8.57E+00	27208.57098	5590	1.43E+01	5604.339694	12300	3.62E+01	12336.15735	5550	7.67E+00	5557.665642	4800	7.86E+00	4807.859587
Antimony	0.1 - 10	0.05	2.96E-05	0.050029555	0.05	4.94E-05	0.050049447	0.05	1.25E-04	0.050124681	0.05	2.64E-05	0.050026433	0.05	2.71E-05	0.050027102
Arsenic	0.05 - 5	3.77	1.48E-04	3.770147776	0.726	2.47E-04	0.726247236	2.35	6.23E-04	2.350623403	3.92	1.32E-04	3.920132166	0.855	1.36E-04	0.85513551
Barium	0.5 - 1	164	8.87E-04	164.0008867	21.8	1.48E-03	21.80148342	54.2	3.74E-03	54.20374042	6.85	7.93E-04	6.850792997	11.9	8.13E-04	11.90081306
Beryllium	0.2 - 0.5	0.79	9.75E-05	0.790097532	0.1	1.63E-04	0.100163176	0.23	4.11E-04	0.230411446	0.1	8.72E-05	0.10008723	0.1	8.94E-05	0.100089437
Bismuth	0.2 - 20	0.23	2.96E-05	0.230029555	0.1	4.94E-05	0.100049447	0.1	1.25E-04	0.100124681	0.1	2.64E-05	0.100026433	0.1	2.71E-05	0.100027102
Cadmium	0.05 - 0.5	0.025	2.96E-05	0.025029555	0.025	4.94E-05	0.025049447	0.025	1.25E-04	0.025124681	0.025	2.64E-05	0.025026433	0.025	2.71E-05	0.025027102
Calcium	50	6790	9.46E+00	6799.457638	1860	1.58E+01	1875.82311	4720	3.99E+01	4759.89777	1740	8.46E+00	1748.45864	1530	8.67E+00	1538.672648
Chromium	0.5 - 2	77.8	4.43E-02	77.84433268	14.3	7.42E-02	14.37417083	39.7	1.87E-01	39.8870208	15	3.96E-02	15.03964987	13	4.07E-02	13.04065304
Cobalt	0.1 - 2	15.9	1.03E-02	15.91034429	4.71	1.73E-02	4.727306527	11.1	4.36E-02	11.14363819	5.72	9.25E-03	5.729251637	5.11	9.49E-03	5.119485708
Copper	0.5 - 1	41.2	3.25E-02	41.23251063	6.47	5.44E-02	6.524391942	23.8	1.37E-01	23.93714858	27.1	2.91E-02	27.12907657	12.2	2.98E-02	12.22981223
Iron	50	39800	1.45E+01	39814.48201	10100	2.42E+01	10124.22914	20900	6.11E+01	20961.09346	12200	1.30E+01	12212.95229	11400	1.33E+01	11413.27999
Lead	0.5 - 30	9.46	1.77E-04	9.460177331	1.78	2.97E-04	1.780296683	3.32	7.48E-04	3.320748083	1.75	1.59E-04	1.750158599	1.42	1.63E-04	1.420162612
Magnesium	20 - 50	17900	6.80E+00	17906.79768	3640	1.14E+01	3651.372861	7490	2.87E+01	7518.676522	3080	6.08E+00	3086.079647	2870	6.23E+00	2876.233466
Manganese	1	413	2.75E-01	413.2748626	123	4.60E-01	123.4598591	327	1.16E+00	328.1595289	145	2.46E-01	145.2458292	132	2.52E-01	132.2520488
Mercury	0.005 - 0.005	0.0073	2.96E-06	0.007302956	0.0074	4.94E-06	0.007404945	0.0088	1.25E-05	0.008812468	0.0025	2.64E-06	0.002502643	0.0025	2.71E-06	0.00250271
Molybdenum	0.5 - 4	0.25	1.48E-04	0.250147776	0.25	2.47E-04	0.250247236	0.25	6.23E-04	0.250623403	0.25	1.32E-04	0.250132166	0.25	1.36E-04	0.25013551
Nickel	0.5 - 5	39.9	2.13E-02	39.92127969	8.25	3.56E-02	8.285601998	24	8.98E-02	24.08976998	9.86	1.90E-02	9.879031939	8.66	1.95E-02	8.679513457
Phosphorus	50	363	6.50E-02	363.0650213	227	1.09E-01	227.1087839	170	2.74E-01	170.2742972	113	5.82E-02	113.0581531	161	5.96E-02	161.0596245
Potassium	100 - 200	7790	2.96E-02	7790.029555	860	4.94E-02	860.0494472	2160	1.25E-01	2160.124681	160	2.64E-02	160.0264332	260	2.71E-02	260.027102
Selenium	0.2 - 0.5	0.1	1.48E-04	0.100147776	0.1	2.47E-04	0.100247236	0.1	6.23E-04	0.100623403	0.1	1.32E-04	0.100132166	0.1	1.36E-04	0.10013551
Silver	0.1 - 2	0.05	2.96E-05	0.050029555	0.05	4.94E-05	0.050049447	0.05	1.25E-04	0.050124681	0.05	2.64E-05	0.050026433	0.05	2.71E-05	0.050027102
Sodium	100 - 200	1070	7.39E-02	1070.073888	180	1.24E-01	180.123618	460	3.12E-01	460.3117013	50	6.61E-02	50.06608312	120	6.78E-02	120.0677551
Strontium	0.5	32.3	4.14E-03	32.30413772	9.66	6.92E-03	9.666922611	21.5	1.75E-02	21.51745527	7.52	3.70E-03	7.523700655	7.71	3.79E-03	7.713794283
Thallium	0.05 - 1	0.356	2.96E-05	0.356029555	0.025	4.94E-05	0.025049447	0.114	1.25E-04	0.114124681	0.025	2.64E-05	0.025026433	0.025	2.71E-05	0.025027102
Tin	5-Feb	1	5.91E-04	1.000591102	1	9.89E-04	1.000988944	1	2.49E-03	1.002493611	1	5.29E-04	1.000528665	1	5.42E-04	1.00054204
Titanium	1	1760	6.50E-01	1760.650213	480	1.09E+00	481.0878388	950	2.74E+00	952.7429717	479	5.82E-01	479.5815315	414	5.96E-01	414.5962445
Uranium	0.05	0.863	2.96E-05	0.863029555	0.392	4.94E-05	0.392049447	0.369	1.25E-04	0.369124681	0.405	2.64E-05	0.405026433	0.31	2.71E-05	0.310027102
Vanadium	0.2 - 2	82	2.96E-02	82.02955512	23.1	4.94E-02	23.14944722	46.9	1.25E-01	47.02468053	27.9	2.64E-02	27.92643325	24.7	2.71E-02	24.72710202
Zinc	1	80.5	1.74E-02	80.51743752	16.4	2.92E-02	16.42917386	34.2	7.36E-02	34.27356151	13.4	1.56E-02	13.41559562	14.3	1.60E-02	14.31599019

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		LSA-07A			LSA-07B			LSA-08			LSA-09A			LSA-09B		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	6960	7.59E+00	6967.585394	5920	7.59E+00	5927.585394	7070	7.57E+00	7077.570624	3480	1.23E+01	3492.271392	3920	1.23E+01	3932.271392
Antimony	0.1 - 10	0.05	2.62E-05	0.050026157	0.05	2.62E-05	0.050026157	0.05	2.61E-05	0.050026106	0.05	4.23E-05	0.050042315	0.05	4.23E-05	0.050042315
Arsenic	0.05 - 5	3.03	1.31E-04	3.030130783	2.37	1.31E-04	2.370130783	1.31	1.31E-04	1.310130528	0.999	2.12E-04	0.999211576	1.01	2.12E-04	1.010211576
Barium	0.5 - 1	25	7.85E-04	25.0007847	20.6	7.85E-04	20.6007847	18.6	7.83E-04	18.60078317	14.6	1.27E-03	14.60126945	18.2	1.27E-03	18.20126945
Beryllium	0.2 - 0.5	0.1	8.63E-05	0.100086317	0.1	8.63E-05	0.100086317	0.1	8.61E-05	0.100086148	0.1	1.40E-04	0.10013964	0.1	1.40E-04	0.10013964
Bismuth	0.2 - 20	0.1	2.62E-05	0.100026157	0.1	2.62E-05	0.100026157	0.1	2.61E-05	0.100026106	0.1	4.23E-05	0.100042315	0.1	4.23E-05	0.100042315
Cadmium	0.05 - 0.5	0.025	2.62E-05	0.025026157	0.025	2.62E-05	0.025026157	0.025	2.61E-05	0.025026106	0.025	4.23E-05	0.025042315	0.025	4.23E-05	0.025042315
Calcium	50	2310	8.37E+00	2318.37009	2060	8.37E+00	2068.37009	2260	8.35E+00	2268.353792	2560	1.35E+01	2573.540846	2540	1.35E+01	2553.540846
Chromium	0.5 - 2	18.2	3.92E-02	18.23923479	20.7	3.92E-02	20.73923479	16.4	3.92E-02	16.4391584	12.2	6.35E-02	12.26347272	13.1	6.35E-02	13.16347272
Cobalt	0.1 - 2	7.28	9.15E-03	7.289154785	5.87	9.15E-03	5.879154785	6.87	9.14E-03	6.87913696	2.84	1.48E-02	2.854810301	3.1	1.48E-02	3.114810301
Copper	0.5 - 1	16.5	2.88E-02	16.52877218	12.9	2.88E-02	12.92877218	33.4	2.87E-02	33.42871616	4.06	4.65E-02	4.10654666	4.86	4.65E-02	4.90654666
Iron	50	14000	1.28E+01	14012.8167	12000	1.28E+01	12012.8167	13600	1.28E+01	13612.79174	8150	2.07E+01	8170.734421	8650	2.07E+01	8670.734421
Lead	0.5 - 30	3.08	1.57E-04	3.080156939	2.37	1.57E-04	2.370156939	2.55	1.57E-04	2.550156634	2.17	2.54E-04	2.170253891	2.19	2.54E-04	2.190253891
Magnesium	20 - 50	4610	6.02E+00	4616.016002	3910	6.02E+00	3916.016002	3400	6.00E+00	3406.004288	1940	9.73E+00	1949.732483	2160	9.73E+00	2169.732483
Manganese	1	175	2.43E-01	175.2432557	127	2.43E-01	127.2432557	112	2.43E-01	112.2427821	91.6	3.94E-01	91.99353085	92.2	3.94E-01	92.59353085
Mercury	0.005 - 0.005	0.0148	2.62E-06	0.014802616	0.0103	2.62E-06	0.010302616	0.0079	2.61E-06	0.007902611	0.0025	4.23E-06	0.002504232	0.0025	4.23E-06	0.002504232
Molybdenum	0.5 - 4	0.25	1.31E-04	0.250130783	0.25	1.31E-04	0.250130783	0.25	1.31E-04	0.250130528	0.25	2.12E-04	0.250211576	0.25	2.12E-04	0.250211576
Nickel	0.5 - 5	13.9	1.88E-02	13.9188327	13	1.88E-02	13.0188327	13.2	1.88E-02	13.21879603	5.43	3.05E-02	5.460466904	5.86	3.05E-02	5.890466904
Phosphorus	50	351	5.75E-02	351.0575444	277	5.75E-02	277.0575444	131	5.74E-02	131.0574323	429	9.31E-02	429.0930933	364	9.31E-02	364.0930933
Potassium	100 - 200	640	2.62E-02	640.0261565	640	2.62E-02	640.0261565	370	2.61E-02	370.0261056	610	4.23E-02	610.0423151	790	4.23E-02	790.0423151
Selenium	0.2 - 0.5	0.1	1.31E-04	0.100130783	0.1	1.31E-04	0.100130783	0.1	1.31E-04	0.100130528	0.1	2.12E-04	0.100211576	0.1	2.12E-04	0.100211576
Silver	0.1 - 2	0.05	2.62E-05	0.050026157	0.05	2.62E-05	0.050026157	0.05	2.61E-05	0.050026106	0.05	4.23E-05	0.050042315	0.05	4.23E-05	0.050042315
Sodium	100 - 200	50	6.54E-02	50.06539132	100	6.54E-02	100.0653913	230	6.53E-02	230.065264	220	1.06E-01	220.1057879	230	1.06E-01	230.1057879
Strontium	0.5	10.1	3.66E-03	10.10366191	8.33	3.66E-03	8.333661914	12.6	3.65E-03	12.60365478	12.4	5.92E-03	12.40592412	13.3	5.92E-03	13.30592412
Thallium	0.05 - 1	0.025	2.62E-05	0.025026157	0.025	2.62E-05	0.025026157	0.025	2.61E-05	0.025026106	0.025	4.23E-05	0.025042315	0.025	4.23E-05	0.025042315
Tin	5-Feb	1	5.23E-04	1.000523131	1	5.23E-04	1.000523131	1	5.22E-04	1.000522112	1	8.46E-04	1.000846303	1	8.46E-04	1.000846303
Titanium	1	417	5.75E-01	417.5754437	432	5.75E-01	432.5754437	539	5.74E-01	539.5743232	458	9.31E-01	458.9309332	477	9.31E-01	477.9309332
Uranium	0.05	0.541	2.62E-05	0.541026157	1.07	2.62E-05	1.070026157	0.408	2.61E-05	0.408026106	0.678	4.23E-05	0.678042315	0.641	4.23E-05	0.641042315
Vanadium	0.2 - 2	24.5	2.62E-02	24.52615653	23.7	2.62E-02	23.72615653	30	2.61E-02	30.0261056	19	4.23E-02	19.04231515	20	4.23E-02	20.04231515
Zinc	1	21.7	1.54E-02	21.71543235	19.4	1.54E-02	19.41543235	16.5	1.54E-02	16.5154023	8.9	2.50E-02	8.924965936	10.3	2.50E-02	10.32496594

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		LSA-10			LSA-11			LSA-12			LSA-13A			LSA-13B		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	6590	7.72E+00	6597.719753	18600	7.71E+00	18607.71374	11200	8.21E+00	11208.21234	20100	3.20E+01	20131.98309	17300	3.20E+01	17331.98309
Antimony	0.1 - 10	0.05	2.66E-05	0.05002662	0.05	2.66E-05	0.050026599	0.05	2.83E-05	0.050028318	0.05	1.10E-04	0.050110287	0.05	1.10E-04	0.050110287
Arsenic	0.05 - 5	1.11	1.33E-04	1.110133099	3.92	1.33E-04	3.920132995	1.74	1.42E-04	1.740141592	3.04	5.51E-04	3.040551433	2.96	5.51E-04	2.960551433
Barium	0.5 - 1	17.2	7.99E-04	17.2007986	102	7.98E-04	102.000798	71.2	8.50E-04	71.20084955	108	3.31E-03	108.0033086	89	3.31E-03	89.0033086
Beryllium	0.2 - 0.5	0.1	8.78E-05	0.100087845	0.68	8.78E-05	0.680087777	0.33	9.35E-05	0.330093451	0.56	3.64E-04	0.560363946	0.52	3.64E-04	0.520363946
Bismuth	0.2 - 20	0.1	2.66E-05	0.10002662	0.1	2.66E-05	0.100026599	0.1	2.83E-05	0.100028318	0.1	1.10E-04	0.100110287	0.1	1.10E-04	0.100110287
Cadmium	0.05 - 0.5	0.025	2.66E-05	0.02502662	0.025	2.66E-05	0.025026599	0.025	2.83E-05	0.025028318	0.025	1.10E-04	0.025110287	0.025	1.10E-04	0.025110287
Calcium	50	1730	8.52E+00	1738.518348	5230	8.51E+00	5238.511708	4210	9.06E+00	4219.061897	4160	3.53E+01	4195.291687	3900	3.53E+01	3935.291687
Chromium	0.5 - 2	24.6	3.99E-02	24.63992976	49.2	3.99E-02	49.23989863	30.8	4.25E-02	30.84247764	63.4	1.65E-01	63.56542978	54.4	1.65E-01	54.56542978
Cobalt	0.1 - 2	6.4	9.32E-03	6.409316944	9.2	9.31E-03	9.20930968	7.65	9.91E-03	7.659911449	12	3.86E-02	12.03860028	10.3	3.86E-02	10.33860028
Copper	0.5 - 1	11.4	2.93E-02	11.42928182	21.3	2.93E-02	21.32925899	19	3.12E-02	19.03115027	26.5	1.21E-01	26.62131518	23.8	1.21E-01	23.92131518
Iron	50	13700	1.30E+01	13713.04372	23700	1.30E+01	23713.03355	16700	1.39E+01	16713.87603	29200	5.40E+01	29254.0404	26000	5.40E+01	26054.0404
Lead	0.5 - 30	2.15	1.60E-04	2.150159719	7.5	1.60E-04	7.500159595	4.79	1.70E-04	4.790169911	7.88	6.62E-04	7.880661719	7.25	6.62E-04	7.250661719
Magnesium	20 - 50	4150	6.12E+00	4156.122563	9020	6.12E+00	9026.11779	5500	6.51E+00	5506.513238	10700	2.54E+01	10725.3659	9550	2.54E+01	9575.3659
Manganese	1	149	2.48E-01	149.2475645	199	2.47E-01	199.2473715	210	2.63E-01	210.2633614	250	1.03E+00	251.0256647	218	1.03E+00	219.0256647
Mercury	0.005 - 0.005	0.0068	2.66E-06	0.006802662	0.0173	2.66E-06	0.01730266	0.0054	2.83E-06	0.005402832	0.0116	1.10E-05	0.011611029	0.0103	1.10E-05	0.010311029
Molybdenum	0.5 - 4	0.25	1.33E-04	0.250133099	0.25	1.33E-04	0.250132995	0.25	1.42E-04	0.250141592	0.25	5.51E-04	0.250551433	0.25	5.51E-04	0.250551433
Nickel	0.5 - 5	13.5	1.92E-02	13.51916628	26.7	1.92E-02	26.71915134	15.9	2.04E-02	15.92038927	32.9	7.94E-02	32.9794063	27.9	7.94E-02	27.9794063
Phosphorus	50	160	5.86E-02	160.0585636	391	5.85E-02	391.058518	289	6.23E-02	289.0623005	392	2.43E-01	392.2426304	390	2.43E-01	390.2426304
Potassium	100 - 200	310	2.66E-02	310.0266198	3840	2.66E-02	3840.026599	1990	2.83E-02	1990.028318	3950	1.10E-01	3950.110287	3190	1.10E-01	3190.110287
Selenium	0.2 - 0.5	0.1	1.33E-04	0.100133099	0.1	1.33E-04	0.100132995	0.1	1.42E-04	0.100141592	0.1	5.51E-04	0.100551433	0.1	5.51E-04	0.100551433
Silver	0.1 - 2	0.05	2.66E-05	0.05002662	0.05	2.66E-05	0.050026599	0.05	2.83E-05	0.050028318	0.05	1.10E-04	0.050110287	0.05	1.10E-04	0.050110287
Sodium	100 - 200	140	6.65E-02	140.0665496	580	6.65E-02	580.0664977	410	7.08E-02	410.0707961	550	2.76E-01	550.2757163	430	2.76E-01	430.2757163
Strontium	0.5	9.07	3.73E-03	9.073726777	51.7	3.72E-03	51.70372387	21.6	3.96E-03	21.60396458	24.1	1.54E-02	24.11544011	22	1.54E-02	22.01544011
Thallium	0.05 - 1	0.025	2.66E-05	0.02502662	0.181	2.66E-05	0.181026599	0.127	2.83E-05	0.127028318	0.208	1.10E-04	0.208110287	0.214	1.10E-04	0.214110287
Tin	5-Feb	1	5.32E-04	1.000532397	1	5.32E-04	1.000531982	1	5.66E-04	1.000566369	1	2.21E-03	1.00220573	1	2.21E-03	1.00220573
Titanium	1	563	5.86E-01	563.5856365	986	5.85E-01	986.5851799	996	6.23E-01	996.6230054	1390	2.43E+00	1392.426304	1190	2.43E+00	1192.426304
Uranium	0.05	0.349	2.66E-05	0.34902662	1.06	2.66E-05	1.060026599	0.782	2.83E-05	0.782028318	1.75	1.10E-04	1.750110287	1.6	1.10E-04	1.600110287
Vanadium	0.2 - 2	28.7	2.66E-02	28.72661984	48.6	2.66E-02	48.62659909	37.2	2.83E-02	37.22831843	65.2	1.10E-01	65.31028652	57.7	1.10E-01	57.81028652
Zinc	1	15.5	1.57E-02	15.51570571	40	1.57E-02	40.01569346	28.7	1.67E-02	28.71670787	56.4	6.51E-02	56.46506905	50.3	6.51E-02	50.36506905

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		LSA-14			LSA-15			LSA-16			LSA-17			LSA-18		
		Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Predicted Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)
Metals	Detection Limit (mg/kg)															
Aluminum	50	8100	2.38E+01	8123.801164	13900	9.03E+00	13909.02617	13300	2.40E+01	13323.98018	3220	3.03E+01	3250.312153	2570	8.57E+00	2578.570985
Antimony	0.1 - 10	0.05	8.21E-05	0.050082073	0.05	3.11E-05	0.050031125	0.05	8.27E-05	0.05008269	0.05	1.05E-04	0.050104525	0.05	2.96E-05	0.050029555
Arsenic	0.05 - 5	1.87	4.10E-04	1.870410365	2.78	1.56E-04	2.780155624	7.17	4.13E-04	7.170413451	0.756	5.23E-04	0.756522623	0.645	1.48E-04	0.645147776
Barium	0.5 - 1	19.8	2.46E-03	19.80246219	71	9.34E-04	71.00093374	47.9	2.48E-03	47.90248071	19.1	3.14E-03	19.10313574	14.1	8.87E-04	14.10088665
Beryllium	0.2 - 0.5	0.1	2.71E-04	0.100270841	0.41	1.03E-04	0.410102712	0.24	2.73E-04	0.240272878	0.1	3.45E-04	0.100344931	0.1	9.75E-05	0.100097532
Bismuth	0.2 - 20	0.1	8.21E-05	0.100082073	0.1	3.11E-05	0.100031125	0.1	8.27E-05	0.10008269	0.1	1.05E-04	0.100104525	0.1	2.96E-05	0.100029555
Cadmium	0.05 - 0.5	0.025	8.21E-05	0.025082073	0.025	3.11E-05	0.025031125	0.025	8.27E-05	0.02508269	0.025	1.05E-04	0.025104525	0.025	2.96E-05	0.025029555
Calcium	50	2370	2.63E+01	2396.263353	3550	9.96E+00	3559.959909	4110	2.65E+01	4136.460884	1850	3.34E+01	1883.447893	1900	9.46E+00	1909.457638
Chromium	0.5 - 2	36.9	1.23E-01	37.02310947	44.1	4.67E-02	44.14668708	44.9	1.24E-01	45.02403539	10.9	1.57E-01	11.056787	9.09	4.43E-02	9.13433268
Cobalt	0.1 - 2	8.56	2.87E-02	8.588725543	8.86	1.09E-02	8.870893651	14.9	2.89E-02	14.92894159	2.87	3.66E-02	2.906583633	2.25	1.03E-02	2.260344292
Copper	0.5 - 1	20.1	9.03E-02	20.19028028	16.8	3.42E-02	16.83423719	40.6	9.10E-02	40.69095929	6.13	1.15E-01	6.244977133	8.15	3.25E-02	8.182510632
Iron	50	15000	4.02E+01	15040.21576	20600	1.53E+01	20615.25111	25900	4.05E+01	25940.51823	7520	5.12E+01	7571.217087	7010	1.45E+01	7024.482009
Lead	0.5 - 30	2.02	4.92E-04	2.020492438	5.51	1.87E-04	5.510186748	2.97	4.96E-04	2.970496142	1.91	6.27E-04	1.910627148	1.59	1.77E-04	1.590177331
Magnesium	20 - 50	5520	1.89E+01	5538.876785	7180	7.16E+00	7187.158685	9120	1.90E+01	9139.01876	1700	2.40E+01	1724.040673	1260	6.80E+00	1266.797678
Manganese	1	213	7.63E-01	213.7632787	207	2.89E-01	207.2894599	394	7.69E-01	394.7690194	67	9.72E-01	67.9720794	49.6	2.75E-01	49.87486261
Mercury	0.005 - 0.005	0.0025	8.21E-06	0.002508207	0.012	3.11E-06	0.012003112	0.006	8.27E-06	0.006008269	0.0025	1.05E-05	0.002510452	0.0025	2.96E-06	0.002502956
Molybdenum	0.5 - 4	0.25	4.10E-04	0.250410365	0.25	1.56E-04	0.250155624	0.25	4.13E-04	0.250413451	0.25	5.23E-04	0.250522623	0.25	1.48E-04	0.250147776
Nickel	0.5 - 5	24.1	5.91E-02	24.15909255	24.7	2.24E-02	24.7224098	33.6	5.95E-02	33.65953699	4.94	7.53E-02	5.01525776	3.81	2.13E-02	3.831279686
Phosphorus	50	137	1.81E-01	137.1805606	182	6.85E-02	182.0684744	357	1.82E-01	357.1819186	289	2.30E-01	289.2299543	325	6.50E-02	325.0650213
Potassium	100 - 200	380	8.21E-02	380.082073	2180	3.11E-02	2180.031125	1400	8.27E-02	1400.08269	600	1.05E-01	600.1045247	280	2.96E-02	280.0295551
Selenium	0.2 - 0.5	0.1	4.10E-04	0.100410365	0.1	1.56E-04	0.100155624	0.1	4.13E-04	0.100413451	0.1	5.23E-04	0.100522623	0.1	1.48E-04	0.100147776
Silver	0.1 - 2	0.05	8.21E-05	0.050082073	0.05	3.11E-05	0.050031125	0.05	8.27E-05	0.05008269	0.05	1.05E-04	0.050104525	0.05	2.96E-05	0.050029555
Sodium	100 - 200	300	2.05E-01	300.2051824	450	7.78E-02	450.0778118	320	2.07E-01	320.2067257	150	2.61E-01	150.2613117	140	7.39E-02	140.0738878
Strontium	0.5	10.1	1.15E-02	10.11149022	19.7	4.36E-03	19.70435746	13.5	1.16E-02	13.51157664	8.99	1.46E-02	9.004633453	7.88	4.14E-03	7.884137717
Thallium	0.05 - 1	0.025	8.21E-05	0.025082073	0.147	3.11E-05	0.147031125	0.093	8.27E-05	0.09308269	0.025	1.05E-04	0.025104525	0.025	2.96E-05	0.025029555
Tin	5-Feb	1	1.64E-03	1.00164146	1	6.22E-04	1.000622494	1	1.65E-03	1.001653805	1	2.09E-03	1.002090493	1	5.91E-04	1.000591102
Titanium	1	635	1.81E+00	636.8056055	962	6.85E-01	962.6847438	826	1.82E+00	827.8191858	396	2.30E+00	398.2995427	320	6.50E-01	320.6502126
Uranium	0.05	0.302	8.21E-05	0.302082073	1.06	3.11E-05	1.060031125	0.485	8.27E-05	0.48508269	0.517	1.05E-04	0.517104525	0.456	2.96E-05	0.456029555
Vanadium	0.2 - 2	35.3	8.21E-02	35.38207298	46.2	3.11E-02	46.23112472	56	8.27E-02	56.08269026	17.1	1.05E-01	17.20452467	17.2	2.96E-02	17.22955512
Zinc	1	22.5	4.84E-02	22.54842306	32.9	1.84E-02	32.91836358	41.4	4.88E-02	41.44878725	9.1	6.17E-02	9.161669553	6.4	1.74E-02	6.417437521

Notes:

¹ Soil baseline concentrations are from samples collected in 2010 and 2014.

² Equation used to calculate incremental soil concentration is from the US EPA (2005): Cs =100*((DEPOSITION/(Zs*BD)))*tD

³ Total soil concentration is the sum of the baseline concentration and the incremental concentration.

Samples where the concentration was below the detection limit were replaced with values of half the detection limit for calculation purposes.

Cs = Average soil concentration over exposure duration (mg COPC/kg soil)

100 = Units conversion factor (mg-m² /kg-cm²)

DEPOSITION = Yearly deposition rate of COPC from model (g/m² year)

tD = Time period over which deposition occurs (10 years of the Operational phase)

Zs = Soil mixing zone depth (2 cm)

BD = Soil bulk density (1.5 g soil/cm³ soil)

All soil concentrations are dry weights.

Appendix V6-5I. Predicted Metal Concentrations in Soil from Dust Deposition during the Operational Phase

		LSA-19			LSA-20			LSA-21			Summary Statistics							
		Baseline Soil Concentration ¹ (mg/kg)	Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Baseline Soil Concentration ¹ (mg/kg)	Incremental Soil Concentration ² (mg/kg)	Predicted Total Soil Concentration ³ (mg/kg)	Mean of Baseline Concentrations (mg/kg)	Median of Baseline Concentrations (mg/kg)	95th Percentile of Baseline Concentrations (mg/kg)	Maximum of Baseline Concentrations (mg/kg)	Mean of Predicted Total Concentrations (mg/kg)	Median of Predicted Total Concentrations (mg/kg)	95th Percentile Predicted Total Concentrations (mg/kg)	Maximum of Predicted Total Concentrations (mg/kg)
Metals	Detection Limit (mg/kg)																	
Aluminum	50	6590	1.43E+01	6604.339694	12100	3.21E+01	12132.10779	4760	1.44E+01	4774.425477	10095.56311	8630	21280	27200	10115.61357	8643.736179	21296.40125	27208.57098
Antimony	0.1 - 10	0.05	4.94E-05	0.050049447	0.05	1.11E-04	0.050110717	0.05	4.97E-05	0.050049743	3.41407767	5	5	5	3.414146809	5.000036607	5.000165497	5.000219942
Arsenic	0.05 - 5	1.83	2.47E-04	1.830247236	1.37	5.54E-04	1.370553583	0.963	2.49E-04	0.963248715	2.40276699	2.5	3.697	7.17	2.403112688	2.500236831	3.697188141	7.170413451
Barium	0.5 - 1	19.4	1.48E-03	19.40148342	61.8	3.32E-03	61.8033215	16	1.49E-03	16.00149229	53.87912621	35.3	130.7	164	53.8812004	35.30313574	130.7008975	164.0008867
Beryllium	0.2 - 0.5	0.1	1.63E-04	0.100163176	0.3	3.65E-04	0.300365364	0.1	1.64E-04	0.100164152	0.296407767	0.25	0.639	0.79	0.296635927	0.250182285	0.639130189	0.790097532
Bismuth	0.2 - 20	0.1	4.94E-05	0.100049447	0.1	1.11E-04	0.100110717	0.1	4.97E-05	0.100049743	6.830485437	10	10	10	6.830554576	10.00003661	10.0001655	10.00021994
Cadmium	0.05 - 0.5	0.025	4.94E-05	0.025049447	0.025	1.11E-04	0.025110717	0.025	4.97E-05	0.025049743	0.17861165	0.25	0.25	0.25	0.17868079	0.250036607	0.250165497	0.250219942
Calcium	50	1830	1.58E+01	1845.82311	5730	3.54E+01	5765.429282	2220	1.59E+01	2235.917768	3629.456311	2660	9018	14000	3651.580958	2668.518348	9051.425944	14010.74069
Chromium	0.5 - 2	19.6	7.42E-02	19.67417083	31.8	1.66E-01	31.96607476	27.3	7.46E-02	27.37461454	30.89048544	24.9	65.57	81.8	30.99419472	24.96347272	65.70158791	81.96607476
Cobalt	0.1 - 2	9.83	1.73E-02	9.847306527	7.99	3.88E-02	8.028750777	5.83	1.74E-02	5.847410058	7.164660194	6.6	14.34	17.1	7.188859028	6.609555798	14.35785472	17.13875078
Copper	0.5 - 1	41.7	5.44E-02	41.75439194	13.2	1.22E-01	13.32178816	6.4	5.47E-02	6.454717326	16.85291262	16.2	37.89	67.7	16.9289661	16.25003221	38.00481962	67.82178816
Iron	50	12700	2.42E+01	12724.22914	18200	5.43E+01	18254.25109	10800	2.44E+01	10824.37408	16717.37864	15100	30870	39800	16751.25701	15173.8277	30913.19152	39814.48201
Lead	0.5 - 30	2.4	2.97E-04	2.400296683	3.77	6.64E-04	3.770664299	1.53	2.98E-04	1.530298458	11.28524272	15	15	15	11.28565756	15.00021964	15.00099298	15.00131965
Magnesium	20 - 50	3810	1.14E+01	3821.372861	7010	2.55E+01	7035.464796	3280	1.14E+01	3291.440895	5878.834951	4810	12960	17900	5894.737042	4816.698185	12979.62496	17906.79768
Manganese	1	190	4.60E-01	190.4598591	224	1.03E+00	225.0296635	149	4.63E-01	149.4626101	188.8563107	157	368.9	790	189.4993083	157.2416444	369.4276718	791.0296635
Mercury	0.005 - 0.005	0.0061	4.94E-06	0.006104945	0.0091	1.11E-05	0.009111072	0.0088	4.97E-06	0.008804974	0.012921359	0.0078	0.04978	0.158	0.012928273	0.007805059	0.049783992	0.158003356
Molybdenum	0.5 - 4	0.25	2.47E-04	0.250247236	0.25	5.54E-04	0.250553583	0.25	2.49E-04	0.250248715	1.446893204	2	2	2	1.447238902	2.000183034	2.000827487	2.00109971
Nickel	0.5 - 5	12.8	3.56E-02	12.835602	17.6	7.97E-02	17.67971588	13	3.58E-02	13.03581498	16.73378641	15.1	34.67	53.5	16.78356687	15.12416654	34.71395289	53.57971588
Phosphorus	50	128	1.09E-01	128.1087839	279	2.44E-01	279.2435763	192	1.09E-01	192.1094347	385.7961165	364	667.3	943	385.9482235	364.0930933	667.4005848	943.0738422
Potassium	100 - 200	350	4.94E-02	350.0494472	2090	1.11E-01	2090.110717	310	4.97E-02	310.049743	1836.213592	900	4833	7790	1836.282732	900.0266198	4833.148795	7790.029555
Selenium	0.2 - 0.5	0.1	2.47E-04	0.100247236	0.1	5.54E-04	0.100553583	0.1	2.49E-04	0.100248715	0.201941748	0.25	0.25	0.25	0.202287445	0.250183034	0.250827487	0.25109971
Silver	0.1 - 2	0.05	4.94E-05	0.050049447	0.05	1.11E-04	0.050110717	0.05	4.97E-05	0.050049743	0.695631068	1	1	1	0.695700207	1.000036607	1.000165497	1.000219942
Sodium	100 - 200	180	1.24E-01	180.123618	390	2.77E-01	390.2767913	110	1.24E-01	110.1243576	307.4757282	240	707	1450	307.648577	240.101968	707.126482	1450.066498
Strontium	0.5	8.4	6.92E-03	8.406922611	30.5	1.55E-02	30.51550031	7.86	6.96E-03	7.866964023	19.4292233	14.9	39.37	79.9	19.43890283	14.91463345	39.37376133	79.92357112
Thallium	0.05 - 1	0.025	4.94E-05	0.025049447	0.12	1.11E-04	0.120110717	0.025	4.97E-05	0.025049743	0.365058252	0.5	0.5	0.5	0.365127392	0.500036607	0.500165497	0.500219942
Tin	5-Feb	1	9.89E-04	1.000988944	1	2.21E-03	1.00221433	1	9.95E-04	1.00099486	2.019417476	2.5	2.5	2.5	2.020800266	2.500732137	2.503309949	2.50439884
Titanium	1	505	1.09E+00	506.0878388	851	2.44E+00	853.4357631	366	1.09E+00	367.0943465	711.684466	584	1470	1760	713.2055356	584.640696	1471.950191	1760.650213
Uranium	0.05	0.399	4.94E-05	0.399049447	0.449	1.11E-04	0.449110717	0.314	4.97E-05	0.314049743	0.802951456	0.547	1.75	2.23	0.803020596	0.547055238	1.750104738	2.230091851
Vanadium	0.2 - 2	27.8	4.94E-02	27.84944722	39.6	1.11E-01	39.71071651	26.4	4.97E-02	26.44974302	36.03495146	32	69.57	82	36.10409098	32.15066877	69.62929141	82.02955512
Zinc	1	17.5	2.92E-02	17.52917386	37.6	6.53E-02	37.66532274	15.8	2.93E-02	15.82934838	29.56213592	26.5	59.09	80.5	29.60292824	26.51980314	59.17778881	80.51743752

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