APPENDIX 2.7.3.3-A

HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT TABLES

(Pages 1 to 13)

Total 20-Year Predicited Metal Accumuations in Soil in the Vicinity of Fish Lake (Soil Map Unit 1)

Soil Map Unit	Polygon Number	Total Increase in metal concentration in surface horizon after 20 yr deposition (mg/kg)													
		Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
O1	13	6.24E-06	4.93E-05	1.71E-04	2.42E-07	3.34E-04	4.70E-05	6.96E-03	1.34E-05	1.20E-06	1.17E-04	5.15E-05	7.25E-06	1.32E-06	1.32E-06
O1	16	1.17E-05	9.23E-05	3.21E-04	4.53E-07	6.25E-04	8.80E-05	1.30E-02	2.51E-05	2.25E-06	2.19E-04	9.64E-05	1.36E-05	2.47E-06	2.47E-06
O1	21	1.30E-05	1.03E-04	3.57E-04	5.04E-07	6.97E-04	9.80E-05	1.45E-02	2.80E-05	2.50E-06	2.44E-04	1.07E-04	1.51E-05	2.75E-06	2.75E-06
O1	24	9.47E-06	7.48E-05	2.60E-04	3.67E-07	5.07E-04	7.13E-05	1.06E-02	2.03E-05	1.82E-06	1.77E-04	7.81E-05	1.10E-05	2.00E-06	2.00E-06
O1	26	9.47E-06	7.48E-05	2.60E-04	3.67E-07	5.07E-04	7.13E-05	1.06E-02	2.03E-05	1.82E-06	1.77E-04	7.81E-05	1.10E-05	2.00E-06	2.00E-06
O1	35	1.51E-05	1.19E-04	4.14E-04	5.84E-07	8.07E-04	1.14E-04	1.68E-02	3.24E-05	2.90E-06	2.82E-04	1.24E-04	1.75E-05	3.19E-06	3.19E-06
O1	43	1.49E-05	1.18E-04	4.10E-04	5.79E-07	7.99E-04	1.12E-04	1.67E-02	3.21E-05	2.87E-06	2.80E-04	1.23E-04	1.74E-05	3.16E-06	3.16E-06
O1	46	1.58E-05	1.25E-04	4.33E-04	6.11E-07	8.44E-04	1.19E-04	1.76E-02	3.39E-05	3.03E-06	2.95E-04	1.30E-04	1.83E-05	3.33E-06	3.33E-06
O1	48	1.05E-05	8.29E-05	2.88E-04	4.07E-07	5.62E-04	7.91E-05	1.17E-02	2.26E-05	2.02E-06	1.97E-04	8.66E-05	1.22E-05	2.22E-06	2.22E-06
O1	52	5.51E-06	4.35E-05	1.51E-04	2.13E-07	2.95E-04	4.15E-05	6.15E-03	1.18E-05	1.06E-06	1.03E-04	4.54E-05	6.40E-06	1.16E-06	1.16E-06
O1	53	1.12E-05	8.81E-05	3.06E-04	4.32E-07	5.97E-04	8.40E-05	1.25E-02	2.40E-05	2.14E-06	2.09E-04	9.20E-05	1.30E-05	2.36E-06	2.36E-06
O1	55	1.40E-05	1.11E-04	3.84E-04	5.43E-07	7.50E-04	1.05E-04	1.56E-02	3.01E-05	2.69E-06	2.62E-04	1.16E-04	1.63E-05	2.96E-06	2.96E-06
O1	57	1.46E-05	1.15E-04	3.99E-04	5.64E-07	7.79E-04	1.10E-04	1.63E-02	3.13E-05	2.80E-06	2.73E-04	1.20E-04	1.69E-05	3.08E-06	3.08E-06
O1	60	1.34E-05	1.06E-04	3.68E-04	5.20E-07	7.18E-04	1.01E-04	1.50E-02	2.88E-05	2.58E-06	2.51E-04	1.11E-04	1.56E-05	2.84E-06	2.84E-06
O1	66	9.80E-06	7.74E-05	2.69E-04	3.80E-07	5.24E-04	7.38E-05	1.09E-02	2.10E-05	1.88E-06	1.84E-04	8.08E-05	1.14E-05	2.07E-06	2.07E-06
O1	71	1.37E-05	1.08E-04	3.77E-04	5.32E-07	7.34E-04	1.03E-04	1.53E-02	2.95E-05	2.64E-06	2.57E-04	1.13E-04	1.60E-05	2.90E-06	2.90E-06
O1	81	5.67E-06	4.48E-05	1.56E-04	2.20E-07	3.04E-04	4.27E-05	6.33E-03	1.22E-05	1.09E-06	1.06E-04	4.68E-05	6.59E-06	1.20E-06	1.20E-06
O1	89	1.89E-05	1.49E-04	5.19E-04	7.33E-07	1.01E-03	1.42E-04	2.11E-02	4.06E-05	3.64E-06	3.54E-04	1.56E-04	2.20E-05	4.00E-06	4.00E-06
O1	97	1.59E-05	1.26E-04	4.37E-04	6.18E-07	8.53E-04	1.20E-04	1.78E-02	3.42E-05	3.06E-06	2.99E-04	1.31E-04	1.85E-05	3.37E-06	3.37E-06
O1	100	1.76E-05	1.39E-04	4.84E-04	6.83E-07	9.43E-04	1.33E-04	1.97E-02	3.79E-05	3.39E-06	3.30E-04	1.45E-04	2.05E-05	3.73E-06	3.73E-06
O1	104	1.77E-05	1.40E-04	4.85E-04	6.85E-07	9.45E-04	1.33E-04	1.97E-02	3.79E-05	3.40E-06	3.31E-04	1.46E-04	2.05E-05	3.74E-06	3.74E-06
O1	106	1.47E-05	1.16E-04	4.04E-04	5.70E-07	7.87E-04	1.11E-04	1.64E-02	3.16E-05	2.83E-06	2.75E-04	1.21E-04	1.71E-05	3.11E-06	3.11E-06
O1	111	1.51E-05	1.19E-04	4.13E-04	5.84E-07	8.06E-04	1.13E-04	1.68E-02	3.24E-05	2.90E-06	2.82E-04	1.24E-04	1.75E-05	3.19E-06	3.19E-06
O1	113	1.73E-05	1.37E-04	4.76E-04	6.72E-07	9.28E-04	1.31E-04	1.94E-02	3.72E-05	3.33E-06	3.25E-04	1.43E-04	2.02E-05	3.67E-06	3.67E-06
O1	124	2.32E-05	1.83E-04	6.37E-04	9.00E-07	1.24E-03	1.75E-04	2.59E-02	4.99E-05	4.46E-06	4.35E-04	1.91E-04	2.70E-05	4.91E-06	4.91E-06
O1	130	2.02E-05	1.59E-04	5.54E-04	7.82E-07	1.08E-03	1.52E-04	2.25E-02	4.33E-05	3.88E-06	3.78E-04	1.66E-04	2.35E-05	4.27E-06	4.27E-06
O1	142	2.65E-05	2.09E-04	7.27E-04	1.03E-06	1.42E-03	1.99E-04	2.96E-02	5.69E-05	5.09E-06	4.96E-04	2.19E-04	3.08E-05	5.60E-06	5.60E-06
O1	144	2.63E-05	2.08E-04	7.22E-04	1.02E-06	1.41E-03	1.98E-04	2.94E-02	5.65E-05	5.06E-06	4.93E-04	2.17E-04	3.06E-05	5.56E-06	5.56E-06
O1	154	1.95E-05	1.54E-04	5.35E-04	7.55E-07	1.04E-03	1.47E-04	2.18E-02	4.19E-05	3.75E-06	3.65E-04	1.61E-04	2.27E-05	4.12E-06	4.12E-06
O1	161	3.04E-05	2.40E-04	8.34E-04	1.18E-06	1.63E-03	2.29E-04	3.39E-02	6.53E-05	5.84E-06	5.69E-04	2.51E-04	3.53E-05	6.43E-06	6.43E-06
O1	163	1.33E-05	1.05E-04	3.65E-04	5.16E-07	7.12E-04	1.00E-04	1.49E-02	2.86E-05	2.56E-06	2.49E-04	1.10E-04	1.55E-05	2.81E-06	2.81E-06
O1	168	1.14E-05	9.00E-05	3.13E-04	4.41E-07	6.10E-04	8.58E-05	1.27E-02	2.45E-05	2.19E-06	2.13E-04	9.40E-05	1.32E-05	2.41E-06	2.41E-06
O1	170	2.57E-05	2.03E-04	7.05E-04	9.96E-07	1.37E-03	1.93E-04	2.87E-02	5.52E-05	4.94E-06	4.81E-04	2.12E-04	2.99E-05	5.43E-06	5.43E-06
O1	175	1.03E-05	8.10E-05	2.82E-04	3.98E-07	5.49E-04	7.72E-05	1.15E-02	2.20E-05	1.97E-06	1.92E-04	8.46E-05	1.19E-05	2.17E-06	2.17E-06
O1	184	1.41E-05	1.11E-04	3.86E-04	5.45E-07	7.53E-04	1.06E-04	1.57E-02	3.02E-05	2.70E-06	2.63E-04	1.16E-04	1.64E-05	2.97E-06	2.97E-06
O1	186	1.56E-05	1.23E-04	4.28E-04	6.05E-07	8.36E-04	1.18E-04	1.74E-02	3.35E-05	3.00E-06	2.92E-04	1.29E-04	1.82E-05	3.30E-06	3.30E-06
O1	187	1.74E-05	1.38E-04	4.78E-04	6.76E-07	9.33E-04	1.31E-04	1.95E-02	3.74E-05	3.35E-06	3.27E-04	1.44E-04	2.03E-05	3.69E-06	3.69E-06
O1	193	1.56E-05	1.23E-04	4.29E-04	6.05E-07	8.36E-04	1.18E-04	1.74E-02	3.35E-05	3.00E-06	2.93E-04	1.29E-04	1.82E-05	3.30E-06	3.30E-06
O1	195	3.86E-05	3.05E-04	1.06E-03	1.49E-06	2.06E-03	2.90E-04	4.31E-02	8.29E-05	7.42E-06	7.22E-04	3.18E-04	4.48E-05	8.16E-06	8.16E-06
O1	196	3.04E-05	2.40E-04	8.34E-04	1.18E-06	1.63E-03	2.29E-04	3.39E-02	6.53E-05	5.85E-06	5.69E-04	2.51E-04	3.53E-05	6.43E-06	6.43E-06
O1	197	4.47E-05	3.53E-04	1.23E-03	1.73E-06	2.39E-03	3.36E-04	4.98E-02	9.59E-05	8.58E-06	8.36E-04	3.68E-04	5.19E-05	9.44E-06	9.44E-06
O1	200	1.54E-05	1.21E-04	4.21E-04	5.95E-07	8.22E-04	1.16E-04	1.71E-02	3.30E-05	2.95E-06	2.88E-04	1.27E-04	1.78E-05	3.25E-06	3.25E-06
O1	201	1.43E-05	1.13E-04	3.93E-04	5.54E-07	7.66E-04	1.08E-04	1.60E-02	3.07E-05	2.75E-06	2.68E-04	1.18E-04	1.66E-05	3.03E-06	3.03E-06
O1	204	1.87E-05	1.48E-04	5.14E-04	7.26E-07	1.00E-03	1.41E-04	2.09E-02	4.02E-05	3.60E-06	3.51E-04	1.55E-04	2.18E-05	3.96E-06	3.96E-06
O1	207	1.28E-05	1.01E-04	3.50E-04	4.94E-07	6.83E-04	9.61E-05	1.42E-02	2.74E-05	2.45E-06	2.39E-04	1.05E-04	1.48E-05	2.70E-06	2.70E-06
O1	217	7.62E-05	6.02E-04	2.09E-03	2.95E-06	4.08E-03	5.74E-04	8.51E-02	1.64E-04	1.47E-05	1.43E-03	6.29E-04	8.86E-05	1.61E-05	1.61E-05
O1	220	1.94E-05	1.53E-04	5.31E-04	7.50E-07	1.04E-03	1.46E-04	2.16E-02	4.16E-05	3.72E-06	3.63E-04	1.60E-04	2.25E-05	4.09E-06	4.09E-06
O1	233	4.87E-05	3.85E-04	1.34E-03	1.89E-06	2.61E-03	3.67E-04	5.44E-02	1.05E-04	9.37E-06	9.13E-04	4.02E-04	5.66E-05	1.03E-05	1.03E-05
O1	235	7.93E-05	6.26E-04	2.18E-03	3.07E-06	4.24E-03	5.97E-04	8.85E-02	1.70E-04	1.52E-05	1.49E-03	6.54E-04	9.22E-05	1.68E-05	1.68E-05
O1	236	8.55E-05	6.75E-04	2.35E-03	3.31E-06	4.58E-03	6.44E-04	9.55E-02	1.84E-04	1.64E-05	1.60E-03	7.05E-04	9.94E-05	1.81E-05	1.81E-05
O1	245	7.24E-05	5.72E-04	1.99E-03	2.80E-06	3.87E-03	5.45E-04	8.08E-02	1.55E-04	1.39E-05	1.36E-03	5.97E-04	8.41E-05	1.53E-05	1.53E-05
O1	247	9.75E-05	7.70E-04	2.68E-03	3.78E-06	5.22E-03	7.34E-04	1.09E-01	2.09E-04	1.87E-05	1.83E-03	8.04E-04	1.13E-04	2.06E-05	2.06E-05
O1	253	2.97E-04	2.34E-03	8.14E-03	1.15E-05	1.59E-02	2.23E-03	3.31E-01	6.37E-04	5.70E-05	5.56E-03	2.45E-03	3.45E-04	6.27E-05	6.27E-05
O1	254	9.20E-05	7.27E-04	2.52E-03	3.56E-06	4.92E-03	6.93E-04	1.03E-01	1.98E-04	1.77E-05	1.72E-03	7.59E-04	1.07E-04	1.95E-05	1.95E-05
O1	261	5.12E-05	4.04E-04	1.40E-03	1.98E-06	2.74E-03	3.85E-04	5.71E-02	1.10E-04	9.84E-06	9.58E-04	4.22E-04	5.95E-05	1.08E-05	1.08E-05
O1	263	1.20E-04	9.49E-04	3.30E-03	4.65E-06	6.43E-03	9.04E-04	1.34E-01	2.58E-04	2.31E-05	2.25E-03	9.91E-04	1.40E-04	2.54E-05	2.54E-05
O1	267	1.20E-04	9.45E-04	3.28E-03	4.64E-06	6.41E-03	9.01E-04	1.34E-01	2.57E-04	2.30E-05	2.24E-03	9.87E-04	1.39E-04	2.53E-05	2.53E-05
O1	269	3.97E-04	3.13E-03	1.09E-02	1.54E-05	2.12E-02	2.98E-03	4.43E-01	8.52E-04	7.62E-05	7.43E-03	3.27E-03	4.61E-04	8.38E-05	8.38E-05
O1	276	4.61E-05	3.64E-04	1.26E-03	1.78E-06	2.46E-03	3.47E-04	5.14E-02	9.89E-05	8.86E-06	8.63E-04	3.80E-04	5.35E-05	9.74E-06	9.74E-06
O1	287	1.73E-04	1.36E-03	4.74E-03	6.69E-06	9.24E-03	1.30E-03	1.93E-01	3.71E-04	3.32E-05	3.23E-03	1.42E-03	2.01E-04	3.65E-05	3.65E-05
O1	289	5.77E-05	4.56E-04	1.58E-03	2.24E-06	3.09E-03	4.35E-04	6.44E-02	1.24E-04	1.11E-05	1.08E-03	4.76E-04	6.71E-05	1.22E-05	1.22E-05
O1	297	3.52E-04	2.78E-03	9.67E-03	1.37E-05	1.89E-02	2.65E-03	3.93E-01	7.57E-04	6.78E-05	6.60E-03	2.91E-03	4.10E-04	7.45E-05	7.45E-05
O1	306	1.87E-04	1.48E-03	5.13E-03	7.24E-06	1.00E-02	1.41E-03	2.09E-01	4.01E-04	3.59E-05	3.50E-03	1.54E-03	2.17E-04	3.95E-05	3.95E-05
O1	315	1.28E-04	1.01E-03	3.51E-03	4.96E-06	6.84E-03	9.63E-04	1.43E-01	2.75E-04	2.46E-05	2.40E-03	1.05E-03	1.49E-04	2.70E-05	2.70E-05
O1	329	2.46E-05	1.94E-04	6.74E-04	9.52E-07	1.31E-03	1.85E-04	2.74E-02	5.27E-05	4.72E-06	4.60E-04	2.03E-04	2.85E-05	5.19E-06	5.19E-06
O1	337	1.82E-04	1.44E-03	4.99E-03	7.04E-06	9.73E-03	1.37E-03	2.03E-01	3.90E-04	3.50E-05	3.41E-03	1.50E-03	2.11E-04	3.84E-05	3.84E-05
O1	349	1.24E-04	9.76E-04	3.39E-03	4.79E-06	6.61E-03	9.30E-04	1.38E-01	2.65E-04	2.37E-05	2.31E-03	1.02E-03	1.44E-04	2.61E-05	2.61E-05
O1	361	2.77E-05	2.19E-04	7.60E-04	1.07E-06	1.48E-03	2.09E-04	3.09E-02	5.95E-05	5.33E-06	5.19E-04	2.28E-04	3.22E-05	5.86E-06	5.86E-06
O1	369	2.42E-05	1.91E-04	6.65E-04	9.39E-07	1.30E-03	1.82E-04	2.70E-02	5.20E-05	4.66E-06	4.54E-04	2.00E-04	2.82E-05	5.12E-06	5.12E-06
O1	387	3.32E-05	2.62E-04	9.11E-04	1.29E-06	1.78E-03	2.50E-04	3.71E-02	7.13E-05	6.39E-06	6.22E-04	2.74E-04	3.86E-05	7.02E-06	7.02E-06
O1	397	2.97E-05	2.34E-04	8.14E-04	1.15E-06	1.59E-03	2.23E-04	3.31E-02	6.37E-05	5.70E-06	5.56E-04	2.45E-04	3.45E-05	6.27E-06	6.27E-06
O1	399	5.03E-05	3.97E-04	1.38E-03	1.95E-06	2.69E-03	3.79E-04	5.62E-02	1.08E-04	9.68E-06	9.43E-04	4.15E-04	5.85E-05	1.06E-05	1.06E-05
O1	409	2.37E-05	1.87E-04	6.50E-04	9.18E-07	1.27E-03	1.78E-04	2.65E-02	5.09E-05	4.56E-06	4.44E-04	1.95E-04	2.75E-05	5.01E-06	5.01E-06
O1	421	4.09E-05	3.23E-04	1.12E-03	1.58E-06	2.19E-03	3.08E-04	4.57E-02	8.78E-05	7.86E-06	7.66E-04	3.37E-04	4.75E-05	8.65E-06	8.65E-06
O1	422	1.79E-05	1.41E-04	4.91E-04	6.93E-07	9.57E-04	1.35E-04	2.00E-02	3.84E-05	3.44E-06	3.35E-04	1.47E-04	2.08E-05	3.78E-06	3.78E-06
O1	424	1.82E-05	1.44E-04	5.00E-04	7.06E-07	9.75E-04	1.37E-04	2.03E-02	3.91E-05	3.50E-06	3.41E-04	1.50E-04	2.12E-05	3.85E-06	3.85E-06
O1	435	2.40E-05	1.90E-04	6.59E-04	9.31E-07	1.29E-03	1.81E-04	2.68E-02	5.16E-05	4.62E-06	4.50E-04	1.98E-04	2.79E-05	5.08E-06	5.08E-06
O1	442	2.50E-05	1.98E-04	6.86E-04	9.69E-07	1.34E-03	1.88E-04	2.79E-02	5.37E-05	4.81E-06	4.68E-04	2.06E-04	2.91E-05	5.29E-06	5.29E-06
O1	454	2.19E-05	1.73E-04	6.00E-04	8.48E-07	1.17E-03	1.65E-04	2.44E-02	4.70E-05	4.21E-06	4.10E-04	1.80E-04	2.54E-05	4.63E-06	4.63E-06
O1	473	8.64E-06	6.82E-05	2.37E-04	3.35E-07	4.62E-04	6.50E-05	9.64E-03	1.85E-05	1.66E-06	1.62E-04	7.12E-05	1.00E-05	1.83E-06	1.83E-06
O1	476	9.54E-06	7.53E-05	2.62E-04	3.70E-07	5.10E-04	7.18E-05	1.06E-02	2.05E-05	1.83E-06	1.79E-04	7.87E-05	1.11E-05	2.02E-06	2.02E-06
Summary Statistics		**Sb**	**As**	**Ba**	**Cd**	**Cr**	**Co**	**Cu**	**Pb**	**Hg**	**Mo**	**Ni**	**Se**	**Ag**	**Zn**
Mimimum		5.51E-06	4.35E-05	1.51E-04	2.13E-07	2.95E-04	4.15E-05	6.15E-03	1.18E-05	1.06E-06	1.03E-04	4.54E-05	6.40E-06	1.16E-06	1.16E-06
Average		4.86E-05	3.84E-04	1.33E-03	1.88E-06	2.60E-03	3.66E-04	5.43E-02	1.04E-04	9.35E-06	9.11E-04	4.01E-04	5.65E-05	1.03E-05	1.03E-05
Maximum		3.97E-04	3.13E-03	1.09E-02	1.54E-05	2.12E-02	2.98E-03	4.43E-01	8.52E-04	7.62E-05	7.43E-03	3.27E-03	4.61E-04	8.38E-05	8.38E-05

Yearly-Averaged Mean Metal Concentrations in Fish Lake (mg/L)

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
CDWG (mg/L)	**0.006**	**0.01**	**1**	**0.004**	**0.005**	**0.05**	**0.0038**	**1**	**0.01**	**0.001**	**0.25**	**0.1**	**0.01**	**0.0015**	**5**
Year															
12/31/2010	6.05E-05	3.69E-04	3.11E-03	8.17E-04	3.51E-05	2.53E-04	1.76E-04	8.52E-04	1.57E-04	5.52E-09	3.96E-04	2.60E-03	1.73E-04	3.73E-05	2.58E-03
12/31/2011	7.50E-05	3.73E-04	3.80E-03	1.66E-03	6.35E-05	5.22E-05	2.71E-04	5.66E-04	3.00E-04	5.58E-09	6.87E-04	2.21E-03	2.65E-04	8.15E-05	2.89E-03
12/31/2012	8.61E-05	3.70E-04	4.06E-03	1.95E-03	7.34E-05	6.98E-05	3.10E-04	5.12E-04	3.51E-04	5.83E-09	8.22E-04	2.13E-03	2.98E-04	9.65E-05	3.07E-03
12/31/2013	1.59E-04	4.38E-04	4.54E-03	2.08E-03	8.30E-05	1.19E-04	3.55E-04	1.29E-03	3.89E-04	1.41E-06	2.97E-03	2.25E-03	3.66E-04	1.04E-04	3.38E-03
12/31/2014	2.59E-04	4.82E-04	5.02E-03	2.14E-03	9.10E-05	1.21E-04	3.74E-04	1.64E-03	4.07E-04	2.42E-06	5.58E-03	2.33E-03	4.36E-04	1.07E-04	3.64E-03
12/31/2015	3.53E-04	4.92E-04	5.34E-03	2.15E-03	9.38E-05	1.28E-04	3.80E-04	1.83E-03	4.17E-04	3.03E-06	6.76E-03	2.38E-03	4.62E-04	1.11E-04	3.74E-03
12/31/2016	4.49E-04	5.25E-04	5.63E-03	2.15E-03	9.50E-05	1.24E-04	3.85E-04	1.97E-03	4.20E-04	3.56E-06	7.60E-03	2.39E-03	4.79E-04	1.11E-04	3.80E-03
12/31/2017	5.45E-04	5.40E-04	5.92E-03	2.15E-03	9.56E-05	1.30E-04	3.86E-04	2.10E-03	4.21E-04	4.03E-06	8.27E-03	2.41E-03	4.91E-04	1.12E-04	3.81E-03
12/31/2018	6.57E-04	5.63E-04	6.25E-03	2.16E-03	9.66E-05	1.28E-04	3.86E-04	2.24E-03	4.23E-04	4.60E-06	9.09E-03	2.42E-03	5.05E-04	1.12E-04	3.83E-03
12/31/2019	7.51E-04	5.85E-04	6.54E-03	2.16E-03	9.75E-05	1.31E-04	3.88E-04	2.36E-03	4.26E-04	5.07E-06	9.79E-03	2.42E-03	5.17E-04	1.13E-04	3.86E-03
12/31/2020	8.41E-04	6.15E-04	6.82E-03	2.17E-03	9.88E-05	1.18E-04	3.88E-04	2.48E-03	4.32E-04	5.55E-06	1.06E-02	2.42E-03	5.32E-04	1.16E-04	3.87E-03
12/31/2021	8.64E-04	6.01E-04	6.86E-03	2.16E-03	9.85E-05	1.40E-04	3.89E-04	2.50E-03	4.31E-04	5.62E-06	1.06E-02	2.44E-03	5.31E-04	1.14E-04	3.93E-03
12/31/2022	9.04E-04	5.97E-04	6.97E-03	2.15E-03	9.89E-05	1.37E-04	3.91E-04	2.56E-03	4.31E-04	5.80E-06	1.08E-02	2.46E-03	5.47E-04	1.12E-04	3.98E-03
12/31/2023	1.01E-03	6.31E-04	7.31E-03	2.16E-03	1.00E-04	1.37E-04	3.94E-04	2.75E-03	4.37E-04	6.35E-06	1.15E-02	2.48E-03	6.06E-04	1.14E-04	4.02E-03
12/31/2024	1.12E-03	6.65E-04	7.62E-03	2.15E-03	1.01E-04	1.42E-04	3.97E-04	2.92E-03	4.42E-04	6.88E-06	1.22E-02	2.51E-03	6.51E-04	1.16E-04	4.08E-03
12/31/2025	1.19E-03	6.97E-04	7.85E-03	2.15E-03	1.02E-04	1.44E-04	4.01E-04	3.03E-03	4.43E-04	7.26E-06	1.27E-02	2.52E-03	6.82E-04	1.14E-04	4.15E-03
12/31/2026	1.28E-03	7.28E-04	8.12E-03	2.16E-03	1.03E-04	1.33E-04	4.03E-04	3.16E-03	4.47E-04	7.70E-06	1.34E-02	2.53E-03	7.18E-04	1.15E-04	4.16E-03
12/31/2027	1.31E-03	7.36E-04	8.23E-03	2.16E-03	1.04E-04	1.40E-04	4.05E-04	3.22E-03	4.49E-04	7.88E-06	1.36E-02	2.54E-03	7.45E-04	1.14E-04	4.20E-03
12/31/2028	1.30E-03	7.33E-04	8.21E-03	2.16E-03	1.04E-04	1.45E-04	4.07E-04	3.23E-03	4.48E-04	7.83E-06	1.35E-02	2.55E-03	7.60E-04	1.13E-04	4.23E-03
12/31/2029	1.20E-03	7.15E-04	7.88E-03	2.15E-03	1.03E-04	1.41E-04	4.07E-04	3.12E-03	4.47E-04	7.27E-06	1.26E-02	2.57E-03	7.59E-04	1.14E-04	4.17E-03
12/31/2030	9.79E-04	6.86E-04	7.23E-03	2.15E-03	1.01E-04	1.35E-04	4.08E-04	2.87E-03	4.42E-04	6.19E-06	1.10E-02	2.56E-03	7.50E-04	1.13E-04	4.11E-03
12/31/2031	7.22E-04	6.50E-04	6.47E-03	2.14E-03	9.92E-05	1.25E-04	4.07E-04	2.57E-03	4.37E-04	4.93E-06	9.29E-03	2.53E-03	7.41E-04	1.13E-04	4.03E-03
12/31/2032	4.94E-04	6.26E-04	5.82E-03	2.15E-03	9.83E-05	1.14E-04	4.07E-04	2.31E-03	4.35E-04	3.83E-06	7.82E-03	2.51E-03	7.43E-04	1.13E-04	3.95E-03
12/31/2033	3.21E-04	5.30E-04	5.15E-03	2.13E-03	9.17E-05	8.12E-05	3.86E-04	1.43E-03	4.13E-04	1.68E-06	4.91E-03	2.44E-03	6.88E-04	1.10E-04	3.72E-03
12/31/2034	2.45E-04	4.88E-04	4.79E-03	2.11E-03	8.55E-05	8.44E-05	3.80E-04	1.14E-03	4.03E-04	5.05E-07	2.44E-03	2.40E-03	6.41E-04	1.08E-04	3.58E-03
12/31/2035	2.35E-04	4.96E-04	4.74E-03	2.10E-03	8.43E-05	7.31E-05	3.79E-04	1.09E-03	4.03E-04	2.22E-07	1.82E-03	2.39E-03	6.50E-04	1.08E-04	3.55E-03
12/31/2036	2.38E-04	4.95E-04	4.74E-03	2.10E-03	8.41E-05	7.97E-05	3.81E-04	1.10E-03	4.04E-04	1.79E-07	1.67E-03	2.40E-03	6.65E-04	1.10E-04	3.54E-03
12/31/2037	2.42E-04	4.86E-04	4.74E-03	2.09E-03	8.40E-05	8.41E-05	3.82E-04	1.13E-03	4.06E-04	1.95E-07	1.64E-03	2.42E-03	6.78E-04	1.10E-04	3.55E-03
12/31/2038	2.51E-04	4.97E-04	4.78E-03	2.09E-03	8.41E-05	8.16E-05	3.84E-04	1.17E-03	4.07E-04	2.37E-07	1.67E-03	2.43E-03	6.97E-04	1.10E-04	3.54E-03
12/31/2039	2.67E-04	5.26E-04	4.85E-03	2.10E-03	8.49E-05	7.15E-05	3.86E-04	1.20E-03	4.09E-04	2.95E-07	1.75E-03	2.42E-03	7.32E-04	1.10E-04	3.55E-03
12/31/2040	2.69E-04	5.16E-04	4.84E-03	2.09E-03	8.49E-05	9.08E-05	3.87E-04	1.23E-03	4.09E-04	3.36E-07	1.76E-03	2.45E-03	7.39E-04	1.09E-04	3.60E-03
12/31/2041	2.75E-04	5.17E-04	4.86E-03	2.09E-03	8.51E-05	8.01E-05	3.90E-04	1.26E-03	4.10E-04	3.75E-07	1.78E-03	2.46E-03	7.52E-04	1.09E-04	3.62E-03
12/31/2042	2.81E-04	5.27E-04	4.89E-03	2.09E-03	8.54E-05	8.32E-05	3.91E-04	1.27E-03	4.11E-04	3.99E-07	1.82E-03	2.46E-03	7.64E-04	1.09E-04	3.64E-03
12/31/2043	3.26E-04	6.00E-04	5.03E-03	2.09E-03	8.64E-05	2.90E-05	3.75E-04	1.30E-03	4.12E-04	4.88E-07	2.08E-03	2.31E-03	8.49E-04	1.09E-04	3.48E-03
12/31/2044	3.78E-04	6.82E-04	5.21E-03	2.09E-03	8.74E-05	2.56E-05	3.51E-04	1.33E-03	4.15E-04	5.96E-07	2.37E-03	2.12E-03	9.51E-04	1.05E-04	3.36E-03
12/31/2045	4.02E-04	7.18E-04	5.29E-03	2.10E-03	8.80E-05	2.70E-05	3.40E-04	1.34E-03	4.16E-04	6.47E-07	2.50E-03	2.04E-03	9.98E-04	1.02E-04	3.32E-03
12/31/2046	4.16E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.51E-05	3.36E-04	1.36E-03	4.17E-04	6.76E-07	2.58E-03	1.99E-03	1.02E-03	1.00E-04	3.32E-03
12/31/2047	4.19E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.93E-05	3.33E-04	1.36E-03	4.17E-04	6.86E-07	2.59E-03	1.99E-03	1.03E-03	1.00E-04	3.30E-03
12/31/2048	4.23E-04	7.44E-04	5.35E-03	2.09E-03	8.85E-05	2.73E-05	3.33E-04	1.37E-03	4.17E-04	7.00E-07	2.61E-03	1.98E-03	1.03E-03	1.00E-04	3.28E-03
12/31/2049	4.26E-04	7.48E-04	5.36E-03	2.10E-03	8.84E-05	2.76E-05	3.33E-04	1.38E-03	4.18E-04	7.08E-07	2.63E-03	1.98E-03	1.04E-03	1.01E-04	3.25E-03
12/31/2050	4.34E-04	7.55E-04	5.38E-03	2.09E-03	8.86E-05	2.90E-05	3.35E-04	1.41E-03	4.19E-04	7.52E-07	2.67E-03	1.99E-03	1.06E-03	1.02E-04	3.27E-03
12/31/2051	4.43E-04	7.64E-04	5.42E-03	2.09E-03	8.87E-05	2.70E-05	3.36E-04	1.44E-03	4.20E-04	7.97E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.27E-03
12/31/2052	4.43E-04	7.66E-04	5.41E-03	2.09E-03	8.86E-05	2.99E-05	3.37E-04	1.44E-03	4.20E-04	8.07E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.29E-03
12/31/2053	4.46E-04	7.67E-04	5.42E-03	2.08E-03	8.86E-05	2.96E-05	3.38E-04	1.46E-03	4.20E-04	8.33E-07	2.73E-03	2.01E-03	1.10E-03	1.02E-04	3.31E-03
12/31/2054	4.63E-04	7.80E-04	5.48E-03	2.08E-03	8.89E-05	3.16E-05	3.42E-04	1.52E-03	4.22E-04	9.24E-07	2.82E-03	2.03E-03	1.15E-03	1.03E-04	3.33E-03
12/31/2055	4.86E-04	8.06E-04	5.58E-03	2.08E-03	8.96E-05	3.04E-05	3.48E-04	1.59E-03	4.23E-04	1.04E-06	2.94E-03	2.05E-03	1.23E-03	1.02E-04	3.38E-03
12/31/2056	5.25E-04	8.46E-04	5.74E-03	2.08E-03	9.05E-05	3.63E-05	3.58E-04	1.70E-03	4.27E-04	1.25E-06	3.15E-03	2.08E-03	1.36E-03	1.02E-04	3.48E-03
12/31/2057	5.60E-04	8.67E-04	5.87E-03	2.06E-03	9.10E-05	4.49E-05	3.71E-04	1.84E-03	4.29E-04	1.47E-06	3.33E-03	2.15E-03	1.50E-03	1.02E-04	3.61E-03
12/31/2058	6.13E-04	8.98E-04	6.08E-03	2.05E-03	9.21E-05	5.38E-05	3.90E-04	2.02E-03	4.34E-04	1.80E-06	3.61E-03	2.23E-03	1.70E-03	1.02E-04	3.78E-03
12/31/2059	6.65E-04	9.38E-04	6.30E-03	2.04E-03	9.31E-05	5.40E-05	4.07E-04	2.19E-03	4.37E-04	2.10E-06	3.88E-03	2.31E-03	1.90E-03	1.02E-04	3.92E-03
12/31/2060	7.28E-04	9.86E-04	6.56E-03	2.02E-03	9.42E-05	6.84E-05	4.31E-04	2.41E-03	4.40E-04	2.49E-06	4.21E-03	2.41E-03	2.16E-03	1.01E-04	4.12E-03
12/31/2061	7.84E-04	1.03E-03	6.79E-03	2.01E-03	9.50E-05	6.69E-05	4.50E-04	2.60E-03	4.44E-04	2.82E-06	4.50E-03	2.50E-03	2.39E-03	1.02E-04	4.31E-03
12/31/2062	8.41E-04	1.06E-03	7.03E-03	1.99E-03	9.59E-05	8.34E-05	4.72E-04	2.79E-03	4.46E-04	3.18E-06	4.81E-03	2.60E-03	2.63E-03	1.02E-04	4.48E-03
12/31/2063	8.91E-04	1.11E-03	7.25E-03	1.99E-03	9.68E-05	8.13E-05	4.86E-04	2.95E-03	4.50E-04	3.45E-06	5.08E-03	2.65E-03	2.83E-03	1.03E-04	4.59E-03
12/31/2064	9.11E-04	1.12E-03	7.35E-03	1.98E-03	9.70E-05	8.86E-05	4.96E-04	3.01E-03	4.50E-04	3.58E-06	5.19E-03	2.69E-03	2.94E-03	1.02E-04	4.68E-03
12/31/2065	9.23E-04	1.13E-03	7.41E-03	1.98E-03	9.72E-05	8.59E-05	5.01E-04	3.04E-03	4.50E-04	3.65E-06	5.25E-03	2.70E-03	3.00E-03	1.02E-04	4.74E-03
12/31/2066	9.33E-04	1.14E-03	7.46E-03	1.98E-03	9.72E-05	8.66E-05	5.06E-04	3.07E-03	4.50E-04	3.71E-06	5.31E-03	2.72E-03	3.07E-03	1.02E-04	4.79E-03
12/31/2067	9.44E-04	1.14E-03	7.52E-03	1.98E-03	9.74E-05	8.44E-05	5.11E-04	3.10E-03	4.50E-04	3.77E-06	5.37E-03	2.74E-03	3.13E-03	1.03E-04	4.82E-03
12/31/2068	9.46E-04	1.14E-03	7.54E-03	1.98E-03	9.74E-05	9.16E-05	5.12E-04	3.10E-03	4.49E-04	3.78E-06	5.38E-03	2.75E-03	3.16E-03	1.02E-04	4.83E-03
12/31/2069	9.41E-04	1.13E-03	7.53E-03	1.98E-03	9.73E-05	8.11E-05	5.12E-04	3.07E-03	4.49E-04	3.75E-06	5.36E-03	2.74E-03	3.16E-03	1.03E-04	4.82E-03
12/31/2070	9.48E-04	1.14E-03	7.56E-03	1.98E-03	9.73E-05	9.01E-05	5.15E-04	3.09E-03	4.48E-04	3.80E-06	5.40E-03	2.75E-03	3.21E-03	1.02E-04	4.86E-03
12/31/2071	9.50E-04	1.14E-03	7.57E-03	1.98E-03	9.72E-05	8.83E-05	5.17E-04	3.10E-03	4.48E-04	3.81E-06	5.42E-03	2.75E-03	3.23E-03	1.03E-04	4.88E-03
12/31/2072	9.44E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.78E-05	5.20E-04	3.09E-03	4.45E-04	3.81E-06	5.38E-03	2.77E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2073	9.42E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.09E-05	5.19E-04	3.07E-03	4.45E-04	3.80E-06	5.37E-03	2.77E-03	3.26E-03	1.02E-04	4.93E-03
12/31/2074	9.38E-04	1.12E-03	7.54E-03	1.98E-03	9.67E-05	8.86E-05	5.18E-04	3.05E-03	4.44E-04	3.76E-06	5.36E-03	2.75E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2075	9.24E-04	1.11E-03	7.49E-03	1.99E-03	9.66E-05	8.00E-05	5.10E-04	2.98E-03	4.44E-04	3.65E-06	5.29E-03	2.71E-03	3.19E-03	1.03E-04	4.82E-03
12/31/2076	9.14E-04	1.10E-03	7.46E-03	1.99E-03	9.62E-05	8.85E-05	5.08E-04	2.95E-03	4.43E-04	3.59E-06	5.24E-03	2.70E-03	3.16E-03	1.03E-04	4.78E-03
12/31/2077	9.06E-04	1.08E-03	7.43E-03	1.98E-03	9.55E-05	9.98E-05	5.11E-04	2.94E-03	4.39E-04	3.60E-06	5.19E-03	2.73E-03	3.18E-03	1.02E-04	4.83E-03
12/31/2078	9.05E-04	1.07E-03	7.43E-03	1.98E-03	9.54E-05	9.06E-05	5.12E-04	2.93E-03	4.37E-04	3.59E-06	5.18E-03	2.73E-03	3.20E-03	1.01E-04	4.86E-03
12/31/2079	9.01E-04	1.06E-03	7.42E-03	1.97E-03	9.52E-05	9.96E-05	5.13E-04	2.91E-03	4.36E-04	3.58E-06	5.16E-03	2.73E-03	3.22E-03	9.99E-05	4.89E-03
12/31/2080	9.00E-04	1.05E-03	7.42E-03	1.96E-03	9.48E-05	1.03E-04	5.15E-04	2.90E-03	4.34E-04	3.59E-06	5.16E-03	2.74E-03	3.24E-03	9.90E-05	4.93E-03
12/31/2081	8.94E-04	1.05E-03	7.40E-03	1.98E-03	9.49E-05	8.53E-05	5.08E-04	2.85E-03	4.34E-04	3.51E-06	5.14E-03	2.70E-03	3.20E-03	9.98E-05	4.86E-03
12/31/2082	8.87E-04	1.05E-03	7.37E-03	1.98E-03	9.44E-05	9.35E-05	5.04E-04	2.82E-03	4.32E-04	3.47E-06	5.11E-03	2.68E-03	3.18E-03	1.01E-04	4.81E-03
12/31/2083	8.73E-04	1.04E-03	7.28E-03	1.97E-03	9.35E-05	7.48E-05	4.95E-04	2.75E-03	4.29E-04	3.37E-06	5.04E-03	2.62E-03	3.12E-03	1.01E-04	4.71E-03
12/31/2084	8.64E-04	1.03E-03	7.22E-03	1.96E-03	9.26E-05	8.62E-05	4.90E-04	2.71E-03	4.24E-04	3.33E-06	5.00E-03	2.60E-03	3.08E-03	1.00E-04	4.66E-03
12/31/2085	8.65E-04	1.02E-03	7.22E-03	1.95E-03	9.22E-05	8.56E-05	4.88E-04	2.70E-03	4.22E-04	3.35E-06	5.03E-03	2.59E-03	3.09E-03	1.00E-04	4.66E-03
12/31/2086	8.66E-04	1.01E-03	7.21E-03	1.95E-03	9.20E-05	8.08E-05	4.85E-04	2.67E-03	4.21E-04	3.34E-06	5.04E-03	2.57E-03	3.07E-03	1.01E-04	4.64E-03
12/31/2087	8.67E-04	1.01E-03	7.21E-03	1.95E-03	9.17E-05	8.45E-05	4.84E-04	2.65E-03	4.19E-04	3.34E-06	5.06E-03	2.56E-03	3.06E-03	1.00E-04	4.62E-03
12/31/2088	8.68E-04	9.95E-04	7.20E-03	1.95E-03	9.13E-05	8.62E-05	4.81E-04	2.63E-03	4.19E-04	3.34E-06	5.09E-03	2.55E-03	3.05E-03	1.01E-04	4.60E-03
12/31/2089	8.75E-04	9.99E-04	7.23E-03	1.95E-03	9.13E-05	7.95E-05	4.81E-04	2.63E-03	4.19E-04	3.36E-06	5.15E-03	2.54E-03	3.06E-03	1.03E-04	4.59E-03
12/31/2090	8.71E-04	9.89E-04	7.21E-03	1.95E-03	9.14E-05	8.30E-05	4.77E-04	2.59E-03	4.18E-04	3.33E-06	5.14E-03	2.52E-03	3.03E-03	1.02E-04	4.58E-03
12/31/2091	8.67E-04	9.79E-04	7.19E-03	1.95E-03	9.10E-05	8.43E-05	4.78E-04	2.57E-03	4.16E-04	3.32E-06	5.13E-03	2.52E-03	3.02E-03	1.01E-04	4.59E-03
12/31/2092	8.69E-04	9.76E-04	7.20E-03	1.95E-03	9.11E-05	7.87E-05	4.76E-04	2.56E-03	4.16E-04	3.31E-06	5.15E-03	2.51E-03	3.02E-03	1.01E-04	4.58E-03
12/31/2093	8.70E-04	9.70E-04	7.21E-03	1.95E-03	9.08E-05	8.63E-05	4.76E-04	2.54E-03	4.14E-04	3.32E-06	5.16E-03	2.51E-03	3.03E-03	9.97E-05	4.61E-03
12/31/2094	8.73E-04	9.73E-04	7.21E-03	1.96E-03	9.10E-05	6.83E-05	4.68E-04	2.51E-03	4.15E-04	3.28E-06	5.20E-03	2.46E-03	2.96E-03	1.01E-04	4.51E-03
12/31/2095	8.67E-04	9.54E-04	7.18E-03	1.96E-03	9.05E-05	8.65E-05	4.68E-04	2.49E-03	4.13E-04	3.28E-06	5.18E-03	2.48E-03	2.97E-03	1.01E-04	4.53E-03
12/31/2096	8.67E-04	9.41E-04	7.19E-03	1.94E-03	8.98E-05	9.12E-05	4.75E-04	2.50E-03	4.10E-04	3.32E-06	5.17E-03	2.51E-03	3.04E-03	1.00E-04	4.61E-03
12/31/2097	8.68E-04	9.36E-04	7.21E-03	1.94E-03	8.96E-05	9.67E-05	4.81E-04	2.50E-03	4.08E-04	3.34E-06	5.18E-03	2.53E-03	3.09E-03	9.94E-05	4.67E-03
12/31/2098	8.66E-04	9.32E-04	7.20E-03	1.94E-03	8.95E-05	9.00E-05	4.80E-04	2.49E-03	4.07E-04	3.33E-06	5.17E-03	2.52E-03	3.11E-03	9.94E-05	4.67E-03
12/31/2099	8.54E-04	9.28E-04	7.16E-03	1.93E-03	8.89E-05	9.11E-05	4.78E-04	2.45E-03	4.05E-04	3.27E-06	5.10E-03	2.51E-03	3.10E-03	9.96E-05	4.65E-03
12/31/2100	8.29E-04	9.24E-04	7.08E-03	1.94E-03	8.89E-05	7.83E-05	4.72E-04	2.40E-03	4.05E-04	3.12E-06	4.95E-03	2.48E-03	3.05E-03	9.96E-05	4.59E-03
12/31/2101	7.98E-04	9.14E-04	6.98E-03	1.95E-03	8.88E-05	8.03E-05	4.68E-04	2.34E-03	4.05E-04	2.94E-06	4.75E-03	2.46E-03	3.00E-03	1.00E-04	4.51E-03
12/31/2102	7.73E-04	9.07E-04	6.90E-03	1.95E-03	8.86E-05	7.47E-05	4.66E-04	2.29E-03	4.05E-04	2.80E-06	4.58E-03	2.44E-03	2.98E-03	1.01E-04	4.47E-03
12/31/2103	7.60E-04	8.99E-04	6.87E-03	1.94E-03	8.80E-05	8.73E-05	4.71E-04	2.28E-03	4.01E-04	2.77E-06	4.49E-03	2.46E-03	3.03E-03	1.00E-04	4.53E-03
12/31/2104	7.49E-04	8.97E-04	6.84E-03	1.95E-03	8.81E-05	7.25E-05	4.66E-04	2.24E-03	4.01E-04	2.69E-06	4.43E-03	2.44E-03	2.98E-03	9.94E-05	4.49E-03
12/31/2105	7.41E-04	8.92E-04	6.81E-03	1.96E-03	8.82E-05	7.70E-05	4.62E-04	2.22E-03	4.01E-04	2.63E-06	4.38E-03	2.42E-03	2.94E-03	9.96E-05	4.46E-03
12/31/2106	7.39E-04	8.90E-04	6.80E-03	1.95E-03	8.80E-05	7.65E-05	4.63E-04	2.21E-03	4.01E-04	2.63E-06	4.37E-03	2.42E-03	2.96E-03	9.94E-05	4.48E-03
12/31/2107	7.38E-04	8.83E-04	6.80E-03	1.95E-03	8.77E-05	8.40E-05	4.66E-04	2.21E-03	3.98E-04	2.64E-06	4.37E-03	2.44E-03	2.99E-03	9.84E-05	4.52E-03
12/31/2108	7.39E-04	8.95E-04	6.81E-03	1.95E-03	8.79E-05	7.43E-05	4.64E-04	2.20E-03	3.99E-04	2.63E-06	4.38E-03	2.41E-03	2.98E-03	9.87E-05	4.50E-03
12/31/2109	7.36E-04	8.87E-04	6.80E-03	1.95E-03	8.76E-05	8.42E-05	4.62E-04	2.19E-03	3.99E-04	2.62E-06	4.36E-03	2.42E-03	2.99E-03	1.00E-04	4.48E-03
12/31/2110	7.34E-04	8.82E-04	6.79E-03	1.95E-03	8.73E-05	7.87E-05	4.63E-04	2.19E-03	3.98E-04	2.61E-06	4.35E-03	2.42E-03	2.99E-03	1.01E-04	4.48E-03
12/31/2111	7.31E-04	8.79E-04	6.78E-03	1.95E-03	8.72E-05	7.99E-05	4.63E-04	2.17E-03	3.97E-04	2.60E-06	4.34E-03	2.42E-03	2.99E-03	9.96E-05	4.48E-03
1/1/2112	7.36E-04	8.94E-04	6.81E-03	1.98E-03	8.86E-05	1.86E-05	4.61E-04	2.17E-03	4.03E-04	2.55E-06	4.39E-03	2.40E-03	2.94E-03	1.06E-04	4.32E-03
Maxium Concentration	**1.31E-03**	**1.14E-03**	**8.23E-03**	**2.17E-03**	**1.04E-04**	**2.53E-04**	**5.20E-04**	**3.23E-03**	**4.50E-04**	**7.88E-06**	**1.36E-02**	**2.77E-03**	**3.26E-03**	**1.16E-04**	**4.93E-03**

Yearly-Averaged Mean Metal Concentrations in Upper Fish Creek (mg/L)

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
CDWG (mg/L)	**0.006**	**0.01**	**1**	**0.004**	**0.005**	**0.05**	**0.0038**	**1**	**0.01**	**0.001**	**0.25**	**0.1**	**0.01**	**0.0015**	**5**
Year															
12/31/2010	7.68E-05	8.21E-04	6.63E-03	2.00E-03	7.85E-05	6.68E-04	1.31E-03	1.16E-03	3.50E-04	0.00E+00	8.28E-04	3.87E-03	3.49E-04	1.19E-04	3.66E-03
12/31/2011	7.53E-05	7.24E-04	5.74E-03	1.97E-03	7.71E-05	6.61E-04	1.17E-03	1.17E-03	3.38E-04	0.00E+00	8.38E-04	3.75E-03	3.56E-04	1.17E-04	4.07E-03
12/31/2012	7.86E-05	3.56E-04	4.12E-03	1.99E-03	7.55E-05	2.35E-04	3.88E-04	7.44E-04	3.66E-04	3.55E-09	7.70E-04	2.53E-03	3.10E-04	1.13E-04	3.36E-03
12/31/2013	1.21E-04	3.72E-04	4.38E-03	2.08E-03	8.18E-05	2.38E-04	4.04E-04	9.06E-04	3.84E-04	4.89E-07	2.14E-03	2.57E-03	3.54E-04	1.16E-04	3.54E-03
12/31/2014	1.85E-04	4.00E-04	4.70E-03	2.12E-03	8.72E-05	2.44E-04	4.19E-04	1.15E-03	3.97E-04	1.17E-06	3.89E-03	2.64E-03	4.01E-04	1.19E-04	3.72E-03
12/31/2015	2.44E-04	4.01E-04	4.89E-03	2.13E-03	8.91E-05	2.49E-04	4.22E-04	1.27E-03	4.05E-04	1.55E-06	4.65E-03	2.68E-03	4.18E-04	1.22E-04	3.78E-03
12/31/2016	3.07E-04	4.29E-04	5.10E-03	2.13E-03	8.99E-05	2.47E-04	4.28E-04	1.37E-03	4.07E-04	1.90E-06	5.21E-03	2.68E-03	4.29E-04	1.23E-04	3.81E-03
12/31/2017	3.68E-04	4.38E-04	5.28E-03	2.13E-03	9.03E-05	2.50E-04	4.27E-04	1.45E-03	4.07E-04	2.21E-06	5.64E-03	2.69E-03	4.37E-04	1.22E-04	3.82E-03
12/31/2018	4.39E-04	4.58E-04	5.50E-03	2.14E-03	9.09E-05	2.49E-04	4.28E-04	1.54E-03	4.09E-04	2.56E-06	6.16E-03	2.70E-03	4.46E-04	1.22E-04	3.83E-03
12/31/2019	5.03E-04	4.72E-04	5.69E-03	2.14E-03	9.16E-05	2.51E-04	4.30E-04	1.62E-03	4.12E-04	2.89E-06	6.65E-03	2.71E-03	4.54E-04	1.23E-04	3.85E-03
12/31/2020	5.57E-04	4.89E-04	5.86E-03	2.14E-03	9.23E-05	2.44E-04	4.29E-04	1.70E-03	4.16E-04	3.18E-06	7.11E-03	2.71E-03	4.63E-04	1.26E-04	3.85E-03
12/31/2021	5.71E-04	4.77E-04	5.88E-03	2.13E-03	9.21E-05	2.60E-04	4.30E-04	1.70E-03	4.14E-04	3.21E-06	7.06E-03	2.72E-03	4.62E-04	1.23E-04	3.91E-03
12/31/2022	6.13E-04	4.87E-04	6.01E-03	2.13E-03	9.28E-05	2.54E-04	4.33E-04	1.79E-03	4.16E-04	3.43E-06	7.32E-03	2.73E-03	4.97E-04	1.22E-04	3.96E-03
12/31/2023	6.97E-04	5.23E-04	6.28E-03	2.13E-03	9.39E-05	2.54E-04	4.35E-04	1.95E-03	4.22E-04	3.86E-06	7.89E-03	2.76E-03	5.63E-04	1.25E-04	3.98E-03
12/31/2024	7.60E-04	5.45E-04	6.47E-03	2.13E-03	9.47E-05	2.61E-04	4.40E-04	2.07E-03	4.27E-04	4.18E-06	8.27E-03	2.79E-03	6.01E-04	1.26E-04	4.05E-03
12/31/2025	8.15E-04	5.77E-04	6.64E-03	2.13E-03	9.53E-05	2.64E-04	4.45E-04	2.16E-03	4.26E-04	4.45E-06	8.61E-03	2.81E-03	6.32E-04	1.23E-04	4.11E-03
12/31/2026	8.80E-04	5.99E-04	6.85E-03	2.13E-03	9.63E-05	2.54E-04	4.45E-04	2.26E-03	4.30E-04	4.79E-06	9.13E-03	2.81E-03	6.68E-04	1.25E-04	4.11E-03
12/31/2027	9.15E-04	6.10E-04	6.97E-03	2.13E-03	9.71E-05	2.57E-04	4.47E-04	2.33E-03	4.31E-04	4.99E-06	9.39E-03	2.81E-03	6.99E-04	1.24E-04	4.16E-03
12/31/2028	9.04E-04	6.12E-04	6.95E-03	2.13E-03	9.72E-05	2.63E-04	4.51E-04	2.34E-03	4.33E-04	4.92E-06	9.23E-03	2.84E-03	7.16E-04	1.23E-04	4.19E-03
12/31/2029	8.43E-04	6.11E-04	6.76E-03	2.13E-03	9.65E-05	2.63E-04	4.52E-04	2.30E-03	4.33E-04	4.60E-06	8.70E-03	2.86E-03	7.26E-04	1.25E-04	4.14E-03
12/31/2030	7.08E-04	5.94E-04	6.35E-03	2.13E-03	9.54E-05	2.63E-04	4.56E-04	2.15E-03	4.29E-04	3.92E-06	7.69E-03	2.86E-03	7.30E-04	1.23E-04	4.14E-03
12/31/2031	5.54E-04	5.74E-04	5.90E-03	2.12E-03	9.45E-05	2.56E-04	4.55E-04	1.99E-03	4.28E-04	3.17E-06	6.66E-03	2.85E-03	7.37E-04	1.24E-04	4.08E-03
12/31/2032	4.13E-04	5.66E-04	5.50E-03	2.12E-03	9.42E-05	2.47E-04	4.56E-04	1.84E-03	4.26E-04	2.50E-06	5.75E-03	2.83E-03	7.51E-04	1.22E-04	4.06E-03
12/31/2033	3.06E-04	5.37E-04	5.12E-03	2.11E-03	9.02E-05	2.52E-04	4.53E-04	1.62E-03	4.20E-04	1.53E-06	3.91E-03	2.82E-03	7.26E-04	1.22E-04	3.92E-03
12/31/2034	2.60E-04	5.13E-04	4.90E-03	2.10E-03	8.63E-05	2.54E-04	4.50E-04	1.43E-03	4.12E-04	7.63E-07	2.26E-03	2.79E-03	7.06E-04	1.19E-04	3.84E-03
12/31/2035	2.56E-04	5.19E-04	4.86E-03	2.09E-03	8.54E-05	2.51E-04	4.50E-04	1.42E-03	4.13E-04	5.91E-07	1.84E-03	2.80E-03	7.19E-04	1.21E-04	3.82E-03
12/31/2036	2.64E-04	5.24E-04	4.89E-03	2.09E-03	8.55E-05	2.53E-04	4.52E-04	1.44E-03	4.16E-04	5.89E-07	1.77E-03	2.81E-03	7.42E-04	1.22E-04	3.83E-03
12/31/2037	2.70E-04	5.21E-04	4.91E-03	2.09E-03	8.56E-05	2.58E-04	4.55E-04	1.48E-03	4.19E-04	6.25E-07	1.77E-03	2.84E-03	7.59E-04	1.23E-04	3.85E-03
12/31/2038	2.82E-04	5.36E-04	4.95E-03	2.09E-03	8.58E-05	2.53E-04	4.56E-04	1.52E-03	4.19E-04	6.80E-07	1.82E-03	2.84E-03	7.85E-04	1.23E-04	3.83E-03
12/31/2039	2.99E-04	5.60E-04	5.02E-03	2.09E-03	8.64E-05	2.47E-04	4.58E-04	1.56E-03	4.20E-04	7.47E-07	1.90E-03	2.83E-03	8.20E-04	1.22E-04	3.86E-03
12/31/2040	3.03E-04	5.56E-04	5.03E-03	2.09E-03	8.67E-05	2.62E-04	4.60E-04	1.59E-03	4.21E-04	7.96E-07	1.92E-03	2.86E-03	8.32E-04	1.21E-04	3.91E-03
12/31/2041	3.10E-04	5.58E-04	5.05E-03	2.08E-03	8.67E-05	2.56E-04	4.63E-04	1.63E-03	4.23E-04	8.37E-07	1.95E-03	2.88E-03	8.46E-04	1.23E-04	3.91E-03
12/31/2042	3.15E-04	5.69E-04	5.07E-03	2.09E-03	8.71E-05	2.57E-04	4.65E-04	1.63E-03	4.22E-04	8.55E-07	1.98E-03	2.88E-03	8.55E-04	1.20E-04	3.94E-03
12/31/2043	4.11E-04	6.86E-04	5.37E-03	2.09E-03	8.93E-05	8.83E-05	4.12E-04	1.68E-03	4.27E-04	1.05E-06	2.51E-03	2.52E-03	1.04E-03	1.11E-04	3.74E-03
12/31/2044	4.60E-04	7.60E-04	5.53E-03	2.09E-03	9.02E-05	8.40E-05	3.90E-04	1.72E-03	4.30E-04	1.15E-06	2.78E-03	2.35E-03	1.14E-03	1.08E-04	3.63E-03
12/31/2045	4.82E-04	7.94E-04	5.60E-03	2.09E-03	9.08E-05	8.58E-05	3.80E-04	1.73E-03	4.31E-04	1.20E-06	2.90E-03	2.27E-03	1.18E-03	1.05E-04	3.60E-03
12/31/2046	4.96E-04	8.16E-04	5.65E-03	2.09E-03	9.13E-05	8.32E-05	3.76E-04	1.74E-03	4.32E-04	1.23E-06	2.98E-03	2.23E-03	1.20E-03	1.04E-04	3.60E-03
12/31/2047	4.98E-04	8.13E-04	5.64E-03	2.09E-03	9.12E-05	8.84E-05	3.74E-04	1.75E-03	4.32E-04	1.24E-06	2.98E-03	2.23E-03	1.21E-03	1.03E-04	3.58E-03
12/31/2048	5.02E-04	8.17E-04	5.66E-03	2.09E-03	9.12E-05	8.63E-05	3.73E-04	1.76E-03	4.32E-04	1.25E-06	3.01E-03	2.23E-03	1.21E-03	1.03E-04	3.56E-03
12/31/2049	5.05E-04	8.21E-04	5.67E-03	2.09E-03	9.12E-05	8.72E-05	3.74E-04	1.77E-03	4.33E-04	1.26E-06	3.02E-03	2.23E-03	1.22E-03	1.05E-04	3.54E-03
12/31/2050	5.14E-04	8.30E-04	5.70E-03	2.09E-03	9.14E-05	8.84E-05	3.76E-04	1.80E-03	4.34E-04	1.31E-06	3.07E-03	2.24E-03	1.24E-03	1.05E-04	3.55E-03
12/31/2051	5.24E-04	8.39E-04	5.74E-03	2.09E-03	9.15E-05	8.65E-05	3.77E-04	1.83E-03	4.35E-04	1.36E-06	3.12E-03	2.24E-03	1.28E-03	1.06E-04	3.56E-03
12/31/2052	5.22E-04	8.39E-04	5.72E-03	2.08E-03	9.14E-05	9.04E-05	3.78E-04	1.84E-03	4.35E-04	1.37E-06	3.11E-03	2.25E-03	1.27E-03	1.06E-04	3.58E-03
12/31/2053	5.29E-04	8.43E-04	5.74E-03	2.08E-03	9.15E-05	9.02E-05	3.80E-04	1.86E-03	4.36E-04	1.41E-06	3.14E-03	2.26E-03	1.29E-03	1.06E-04	3.60E-03
12/31/2054	5.50E-04	8.60E-04	5.82E-03	2.07E-03	9.19E-05	9.37E-05	3.85E-04	1.94E-03	4.38E-04	1.52E-06	3.25E-03	2.29E-03	1.36E-03	1.07E-04	3.63E-03
12/31/2055	5.73E-04	8.86E-04	5.91E-03	2.07E-03	9.25E-05	9.08E-05	3.90E-04	2.00E-03	4.39E-04	1.64E-06	3.37E-03	2.30E-03	1.43E-03	1.05E-04	3.69E-03
12/31/2056	6.21E-04	9.33E-04	6.11E-03	2.07E-03	9.36E-05	1.02E-04	4.04E-04	2.15E-03	4.43E-04	1.90E-06	3.63E-03	2.35E-03	1.60E-03	1.06E-04	3.81E-03
12/31/2057	6.56E-04	9.52E-04	6.24E-03	2.05E-03	9.42E-05	1.12E-04	4.18E-04	2.28E-03	4.46E-04	2.12E-06	3.81E-03	2.42E-03	1.73E-03	1.06E-04	3.94E-03
12/31/2058	7.16E-04	9.90E-04	6.48E-03	2.04E-03	9.54E-05	1.20E-04	4.37E-04	2.48E-03	4.51E-04	2.48E-06	4.12E-03	2.50E-03	1.96E-03	1.05E-04	4.11E-03
12/31/2059	7.64E-04	1.03E-03	6.69E-03	2.03E-03	9.63E-05	1.23E-04	4.53E-04	2.64E-03	4.53E-04	2.76E-06	4.38E-03	2.58E-03	2.15E-03	1.05E-04	4.25E-03
12/31/2060	8.37E-04	1.08E-03	6.99E-03	2.01E-03	9.76E-05	1.41E-04	4.80E-04	2.89E-03	4.58E-04	3.21E-06	4.76E-03	2.69E-03	2.44E-03	1.05E-04	4.48E-03
12/31/2061	8.98E-04	1.13E-03	7.24E-03	1.99E-03	9.85E-05	1.46E-04	5.02E-04	3.10E-03	4.61E-04	3.58E-06	5.08E-03	2.79E-03	2.70E-03	1.05E-04	4.68E-03
12/31/2062	9.58E-04	1.17E-03	7.49E-03	1.98E-03	9.94E-05	1.63E-04	5.24E-04	3.30E-03	4.63E-04	3.94E-06	5.40E-03	2.89E-03	2.95E-03	1.05E-04	4.86E-03
12/31/2063	1.01E-03	1.21E-03	7.71E-03	1.98E-03	1.00E-04	1.64E-04	5.38E-04	3.45E-03	4.67E-04	4.22E-06	5.67E-03	2.94E-03	3.15E-03	1.06E-04	4.97E-03
12/31/2064	1.02E-03	1.22E-03	7.78E-03	1.97E-03	1.00E-04	1.68E-04	5.46E-04	3.49E-03	4.66E-04	4.31E-06	5.74E-03	2.97E-03	3.23E-03	1.05E-04	5.04E-03
12/31/2065	1.03E-03	1.23E-03	7.84E-03	1.97E-03	1.01E-04	1.65E-04	5.51E-04	3.52E-03	4.67E-04	4.37E-06	5.81E-03	2.98E-03	3.30E-03	1.06E-04	5.09E-03
12/31/2066	1.04E-03	1.23E-03	7.90E-03	1.97E-03	1.01E-04	1.71E-04	5.58E-04	3.56E-03	4.66E-04	4.45E-06	5.87E-03	3.01E-03	3.38E-03	1.05E-04	5.16E-03
12/31/2067	1.05E-03	1.24E-03	7.94E-03	1.97E-03	1.01E-04	1.66E-04	5.60E-04	3.58E-03	4.66E-04	4.49E-06	5.92E-03	3.02E-03	3.43E-03	1.06E-04	5.17E-03
12/31/2068	1.06E-03	1.23E-03	7.97E-03	1.97E-03	1.01E-04	1.73E-04	5.62E-04	3.58E-03	4.65E-04	4.51E-06	5.94E-03	3.02E-03	3.46E-03	1.05E-04	5.19E-03
12/31/2069	1.05E-03	1.23E-03	7.96E-03	1.97E-03	1.01E-04	1.65E-04	5.62E-04	3.56E-03	4.65E-04	4.48E-06	5.92E-03	3.02E-03	3.46E-03	1.06E-04	5.18E-03
12/31/2070	1.06E-03	1.24E-03	8.00E-03	1.97E-03	1.01E-04	1.73E-04	5.65E-04	3.58E-03	4.64E-04	4.53E-06	5.96E-03	3.03E-03	3.51E-03	1.05E-04	5.23E-03
12/31/2071	1.06E-03	1.24E-03	8.01E-03	1.96E-03	1.00E-04	1.74E-04	5.68E-04	3.59E-03	4.64E-04	4.56E-06	5.98E-03	3.04E-03	3.55E-03	1.06E-04	5.25E-03
12/31/2072	1.06E-03	1.22E-03	7.99E-03	1.96E-03	1.00E-04	1.80E-04	5.70E-04	3.57E-03	4.62E-04	4.54E-06	5.94E-03	3.05E-03	3.56E-03	1.06E-04	5.28E-03
12/31/2073	1.05E-03	1.22E-03	7.98E-03	1.96E-03	1.00E-04	1.74E-04	5.69E-04	3.55E-03	4.61E-04	4.52E-06	5.93E-03	3.04E-03	3.56E-03	1.05E-04	5.28E-03
12/31/2074	1.05E-03	1.21E-03	7.97E-03	1.96E-03	9.99E-05	1.72E-04	5.67E-04	3.52E-03	4.60E-04	4.47E-06	5.90E-03	3.03E-03	3.55E-03	1.05E-04	5.26E-03
12/31/2075	1.03E-03	1.20E-03	7.90E-03	1.97E-03	9.97E-05	1.61E-04	5.59E-04	3.45E-03	4.59E-04	4.34E-06	5.82E-03	2.98E-03	3.47E-03	1.06E-04	5.16E-03
12/31/2076	1.02E-03	1.20E-03	7.88E-03	1.97E-03	9.94E-05	1.70E-04	5.57E-04	3.42E-03	4.59E-04	4.30E-06	5.78E-03	2.97E-03	3.46E-03	1.07E-04	5.14E-03
12/31/2077	1.02E-03	1.18E-03	7.88E-03	1.96E-03	9.88E-05	1.86E-04	5.63E-04	3.43E-03	4.55E-04	4.35E-06	5.77E-03	3.02E-03	3.51E-03	1.05E-04	5.21E-03
12/31/2078	1.01E-03	1.17E-03	7.85E-03	1.96E-03	9.86E-05	1.72E-04	5.61E-04	3.39E-03	4.53E-04	4.30E-06	5.73E-03	3.00E-03	3.50E-03	1.04E-04	5.21E-03
12/31/2079	1.01E-03	1.16E-03	7.85E-03	1.96E-03	9.84E-05	1.83E-04	5.63E-04	3.39E-03	4.52E-04	4.30E-06	5.72E-03	3.01E-03	3.53E-03	1.03E-04	5.25E-03
12/31/2080	1.01E-03	1.15E-03	7.85E-03	1.95E-03	9.81E-05	1.85E-04	5.64E-04	3.37E-03	4.49E-04	4.30E-06	5.72E-03	3.01E-03	3.55E-03	1.02E-04	5.28E-03
12/31/2081	9.98E-04	1.14E-03	7.81E-03	1.96E-03	9.80E-05	1.66E-04	5.56E-04	3.31E-03	4.49E-04	4.20E-06	5.67E-03	2.96E-03	3.49E-03	1.03E-04	5.20E-03
12/31/2082	9.92E-04	1.14E-03	7.79E-03	1.96E-03	9.75E-05	1.78E-04	5.54E-04	3.28E-03	4.48E-04	4.17E-06	5.64E-03	2.95E-03	3.49E-03	1.04E-04	5.17E-03
12/31/2083	9.73E-04	1.13E-03	7.69E-03	1.96E-03	9.67E-05	1.56E-04	5.43E-04	3.20E-03	4.44E-04	4.04E-06	5.55E-03	2.89E-03	3.40E-03	1.05E-04	5.05E-03
12/31/2084	9.67E-04	1.12E-03	7.64E-03	1.95E-03	9.59E-05	1.66E-04	5.39E-04	3.17E-03	4.40E-04	4.02E-06	5.52E-03	2.87E-03	3.38E-03	1.04E-04	5.02E-03
12/31/2085	9.67E-04	1.11E-03	7.63E-03	1.94E-03	9.54E-05	1.65E-04	5.37E-04	3.15E-03	4.38E-04	4.02E-06	5.53E-03	2.86E-03	3.38E-03	1.04E-04	5.02E-03
12/31/2086	9.65E-04	1.10E-03	7.62E-03	1.94E-03	9.52E-05	1.61E-04	5.35E-04	3.12E-03	4.37E-04	4.00E-06	5.54E-03	2.84E-03	3.36E-03	1.04E-04	5.00E-03
12/31/2087	9.64E-04	1.10E-03	7.61E-03	1.94E-03	9.49E-05	1.64E-04	5.32E-04	3.10E-03	4.35E-04	3.99E-06	5.55E-03	2.83E-03	3.35E-03	1.04E-04	4.97E-03
12/31/2088	9.67E-04	1.09E-03	7.62E-03	1.94E-03	9.45E-05	1.67E-04	5.31E-04	3.09E-03	4.34E-04	4.01E-06	5.58E-03	2.83E-03	3.36E-03	1.05E-04	4.96E-03
12/31/2089	9.71E-04	1.09E-03	7.63E-03	1.94E-03	9.45E-05	1.62E-04	5.31E-04	3.08E-03	4.35E-04	4.01E-06	5.62E-03	2.82E-03	3.36E-03	1.06E-04	4.95E-03
12/31/2090	9.62E-04	1.08E-03	7.59E-03	1.95E-03	9.45E-05	1.59E-04	5.24E-04	3.02E-03	4.34E-04	3.94E-06	5.58E-03	2.79E-03	3.30E-03	1.05E-04	4.91E-03
12/31/2091	9.63E-04	1.07E-03	7.60E-03	1.94E-03	9.42E-05	1.67E-04	5.28E-04	3.02E-03	4.31E-04	3.97E-06	5.60E-03	2.80E-03	3.34E-03	1.04E-04	4.96E-03
12/31/2092	9.62E-04	1.06E-03	7.59E-03	1.94E-03	9.42E-05	1.57E-04	5.25E-04	2.99E-03	4.31E-04	3.94E-06	5.60E-03	2.78E-03	3.31E-03	1.04E-04	4.92E-03
12/31/2093	9.60E-04	1.06E-03	7.59E-03	1.94E-03	9.40E-05	1.63E-04	5.24E-04	2.97E-03	4.29E-04	3.93E-06	5.60E-03	2.77E-03	3.32E-03	1.03E-04	4.95E-03
12/31/2094	9.59E-04	1.06E-03	7.57E-03	1.96E-03	9.41E-05	1.45E-04	5.15E-04	2.93E-03	4.31E-04	3.88E-06	5.62E-03	2.73E-03	3.24E-03	1.04E-04	4.84E-03
12/31/2095	9.55E-04	1.04E-03	7.56E-03	1.95E-03	9.35E-05	1.66E-04	5.17E-04	2.92E-03	4.28E-04	3.89E-06	5.60E-03	2.75E-03	3.27E-03	1.04E-04	4.89E-03
12/31/2096	9.58E-04	1.03E-03	7.59E-03	1.94E-03	9.29E-05	1.72E-04	5.26E-04	2.94E-03	4.25E-04	3.94E-06	5.61E-03	2.79E-03	3.36E-03	1.04E-04	4.97E-03
12/31/2097	9.60E-04	1.03E-03	7.61E-03	1.93E-03	9.28E-05	1.77E-04	5.31E-04	2.94E-03	4.23E-04	3.97E-06	5.62E-03	2.80E-03	3.41E-03	1.03E-04	5.02E-03
12/31/2098	9.57E-04	1.02E-03	7.60E-03	1.93E-03	9.26E-05	1.70E-04	5.29E-04	2.92E-03	4.22E-04	3.95E-06	5.61E-03	2.79E-03	3.42E-03	1.03E-04	5.03E-03
12/31/2099	9.44E-04	1.02E-03	7.56E-03	1.93E-03	9.20E-05	1.73E-04	5.28E-04	2.89E-03	4.20E-04	3.89E-06	5.54E-03	2.78E-03	3.41E-03	1.03E-04	5.01E-03
12/31/2100	9.17E-04	1.01E-03	7.45E-03	1.94E-03	9.20E-05	1.56E-04	5.19E-04	2.82E-03	4.20E-04	3.72E-06	5.38E-03	2.74E-03	3.32E-03	1.03E-04	4.92E-03
12/31/2101	8.95E-04	1.00E-03	7.39E-03	1.94E-03	9.18E-05	1.62E-04	5.18E-04	2.78E-03	4.20E-04	3.60E-06	5.23E-03	2.73E-03	3.31E-03	1.04E-04	4.88E-03
12/31/2102	8.71E-04	9.92E-04	7.31E-03	1.94E-03	9.16E-05	1.58E-04	5.15E-04	2.74E-03	4.20E-04	3.46E-06	5.07E-03	2.72E-03	3.29E-03	1.05E-04	4.83E-03
12/31/2103	8.60E-04	9.86E-04	7.30E-03	1.94E-03	9.11E-05	1.68E-04	5.20E-04	2.72E-03	4.16E-04	3.44E-06	5.00E-03	2.74E-03	3.34E-03	1.03E-04	4.89E-03
12/31/2104	8.45E-04	9.81E-04	7.23E-03	1.94E-03	9.11E-05	1.52E-04	5.13E-04	2.68E-03	4.16E-04	3.34E-06	4.91E-03	2.70E-03	3.26E-03	1.03E-04	4.84E-03
12/31/2105	8.42E-04	9.79E-04	7.23E-03	1.95E-03	9.13E-05	1.58E-04	5.11E-04	2.66E-03	4.16E-04	3.31E-06	4.90E-03	2.69E-03	3.25E-03	1.03E-04	4.82E-03
12/31/2106	8.38E-04	9.75E-04	7.21E-03	1.94E-03	9.11E-05	1.58E-04	5.12E-04	2.65E-03	4.15E-04	3.30E-06	4.88E-03	2.69E-03	3.26E-03	1.03E-04	4.84E-03
12/31/2107	8.39E-04	9.71E-04	7.23E-03	1.94E-03	9.08E-05	1.66E-04	5.16E-04	2.65E-03	4.13E-04	3.32E-06	4.88E-03	2.71E-03	3.30E-03	1.02E-04	4.88E-03
12/31/2108	8.38E-04	9.79E-04	7.22E-03	1.95E-03	9.10E-05	1.53E-04	5.12E-04	2.63E-03	4.14E-04	3.29E-06	4.88E-03	2.68E-03	3.27E-03	1.02E-04	4.84E-03
12/31/2109	8.37E-04	9.72E-04	7.22E-03	1.94E-03	9.06E-05	1.64E-04	5.12E-04	2.63E-03	4.14E-04	3.29E-06	4.87E-03	2.69E-03	3.29E-03	1.04E-04	4.83E-03
12/31/2110	8.34E-04	9.69E-04	7.21E-03	1.94E-03	9.04E-05	1.60E-04	5.13E-04	2.63E-03	4.13E-04	3.28E-06	4.86E-03	2.69E-03	3.30E-03	1.04E-04	4.84E-03
12/31/2111	8.29E-04	9.63E-04	7.19E-03	1.94E-03	9.03E-05	1.60E-04	5.12E-04	2.61E-03	4.12E-04	3.26E-06	4.83E-03	2.69E-03	3.28E-03	1.03E-04	4.83E-03
1/1/2112	8.61E-04	1.03E-03	7.29E-03	1.97E-03	9.27E-05	3.57E-05	5.02E-04	2.64E-03	4.22E-04	3.25E-06	5.02E-03	2.56E-03	3.19E-03	1.06E-04	4.59E-03
Maxium Concentration	**1.06E-03**	**1.24E-03**	**8.01E-03**	**2.14E-03**	**1.01E-04**	**6.68E-04**	**1.31E-03**	**3.59E-03**	**4.67E-04**	**4.99E-06**	**9.39E-03**	**3.87E-03**	**3.56E-03**	**1.26E-04**	**5.28E-03**

Yearly - Averaged Mean Metal Concentrations in Tributary 1 (mg/L)

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
CDWG (mg/L)	**0.006**	**0.01**	**1**	**0.004**	**0.005**	**0.05**	**0.0038**	**1**	**0.01**	**0.001**	**0.25**	**0.1**	**0.01**	**0.0015**	**5**
Year															
12/31/2010	7.52E-05	8.27E-04	6.53E-03	2.03E-03	7.88E-05	6.69E-04	1.32E-03	1.21E-03	3.51E-04	0.00E+00	8.38E-04	3.90E-03	3.46E-04	1.32E-04	3.81E-03
12/31/2011	7.44E-05	7.83E-04	6.16E-03	2.03E-03	7.84E-05	6.63E-04	1.27E-03	1.22E-03	3.47E-04	0.00E+00	8.45E-04	3.85E-03	3.49E-04	1.31E-04	4.05E-03
12/31/2012	8.02E-05	3.60E-04	4.11E-03	1.98E-03	7.50E-05	2.02E-04	3.71E-04	6.97E-04	3.63E-04	3.97E-09	7.75E-04	2.45E-03	3.09E-04	1.08E-04	3.34E-03
12/31/2013	1.28E-04	3.79E-04	4.40E-03	2.08E-03	8.20E-05	2.06E-04	3.88E-04	8.82E-04	3.83E-04	5.55E-07	2.31E-03	2.49E-03	3.58E-04	1.11E-04	3.55E-03
12/31/2014	1.98E-04	4.08E-04	4.75E-03	2.12E-03	8.78E-05	2.13E-04	4.04E-04	1.14E-03	3.98E-04	1.29E-06	4.20E-03	2.57E-03	4.08E-04	1.15E-04	3.73E-03
12/31/2015	2.65E-04	4.12E-04	4.97E-03	2.13E-03	8.99E-05	2.18E-04	4.08E-04	1.28E-03	4.06E-04	1.72E-06	5.04E-03	2.61E-03	4.27E-04	1.18E-04	3.80E-03
12/31/2016	3.34E-04	4.43E-04	5.19E-03	2.13E-03	9.08E-05	2.16E-04	4.13E-04	1.38E-03	4.08E-04	2.11E-06	5.66E-03	2.62E-03	4.39E-04	1.19E-04	3.84E-03
12/31/2017	4.02E-04	4.52E-04	5.40E-03	2.14E-03	9.12E-05	2.20E-04	4.13E-04	1.47E-03	4.08E-04	2.45E-06	6.13E-03	2.63E-03	4.48E-04	1.18E-04	3.85E-03
12/31/2018	4.81E-04	4.72E-04	5.64E-03	2.14E-03	9.19E-05	2.19E-04	4.14E-04	1.57E-03	4.10E-04	2.85E-06	6.71E-03	2.63E-03	4.58E-04	1.18E-04	3.86E-03
12/31/2019	5.51E-04	4.89E-04	5.85E-03	2.14E-03	9.26E-05	2.21E-04	4.15E-04	1.67E-03	4.13E-04	3.21E-06	7.25E-03	2.64E-03	4.68E-04	1.19E-04	3.88E-03
12/31/2020	6.13E-04	5.10E-04	6.05E-03	2.15E-03	9.35E-05	2.11E-04	4.15E-04	1.75E-03	4.18E-04	3.54E-06	7.78E-03	2.64E-03	4.77E-04	1.23E-04	3.89E-03
12/31/2021	6.25E-04	4.96E-04	6.07E-03	2.14E-03	9.32E-05	2.30E-04	4.16E-04	1.76E-03	4.16E-04	3.57E-06	7.71E-03	2.65E-03	4.76E-04	1.20E-04	3.95E-03
12/31/2022	6.74E-04	5.10E-04	6.22E-03	2.14E-03	9.41E-05	2.25E-04	4.20E-04	1.85E-03	4.18E-04	3.81E-06	8.00E-03	2.67E-03	5.19E-04	1.18E-04	4.00E-03
12/31/2023	7.68E-04	5.50E-04	6.52E-03	2.14E-03	9.53E-05	2.26E-04	4.24E-04	2.05E-03	4.25E-04	4.30E-06	8.62E-03	2.71E-03	5.97E-04	1.22E-04	4.04E-03
12/31/2024	8.40E-04	5.78E-04	6.75E-03	2.13E-03	9.62E-05	2.33E-04	4.29E-04	2.18E-03	4.30E-04	4.66E-06	9.07E-03	2.74E-03	6.41E-04	1.22E-04	4.11E-03
12/31/2025	9.03E-04	6.14E-04	6.94E-03	2.13E-03	9.70E-05	2.35E-04	4.34E-04	2.28E-03	4.31E-04	4.97E-06	9.46E-03	2.76E-03	6.77E-04	1.20E-04	4.18E-03
12/31/2026	9.74E-04	6.40E-04	7.17E-03	2.14E-03	9.81E-05	2.26E-04	4.35E-04	2.40E-03	4.34E-04	5.36E-06	1.00E-02	2.76E-03	7.19E-04	1.21E-04	4.19E-03
12/31/2027	1.01E-03	6.52E-04	7.30E-03	2.14E-03	9.90E-05	2.30E-04	4.37E-04	2.47E-03	4.36E-04	5.55E-06	1.03E-02	2.77E-03	7.53E-04	1.20E-04	4.24E-03
12/31/2028	1.00E-03	6.55E-04	7.28E-03	2.14E-03	9.91E-05	2.36E-04	4.42E-04	2.49E-03	4.38E-04	5.50E-06	1.01E-02	2.80E-03	7.75E-04	1.19E-04	4.27E-03
12/31/2029	9.29E-04	6.53E-04	7.06E-03	2.14E-03	9.83E-05	2.37E-04	4.44E-04	2.44E-03	4.38E-04	5.12E-06	9.51E-03	2.82E-03	7.87E-04	1.21E-04	4.22E-03
12/31/2030	7.85E-04	6.37E-04	6.62E-03	2.13E-03	9.73E-05	2.34E-04	4.47E-04	2.29E-03	4.34E-04	4.39E-06	8.44E-03	2.82E-03	7.96E-04	1.19E-04	4.22E-03
12/31/2031	6.13E-04	6.16E-04	6.12E-03	2.13E-03	9.63E-05	2.27E-04	4.46E-04	2.11E-03	4.33E-04	3.56E-06	7.28E-03	2.81E-03	8.05E-04	1.20E-04	4.16E-03
12/31/2032	4.59E-04	6.08E-04	5.68E-03	2.13E-03	9.60E-05	2.17E-04	4.48E-04	1.94E-03	4.31E-04	2.82E-06	6.29E-03	2.79E-03	8.23E-04	1.19E-04	4.13E-03
12/31/2033	3.43E-04	5.75E-04	5.26E-03	2.11E-03	9.14E-05	2.23E-04	4.44E-04	1.70E-03	4.24E-04	1.75E-06	4.23E-03	2.78E-03	7.96E-04	1.18E-04	3.99E-03
12/31/2034	2.95E-04	5.51E-04	5.02E-03	2.10E-03	8.73E-05	2.24E-04	4.41E-04	1.51E-03	4.16E-04	9.33E-07	2.47E-03	2.75E-03	7.77E-04	1.15E-04	3.90E-03
12/31/2035	2.93E-04	5.60E-04	5.00E-03	2.09E-03	8.64E-05	2.21E-04	4.42E-04	1.50E-03	4.18E-04	7.62E-07	2.04E-03	2.76E-03	7.96E-04	1.17E-04	3.88E-03
12/31/2036	3.03E-04	5.66E-04	5.03E-03	2.09E-03	8.65E-05	2.23E-04	4.45E-04	1.54E-03	4.20E-04	7.66E-07	1.97E-03	2.77E-03	8.22E-04	1.18E-04	3.89E-03
12/31/2037	3.11E-04	5.63E-04	5.05E-03	2.09E-03	8.67E-05	2.29E-04	4.47E-04	1.58E-03	4.23E-04	8.13E-07	1.97E-03	2.80E-03	8.44E-04	1.19E-04	3.91E-03
12/31/2038	3.25E-04	5.81E-04	5.10E-03	2.09E-03	8.70E-05	2.25E-04	4.49E-04	1.63E-03	4.24E-04	8.77E-07	2.03E-03	2.81E-03	8.73E-04	1.19E-04	3.90E-03
12/31/2039	3.45E-04	6.10E-04	5.18E-03	2.09E-03	8.78E-05	2.18E-04	4.52E-04	1.68E-03	4.26E-04	9.61E-07	2.14E-03	2.81E-03	9.15E-04	1.18E-04	3.94E-03
12/31/2040	3.50E-04	6.05E-04	5.19E-03	2.09E-03	8.80E-05	2.36E-04	4.55E-04	1.72E-03	4.27E-04	1.02E-06	2.16E-03	2.84E-03	9.28E-04	1.17E-04	3.99E-03
12/31/2041	3.60E-04	6.10E-04	5.22E-03	2.08E-03	8.81E-05	2.28E-04	4.58E-04	1.76E-03	4.29E-04	1.07E-06	2.20E-03	2.86E-03	9.48E-04	1.18E-04	4.00E-03
12/31/2042	3.64E-04	6.20E-04	5.24E-03	2.09E-03	8.85E-05	2.30E-04	4.59E-04	1.77E-03	4.29E-04	1.09E-06	2.23E-03	2.85E-03	9.56E-04	1.17E-04	4.03E-03
12/31/2043	3.97E-04	6.76E-04	5.35E-03	2.09E-03	8.92E-05	1.95E-04	4.48E-04	1.79E-03	4.30E-04	1.16E-06	2.42E-03	2.75E-03	1.02E-03	1.16E-04	3.93E-03
12/31/2044	4.36E-04	7.32E-04	5.47E-03	2.08E-03	8.98E-05	1.91E-04	4.30E-04	1.82E-03	4.32E-04	1.24E-06	2.63E-03	2.61E-03	1.09E-03	1.14E-04	3.84E-03
12/31/2045	4.54E-04	7.60E-04	5.53E-03	2.09E-03	9.05E-05	1.94E-04	4.23E-04	1.83E-03	4.33E-04	1.28E-06	2.73E-03	2.55E-03	1.13E-03	1.11E-04	3.83E-03
12/31/2046	4.65E-04	7.79E-04	5.57E-03	2.09E-03	9.10E-05	1.92E-04	4.20E-04	1.85E-03	4.34E-04	1.31E-06	2.79E-03	2.53E-03	1.15E-03	1.10E-04	3.83E-03
12/31/2047	4.67E-04	7.76E-04	5.57E-03	2.09E-03	9.08E-05	1.96E-04	4.18E-04	1.85E-03	4.34E-04	1.32E-06	2.80E-03	2.52E-03	1.15E-03	1.10E-04	3.81E-03
12/31/2048	4.71E-04	7.80E-04	5.58E-03	2.08E-03	9.08E-05	1.94E-04	4.18E-04	1.86E-03	4.34E-04	1.33E-06	2.82E-03	2.52E-03	1.15E-03	1.10E-04	3.79E-03
12/31/2049	4.73E-04	7.84E-04	5.59E-03	2.09E-03	9.08E-05	1.97E-04	4.20E-04	1.88E-03	4.36E-04	1.34E-06	2.83E-03	2.53E-03	1.15E-03	1.12E-04	3.77E-03
12/31/2050	4.80E-04	7.90E-04	5.62E-03	2.09E-03	9.10E-05	1.99E-04	4.21E-04	1.91E-03	4.37E-04	1.38E-06	2.87E-03	2.54E-03	1.18E-03	1.12E-04	3.79E-03
12/31/2051	4.90E-04	7.97E-04	5.65E-03	2.08E-03	9.11E-05	1.96E-04	4.21E-04	1.93E-03	4.37E-04	1.43E-06	2.92E-03	2.54E-03	1.20E-03	1.13E-04	3.79E-03
12/31/2052	4.89E-04	7.98E-04	5.64E-03	2.08E-03	9.10E-05	1.98E-04	4.23E-04	1.94E-03	4.38E-04	1.43E-06	2.91E-03	2.54E-03	1.20E-03	1.13E-04	3.81E-03
12/31/2053	4.94E-04	8.01E-04	5.65E-03	2.07E-03	9.11E-05	1.98E-04	4.23E-04	1.96E-03	4.39E-04	1.47E-06	2.94E-03	2.56E-03	1.22E-03	1.13E-04	3.82E-03
12/31/2054	5.13E-04	8.18E-04	5.72E-03	2.07E-03	9.15E-05	2.01E-04	4.29E-04	2.02E-03	4.40E-04	1.57E-06	3.04E-03	2.58E-03	1.27E-03	1.13E-04	3.85E-03
12/31/2055	5.36E-04	8.44E-04	5.81E-03	2.07E-03	9.20E-05	1.94E-04	4.31E-04	2.08E-03	4.40E-04	1.67E-06	3.16E-03	2.57E-03	1.34E-03	1.11E-04	3.90E-03
12/31/2056	5.73E-04	8.81E-04	5.96E-03	2.07E-03	9.29E-05	2.04E-04	4.42E-04	2.20E-03	4.44E-04	1.88E-06	3.35E-03	2.62E-03	1.47E-03	1.12E-04	4.00E-03
12/31/2057	6.02E-04	8.95E-04	6.08E-03	2.06E-03	9.35E-05	2.13E-04	4.55E-04	2.31E-03	4.47E-04	2.07E-06	3.51E-03	2.68E-03	1.59E-03	1.12E-04	4.10E-03
12/31/2058	6.54E-04	9.29E-04	6.28E-03	2.04E-03	9.45E-05	2.16E-04	4.70E-04	2.48E-03	4.50E-04	2.36E-06	3.78E-03	2.74E-03	1.78E-03	1.11E-04	4.24E-03
12/31/2059	6.93E-04	9.62E-04	6.44E-03	2.04E-03	9.52E-05	2.20E-04	4.83E-04	2.61E-03	4.51E-04	2.60E-06	3.98E-03	2.80E-03	1.93E-03	1.11E-04	4.36E-03
12/31/2060	7.57E-04	1.01E-03	6.70E-03	2.02E-03	9.64E-05	2.31E-04	5.05E-04	2.82E-03	4.56E-04	2.97E-06	4.32E-03	2.89E-03	2.18E-03	1.11E-04	4.55E-03
12/31/2061	8.06E-04	1.04E-03	6.90E-03	2.00E-03	9.71E-05	2.36E-04	5.23E-04	2.99E-03	4.59E-04	3.28E-06	4.58E-03	2.97E-03	2.39E-03	1.11E-04	4.70E-03
12/31/2062	8.60E-04	1.09E-03	7.13E-03	1.99E-03	9.78E-05	2.44E-04	5.40E-04	3.16E-03	4.60E-04	3.59E-06	4.87E-03	3.04E-03	2.61E-03	1.11E-04	4.84E-03
12/31/2063	8.98E-04	1.12E-03	7.30E-03	1.99E-03	9.85E-05	2.44E-04	5.51E-04	3.27E-03	4.64E-04	3.79E-06	5.07E-03	3.08E-03	2.76E-03	1.13E-04	4.91E-03
12/31/2064	9.11E-04	1.13E-03	7.36E-03	1.99E-03	9.87E-05	2.48E-04	5.59E-04	3.31E-03	4.62E-04	3.88E-06	5.14E-03	3.11E-03	2.83E-03	1.11E-04	4.99E-03
12/31/2065	9.25E-04	1.15E-03	7.43E-03	1.99E-03	9.89E-05	2.43E-04	5.63E-04	3.35E-03	4.64E-04	3.95E-06	5.22E-03	3.11E-03	2.90E-03	1.12E-04	5.03E-03
12/31/2066	9.30E-04	1.14E-03	7.46E-03	1.98E-03	9.89E-05	2.52E-04	5.68E-04	3.37E-03	4.62E-04	4.00E-06	5.25E-03	3.14E-03	2.95E-03	1.11E-04	5.08E-03
12/31/2067	9.39E-04	1.15E-03	7.50E-03	1.98E-03	9.90E-05	2.44E-04	5.69E-04	3.39E-03	4.63E-04	4.04E-06	5.30E-03	3.14E-03	3.00E-03	1.12E-04	5.09E-03
12/31/2068	9.41E-04	1.14E-03	7.52E-03	1.98E-03	9.90E-05	2.48E-04	5.70E-04	3.38E-03	4.62E-04	4.05E-06	5.31E-03	3.14E-03	3.02E-03	1.11E-04	5.10E-03
12/31/2069	9.38E-04	1.14E-03	7.52E-03	1.99E-03	9.89E-05	2.45E-04	5.71E-04	3.37E-03	4.62E-04	4.03E-06	5.30E-03	3.14E-03	3.03E-03	1.11E-04	5.10E-03
12/31/2070	9.46E-04	1.15E-03	7.55E-03	1.98E-03	9.90E-05	2.49E-04	5.73E-04	3.38E-03	4.60E-04	4.07E-06	5.34E-03	3.15E-03	3.08E-03	1.10E-04	5.14E-03
12/31/2071	9.45E-04	1.14E-03	7.55E-03	1.98E-03	9.87E-05	2.54E-04	5.76E-04	3.39E-03	4.60E-04	4.09E-06	5.34E-03	3.16E-03	3.10E-03	1.12E-04	5.15E-03
12/31/2072	9.41E-04	1.13E-03	7.54E-03	1.97E-03	9.84E-05	2.55E-04	5.77E-04	3.38E-03	4.59E-04	4.08E-06	5.32E-03	3.17E-03	3.11E-03	1.11E-04	5.18E-03
12/31/2073	9.38E-04	1.13E-03	7.54E-03	1.97E-03	9.83E-05	2.51E-04	5.77E-04	3.36E-03	4.58E-04	4.06E-06	5.31E-03	3.16E-03	3.11E-03	1.11E-04	5.18E-03
12/31/2074	9.34E-04	1.12E-03	7.53E-03	1.98E-03	9.83E-05	2.49E-04	5.75E-04	3.34E-03	4.57E-04	4.03E-06	5.29E-03	3.15E-03	3.10E-03	1.10E-04	5.17E-03
12/31/2075	9.19E-04	1.11E-03	7.47E-03	1.99E-03	9.81E-05	2.41E-04	5.68E-04	3.27E-03	4.56E-04	3.92E-06	5.21E-03	3.11E-03	3.03E-03	1.11E-04	5.08E-03
12/31/2076	9.11E-04	1.11E-03	7.44E-03	1.99E-03	9.79E-05	2.47E-04	5.66E-04	3.25E-03	4.56E-04	3.87E-06	5.17E-03	3.10E-03	3.02E-03	1.13E-04	5.05E-03
12/31/2077	9.11E-04	1.10E-03	7.45E-03	1.98E-03	9.74E-05	2.61E-04	5.72E-04	3.26E-03	4.53E-04	3.91E-06	5.17E-03	3.14E-03	3.07E-03	1.10E-04	5.12E-03
12/31/2078	9.06E-04	1.09E-03	7.43E-03	1.98E-03	9.73E-05	2.50E-04	5.70E-04	3.24E-03	4.52E-04	3.88E-06	5.14E-03	3.13E-03	3.06E-03	1.10E-04	5.12E-03
12/31/2079	9.06E-04	1.08E-03	7.43E-03	1.97E-03	9.71E-05	2.57E-04	5.72E-04	3.23E-03	4.51E-04	3.89E-06	5.14E-03	3.13E-03	3.09E-03	1.09E-04	5.15E-03
12/31/2080	9.05E-04	1.07E-03	7.43E-03	1.97E-03	9.69E-05	2.57E-04	5.73E-04	3.21E-03	4.49E-04	3.89E-06	5.14E-03	3.13E-03	3.11E-03	1.08E-04	5.18E-03
12/31/2081	8.96E-04	1.07E-03	7.40E-03	1.98E-03	9.68E-05	2.43E-04	5.66E-04	3.16E-03	4.48E-04	3.81E-06	5.10E-03	3.09E-03	3.06E-03	1.08E-04	5.12E-03
12/31/2082	8.88E-04	1.07E-03	7.37E-03	1.98E-03	9.63E-05	2.53E-04	5.65E-04	3.14E-03	4.48E-04	3.76E-06	5.07E-03	3.08E-03	3.05E-03	1.11E-04	5.07E-03
12/31/2083	8.71E-04	1.06E-03	7.28E-03	1.98E-03	9.56E-05	2.39E-04	5.55E-04	3.08E-03	4.45E-04	3.66E-06	4.98E-03	3.04E-03	2.97E-03	1.11E-04	4.99E-03
12/31/2084	8.70E-04	1.05E-03	7.26E-03	1.97E-03	9.51E-05	2.43E-04	5.52E-04	3.05E-03	4.41E-04	3.65E-06	4.98E-03	3.02E-03	2.97E-03	1.10E-04	4.96E-03
12/31/2085	8.68E-04	1.04E-03	7.24E-03	1.96E-03	9.46E-05	2.41E-04	5.49E-04	3.03E-03	4.40E-04	3.64E-06	4.98E-03	3.00E-03	2.96E-03	1.11E-04	4.95E-03
12/31/2086	8.66E-04	1.04E-03	7.23E-03	1.96E-03	9.45E-05	2.41E-04	5.49E-04	3.01E-03	4.38E-04	3.63E-06	4.98E-03	3.00E-03	2.95E-03	1.09E-04	4.95E-03
12/31/2087	8.67E-04	1.03E-03	7.23E-03	1.96E-03	9.43E-05	2.41E-04	5.46E-04	2.99E-03	4.37E-04	3.63E-06	5.00E-03	2.99E-03	2.94E-03	1.10E-04	4.92E-03
12/31/2088	8.65E-04	1.02E-03	7.22E-03	1.96E-03	9.38E-05	2.45E-04	5.44E-04	2.97E-03	4.36E-04	3.62E-06	5.00E-03	2.98E-03	2.94E-03	1.11E-04	4.91E-03
12/31/2089	8.71E-04	1.02E-03	7.24E-03	1.96E-03	9.39E-05	2.40E-04	5.46E-04	2.97E-03	4.37E-04	3.64E-06	5.04E-03	2.98E-03	2.95E-03	1.12E-04	4.90E-03
12/31/2090	8.62E-04	1.01E-03	7.20E-03	1.97E-03	9.39E-05	2.39E-04	5.39E-04	2.92E-03	4.36E-04	3.57E-06	5.01E-03	2.95E-03	2.89E-03	1.11E-04	4.87E-03
12/31/2091	8.63E-04	1.00E-03	7.21E-03	1.96E-03	9.36E-05	2.45E-04	5.43E-04	2.92E-03	4.34E-04	3.59E-06	5.02E-03	2.96E-03	2.92E-03	1.10E-04	4.91E-03
12/31/2092	8.64E-04	1.00E-03	7.21E-03	1.96E-03	9.37E-05	2.36E-04	5.40E-04	2.90E-03	4.33E-04	3.58E-06	5.03E-03	2.94E-03	2.91E-03	1.10E-04	4.89E-03
12/31/2093	8.62E-04	9.99E-04	7.21E-03	1.96E-03	9.35E-05	2.39E-04	5.39E-04	2.88E-03	4.32E-04	3.57E-06	5.03E-03	2.93E-03	2.91E-03	1.09E-04	4.91E-03
12/31/2094	8.63E-04	9.96E-04	7.20E-03	1.97E-03	9.35E-05	2.26E-04	5.32E-04	2.86E-03	4.33E-04	3.54E-06	5.05E-03	2.90E-03	2.85E-03	1.10E-04	4.82E-03
12/31/2095	8.55E-04	9.77E-04	7.17E-03	1.97E-03	9.29E-05	2.44E-04	5.33E-04	2.84E-03	4.31E-04	3.52E-06	5.01E-03	2.92E-03	2.86E-03	1.11E-04	4.85E-03
12/31/2096	8.57E-04	9.72E-04	7.20E-03	1.96E-03	9.25E-05	2.50E-04	5.41E-04	2.85E-03	4.28E-04	3.57E-06	5.03E-03	2.95E-03	2.93E-03	1.10E-04	4.92E-03
12/31/2097	8.62E-04	9.71E-04	7.23E-03	1.95E-03	9.25E-05	2.52E-04	5.45E-04	2.86E-03	4.27E-04	3.60E-06	5.05E-03	2.96E-03	2.99E-03	1.09E-04	4.97E-03
12/31/2098	8.60E-04	9.67E-04	7.22E-03	1.95E-03	9.24E-05	2.46E-04	5.43E-04	2.84E-03	4.26E-04	3.59E-06	5.04E-03	2.95E-03	3.00E-03	1.08E-04	4.98E-03
12/31/2099	8.47E-04	9.60E-04	7.18E-03	1.95E-03	9.18E-05	2.50E-04	5.43E-04	2.81E-03	4.24E-04	3.53E-06	4.97E-03	2.94E-03	2.98E-03	1.09E-04	4.95E-03
12/31/2100	8.27E-04	9.58E-04	7.10E-03	1.96E-03	9.19E-05	2.36E-04	5.36E-04	2.76E-03	4.25E-04	3.40E-06	4.85E-03	2.91E-03	2.91E-03	1.09E-04	4.89E-03
12/31/2101	8.08E-04	9.49E-04	7.05E-03	1.96E-03	9.17E-05	2.42E-04	5.36E-04	2.73E-03	4.25E-04	3.30E-06	4.72E-03	2.91E-03	2.91E-03	1.10E-04	4.85E-03
12/31/2102	7.86E-04	9.37E-04	6.97E-03	1.96E-03	9.15E-05	2.40E-04	5.32E-04	2.69E-03	4.24E-04	3.18E-06	4.59E-03	2.90E-03	2.88E-03	1.11E-04	4.80E-03
12/31/2103	7.81E-04	9.40E-04	6.97E-03	1.96E-03	9.11E-05	2.44E-04	5.36E-04	2.68E-03	4.21E-04	3.17E-06	4.55E-03	2.90E-03	2.93E-03	1.09E-04	4.85E-03
12/31/2104	7.66E-04	9.31E-04	6.91E-03	1.96E-03	9.11E-05	2.34E-04	5.30E-04	2.64E-03	4.21E-04	3.08E-06	4.46E-03	2.88E-03	2.86E-03	1.09E-04	4.82E-03
12/31/2105	7.64E-04	9.31E-04	6.91E-03	1.97E-03	9.13E-05	2.39E-04	5.30E-04	2.63E-03	4.21E-04	3.06E-06	4.45E-03	2.88E-03	2.85E-03	1.08E-04	4.81E-03
12/31/2106	7.60E-04	9.25E-04	6.89E-03	1.96E-03	9.10E-05	2.39E-04	5.28E-04	2.61E-03	4.21E-04	3.05E-06	4.43E-03	2.88E-03	2.86E-03	1.09E-04	4.82E-03
12/31/2107	7.62E-04	9.26E-04	6.91E-03	1.96E-03	9.08E-05	2.44E-04	5.33E-04	2.62E-03	4.19E-04	3.07E-06	4.44E-03	2.89E-03	2.90E-03	1.08E-04	4.86E-03
12/31/2108	7.63E-04	9.33E-04	6.91E-03	1.96E-03	9.11E-05	2.32E-04	5.29E-04	2.61E-03	4.19E-04	3.05E-06	4.45E-03	2.86E-03	2.88E-03	1.08E-04	4.82E-03
12/31/2109	7.61E-04	9.25E-04	6.91E-03	1.96E-03	9.07E-05	2.41E-04	5.29E-04	2.61E-03	4.20E-04	3.04E-06	4.44E-03	2.87E-03	2.89E-03	1.11E-04	4.80E-03
12/31/2110	7.57E-04	9.24E-04	6.89E-03	1.96E-03	9.05E-05	2.41E-04	5.30E-04	2.60E-03	4.18E-04	3.03E-06	4.42E-03	2.87E-03	2.89E-03	1.09E-04	4.82E-03
12/31/2111	7.53E-04	9.19E-04	6.88E-03	1.96E-03	9.04E-05	2.40E-04	5.30E-04	2.58E-03	4.17E-04	3.01E-06	4.40E-03	2.87E-03	2.88E-03	1.09E-04	4.81E-03
1/1/2112	8.99E-04	1.07E-03	7.46E-03	1.97E-03	9.42E-05	4.69E-05	5.39E-04	2.80E-03	4.28E-04	3.47E-06	5.21E-03	2.64E-03	3.24E-03	1.05E-04	4.73E-03
Maxium Concentration	**1.01E-03**	**1.15E-03**	**7.55E-03**	**2.15E-03**	**9.91E-05**	**6.69E-04**	**1.32E-03**	**3.39E-03**	**4.64E-04**	**5.55E-06**	**1.03E-02**	**3.90E-03**	**3.24E-03**	**1.32E-04**	**5.18E-03**

Yearly-Averaged Mean Metal Concentrations in Open Pit (mg/L)

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
CDWG (mg/L)	**0.006**	**0.01**	**1**	**0.004**	**0.005**	**0.05**	**0.0038**	**1**	**0.01**	**0.001**	**0.25**	**0.1**	**0.01**	**0.0015**	**5**
Year															
12/31/2010	6.05E-05	3.69E-04	3.11E-03	8.17E-04	3.51E-05	2.53E-04	1.76E-04	8.52E-04	1.57E-04	5.52E-09	3.96E-04	2.60E-03	1.73E-04	3.73E-05	2.58E-03
12/31/2011	7.50E-05	3.73E-04	3.80E-03	1.66E-03	6.35E-05	5.22E-05	2.71E-04	5.66E-04	3.00E-04	5.58E-09	6.87E-04	2.21E-03	2.65E-04	8.15E-05	2.89E-03
12/31/2012	8.61E-05	3.70E-04	4.06E-03	1.95E-03	7.34E-05	6.98E-05	3.10E-04	5.12E-04	3.51E-04	5.83E-09	8.22E-04	2.13E-03	2.98E-04	9.65E-05	3.07E-03
12/31/2013	1.59E-04	4.38E-04	4.54E-03	2.08E-03	8.30E-05	1.19E-04	3.55E-04	1.29E-03	3.89E-04	1.41E-06	2.97E-03	2.25E-03	3.66E-04	1.04E-04	3.38E-03
12/31/2014	2.59E-04	4.82E-04	5.02E-03	2.14E-03	9.10E-05	1.21E-04	3.74E-04	1.64E-03	4.07E-04	2.42E-06	5.58E-03	2.33E-03	4.36E-04	1.07E-04	3.64E-03
12/31/2015	3.53E-04	4.92E-04	5.34E-03	2.15E-03	9.38E-05	1.28E-04	3.80E-04	1.83E-03	4.17E-04	3.03E-06	6.76E-03	2.38E-03	4.62E-04	1.11E-04	3.74E-03
12/31/2016	4.49E-04	5.25E-04	5.63E-03	2.15E-03	9.50E-05	1.24E-04	3.85E-04	1.97E-03	4.20E-04	3.56E-06	7.60E-03	2.39E-03	4.79E-04	1.11E-04	3.80E-03
12/31/2017	5.45E-04	5.40E-04	5.92E-03	2.15E-03	9.56E-05	1.30E-04	3.86E-04	2.10E-03	4.21E-04	4.03E-06	8.27E-03	2.41E-03	4.91E-04	1.12E-04	3.81E-03
12/31/2018	6.57E-04	5.63E-04	6.25E-03	2.16E-03	9.66E-05	1.28E-04	3.86E-04	2.24E-03	4.23E-04	4.60E-06	9.09E-03	2.42E-03	5.05E-04	1.12E-04	3.83E-03
12/31/2019	7.51E-04	5.85E-04	6.54E-03	2.16E-03	9.75E-05	1.31E-04	3.88E-04	2.36E-03	4.26E-04	5.07E-06	9.79E-03	2.42E-03	5.17E-04	1.13E-04	3.86E-03
12/31/2020	8.41E-04	6.15E-04	6.82E-03	2.17E-03	9.88E-05	1.18E-04	3.88E-04	2.48E-03	4.32E-04	5.55E-06	1.06E-02	2.42E-03	5.32E-04	1.16E-04	3.87E-03
12/31/2021	8.64E-04	6.01E-04	6.86E-03	2.16E-03	9.85E-05	1.40E-04	3.89E-04	2.50E-03	4.31E-04	5.62E-06	1.06E-02	2.44E-03	5.31E-04	1.14E-04	3.93E-03
12/31/2022	9.04E-04	5.97E-04	6.97E-03	2.15E-03	9.89E-05	1.37E-04	3.91E-04	2.56E-03	4.31E-04	5.80E-06	1.08E-02	2.46E-03	5.47E-04	1.12E-04	3.98E-03
12/31/2023	1.01E-03	6.31E-04	7.31E-03	2.16E-03	1.00E-04	1.37E-04	3.94E-04	2.75E-03	4.37E-04	6.35E-06	1.15E-02	2.48E-03	6.06E-04	1.14E-04	4.02E-03
12/31/2024	1.12E-03	6.65E-04	7.62E-03	2.15E-03	1.01E-04	1.42E-04	3.97E-04	2.92E-03	4.42E-04	6.88E-06	1.22E-02	2.51E-03	6.51E-04	1.16E-04	4.08E-03
12/31/2025	1.19E-03	6.97E-04	7.85E-03	2.15E-03	1.02E-04	1.44E-04	4.01E-04	3.03E-03	4.43E-04	7.26E-06	1.27E-02	2.52E-03	6.82E-04	1.14E-04	4.15E-03
12/31/2026	1.28E-03	7.28E-04	8.12E-03	2.16E-03	1.03E-04	1.33E-04	4.03E-04	3.16E-03	4.47E-04	7.70E-06	1.34E-02	2.53E-03	7.18E-04	1.15E-04	4.16E-03
12/31/2027	1.31E-03	7.36E-04	8.23E-03	2.16E-03	1.04E-04	1.40E-04	4.05E-04	3.22E-03	4.49E-04	7.88E-06	1.36E-02	2.54E-03	7.45E-04	1.14E-04	4.20E-03
12/31/2028	1.30E-03	7.33E-04	8.21E-03	2.16E-03	1.04E-04	1.45E-04	4.07E-04	3.23E-03	4.48E-04	7.83E-06	1.35E-02	2.55E-03	7.60E-04	1.13E-04	4.23E-03
12/31/2029	1.20E-03	7.15E-04	7.88E-03	2.15E-03	1.03E-04	1.41E-04	4.07E-04	3.12E-03	4.47E-04	7.27E-06	1.26E-02	2.57E-03	7.59E-04	1.14E-04	4.17E-03
12/31/2030	9.79E-04	6.86E-04	7.23E-03	2.15E-03	1.01E-04	1.35E-04	4.08E-04	2.87E-03	4.42E-04	6.19E-06	1.10E-02	2.56E-03	7.50E-04	1.13E-04	4.11E-03
12/31/2031	7.22E-04	6.50E-04	6.47E-03	2.14E-03	9.92E-05	1.25E-04	4.07E-04	2.57E-03	4.37E-04	4.93E-06	9.29E-03	2.53E-03	7.41E-04	1.13E-04	4.03E-03
12/31/2032	4.94E-04	6.26E-04	5.82E-03	2.15E-03	9.83E-05	1.14E-04	4.07E-04	2.31E-03	4.35E-04	3.83E-06	7.82E-03	2.51E-03	7.43E-04	1.13E-04	3.95E-03
12/31/2033	3.21E-04	5.30E-04	5.15E-03	2.13E-03	9.17E-05	8.12E-05	3.86E-04	1.43E-03	4.13E-04	1.68E-06	4.91E-03	2.44E-03	6.88E-04	1.10E-04	3.72E-03
12/31/2034	2.45E-04	4.88E-04	4.79E-03	2.11E-03	8.55E-05	8.44E-05	3.80E-04	1.14E-03	4.03E-04	5.05E-07	2.44E-03	2.40E-03	6.41E-04	1.08E-04	3.58E-03
12/31/2035	2.35E-04	4.96E-04	4.74E-03	2.10E-03	8.43E-05	7.31E-05	3.79E-04	1.09E-03	4.03E-04	2.22E-07	1.82E-03	2.39E-03	6.50E-04	1.08E-04	3.55E-03
12/31/2036	2.38E-04	4.95E-04	4.74E-03	2.10E-03	8.41E-05	7.97E-05	3.81E-04	1.10E-03	4.04E-04	1.79E-07	1.67E-03	2.40E-03	6.65E-04	1.10E-04	3.54E-03
12/31/2037	2.42E-04	4.86E-04	4.74E-03	2.09E-03	8.40E-05	8.41E-05	3.82E-04	1.13E-03	4.06E-04	1.95E-07	1.64E-03	2.42E-03	6.78E-04	1.10E-04	3.55E-03
12/31/2038	2.51E-04	4.97E-04	4.78E-03	2.09E-03	8.41E-05	8.16E-05	3.84E-04	1.17E-03	4.07E-04	2.37E-07	1.67E-03	2.43E-03	6.97E-04	1.10E-04	3.54E-03
12/31/2039	2.67E-04	5.26E-04	4.85E-03	2.10E-03	8.49E-05	7.15E-05	3.86E-04	1.20E-03	4.09E-04	2.95E-07	1.75E-03	2.42E-03	7.32E-04	1.10E-04	3.55E-03
12/31/2040	2.69E-04	5.16E-04	4.84E-03	2.09E-03	8.49E-05	9.08E-05	3.87E-04	1.23E-03	4.09E-04	3.36E-07	1.76E-03	2.45E-03	7.39E-04	1.09E-04	3.60E-03
12/31/2041	2.75E-04	5.17E-04	4.86E-03	2.09E-03	8.51E-05	8.01E-05	3.90E-04	1.26E-03	4.10E-04	3.75E-07	1.78E-03	2.46E-03	7.52E-04	1.09E-04	3.62E-03
12/31/2042	2.81E-04	5.27E-04	4.89E-03	2.09E-03	8.54E-05	8.32E-05	3.91E-04	1.27E-03	4.11E-04	3.99E-07	1.82E-03	2.46E-03	7.64E-04	1.09E-04	3.64E-03
12/31/2043	3.26E-04	6.00E-04	5.03E-03	2.09E-03	8.64E-05	2.90E-05	3.75E-04	1.30E-03	4.12E-04	4.88E-07	2.08E-03	2.31E-03	8.49E-04	1.09E-04	3.48E-03
12/31/2044	3.78E-04	6.82E-04	5.21E-03	2.09E-03	8.74E-05	2.56E-05	3.51E-04	1.33E-03	4.15E-04	5.96E-07	2.37E-03	2.12E-03	9.51E-04	1.05E-04	3.36E-03
12/31/2045	4.02E-04	7.18E-04	5.29E-03	2.10E-03	8.80E-05	2.70E-05	3.40E-04	1.34E-03	4.16E-04	6.47E-07	2.50E-03	2.04E-03	9.98E-04	1.02E-04	3.32E-03
12/31/2046	4.16E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.51E-05	3.36E-04	1.36E-03	4.17E-04	6.76E-07	2.58E-03	1.99E-03	1.02E-03	1.00E-04	3.32E-03
12/31/2047	4.19E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.93E-05	3.33E-04	1.36E-03	4.17E-04	6.86E-07	2.59E-03	1.99E-03	1.03E-03	1.00E-04	3.30E-03
12/31/2048	4.23E-04	7.44E-04	5.35E-03	2.09E-03	8.85E-05	2.73E-05	3.33E-04	1.37E-03	4.17E-04	7.00E-07	2.61E-03	1.98E-03	1.03E-03	1.00E-04	3.28E-03
12/31/2049	4.26E-04	7.48E-04	5.36E-03	2.10E-03	8.84E-05	2.76E-05	3.33E-04	1.38E-03	4.18E-04	7.08E-07	2.63E-03	1.98E-03	1.04E-03	1.01E-04	3.25E-03
12/31/2050	4.34E-04	7.55E-04	5.38E-03	2.09E-03	8.86E-05	2.90E-05	3.35E-04	1.41E-03	4.19E-04	7.52E-07	2.67E-03	1.99E-03	1.06E-03	1.02E-04	3.27E-03
12/31/2051	4.43E-04	7.64E-04	5.42E-03	2.09E-03	8.87E-05	2.70E-05	3.36E-04	1.44E-03	4.20E-04	7.97E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.27E-03
12/31/2052	4.43E-04	7.66E-04	5.41E-03	2.09E-03	8.86E-05	2.99E-05	3.37E-04	1.44E-03	4.20E-04	8.07E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.29E-03
12/31/2053	4.46E-04	7.67E-04	5.42E-03	2.08E-03	8.86E-05	2.96E-05	3.38E-04	1.46E-03	4.20E-04	8.33E-07	2.73E-03	2.01E-03	1.10E-03	1.02E-04	3.31E-03
12/31/2054	4.63E-04	7.80E-04	5.48E-03	2.08E-03	8.89E-05	3.16E-05	3.42E-04	1.52E-03	4.22E-04	9.24E-07	2.82E-03	2.03E-03	1.15E-03	1.03E-04	3.33E-03
12/31/2055	4.86E-04	8.06E-04	5.58E-03	2.08E-03	8.96E-05	3.04E-05	3.48E-04	1.59E-03	4.23E-04	1.04E-06	2.94E-03	2.05E-03	1.23E-03	1.02E-04	3.38E-03
12/31/2056	5.25E-04	8.46E-04	5.74E-03	2.08E-03	9.05E-05	3.63E-05	3.58E-04	1.70E-03	4.27E-04	1.25E-06	3.15E-03	2.08E-03	1.36E-03	1.02E-04	3.48E-03
12/31/2057	5.60E-04	8.67E-04	5.87E-03	2.06E-03	9.10E-05	4.49E-05	3.71E-04	1.84E-03	4.29E-04	1.47E-06	3.33E-03	2.15E-03	1.50E-03	1.02E-04	3.61E-03
12/31/2058	6.13E-04	8.98E-04	6.08E-03	2.05E-03	9.21E-05	5.38E-05	3.90E-04	2.02E-03	4.34E-04	1.80E-06	3.61E-03	2.23E-03	1.70E-03	1.02E-04	3.78E-03
12/31/2059	6.65E-04	9.38E-04	6.30E-03	2.04E-03	9.31E-05	5.40E-05	4.07E-04	2.19E-03	4.37E-04	2.10E-06	3.88E-03	2.31E-03	1.90E-03	1.02E-04	3.92E-03
12/31/2060	7.28E-04	9.86E-04	6.56E-03	2.02E-03	9.42E-05	6.84E-05	4.31E-04	2.41E-03	4.40E-04	2.49E-06	4.21E-03	2.41E-03	2.16E-03	1.01E-04	4.12E-03
12/31/2061	7.84E-04	1.03E-03	6.79E-03	2.01E-03	9.50E-05	6.69E-05	4.50E-04	2.60E-03	4.44E-04	2.82E-06	4.50E-03	2.50E-03	2.39E-03	1.02E-04	4.31E-03
12/31/2062	8.41E-04	1.06E-03	7.03E-03	1.99E-03	9.59E-05	8.34E-05	4.72E-04	2.79E-03	4.46E-04	3.18E-06	4.81E-03	2.60E-03	2.63E-03	1.02E-04	4.48E-03
12/31/2063	8.91E-04	1.11E-03	7.25E-03	1.99E-03	9.68E-05	8.13E-05	4.86E-04	2.95E-03	4.50E-04	3.45E-06	5.08E-03	2.65E-03	2.83E-03	1.03E-04	4.59E-03
12/31/2064	9.11E-04	1.12E-03	7.35E-03	1.98E-03	9.70E-05	8.86E-05	4.96E-04	3.01E-03	4.50E-04	3.58E-06	5.19E-03	2.69E-03	2.94E-03	1.02E-04	4.68E-03
12/31/2065	9.23E-04	1.13E-03	7.41E-03	1.98E-03	9.72E-05	8.59E-05	5.01E-04	3.04E-03	4.50E-04	3.65E-06	5.25E-03	2.70E-03	3.00E-03	1.02E-04	4.74E-03
12/31/2066	9.33E-04	1.14E-03	7.46E-03	1.98E-03	9.72E-05	8.66E-05	5.06E-04	3.07E-03	4.50E-04	3.71E-06	5.31E-03	2.72E-03	3.07E-03	1.02E-04	4.79E-03
12/31/2067	9.44E-04	1.14E-03	7.52E-03	1.98E-03	9.74E-05	8.44E-05	5.11E-04	3.10E-03	4.50E-04	3.77E-06	5.37E-03	2.74E-03	3.13E-03	1.03E-04	4.82E-03
12/31/2068	9.46E-04	1.14E-03	7.54E-03	1.98E-03	9.74E-05	9.16E-05	5.12E-04	3.10E-03	4.49E-04	3.78E-06	5.38E-03	2.75E-03	3.16E-03	1.02E-04	4.83E-03
12/31/2069	9.41E-04	1.13E-03	7.53E-03	1.98E-03	9.73E-05	8.11E-05	5.12E-04	3.07E-03	4.49E-04	3.75E-06	5.36E-03	2.74E-03	3.16E-03	1.03E-04	4.82E-03
12/31/2070	9.48E-04	1.14E-03	7.56E-03	1.98E-03	9.73E-05	9.01E-05	5.15E-04	3.09E-03	4.48E-04	3.80E-06	5.40E-03	2.75E-03	3.21E-03	1.02E-04	4.86E-03
12/31/2071	9.50E-04	1.14E-03	7.57E-03	1.98E-03	9.72E-05	8.83E-05	5.17E-04	3.10E-03	4.48E-04	3.81E-06	5.42E-03	2.75E-03	3.23E-03	1.03E-04	4.88E-03
12/31/2072	9.44E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.78E-05	5.20E-04	3.09E-03	4.45E-04	3.81E-06	5.38E-03	2.77E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2073	9.42E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.09E-05	5.19E-04	3.07E-03	4.45E-04	3.80E-06	5.37E-03	2.77E-03	3.26E-03	1.02E-04	4.93E-03
12/31/2074	9.38E-04	1.12E-03	7.54E-03	1.98E-03	9.67E-05	8.86E-05	5.18E-04	3.05E-03	4.44E-04	3.76E-06	5.36E-03	2.75E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2075	9.24E-04	1.11E-03	7.49E-03	1.99E-03	9.66E-05	8.00E-05	5.10E-04	2.98E-03	4.44E-04	3.65E-06	5.29E-03	2.71E-03	3.19E-03	1.03E-04	4.82E-03
12/31/2076	9.14E-04	1.10E-03	7.46E-03	1.99E-03	9.62E-05	8.85E-05	5.08E-04	2.95E-03	4.43E-04	3.59E-06	5.24E-03	2.70E-03	3.16E-03	1.03E-04	4.78E-03
12/31/2077	9.06E-04	1.08E-03	7.43E-03	1.98E-03	9.55E-05	9.98E-05	5.11E-04	2.94E-03	4.39E-04	3.60E-06	5.19E-03	2.73E-03	3.18E-03	1.02E-04	4.83E-03
12/31/2078	9.05E-04	1.07E-03	7.43E-03	1.98E-03	9.54E-05	9.06E-05	5.12E-04	2.93E-03	4.37E-04	3.59E-06	5.18E-03	2.73E-03	3.20E-03	1.01E-04	4.86E-03
12/31/2079	9.01E-04	1.06E-03	7.42E-03	1.97E-03	9.52E-05	9.96E-05	5.13E-04	2.91E-03	4.36E-04	3.58E-06	5.16E-03	2.73E-03	3.22E-03	9.99E-05	4.89E-03
12/31/2080	9.00E-04	1.05E-03	7.42E-03	1.96E-03	9.48E-05	1.03E-04	5.15E-04	2.90E-03	4.34E-04	3.59E-06	5.16E-03	2.74E-03	3.24E-03	9.90E-05	4.93E-03
12/31/2081	8.94E-04	1.05E-03	7.40E-03	1.98E-03	9.49E-05	8.53E-05	5.08E-04	2.85E-03	4.34E-04	3.51E-06	5.14E-03	2.70E-03	3.20E-03	9.98E-05	4.86E-03
12/31/2082	8.87E-04	1.05E-03	7.37E-03	1.98E-03	9.44E-05	9.35E-05	5.04E-04	2.82E-03	4.32E-04	3.47E-06	5.11E-03	2.68E-03	3.18E-03	1.01E-04	4.81E-03
12/31/2083	8.73E-04	1.04E-03	7.28E-03	1.97E-03	9.35E-05	7.48E-05	4.95E-04	2.75E-03	4.29E-04	3.37E-06	5.04E-03	2.62E-03	3.12E-03	1.01E-04	4.71E-03
12/31/2084	8.64E-04	1.03E-03	7.22E-03	1.96E-03	9.26E-05	8.62E-05	4.90E-04	2.71E-03	4.24E-04	3.33E-06	5.00E-03	2.60E-03	3.08E-03	1.00E-04	4.66E-03
12/31/2085	8.65E-04	1.02E-03	7.22E-03	1.95E-03	9.22E-05	8.56E-05	4.88E-04	2.70E-03	4.22E-04	3.35E-06	5.03E-03	2.59E-03	3.09E-03	1.00E-04	4.66E-03
12/31/2086	8.66E-04	1.01E-03	7.21E-03	1.95E-03	9.20E-05	8.08E-05	4.85E-04	2.67E-03	4.21E-04	3.34E-06	5.04E-03	2.57E-03	3.07E-03	1.01E-04	4.64E-03
12/31/2087	8.67E-04	1.01E-03	7.21E-03	1.95E-03	9.17E-05	8.45E-05	4.84E-04	2.65E-03	4.19E-04	3.34E-06	5.06E-03	2.56E-03	3.06E-03	1.00E-04	4.62E-03
12/31/2088	8.68E-04	9.95E-04	7.20E-03	1.95E-03	9.13E-05	8.62E-05	4.81E-04	2.63E-03	4.19E-04	3.34E-06	5.09E-03	2.55E-03	3.05E-03	1.01E-04	4.60E-03
12/31/2089	8.75E-04	9.99E-04	7.23E-03	1.95E-03	9.13E-05	7.95E-05	4.81E-04	2.63E-03	4.19E-04	3.36E-06	5.15E-03	2.54E-03	3.06E-03	1.03E-04	4.59E-03
12/31/2090	8.71E-04	9.89E-04	7.21E-03	1.95E-03	9.14E-05	8.30E-05	4.77E-04	2.59E-03	4.18E-04	3.33E-06	5.14E-03	2.52E-03	3.03E-03	1.02E-04	4.58E-03
12/31/2091	8.67E-04	9.79E-04	7.19E-03	1.95E-03	9.10E-05	8.43E-05	4.78E-04	2.57E-03	4.16E-04	3.32E-06	5.13E-03	2.52E-03	3.02E-03	1.01E-04	4.59E-03
12/31/2092	8.69E-04	9.76E-04	7.20E-03	1.95E-03	9.11E-05	7.87E-05	4.76E-04	2.56E-03	4.16E-04	3.31E-06	5.15E-03	2.51E-03	3.02E-03	1.01E-04	4.58E-03
12/31/2093	8.70E-04	9.70E-04	7.21E-03	1.95E-03	9.08E-05	8.63E-05	4.76E-04	2.54E-03	4.14E-04	3.32E-06	5.16E-03	2.51E-03	3.03E-03	9.97E-05	4.61E-03
12/31/2094	8.73E-04	9.73E-04	7.21E-03	1.96E-03	9.10E-05	6.83E-05	4.68E-04	2.51E-03	4.15E-04	3.28E-06	5.20E-03	2.46E-03	2.96E-03	1.01E-04	4.51E-03
12/31/2095	8.67E-04	9.54E-04	7.18E-03	1.96E-03	9.05E-05	8.65E-05	4.68E-04	2.49E-03	4.13E-04	3.28E-06	5.18E-03	2.48E-03	2.97E-03	1.01E-04	4.53E-03
12/31/2096	8.67E-04	9.41E-04	7.19E-03	1.94E-03	8.98E-05	9.12E-05	4.75E-04	2.50E-03	4.10E-04	3.32E-06	5.17E-03	2.51E-03	3.04E-03	1.00E-04	4.61E-03
12/31/2097	8.68E-04	9.36E-04	7.21E-03	1.94E-03	8.96E-05	9.67E-05	4.81E-04	2.50E-03	4.08E-04	3.34E-06	5.18E-03	2.53E-03	3.09E-03	9.94E-05	4.67E-03
12/31/2098	8.66E-04	9.32E-04	7.20E-03	1.94E-03	8.95E-05	9.00E-05	4.80E-04	2.49E-03	4.07E-04	3.33E-06	5.17E-03	2.52E-03	3.11E-03	9.94E-05	4.67E-03
12/31/2099	8.54E-04	9.28E-04	7.16E-03	1.93E-03	8.89E-05	9.11E-05	4.78E-04	2.45E-03	4.05E-04	3.27E-06	5.10E-03	2.51E-03	3.10E-03	9.96E-05	4.65E-03
12/31/2100	8.29E-04	9.24E-04	7.08E-03	1.94E-03	8.89E-05	7.83E-05	4.72E-04	2.40E-03	4.05E-04	3.12E-06	4.95E-03	2.48E-03	3.05E-03	9.96E-05	4.59E-03
12/31/2101	7.98E-04	9.14E-04	6.98E-03	1.95E-03	8.88E-05	8.03E-05	4.68E-04	2.34E-03	4.05E-04	2.94E-06	4.75E-03	2.46E-03	3.00E-03	1.00E-04	4.51E-03
12/31/2102	7.73E-04	9.07E-04	6.90E-03	1.95E-03	8.86E-05	7.47E-05	4.66E-04	2.29E-03	4.05E-04	2.80E-06	4.58E-03	2.44E-03	2.98E-03	1.01E-04	4.47E-03
12/31/2103	7.60E-04	8.99E-04	6.87E-03	1.94E-03	8.80E-05	8.73E-05	4.71E-04	2.28E-03	4.01E-04	2.77E-06	4.49E-03	2.46E-03	3.03E-03	1.00E-04	4.53E-03
12/31/2104	7.49E-04	8.97E-04	6.84E-03	1.95E-03	8.81E-05	7.25E-05	4.66E-04	2.24E-03	4.01E-04	2.69E-06	4.43E-03	2.44E-03	2.98E-03	9.94E-05	4.49E-03
12/31/2105	7.41E-04	8.92E-04	6.81E-03	1.96E-03	8.82E-05	7.70E-05	4.62E-04	2.22E-03	4.01E-04	2.63E-06	4.38E-03	2.42E-03	2.94E-03	9.96E-05	4.46E-03
12/31/2106	7.39E-04	8.90E-04	6.80E-03	1.95E-03	8.80E-05	7.65E-05	4.63E-04	2.21E-03	4.01E-04	2.63E-06	4.37E-03	2.42E-03	2.96E-03	9.94E-05	4.48E-03
12/31/2107	7.38E-04	8.83E-04	6.80E-03	1.95E-03	8.77E-05	8.40E-05	4.66E-04	2.21E-03	3.98E-04	2.64E-06	4.37E-03	2.44E-03	2.99E-03	9.84E-05	4.52E-03
12/31/2108	7.39E-04	8.95E-04	6.81E-03	1.95E-03	8.79E-05	7.43E-05	4.64E-04	2.20E-03	3.99E-04	2.63E-06	4.38E-03	2.41E-03	2.98E-03	9.87E-05	4.50E-03
12/31/2109	7.36E-04	8.87E-04	6.80E-03	1.95E-03	8.76E-05	8.42E-05	4.62E-04	2.19E-03	3.99E-04	2.62E-06	4.36E-03	2.42E-03	2.99E-03	1.00E-04	4.48E-03
12/31/2110	7.34E-04	8.82E-04	6.79E-03	1.95E-03	8.73E-05	7.87E-05	4.63E-04	2.19E-03	3.98E-04	2.61E-06	4.35E-03	2.42E-03	2.99E-03	1.01E-04	4.48E-03
12/31/2111	7.31E-04	8.79E-04	6.78E-03	1.95E-03	8.72E-05	7.99E-05	4.63E-04	2.17E-03	3.97E-04	2.60E-06	4.34E-03	2.42E-03	2.99E-03	9.96E-05	4.48E-03
1/1/2112	7.36E-04	8.94E-04	6.81E-03	1.98E-03	8.86E-05	1.86E-05	4.61E-04	2.17E-03	4.03E-04	2.55E-06	4.39E-03	2.40E-03	2.94E-03	1.06E-04	4.32E-03
Maxium Concentration	**1.31E-03**	**1.14E-03**	**8.23E-03**	**2.17E-03**	**1.04E-04**	**2.53E-04**	**5.20E-04**	**3.23E-03**	**4.50E-04**	**7.88E-06**	**1.36E-02**	**2.77E-03**	**3.26E-03**	**1.16E-04**	**4.93E-03**

Yearly-Averaged Mean Metal Concentrations in Fish Lake (mg/L) -Livestock Watering Guideline Comparison

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
LWG (mg/L)	**-**	**0.025**	**-**	**0.1**	**0.08**	**0.05**	**1**	**0.3**	**0.1**	**0.003**	**0.05**	**1**	**0.05**	**-**	**0.05**
Year															
12/31/2010	6.05E-05	3.69E-04	3.11E-03	8.17E-04	3.51E-05	2.53E-04	1.76E-04	8.52E-04	1.57E-04	5.52E-09	3.96E-04	2.60E-03	1.73E-04	3.73E-05	2.58E-03
12/31/2011	7.50E-05	3.73E-04	3.80E-03	1.66E-03	6.35E-05	5.22E-05	2.71E-04	5.66E-04	3.00E-04	5.58E-09	6.87E-04	2.21E-03	2.65E-04	8.15E-05	2.89E-03
12/31/2012	8.61E-05	3.70E-04	4.06E-03	1.95E-03	7.34E-05	6.98E-05	3.10E-04	5.12E-04	3.51E-04	5.83E-09	8.22E-04	2.13E-03	2.98E-04	9.65E-05	3.07E-03
12/31/2013	1.59E-04	4.38E-04	4.54E-03	2.08E-03	8.30E-05	1.19E-04	3.55E-04	1.29E-03	3.89E-04	1.41E-06	2.97E-03	2.25E-03	3.66E-04	1.04E-04	3.38E-03
12/31/2014	2.59E-04	4.82E-04	5.02E-03	2.14E-03	9.10E-05	1.21E-04	3.74E-04	1.64E-03	4.07E-04	2.42E-06	5.58E-03	2.33E-03	4.36E-04	1.07E-04	3.64E-03
12/31/2015	3.53E-04	4.92E-04	5.34E-03	2.15E-03	9.38E-05	1.28E-04	3.80E-04	1.83E-03	4.17E-04	3.03E-06	6.76E-03	2.38E-03	4.62E-04	1.11E-04	3.74E-03
12/31/2016	4.49E-04	5.25E-04	5.63E-03	2.15E-03	9.50E-05	1.24E-04	3.85E-04	1.97E-03	4.20E-04	3.56E-06	7.60E-03	2.39E-03	4.79E-04	1.11E-04	3.80E-03
12/31/2017	5.45E-04	5.40E-04	5.92E-03	2.15E-03	9.56E-05	1.30E-04	3.86E-04	2.10E-03	4.21E-04	4.03E-06	8.27E-03	2.41E-03	4.91E-04	1.12E-04	3.81E-03
12/31/2018	6.57E-04	5.63E-04	6.25E-03	2.16E-03	9.66E-05	1.28E-04	3.86E-04	2.24E-03	4.23E-04	4.60E-06	9.09E-03	2.42E-03	5.05E-04	1.12E-04	3.83E-03
12/31/2019	7.51E-04	5.85E-04	6.54E-03	2.16E-03	9.75E-05	1.31E-04	3.88E-04	2.36E-03	4.26E-04	5.07E-06	9.79E-03	2.42E-03	5.17E-04	1.13E-04	3.86E-03
12/31/2020	8.41E-04	6.15E-04	6.82E-03	2.17E-03	9.88E-05	1.18E-04	3.88E-04	2.48E-03	4.32E-04	5.55E-06	1.06E-02	2.42E-03	5.32E-04	1.16E-04	3.87E-03
12/31/2021	8.64E-04	6.01E-04	6.86E-03	2.16E-03	9.85E-05	1.40E-04	3.89E-04	2.50E-03	4.31E-04	5.62E-06	1.06E-02	2.44E-03	5.31E-04	1.14E-04	3.93E-03
12/31/2022	9.04E-04	5.97E-04	6.97E-03	2.15E-03	9.89E-05	1.37E-04	3.91E-04	2.56E-03	4.31E-04	5.80E-06	1.08E-02	2.46E-03	5.47E-04	1.12E-04	3.98E-03
12/31/2023	1.01E-03	6.31E-04	7.31E-03	2.16E-03	1.00E-04	1.37E-04	3.94E-04	2.75E-03	4.37E-04	6.35E-06	1.15E-02	2.48E-03	6.06E-04	1.14E-04	4.02E-03
12/31/2024	1.12E-03	6.65E-04	7.62E-03	2.15E-03	1.01E-04	1.42E-04	3.97E-04	2.92E-03	4.42E-04	6.88E-06	1.22E-02	2.51E-03	6.51E-04	1.16E-04	4.08E-03
12/31/2025	1.19E-03	6.97E-04	7.85E-03	2.15E-03	1.02E-04	1.44E-04	4.01E-04	3.03E-03	4.43E-04	7.26E-06	1.27E-02	2.52E-03	6.82E-04	1.14E-04	4.15E-03
12/31/2026	1.28E-03	7.28E-04	8.12E-03	2.16E-03	1.03E-04	1.33E-04	4.03E-04	3.16E-03	4.47E-04	7.70E-06	1.34E-02	2.53E-03	7.18E-04	1.15E-04	4.16E-03
12/31/2027	1.31E-03	7.36E-04	8.23E-03	2.16E-03	1.04E-04	1.40E-04	4.05E-04	3.22E-03	4.49E-04	7.88E-06	1.36E-02	2.54E-03	7.45E-04	1.14E-04	4.20E-03
12/31/2028	1.30E-03	7.33E-04	8.21E-03	2.16E-03	1.04E-04	1.45E-04	4.07E-04	3.23E-03	4.48E-04	7.83E-06	1.35E-02	2.55E-03	7.60E-04	1.13E-04	4.23E-03
12/31/2029	1.20E-03	7.15E-04	7.88E-03	2.15E-03	1.03E-04	1.41E-04	4.07E-04	3.12E-03	4.47E-04	7.27E-06	1.26E-02	2.57E-03	7.59E-04	1.14E-04	4.17E-03
12/31/2030	9.79E-04	6.86E-04	7.23E-03	2.15E-03	1.01E-04	1.35E-04	4.08E-04	2.87E-03	4.42E-04	6.19E-06	1.10E-02	2.56E-03	7.50E-04	1.13E-04	4.11E-03
12/31/2031	7.22E-04	6.50E-04	6.47E-03	2.14E-03	9.92E-05	1.25E-04	4.07E-04	2.57E-03	4.37E-04	4.93E-06	9.29E-03	2.53E-03	7.41E-04	1.13E-04	4.03E-03
12/31/2032	4.94E-04	6.26E-04	5.82E-03	2.15E-03	9.83E-05	1.14E-04	4.07E-04	2.31E-03	4.35E-04	3.83E-06	7.82E-03	2.51E-03	7.43E-04	1.13E-04	3.95E-03
12/31/2033	3.21E-04	5.30E-04	5.15E-03	2.13E-03	9.17E-05	8.12E-05	3.86E-04	1.43E-03	4.13E-04	1.68E-06	4.91E-03	2.44E-03	6.88E-04	1.10E-04	3.72E-03
12/31/2034	2.45E-04	4.88E-04	4.79E-03	2.11E-03	8.55E-05	8.44E-05	3.80E-04	1.14E-03	4.03E-04	5.05E-07	2.44E-03	2.40E-03	6.41E-04	1.08E-04	3.58E-03
12/31/2035	2.35E-04	4.96E-04	4.74E-03	2.10E-03	8.43E-05	7.31E-05	3.79E-04	1.09E-03	4.03E-04	2.22E-07	1.82E-03	2.39E-03	6.50E-04	1.08E-04	3.55E-03
12/31/2036	2.38E-04	4.95E-04	4.74E-03	2.10E-03	8.41E-05	7.97E-05	3.81E-04	1.10E-03	4.04E-04	1.79E-07	1.67E-03	2.40E-03	6.65E-04	1.10E-04	3.54E-03
12/31/2037	2.42E-04	4.86E-04	4.74E-03	2.09E-03	8.40E-05	8.41E-05	3.82E-04	1.13E-03	4.06E-04	1.95E-07	1.64E-03	2.42E-03	6.78E-04	1.10E-04	3.55E-03
12/31/2038	2.51E-04	4.97E-04	4.78E-03	2.09E-03	8.41E-05	8.16E-05	3.84E-04	1.17E-03	4.07E-04	2.37E-07	1.67E-03	2.43E-03	6.97E-04	1.10E-04	3.54E-03
12/31/2039	2.67E-04	5.26E-04	4.85E-03	2.10E-03	8.49E-05	7.15E-05	3.86E-04	1.20E-03	4.09E-04	2.95E-07	1.75E-03	2.42E-03	7.32E-04	1.10E-04	3.55E-03
12/31/2040	2.69E-04	5.16E-04	4.84E-03	2.09E-03	8.49E-05	9.08E-05	3.87E-04	1.23E-03	4.09E-04	3.36E-07	1.76E-03	2.45E-03	7.39E-04	1.09E-04	3.60E-03
12/31/2041	2.75E-04	5.17E-04	4.86E-03	2.09E-03	8.51E-05	8.01E-05	3.90E-04	1.26E-03	4.10E-04	3.75E-07	1.78E-03	2.46E-03	7.52E-04	1.09E-04	3.62E-03
12/31/2042	2.81E-04	5.27E-04	4.89E-03	2.09E-03	8.54E-05	8.32E-05	3.91E-04	1.27E-03	4.11E-04	3.99E-07	1.82E-03	2.46E-03	7.64E-04	1.09E-04	3.64E-03
12/31/2043	3.26E-04	6.00E-04	5.03E-03	2.09E-03	8.64E-05	2.90E-05	3.75E-04	1.30E-03	4.12E-04	4.88E-07	2.08E-03	2.31E-03	8.49E-04	1.09E-04	3.48E-03
12/31/2044	3.78E-04	6.82E-04	5.21E-03	2.09E-03	8.74E-05	2.56E-05	3.51E-04	1.33E-03	4.15E-04	5.96E-07	2.37E-03	2.12E-03	9.51E-04	1.05E-04	3.36E-03
12/31/2045	4.02E-04	7.18E-04	5.29E-03	2.10E-03	8.80E-05	2.70E-05	3.40E-04	1.34E-03	4.16E-04	6.47E-07	2.50E-03	2.04E-03	9.98E-04	1.02E-04	3.32E-03
12/31/2046	4.16E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.51E-05	3.36E-04	1.36E-03	4.17E-04	6.76E-07	2.58E-03	1.99E-03	1.02E-03	1.00E-04	3.32E-03
12/31/2047	4.19E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.93E-05	3.33E-04	1.36E-03	4.17E-04	6.86E-07	2.59E-03	1.99E-03	1.03E-03	1.00E-04	3.30E-03
12/31/2048	4.23E-04	7.44E-04	5.35E-03	2.09E-03	8.85E-05	2.73E-05	3.33E-04	1.37E-03	4.17E-04	7.00E-07	2.61E-03	1.98E-03	1.03E-03	1.00E-04	3.28E-03
12/31/2049	4.26E-04	7.48E-04	5.36E-03	2.10E-03	8.84E-05	2.76E-05	3.33E-04	1.38E-03	4.18E-04	7.08E-07	2.63E-03	1.98E-03	1.04E-03	1.01E-04	3.25E-03
12/31/2050	4.34E-04	7.55E-04	5.38E-03	2.09E-03	8.86E-05	2.90E-05	3.35E-04	1.41E-03	4.19E-04	7.52E-07	2.67E-03	1.99E-03	1.06E-03	1.02E-04	3.27E-03
12/31/2051	4.43E-04	7.64E-04	5.42E-03	2.09E-03	8.87E-05	2.70E-05	3.36E-04	1.44E-03	4.20E-04	7.97E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.27E-03
12/31/2052	4.43E-04	7.66E-04	5.41E-03	2.09E-03	8.86E-05	2.99E-05	3.37E-04	1.44E-03	4.20E-04	8.07E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.29E-03
12/31/2053	4.46E-04	7.67E-04	5.42E-03	2.08E-03	8.86E-05	2.96E-05	3.38E-04	1.46E-03	4.20E-04	8.33E-07	2.73E-03	2.01E-03	1.10E-03	1.02E-04	3.31E-03
12/31/2054	4.63E-04	7.80E-04	5.48E-03	2.08E-03	8.89E-05	3.16E-05	3.42E-04	1.52E-03	4.22E-04	9.24E-07	2.82E-03	2.03E-03	1.15E-03	1.03E-04	3.33E-03
12/31/2055	4.86E-04	8.06E-04	5.58E-03	2.08E-03	8.96E-05	3.04E-05	3.48E-04	1.59E-03	4.23E-04	1.04E-06	2.94E-03	2.05E-03	1.23E-03	1.02E-04	3.38E-03
12/31/2056	5.25E-04	8.46E-04	5.74E-03	2.08E-03	9.05E-05	3.63E-05	3.58E-04	1.70E-03	4.27E-04	1.25E-06	3.15E-03	2.08E-03	1.36E-03	1.02E-04	3.48E-03
12/31/2057	5.60E-04	8.67E-04	5.87E-03	2.06E-03	9.10E-05	4.49E-05	3.71E-04	1.84E-03	4.29E-04	1.47E-06	3.33E-03	2.15E-03	1.50E-03	1.02E-04	3.61E-03
12/31/2058	6.13E-04	8.98E-04	6.08E-03	2.05E-03	9.21E-05	5.38E-05	3.90E-04	2.02E-03	4.34E-04	1.80E-06	3.61E-03	2.23E-03	1.70E-03	1.02E-04	3.78E-03
12/31/2059	6.65E-04	9.38E-04	6.30E-03	2.04E-03	9.31E-05	5.40E-05	4.07E-04	2.19E-03	4.37E-04	2.10E-06	3.88E-03	2.31E-03	1.90E-03	1.02E-04	3.92E-03
12/31/2060	7.28E-04	9.86E-04	6.56E-03	2.02E-03	9.42E-05	6.84E-05	4.31E-04	2.41E-03	4.40E-04	2.49E-06	4.21E-03	2.41E-03	2.16E-03	1.01E-04	4.12E-03
12/31/2061	7.84E-04	1.03E-03	6.79E-03	2.01E-03	9.50E-05	6.69E-05	4.50E-04	2.60E-03	4.44E-04	2.82E-06	4.50E-03	2.50E-03	2.39E-03	1.02E-04	4.31E-03
12/31/2062	8.41E-04	1.06E-03	7.03E-03	1.99E-03	9.59E-05	8.34E-05	4.72E-04	2.79E-03	4.46E-04	3.18E-06	4.81E-03	2.60E-03	2.63E-03	1.02E-04	4.48E-03
12/31/2063	8.91E-04	1.11E-03	7.25E-03	1.99E-03	9.68E-05	8.13E-05	4.86E-04	2.95E-03	4.50E-04	3.45E-06	5.08E-03	2.65E-03	2.83E-03	1.03E-04	4.59E-03
12/31/2064	9.11E-04	1.12E-03	7.35E-03	1.98E-03	9.70E-05	8.86E-05	4.96E-04	3.01E-03	4.50E-04	3.58E-06	5.19E-03	2.69E-03	2.94E-03	1.02E-04	4.68E-03
12/31/2065	9.23E-04	1.13E-03	7.41E-03	1.98E-03	9.72E-05	8.59E-05	5.01E-04	3.04E-03	4.50E-04	3.65E-06	5.25E-03	2.70E-03	3.00E-03	1.02E-04	4.74E-03
12/31/2066	9.33E-04	1.14E-03	7.46E-03	1.98E-03	9.72E-05	8.66E-05	5.06E-04	3.07E-03	4.50E-04	3.71E-06	5.31E-03	2.72E-03	3.07E-03	1.02E-04	4.79E-03
12/31/2067	9.44E-04	1.14E-03	7.52E-03	1.98E-03	9.74E-05	8.44E-05	5.11E-04	3.10E-03	4.50E-04	3.77E-06	5.37E-03	2.74E-03	3.13E-03	1.03E-04	4.82E-03
12/31/2068	9.46E-04	1.14E-03	7.54E-03	1.98E-03	9.74E-05	9.16E-05	5.12E-04	3.10E-03	4.49E-04	3.78E-06	5.38E-03	2.75E-03	3.16E-03	1.02E-04	4.83E-03
12/31/2069	9.41E-04	1.13E-03	7.53E-03	1.98E-03	9.73E-05	8.11E-05	5.12E-04	3.07E-03	4.49E-04	3.75E-06	5.36E-03	2.74E-03	3.16E-03	1.03E-04	4.82E-03
12/31/2070	9.48E-04	1.14E-03	7.56E-03	1.98E-03	9.73E-05	9.01E-05	5.15E-04	3.09E-03	4.48E-04	3.80E-06	5.40E-03	2.75E-03	3.21E-03	1.02E-04	4.86E-03
12/31/2071	9.50E-04	1.14E-03	7.57E-03	1.98E-03	9.72E-05	8.83E-05	5.17E-04	3.10E-03	4.48E-04	3.81E-06	5.42E-03	2.75E-03	3.23E-03	1.03E-04	4.88E-03
12/31/2072	9.44E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.78E-05	5.20E-04	3.09E-03	4.45E-04	3.81E-06	5.38E-03	2.77E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2073	9.42E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.09E-05	5.19E-04	3.07E-03	4.45E-04	3.80E-06	5.37E-03	2.77E-03	3.26E-03	1.02E-04	4.93E-03
12/31/2074	9.38E-04	1.12E-03	7.54E-03	1.98E-03	9.67E-05	8.86E-05	5.18E-04	3.05E-03	4.44E-04	3.76E-06	5.36E-03	2.75E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2075	9.24E-04	1.11E-03	7.49E-03	1.99E-03	9.66E-05	8.00E-05	5.10E-04	2.98E-03	4.44E-04	3.65E-06	5.29E-03	2.71E-03	3.19E-03	1.03E-04	4.82E-03
12/31/2076	9.14E-04	1.10E-03	7.46E-03	1.99E-03	9.62E-05	8.85E-05	5.08E-04	2.95E-03	4.43E-04	3.59E-06	5.24E-03	2.70E-03	3.16E-03	1.03E-04	4.78E-03
12/31/2077	9.06E-04	1.08E-03	7.43E-03	1.98E-03	9.55E-05	9.98E-05	5.11E-04	2.94E-03	4.39E-04	3.60E-06	5.19E-03	2.73E-03	3.18E-03	1.02E-04	4.83E-03
12/31/2078	9.05E-04	1.07E-03	7.43E-03	1.98E-03	9.54E-05	9.06E-05	5.12E-04	2.93E-03	4.37E-04	3.59E-06	5.18E-03	2.73E-03	3.20E-03	1.01E-04	4.86E-03
12/31/2079	9.01E-04	1.06E-03	7.42E-03	1.97E-03	9.52E-05	9.96E-05	5.13E-04	2.91E-03	4.36E-04	3.58E-06	5.16E-03	2.73E-03	3.22E-03	9.99E-05	4.89E-03
12/31/2080	9.00E-04	1.05E-03	7.42E-03	1.96E-03	9.48E-05	1.03E-04	5.15E-04	2.90E-03	4.34E-04	3.59E-06	5.16E-03	2.74E-03	3.24E-03	9.90E-05	4.93E-03
12/31/2081	8.94E-04	1.05E-03	7.40E-03	1.98E-03	9.49E-05	8.53E-05	5.08E-04	2.85E-03	4.34E-04	3.51E-06	5.14E-03	2.70E-03	3.20E-03	9.98E-05	4.86E-03
12/31/2082	8.87E-04	1.05E-03	7.37E-03	1.98E-03	9.44E-05	9.35E-05	5.04E-04	2.82E-03	4.32E-04	3.47E-06	5.11E-03	2.68E-03	3.18E-03	1.01E-04	4.81E-03
12/31/2083	8.73E-04	1.04E-03	7.28E-03	1.97E-03	9.35E-05	7.48E-05	4.95E-04	2.75E-03	4.29E-04	3.37E-06	5.04E-03	2.62E-03	3.12E-03	1.01E-04	4.71E-03
12/31/2084	8.64E-04	1.03E-03	7.22E-03	1.96E-03	9.26E-05	8.62E-05	4.90E-04	2.71E-03	4.24E-04	3.33E-06	5.00E-03	2.60E-03	3.08E-03	1.00E-04	4.66E-03
12/31/2085	8.65E-04	1.02E-03	7.22E-03	1.95E-03	9.22E-05	8.56E-05	4.88E-04	2.70E-03	4.22E-04	3.35E-06	5.03E-03	2.59E-03	3.09E-03	1.00E-04	4.66E-03
12/31/2086	8.66E-04	1.01E-03	7.21E-03	1.95E-03	9.20E-05	8.08E-05	4.85E-04	2.67E-03	4.21E-04	3.34E-06	5.04E-03	2.57E-03	3.07E-03	1.01E-04	4.64E-03
12/31/2087	8.67E-04	1.01E-03	7.21E-03	1.95E-03	9.17E-05	8.45E-05	4.84E-04	2.65E-03	4.19E-04	3.34E-06	5.06E-03	2.56E-03	3.06E-03	1.00E-04	4.62E-03
12/31/2088	8.68E-04	9.95E-04	7.20E-03	1.95E-03	9.13E-05	8.62E-05	4.81E-04	2.63E-03	4.19E-04	3.34E-06	5.09E-03	2.55E-03	3.05E-03	1.01E-04	4.60E-03
12/31/2089	8.75E-04	9.99E-04	7.23E-03	1.95E-03	9.13E-05	7.95E-05	4.81E-04	2.63E-03	4.19E-04	3.36E-06	5.15E-03	2.54E-03	3.06E-03	1.03E-04	4.59E-03
12/31/2090	8.71E-04	9.89E-04	7.21E-03	1.95E-03	9.14E-05	8.30E-05	4.77E-04	2.59E-03	4.18E-04	3.33E-06	5.14E-03	2.52E-03	3.03E-03	1.02E-04	4.58E-03
12/31/2091	8.67E-04	9.79E-04	7.19E-03	1.95E-03	9.10E-05	8.43E-05	4.78E-04	2.57E-03	4.16E-04	3.32E-06	5.13E-03	2.52E-03	3.02E-03	1.01E-04	4.59E-03
12/31/2092	8.69E-04	9.76E-04	7.20E-03	1.95E-03	9.11E-05	7.87E-05	4.76E-04	2.56E-03	4.16E-04	3.31E-06	5.15E-03	2.51E-03	3.02E-03	1.01E-04	4.58E-03
12/31/2093	8.70E-04	9.70E-04	7.21E-03	1.95E-03	9.08E-05	8.63E-05	4.76E-04	2.54E-03	4.14E-04	3.32E-06	5.16E-03	2.51E-03	3.03E-03	9.97E-05	4.61E-03
12/31/2094	8.73E-04	9.73E-04	7.21E-03	1.96E-03	9.10E-05	6.83E-05	4.68E-04	2.51E-03	4.15E-04	3.28E-06	5.20E-03	2.46E-03	2.96E-03	1.01E-04	4.51E-03
12/31/2095	8.67E-04	9.54E-04	7.18E-03	1.96E-03	9.05E-05	8.65E-05	4.68E-04	2.49E-03	4.13E-04	3.28E-06	5.18E-03	2.48E-03	2.97E-03	1.01E-04	4.53E-03
12/31/2096	8.67E-04	9.41E-04	7.19E-03	1.94E-03	8.98E-05	9.12E-05	4.75E-04	2.50E-03	4.10E-04	3.32E-06	5.17E-03	2.51E-03	3.04E-03	1.00E-04	4.61E-03
12/31/2097	8.68E-04	9.36E-04	7.21E-03	1.94E-03	8.96E-05	9.67E-05	4.81E-04	2.50E-03	4.08E-04	3.34E-06	5.18E-03	2.53E-03	3.09E-03	9.94E-05	4.67E-03
12/31/2098	8.66E-04	9.32E-04	7.20E-03	1.94E-03	8.95E-05	9.00E-05	4.80E-04	2.49E-03	4.07E-04	3.33E-06	5.17E-03	2.52E-03	3.11E-03	9.94E-05	4.67E-03
12/31/2099	8.54E-04	9.28E-04	7.16E-03	1.93E-03	8.89E-05	9.11E-05	4.78E-04	2.45E-03	4.05E-04	3.27E-06	5.10E-03	2.51E-03	3.10E-03	9.96E-05	4.65E-03
12/31/2100	8.29E-04	9.24E-04	7.08E-03	1.94E-03	8.89E-05	7.83E-05	4.72E-04	2.40E-03	4.05E-04	3.12E-06	4.95E-03	2.48E-03	3.05E-03	9.96E-05	4.59E-03
12/31/2101	7.98E-04	9.14E-04	6.98E-03	1.95E-03	8.88E-05	8.03E-05	4.68E-04	2.34E-03	4.05E-04	2.94E-06	4.75E-03	2.46E-03	3.00E-03	1.00E-04	4.51E-03
12/31/2102	7.73E-04	9.07E-04	6.90E-03	1.95E-03	8.86E-05	7.47E-05	4.66E-04	2.29E-03	4.05E-04	2.80E-06	4.58E-03	2.44E-03	2.98E-03	1.01E-04	4.47E-03
12/31/2103	7.60E-04	8.99E-04	6.87E-03	1.94E-03	8.80E-05	8.73E-05	4.71E-04	2.28E-03	4.01E-04	2.77E-06	4.49E-03	2.46E-03	3.03E-03	1.00E-04	4.53E-03
12/31/2104	7.49E-04	8.97E-04	6.84E-03	1.95E-03	8.81E-05	7.25E-05	4.66E-04	2.24E-03	4.01E-04	2.69E-06	4.43E-03	2.44E-03	2.98E-03	9.94E-05	4.49E-03
12/31/2105	7.41E-04	8.92E-04	6.81E-03	1.96E-03	8.82E-05	7.70E-05	4.62E-04	2.22E-03	4.01E-04	2.63E-06	4.38E-03	2.42E-03	2.94E-03	9.96E-05	4.46E-03
12/31/2106	7.39E-04	8.90E-04	6.80E-03	1.95E-03	8.80E-05	7.65E-05	4.63E-04	2.21E-03	4.01E-04	2.63E-06	4.37E-03	2.42E-03	2.96E-03	9.94E-05	4.48E-03
12/31/2107	7.38E-04	8.83E-04	6.80E-03	1.95E-03	8.77E-05	8.40E-05	4.66E-04	2.21E-03	3.98E-04	2.64E-06	4.37E-03	2.44E-03	2.99E-03	9.84E-05	4.52E-03
12/31/2108	7.39E-04	8.95E-04	6.81E-03	1.95E-03	8.79E-05	7.43E-05	4.64E-04	2.20E-03	3.99E-04	2.63E-06	4.38E-03	2.41E-03	2.98E-03	9.87E-05	4.50E-03
12/31/2109	7.36E-04	8.87E-04	6.80E-03	1.95E-03	8.76E-05	8.42E-05	4.62E-04	2.19E-03	3.99E-04	2.62E-06	4.36E-03	2.42E-03	2.99E-03	1.00E-04	4.48E-03
12/31/2110	7.34E-04	8.82E-04	6.79E-03	1.95E-03	8.73E-05	7.87E-05	4.63E-04	2.19E-03	3.98E-04	2.61E-06	4.35E-03	2.42E-03	2.99E-03	1.01E-04	4.48E-03
12/31/2111	7.31E-04	8.79E-04	6.78E-03	1.95E-03	8.72E-05	7.99E-05	4.63E-04	2.17E-03	3.97E-04	2.60E-06	4.34E-03	2.42E-03	2.99E-03	9.96E-05	4.48E-03
1/1/2112	7.36E-04	8.94E-04	6.81E-03	1.98E-03	8.86E-05	1.86E-05	4.61E-04	2.17E-03	4.03E-04	2.55E-06	4.39E-03	2.40E-03	2.94E-03	1.06E-04	4.32E-03
Maxium Concentratio	**1.31E-03**	**1.14E-03**	**8.23E-03**	**2.17E-03**	**1.04E-04**	**2.53E-04**	**5.20E-04**	**3.23E-03**	**4.50E-04**	**7.88E-06**	**1.36E-02**	**2.77E-03**	**3.26E-03**	**1.16E-04**	**4.93E-03**

Yearly-Averaged Mean Metal Concentrations in Upper Fish Creek (mg/L) - Livestock Watering Guideline Comparison

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
LWG (mg/L)	**-**	**0.025**	**-**	**0.1**	**0.08**	**0.05**	**1**	**0.3**	**0.1**	**0.003**	**0.05**	**1**	**0.05**	**-**	**0.05**
Year															
12/31/2010	7.68E-05	8.21E-04	6.63E-03	2.00E-03	7.85E-05	6.68E-04	1.31E-03	1.16E-03	3.50E-04	0.00E+00	8.28E-04	3.87E-03	3.49E-04	1.19E-04	3.66E-03
12/31/2011	7.53E-05	7.24E-04	5.74E-03	1.97E-03	7.71E-05	6.61E-04	1.17E-03	1.17E-03	3.38E-04	0.00E+00	8.38E-04	3.75E-03	3.56E-04	1.17E-04	4.07E-03
12/31/2012	7.86E-05	3.56E-04	4.12E-03	1.99E-03	7.55E-05	2.35E-04	3.88E-04	7.44E-04	3.66E-04	3.55E-09	7.70E-04	2.53E-03	3.10E-04	1.13E-04	3.36E-03
12/31/2013	1.21E-04	3.72E-04	4.38E-03	2.08E-03	8.18E-05	2.38E-04	4.04E-04	9.06E-04	3.84E-04	4.89E-07	2.14E-03	2.57E-03	3.54E-04	1.16E-04	3.54E-03
12/31/2014	1.85E-04	4.00E-04	4.70E-03	2.12E-03	8.72E-05	2.44E-04	4.19E-04	1.15E-03	3.97E-04	1.17E-06	3.89E-03	2.64E-03	4.01E-04	1.19E-04	3.72E-03
12/31/2015	2.44E-04	4.01E-04	4.89E-03	2.13E-03	8.91E-05	2.49E-04	4.22E-04	1.27E-03	4.05E-04	1.55E-06	4.65E-03	2.68E-03	4.18E-04	1.22E-04	3.78E-03
12/31/2016	3.07E-04	4.29E-04	5.10E-03	2.13E-03	8.99E-05	2.47E-04	4.28E-04	1.37E-03	4.07E-04	1.90E-06	5.21E-03	2.68E-03	4.29E-04	1.23E-04	3.81E-03
12/31/2017	3.68E-04	4.38E-04	5.28E-03	2.13E-03	9.03E-05	2.50E-04	4.27E-04	1.45E-03	4.07E-04	2.21E-06	5.64E-03	2.69E-03	4.37E-04	1.22E-04	3.82E-03
12/31/2018	4.39E-04	4.58E-04	5.50E-03	2.14E-03	9.09E-05	2.49E-04	4.28E-04	1.54E-03	4.09E-04	2.56E-06	6.16E-03	2.70E-03	4.46E-04	1.22E-04	3.83E-03
12/31/2019	5.03E-04	4.72E-04	5.69E-03	2.14E-03	9.16E-05	2.51E-04	4.30E-04	1.62E-03	4.12E-04	2.89E-06	6.65E-03	2.71E-03	4.54E-04	1.23E-04	3.85E-03
12/31/2020	5.57E-04	4.89E-04	5.86E-03	2.14E-03	9.23E-05	2.44E-04	4.29E-04	1.70E-03	4.16E-04	3.18E-06	7.11E-03	2.71E-03	4.63E-04	1.26E-04	3.85E-03
12/31/2021	5.71E-04	4.77E-04	5.88E-03	2.13E-03	9.21E-05	2.60E-04	4.30E-04	1.70E-03	4.14E-04	3.21E-06	7.06E-03	2.72E-03	4.62E-04	1.23E-04	3.91E-03
12/31/2022	6.13E-04	4.87E-04	6.01E-03	2.13E-03	9.28E-05	2.54E-04	4.33E-04	1.79E-03	4.16E-04	3.43E-06	7.32E-03	2.73E-03	4.97E-04	1.22E-04	3.96E-03
12/31/2023	6.97E-04	5.23E-04	6.28E-03	2.13E-03	9.39E-05	2.54E-04	4.35E-04	1.95E-03	4.22E-04	3.86E-06	7.89E-03	2.76E-03	5.63E-04	1.25E-04	3.98E-03
12/31/2024	7.60E-04	5.45E-04	6.47E-03	2.13E-03	9.47E-05	2.61E-04	4.40E-04	2.07E-03	4.27E-04	4.18E-06	8.27E-03	2.79E-03	6.01E-04	1.26E-04	4.05E-03
12/31/2025	8.15E-04	5.77E-04	6.64E-03	2.13E-03	9.53E-05	2.64E-04	4.45E-04	2.16E-03	4.26E-04	4.45E-06	8.61E-03	2.81E-03	6.32E-04	1.23E-04	4.11E-03
12/31/2026	8.80E-04	5.99E-04	6.85E-03	2.13E-03	9.63E-05	2.54E-04	4.45E-04	2.26E-03	4.30E-04	4.79E-06	9.13E-03	2.81E-03	6.68E-04	1.25E-04	4.11E-03
12/31/2027	9.15E-04	6.10E-04	6.97E-03	2.13E-03	9.71E-05	2.57E-04	4.47E-04	2.33E-03	4.31E-04	4.99E-06	9.39E-03	2.81E-03	6.99E-04	1.24E-04	4.16E-03
12/31/2028	9.04E-04	6.12E-04	6.95E-03	2.13E-03	9.72E-05	2.63E-04	4.51E-04	2.34E-03	4.33E-04	4.92E-06	9.23E-03	2.84E-03	7.16E-04	1.23E-04	4.19E-03
12/31/2029	8.43E-04	6.11E-04	6.76E-03	2.13E-03	9.65E-05	2.63E-04	4.52E-04	2.30E-03	4.33E-04	4.60E-06	8.70E-03	2.86E-03	7.26E-04	1.25E-04	4.14E-03
12/31/2030	7.08E-04	5.94E-04	6.35E-03	2.13E-03	9.54E-05	2.63E-04	4.56E-04	2.15E-03	4.29E-04	3.92E-06	7.69E-03	2.86E-03	7.30E-04	1.23E-04	4.14E-03
12/31/2031	5.54E-04	5.74E-04	5.90E-03	2.12E-03	9.45E-05	2.56E-04	4.55E-04	1.99E-03	4.28E-04	3.17E-06	6.66E-03	2.85E-03	7.37E-04	1.24E-04	4.08E-03
12/31/2032	4.13E-04	5.66E-04	5.50E-03	2.12E-03	9.42E-05	2.47E-04	4.56E-04	1.84E-03	4.26E-04	2.50E-06	5.75E-03	2.83E-03	7.51E-04	1.22E-04	4.06E-03
12/31/2033	3.06E-04	5.37E-04	5.12E-03	2.11E-03	9.02E-05	2.52E-04	4.53E-04	1.62E-03	4.20E-04	1.53E-06	3.91E-03	2.82E-03	7.26E-04	1.22E-04	3.92E-03
12/31/2034	2.60E-04	5.13E-04	4.90E-03	2.10E-03	8.63E-05	2.54E-04	4.50E-04	1.43E-03	4.12E-04	7.63E-07	2.26E-03	2.79E-03	7.06E-04	1.19E-04	3.84E-03
12/31/2035	2.56E-04	5.19E-04	4.86E-03	2.09E-03	8.54E-05	2.51E-04	4.50E-04	1.42E-03	4.13E-04	5.91E-07	1.84E-03	2.80E-03	7.19E-04	1.21E-04	3.82E-03
12/31/2036	2.64E-04	5.24E-04	4.89E-03	2.09E-03	8.55E-05	2.53E-04	4.52E-04	1.44E-03	4.16E-04	5.89E-07	1.77E-03	2.81E-03	7.42E-04	1.22E-04	3.83E-03
12/31/2037	2.70E-04	5.21E-04	4.91E-03	2.09E-03	8.56E-05	2.58E-04	4.55E-04	1.48E-03	4.19E-04	6.25E-07	1.77E-03	2.84E-03	7.59E-04	1.23E-04	3.85E-03
12/31/2038	2.82E-04	5.36E-04	4.95E-03	2.09E-03	8.58E-05	2.53E-04	4.56E-04	1.52E-03	4.19E-04	6.80E-07	1.82E-03	2.84E-03	7.85E-04	1.23E-04	3.83E-03
12/31/2039	2.99E-04	5.60E-04	5.02E-03	2.09E-03	8.64E-05	2.47E-04	4.58E-04	1.56E-03	4.20E-04	7.47E-07	1.90E-03	2.83E-03	8.20E-04	1.22E-04	3.86E-03
12/31/2040	3.03E-04	5.56E-04	5.03E-03	2.09E-03	8.67E-05	2.62E-04	4.60E-04	1.59E-03	4.21E-04	7.96E-07	1.92E-03	2.86E-03	8.32E-04	1.21E-04	3.91E-03
12/31/2041	3.10E-04	5.58E-04	5.05E-03	2.08E-03	8.67E-05	2.56E-04	4.63E-04	1.63E-03	4.23E-04	8.37E-07	1.95E-03	2.88E-03	8.46E-04	1.23E-04	3.91E-03
12/31/2042	3.15E-04	5.69E-04	5.07E-03	2.09E-03	8.71E-05	2.57E-04	4.65E-04	1.63E-03	4.22E-04	8.55E-07	1.98E-03	2.88E-03	8.55E-04	1.20E-04	3.94E-03
12/31/2043	4.11E-04	6.86E-04	5.37E-03	2.09E-03	8.93E-05	8.83E-05	4.12E-04	1.68E-03	4.27E-04	1.05E-06	2.51E-03	2.52E-03	1.04E-03	1.11E-04	3.74E-03
12/31/2044	4.60E-04	7.60E-04	5.53E-03	2.09E-03	9.02E-05	8.40E-05	3.90E-04	1.72E-03	4.30E-04	1.15E-06	2.78E-03	2.35E-03	1.14E-03	1.08E-04	3.63E-03
12/31/2045	4.82E-04	7.94E-04	5.60E-03	2.09E-03	9.08E-05	8.58E-05	3.80E-04	1.73E-03	4.31E-04	1.20E-06	2.90E-03	2.27E-03	1.18E-03	1.05E-04	3.60E-03
12/31/2046	4.96E-04	8.16E-04	5.65E-03	2.09E-03	9.13E-05	8.32E-05	3.76E-04	1.74E-03	4.32E-04	1.23E-06	2.98E-03	2.23E-03	1.20E-03	1.04E-04	3.60E-03
12/31/2047	4.98E-04	8.13E-04	5.64E-03	2.09E-03	9.12E-05	8.84E-05	3.74E-04	1.75E-03	4.32E-04	1.24E-06	2.98E-03	2.23E-03	1.21E-03	1.03E-04	3.58E-03
12/31/2048	5.02E-04	8.17E-04	5.66E-03	2.09E-03	9.12E-05	8.63E-05	3.73E-04	1.76E-03	4.32E-04	1.25E-06	3.01E-03	2.23E-03	1.21E-03	1.03E-04	3.56E-03
12/31/2049	5.05E-04	8.21E-04	5.67E-03	2.09E-03	9.12E-05	8.72E-05	3.74E-04	1.77E-03	4.33E-04	1.26E-06	3.02E-03	2.23E-03	1.22E-03	1.05E-04	3.54E-03
12/31/2050	5.14E-04	8.30E-04	5.70E-03	2.09E-03	9.14E-05	8.84E-05	3.76E-04	1.80E-03	4.34E-04	1.31E-06	3.07E-03	2.24E-03	1.24E-03	1.05E-04	3.55E-03
12/31/2051	5.24E-04	8.39E-04	5.74E-03	2.09E-03	9.15E-05	8.65E-05	3.77E-04	1.83E-03	4.35E-04	1.36E-06	3.12E-03	2.24E-03	1.28E-03	1.06E-04	3.56E-03
12/31/2052	5.22E-04	8.39E-04	5.72E-03	2.08E-03	9.14E-05	9.04E-05	3.78E-04	1.84E-03	4.35E-04	1.37E-06	3.11E-03	2.25E-03	1.27E-03	1.06E-04	3.58E-03
12/31/2053	5.29E-04	8.43E-04	5.74E-03	2.08E-03	9.15E-05	9.02E-05	3.80E-04	1.86E-03	4.36E-04	1.41E-06	3.14E-03	2.26E-03	1.29E-03	1.06E-04	3.60E-03
12/31/2054	5.50E-04	8.60E-04	5.82E-03	2.07E-03	9.19E-05	9.37E-05	3.85E-04	1.94E-03	4.38E-04	1.52E-06	3.25E-03	2.29E-03	1.36E-03	1.07E-04	3.63E-03
12/31/2055	5.73E-04	8.86E-04	5.91E-03	2.07E-03	9.25E-05	9.08E-05	3.90E-04	2.00E-03	4.39E-04	1.64E-06	3.37E-03	2.30E-03	1.43E-03	1.05E-04	3.69E-03
12/31/2056	6.21E-04	9.33E-04	6.11E-03	2.07E-03	9.36E-05	1.02E-04	4.04E-04	2.15E-03	4.43E-04	1.90E-06	3.63E-03	2.35E-03	1.60E-03	1.06E-04	3.81E-03
12/31/2057	6.56E-04	9.52E-04	6.24E-03	2.05E-03	9.42E-05	1.12E-04	4.18E-04	2.28E-03	4.46E-04	2.12E-06	3.81E-03	2.42E-03	1.73E-03	1.06E-04	3.94E-03
12/31/2058	7.16E-04	9.90E-04	6.48E-03	2.04E-03	9.54E-05	1.20E-04	4.37E-04	2.48E-03	4.51E-04	2.48E-06	4.12E-03	2.50E-03	1.96E-03	1.05E-04	4.11E-03
12/31/2059	7.64E-04	1.03E-03	6.69E-03	2.03E-03	9.63E-05	1.23E-04	4.53E-04	2.64E-03	4.53E-04	2.76E-06	4.38E-03	2.58E-03	2.15E-03	1.05E-04	4.25E-03
12/31/2060	8.37E-04	1.08E-03	6.99E-03	2.01E-03	9.76E-05	1.41E-04	4.80E-04	2.89E-03	4.58E-04	3.21E-06	4.76E-03	2.69E-03	2.44E-03	1.05E-04	4.48E-03
12/31/2061	8.98E-04	1.13E-03	7.24E-03	1.99E-03	9.85E-05	1.46E-04	5.02E-04	3.10E-03	4.61E-04	3.58E-06	5.08E-03	2.79E-03	2.70E-03	1.05E-04	4.68E-03
12/31/2062	9.58E-04	1.17E-03	7.49E-03	1.98E-03	9.94E-05	1.63E-04	5.24E-04	3.30E-03	4.63E-04	3.94E-06	5.40E-03	2.89E-03	2.95E-03	1.05E-04	4.86E-03
12/31/2063	1.01E-03	1.21E-03	7.71E-03	1.98E-03	1.00E-04	1.64E-04	5.38E-04	3.45E-03	4.67E-04	4.22E-06	5.67E-03	2.94E-03	3.15E-03	1.06E-04	4.97E-03
12/31/2064	1.02E-03	1.22E-03	7.78E-03	1.97E-03	1.00E-04	1.68E-04	5.46E-04	3.49E-03	4.66E-04	4.31E-06	5.74E-03	2.97E-03	3.23E-03	1.05E-04	5.04E-03
12/31/2065	1.03E-03	1.23E-03	7.84E-03	1.97E-03	1.01E-04	1.65E-04	5.51E-04	3.52E-03	4.67E-04	4.37E-06	5.81E-03	2.98E-03	3.30E-03	1.06E-04	5.09E-03
12/31/2066	1.04E-03	1.23E-03	7.90E-03	1.97E-03	1.01E-04	1.71E-04	5.58E-04	3.56E-03	4.66E-04	4.45E-06	5.87E-03	3.01E-03	3.38E-03	1.05E-04	5.16E-03
12/31/2067	1.05E-03	1.24E-03	7.94E-03	1.97E-03	1.01E-04	1.66E-04	5.60E-04	3.58E-03	4.66E-04	4.49E-06	5.92E-03	3.02E-03	3.43E-03	1.06E-04	5.17E-03
12/31/2068	1.06E-03	1.23E-03	7.97E-03	1.97E-03	1.01E-04	1.73E-04	5.62E-04	3.58E-03	4.65E-04	4.51E-06	5.94E-03	3.02E-03	3.46E-03	1.05E-04	5.19E-03
12/31/2069	1.05E-03	1.23E-03	7.96E-03	1.97E-03	1.01E-04	1.65E-04	5.62E-04	3.56E-03	4.65E-04	4.48E-06	5.92E-03	3.02E-03	3.46E-03	1.06E-04	5.18E-03
12/31/2070	1.06E-03	1.24E-03	8.00E-03	1.97E-03	1.01E-04	1.73E-04	5.65E-04	3.58E-03	4.64E-04	4.53E-06	5.96E-03	3.03E-03	3.51E-03	1.05E-04	5.23E-03
12/31/2071	1.06E-03	1.24E-03	8.01E-03	1.96E-03	1.00E-04	1.74E-04	5.68E-04	3.59E-03	4.64E-04	4.56E-06	5.98E-03	3.04E-03	3.55E-03	1.06E-04	5.25E-03
12/31/2072	1.06E-03	1.22E-03	7.99E-03	1.96E-03	1.00E-04	1.80E-04	5.70E-04	3.57E-03	4.62E-04	4.54E-06	5.94E-03	3.05E-03	3.56E-03	1.06E-04	5.28E-03
12/31/2073	1.05E-03	1.22E-03	7.98E-03	1.96E-03	1.00E-04	1.74E-04	5.69E-04	3.55E-03	4.61E-04	4.52E-06	5.93E-03	3.04E-03	3.56E-03	1.05E-04	5.28E-03
12/31/2074	1.05E-03	1.21E-03	7.97E-03	1.96E-03	9.99E-05	1.72E-04	5.67E-04	3.52E-03	4.60E-04	4.47E-06	5.90E-03	3.03E-03	3.55E-03	1.05E-04	5.26E-03
12/31/2075	1.03E-03	1.20E-03	7.90E-03	1.97E-03	9.97E-05	1.61E-04	5.59E-04	3.45E-03	4.59E-04	4.34E-06	5.82E-03	2.98E-03	3.47E-03	1.06E-04	5.16E-03
12/31/2076	1.02E-03	1.20E-03	7.88E-03	1.97E-03	9.94E-05	1.70E-04	5.57E-04	3.42E-03	4.59E-04	4.30E-06	5.78E-03	2.97E-03	3.46E-03	1.07E-04	5.14E-03
12/31/2077	1.02E-03	1.18E-03	7.88E-03	1.96E-03	9.88E-05	1.86E-04	5.63E-04	3.43E-03	4.55E-04	4.35E-06	5.77E-03	3.02E-03	3.51E-03	1.05E-04	5.21E-03
12/31/2078	1.01E-03	1.17E-03	7.85E-03	1.96E-03	9.86E-05	1.72E-04	5.61E-04	3.39E-03	4.53E-04	4.30E-06	5.73E-03	3.00E-03	3.50E-03	1.04E-04	5.21E-03
12/31/2079	1.01E-03	1.16E-03	7.85E-03	1.96E-03	9.84E-05	1.83E-04	5.63E-04	3.39E-03	4.52E-04	4.30E-06	5.72E-03	3.01E-03	3.53E-03	1.03E-04	5.25E-03
12/31/2080	1.01E-03	1.15E-03	7.85E-03	1.95E-03	9.81E-05	1.85E-04	5.64E-04	3.37E-03	4.49E-04	4.30E-06	5.72E-03	3.01E-03	3.55E-03	1.02E-04	5.28E-03
12/31/2081	9.98E-04	1.14E-03	7.81E-03	1.96E-03	9.80E-05	1.66E-04	5.56E-04	3.31E-03	4.49E-04	4.20E-06	5.67E-03	2.96E-03	3.49E-03	1.03E-04	5.20E-03
12/31/2082	9.92E-04	1.14E-03	7.79E-03	1.96E-03	9.75E-05	1.78E-04	5.54E-04	3.28E-03	4.48E-04	4.17E-06	5.64E-03	2.95E-03	3.49E-03	1.04E-04	5.17E-03
12/31/2083	9.73E-04	1.13E-03	7.69E-03	1.96E-03	9.67E-05	1.56E-04	5.43E-04	3.20E-03	4.44E-04	4.04E-06	5.55E-03	2.89E-03	3.40E-03	1.05E-04	5.05E-03
12/31/2084	9.67E-04	1.12E-03	7.64E-03	1.95E-03	9.59E-05	1.66E-04	5.39E-04	3.17E-03	4.40E-04	4.02E-06	5.52E-03	2.87E-03	3.38E-03	1.04E-04	5.02E-03
12/31/2085	9.67E-04	1.11E-03	7.63E-03	1.94E-03	9.54E-05	1.65E-04	5.37E-04	3.15E-03	4.38E-04	4.02E-06	5.53E-03	2.86E-03	3.38E-03	1.04E-04	5.02E-03
12/31/2086	9.65E-04	1.10E-03	7.62E-03	1.94E-03	9.52E-05	1.61E-04	5.35E-04	3.12E-03	4.37E-04	4.00E-06	5.54E-03	2.84E-03	3.36E-03	1.04E-04	5.00E-03
12/31/2087	9.64E-04	1.10E-03	7.61E-03	1.94E-03	9.49E-05	1.64E-04	5.32E-04	3.10E-03	4.35E-04	3.99E-06	5.55E-03	2.83E-03	3.35E-03	1.04E-04	4.97E-03
12/31/2088	9.67E-04	1.09E-03	7.62E-03	1.94E-03	9.45E-05	1.67E-04	5.31E-04	3.09E-03	4.34E-04	4.01E-06	5.58E-03	2.83E-03	3.36E-03	1.05E-04	4.96E-03
12/31/2089	9.71E-04	1.09E-03	7.63E-03	1.94E-03	9.45E-05	1.62E-04	5.31E-04	3.08E-03	4.35E-04	4.01E-06	5.62E-03	2.82E-03	3.36E-03	1.06E-04	4.95E-03
12/31/2090	9.62E-04	1.08E-03	7.59E-03	1.95E-03	9.45E-05	1.59E-04	5.24E-04	3.02E-03	4.34E-04	3.94E-06	5.58E-03	2.79E-03	3.30E-03	1.05E-04	4.91E-03
12/31/2091	9.63E-04	1.07E-03	7.60E-03	1.94E-03	9.42E-05	1.67E-04	5.28E-04	3.02E-03	4.31E-04	3.97E-06	5.60E-03	2.80E-03	3.34E-03	1.04E-04	4.96E-03
12/31/2092	9.62E-04	1.06E-03	7.59E-03	1.94E-03	9.42E-05	1.57E-04	5.25E-04	2.99E-03	4.31E-04	3.94E-06	5.60E-03	2.78E-03	3.31E-03	1.04E-04	4.92E-03
12/31/2093	9.60E-04	1.06E-03	7.59E-03	1.94E-03	9.40E-05	1.63E-04	5.24E-04	2.97E-03	4.29E-04	3.93E-06	5.60E-03	2.77E-03	3.32E-03	1.03E-04	4.95E-03
12/31/2094	9.59E-04	1.06E-03	7.57E-03	1.96E-03	9.41E-05	1.45E-04	5.15E-04	2.93E-03	4.31E-04	3.88E-06	5.62E-03	2.73E-03	3.24E-03	1.04E-04	4.84E-03
12/31/2095	9.55E-04	1.04E-03	7.56E-03	1.95E-03	9.35E-05	1.66E-04	5.17E-04	2.92E-03	4.28E-04	3.89E-06	5.60E-03	2.75E-03	3.27E-03	1.04E-04	4.89E-03
12/31/2096	9.58E-04	1.03E-03	7.59E-03	1.94E-03	9.29E-05	1.72E-04	5.26E-04	2.94E-03	4.25E-04	3.94E-06	5.61E-03	2.79E-03	3.36E-03	1.04E-04	4.97E-03
12/31/2097	9.60E-04	1.03E-03	7.61E-03	1.93E-03	9.28E-05	1.77E-04	5.31E-04	2.94E-03	4.23E-04	3.97E-06	5.62E-03	2.80E-03	3.41E-03	1.03E-04	5.02E-03
12/31/2098	9.57E-04	1.02E-03	7.60E-03	1.93E-03	9.26E-05	1.70E-04	5.29E-04	2.92E-03	4.22E-04	3.95E-06	5.61E-03	2.79E-03	3.42E-03	1.03E-04	5.03E-03
12/31/2099	9.44E-04	1.02E-03	7.56E-03	1.93E-03	9.20E-05	1.73E-04	5.28E-04	2.89E-03	4.20E-04	3.89E-06	5.54E-03	2.78E-03	3.41E-03	1.03E-04	5.01E-03
12/31/2100	9.17E-04	1.01E-03	7.45E-03	1.94E-03	9.20E-05	1.56E-04	5.19E-04	2.82E-03	4.20E-04	3.72E-06	5.38E-03	2.74E-03	3.32E-03	1.03E-04	4.92E-03
12/31/2101	8.95E-04	1.00E-03	7.39E-03	1.94E-03	9.18E-05	1.62E-04	5.18E-04	2.78E-03	4.20E-04	3.60E-06	5.23E-03	2.73E-03	3.31E-03	1.04E-04	4.88E-03
12/31/2102	8.71E-04	9.92E-04	7.31E-03	1.94E-03	9.16E-05	1.58E-04	5.15E-04	2.74E-03	4.20E-04	3.46E-06	5.07E-03	2.72E-03	3.29E-03	1.05E-04	4.83E-03
12/31/2103	8.60E-04	9.86E-04	7.30E-03	1.94E-03	9.11E-05	1.68E-04	5.20E-04	2.72E-03	4.16E-04	3.44E-06	5.00E-03	2.74E-03	3.34E-03	1.03E-04	4.89E-03
12/31/2104	8.45E-04	9.81E-04	7.23E-03	1.94E-03	9.11E-05	1.52E-04	5.13E-04	2.68E-03	4.16E-04	3.34E-06	4.91E-03	2.70E-03	3.26E-03	1.03E-04	4.84E-03
12/31/2105	8.42E-04	9.79E-04	7.23E-03	1.95E-03	9.13E-05	1.58E-04	5.11E-04	2.66E-03	4.16E-04	3.31E-06	4.90E-03	2.69E-03	3.25E-03	1.03E-04	4.82E-03
12/31/2106	8.38E-04	9.75E-04	7.21E-03	1.94E-03	9.11E-05	1.58E-04	5.12E-04	2.65E-03	4.15E-04	3.30E-06	4.88E-03	2.69E-03	3.26E-03	1.03E-04	4.84E-03
12/31/2107	8.39E-04	9.71E-04	7.23E-03	1.94E-03	9.08E-05	1.66E-04	5.16E-04	2.65E-03	4.13E-04	3.32E-06	4.88E-03	2.71E-03	3.30E-03	1.02E-04	4.88E-03
12/31/2108	8.38E-04	9.79E-04	7.22E-03	1.95E-03	9.10E-05	1.53E-04	5.12E-04	2.63E-03	4.14E-04	3.29E-06	4.88E-03	2.68E-03	3.27E-03	1.02E-04	4.84E-03
12/31/2109	8.37E-04	9.72E-04	7.22E-03	1.94E-03	9.06E-05	1.64E-04	5.12E-04	2.63E-03	4.14E-04	3.29E-06	4.87E-03	2.69E-03	3.29E-03	1.04E-04	4.83E-03
12/31/2110	8.34E-04	9.69E-04	7.21E-03	1.94E-03	9.04E-05	1.60E-04	5.13E-04	2.63E-03	4.13E-04	3.28E-06	4.86E-03	2.69E-03	3.30E-03	1.04E-04	4.84E-03
12/31/2111	8.29E-04	9.63E-04	7.19E-03	1.94E-03	9.03E-05	1.60E-04	5.12E-04	2.61E-03	4.12E-04	3.26E-06	4.83E-03	2.69E-03	3.28E-03	1.03E-04	4.83E-03
1/1/2112	8.61E-04	1.03E-03	7.29E-03	1.97E-03	9.27E-05	3.57E-05	5.02E-04	2.64E-03	4.22E-04	3.25E-06	5.02E-03	2.56E-03	3.19E-03	1.06E-04	4.59E-03
axium Concentrati	**1.06E-03**	**1.24E-03**	**8.01E-03**	**2.14E-03**	**1.01E-04**	**6.68E-04**	**1.31E-03**	**3.59E-03**	**4.67E-04**	**4.99E-06**	**9.39E-03**	**3.87E-03**	**3.56E-03**	**1.26E-04**	**5.28E-03**

Yearly - Averaged Mean Metal Concentrations in Tributary 1 (mg/L) Livestock watering Guideline Comparison

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
LWG (mg/L)	-	0.025	-	0.1	0.08	0.05	1	0.3	0.1	0.003	0.05	1	0.05	-	0.05
Year															
12/31/2010	7.52E-05	8.27E-04	6.53E-03	2.03E-03	7.88E-05	6.69E-04	1.32E-03	1.21E-03	3.51E-04	0.00E+00	8.38E-04	3.90E-03	3.46E-04	1.32E-04	3.81E-03
12/31/2011	7.44E-05	7.83E-04	6.16E-03	2.03E-03	7.84E-05	6.63E-04	1.27E-03	1.22E-03	3.47E-04	0.00E+00	8.45E-04	3.85E-03	3.49E-04	1.31E-04	4.05E-03
12/31/2012	8.02E-05	3.60E-04	4.11E-03	1.98E-03	7.50E-05	2.02E-04	3.71E-04	6.97E-04	3.63E-04	3.97E-09	7.75E-04	2.45E-03	3.09E-04	1.08E-04	3.34E-03
12/31/2013	1.28E-04	3.79E-04	4.40E-03	2.08E-03	8.20E-05	2.06E-04	3.88E-04	8.82E-04	3.83E-04	5.55E-07	2.31E-03	2.49E-03	3.58E-04	1.11E-04	3.55E-03
12/31/2014	1.98E-04	4.08E-04	4.75E-03	2.12E-03	8.78E-05	2.13E-04	4.04E-04	1.14E-03	3.98E-04	1.29E-06	4.20E-03	2.57E-03	4.08E-04	1.15E-04	3.73E-03
12/31/2015	2.65E-04	4.12E-04	4.97E-03	2.13E-03	8.99E-05	2.18E-04	4.08E-04	1.28E-03	4.06E-04	1.72E-06	5.04E-03	2.61E-03	4.27E-04	1.18E-04	3.80E-03
12/31/2016	3.34E-04	4.43E-04	5.19E-03	2.13E-03	9.08E-05	2.16E-04	4.13E-04	1.38E-03	4.08E-04	2.11E-06	5.66E-03	2.62E-03	4.39E-04	1.19E-04	3.84E-03
12/31/2017	4.02E-04	4.52E-04	5.40E-03	2.14E-03	9.12E-05	2.20E-04	4.13E-04	1.47E-03	4.08E-04	2.45E-06	6.13E-03	2.63E-03	4.48E-04	1.18E-04	3.85E-03
12/31/2018	4.81E-04	4.72E-04	5.64E-03	2.14E-03	9.19E-05	2.19E-04	4.14E-04	1.57E-03	4.10E-04	2.85E-06	6.71E-03	2.63E-03	4.58E-04	1.18E-04	3.86E-03
12/31/2019	5.51E-04	4.89E-04	5.85E-03	2.14E-03	9.26E-05	2.21E-04	4.15E-04	1.67E-03	4.13E-04	3.21E-06	7.25E-03	2.64E-03	4.68E-04	1.19E-04	3.88E-03
12/31/2020	6.13E-04	5.10E-04	6.05E-03	2.15E-03	9.35E-05	2.11E-04	4.15E-04	1.75E-03	4.18E-04	3.54E-06	7.78E-03	2.64E-03	4.77E-04	1.23E-04	3.89E-03
12/31/2021	6.25E-04	4.96E-04	6.07E-03	2.14E-03	9.32E-05	2.30E-04	4.16E-04	1.76E-03	4.16E-04	3.57E-06	7.71E-03	2.65E-03	4.76E-04	1.20E-04	3.95E-03
12/31/2022	6.74E-04	5.10E-04	6.22E-03	2.14E-03	9.41E-05	2.25E-04	4.20E-04	1.85E-03	4.18E-04	3.81E-06	8.00E-03	2.67E-03	5.19E-04	1.18E-04	4.00E-03
12/31/2023	7.68E-04	5.50E-04	6.52E-03	2.14E-03	9.53E-05	2.26E-04	4.24E-04	2.05E-03	4.25E-04	4.30E-06	8.62E-03	2.71E-03	5.97E-04	1.22E-04	4.04E-03
12/31/2024	8.40E-04	5.78E-04	6.75E-03	2.13E-03	9.62E-05	2.33E-04	4.29E-04	2.18E-03	4.30E-04	4.66E-06	9.07E-03	2.74E-03	6.41E-04	1.22E-04	4.11E-03
12/31/2025	9.03E-04	6.14E-04	6.94E-03	2.13E-03	9.70E-05	2.35E-04	4.34E-04	2.28E-03	4.31E-04	4.97E-06	9.46E-03	2.76E-03	6.77E-04	1.20E-04	4.18E-03
12/31/2026	9.74E-04	6.40E-04	7.17E-03	2.14E-03	9.81E-05	2.26E-04	4.35E-04	2.40E-03	4.34E-04	5.36E-06	1.00E-02	2.76E-03	7.19E-04	1.21E-04	4.19E-03
12/31/2027	1.01E-03	6.52E-04	7.30E-03	2.14E-03	9.90E-05	2.30E-04	4.37E-04	2.47E-03	4.36E-04	5.55E-06	1.03E-02	2.77E-03	7.53E-04	1.20E-04	4.24E-03
12/31/2028	1.00E-03	6.55E-04	7.28E-03	2.14E-03	9.91E-05	2.36E-04	4.42E-04	2.49E-03	4.38E-04	5.50E-06	1.01E-02	2.80E-03	7.75E-04	1.19E-04	4.27E-03
12/31/2029	9.29E-04	6.53E-04	7.06E-03	2.14E-03	9.83E-05	2.37E-04	4.44E-04	2.44E-03	4.38E-04	5.12E-06	9.51E-03	2.82E-03	7.87E-04	1.21E-04	4.22E-03
12/31/2030	7.85E-04	6.37E-04	6.62E-03	2.13E-03	9.73E-05	2.34E-04	4.47E-04	2.29E-03	4.34E-04	4.39E-06	8.44E-03	2.82E-03	7.96E-04	1.19E-04	4.22E-03
12/31/2031	6.13E-04	6.16E-04	6.12E-03	2.13E-03	9.63E-05	2.27E-04	4.46E-04	2.11E-03	4.33E-04	3.56E-06	7.28E-03	2.81E-03	8.05E-04	1.20E-04	4.16E-03
12/31/2032	4.59E-04	6.08E-04	5.68E-03	2.13E-03	9.60E-05	2.17E-04	4.48E-04	1.94E-03	4.31E-04	2.82E-06	6.29E-03	2.79E-03	8.23E-04	1.19E-04	4.13E-03
12/31/2033	3.43E-04	5.75E-04	5.26E-03	2.11E-03	9.14E-05	2.23E-04	4.44E-04	1.70E-03	4.24E-04	1.75E-06	4.23E-03	2.78E-03	7.96E-04	1.18E-04	3.99E-03
12/31/2034	2.95E-04	5.51E-04	5.02E-03	2.10E-03	8.73E-05	2.24E-04	4.41E-04	1.51E-03	4.16E-04	9.33E-07	2.47E-03	2.75E-03	7.77E-04	1.15E-04	3.90E-03
12/31/2035	2.93E-04	5.60E-04	5.00E-03	2.09E-03	8.64E-05	2.21E-04	4.42E-04	1.50E-03	4.18E-04	7.62E-07	2.04E-03	2.76E-03	7.96E-04	1.17E-04	3.88E-03
12/31/2036	3.03E-04	5.66E-04	5.03E-03	2.09E-03	8.65E-05	2.23E-04	4.45E-04	1.54E-03	4.20E-04	7.66E-07	1.97E-03	2.77E-03	8.22E-04	1.18E-04	3.89E-03
12/31/2037	3.11E-04	5.63E-04	5.05E-03	2.09E-03	8.67E-05	2.29E-04	4.47E-04	1.58E-03	4.23E-04	8.13E-07	1.97E-03	2.80E-03	8.44E-04	1.19E-04	3.91E-03
12/31/2038	3.25E-04	5.81E-04	5.10E-03	2.09E-03	8.70E-05	2.25E-04	4.49E-04	1.63E-03	4.24E-04	8.77E-07	2.03E-03	2.81E-03	8.73E-04	1.19E-04	3.90E-03
12/31/2039	3.45E-04	6.10E-04	5.18E-03	2.09E-03	8.78E-05	2.18E-04	4.52E-04	1.68E-03	4.26E-04	9.61E-07	2.14E-03	2.81E-03	9.15E-04	1.18E-04	3.94E-03
12/31/2040	3.50E-04	6.05E-04	5.19E-03	2.09E-03	8.80E-05	2.36E-04	4.55E-04	1.72E-03	4.27E-04	1.02E-06	2.16E-03	2.84E-03	9.28E-04	1.17E-04	3.99E-03
12/31/2041	3.60E-04	6.10E-04	5.22E-03	2.08E-03	8.81E-05	2.28E-04	4.58E-04	1.76E-03	4.29E-04	1.07E-06	2.20E-03	2.86E-03	9.48E-04	1.18E-04	4.00E-03
12/31/2042	3.64E-04	6.20E-04	5.24E-03	2.09E-03	8.85E-05	2.30E-04	4.59E-04	1.77E-03	4.29E-04	1.09E-06	2.23E-03	2.85E-03	9.56E-04	1.17E-04	4.03E-03
12/31/2043	3.97E-04	6.76E-04	5.35E-03	2.09E-03	8.92E-05	1.95E-04	4.48E-04	1.79E-03	4.30E-04	1.16E-06	2.42E-03	2.75E-03	1.02E-03	1.16E-04	3.93E-03
12/31/2044	4.36E-04	7.32E-04	5.47E-03	2.08E-03	8.98E-05	1.91E-04	4.30E-04	1.82E-03	4.32E-04	1.24E-06	2.63E-03	2.61E-03	1.09E-03	1.14E-04	3.84E-03
12/31/2045	4.54E-04	7.60E-04	5.53E-03	2.09E-03	9.05E-05	1.94E-04	4.23E-04	1.83E-03	4.33E-04	1.28E-06	2.73E-03	2.55E-03	1.13E-03	1.11E-04	3.83E-03
12/31/2046	4.65E-04	7.79E-04	5.57E-03	2.09E-03	9.10E-05	1.92E-04	4.20E-04	1.85E-03	4.34E-04	1.31E-06	2.79E-03	2.53E-03	1.15E-03	1.10E-04	3.83E-03
12/31/2047	4.67E-04	7.76E-04	5.57E-03	2.09E-03	9.08E-05	1.96E-04	4.18E-04	1.85E-03	4.34E-04	1.32E-06	2.80E-03	2.52E-03	1.15E-03	1.10E-04	3.81E-03
12/31/2048	4.71E-04	7.80E-04	5.58E-03	2.08E-03	9.08E-05	1.94E-04	4.18E-04	1.86E-03	4.34E-04	1.33E-06	2.82E-03	2.52E-03	1.15E-03	1.10E-04	3.79E-03
12/31/2049	4.73E-04	7.84E-04	5.59E-03	2.09E-03	9.08E-05	1.97E-04	4.20E-04	1.88E-03	4.36E-04	1.34E-06	2.83E-03	2.53E-03	1.15E-03	1.12E-04	3.77E-03
12/31/2050	4.80E-04	7.90E-04	5.62E-03	2.09E-03	9.10E-05	1.99E-04	4.21E-04	1.91E-03	4.37E-04	1.38E-06	2.87E-03	2.54E-03	1.18E-03	1.12E-04	3.79E-03
12/31/2051	4.90E-04	7.97E-04	5.65E-03	2.08E-03	9.11E-05	1.96E-04	4.21E-04	1.93E-03	4.37E-04	1.43E-06	2.92E-03	2.54E-03	1.20E-03	1.13E-04	3.79E-03
12/31/2052	4.89E-04	7.98E-04	5.64E-03	2.08E-03	9.10E-05	1.98E-04	4.23E-04	1.94E-03	4.38E-04	1.43E-06	2.91E-03	2.54E-03	1.20E-03	1.13E-04	3.81E-03
12/31/2053	4.94E-04	8.01E-04	5.65E-03	2.07E-03	9.11E-05	1.98E-04	4.23E-04	1.96E-03	4.39E-04	1.47E-06	2.94E-03	2.56E-03	1.22E-03	1.13E-04	3.82E-03
12/31/2054	5.13E-04	8.18E-04	5.72E-03	2.07E-03	9.15E-05	2.01E-04	4.29E-04	2.02E-03	4.40E-04	1.57E-06	3.04E-03	2.58E-03	1.27E-03	1.13E-04	3.85E-03
12/31/2055	5.36E-04	8.44E-04	5.81E-03	2.07E-03	9.20E-05	1.94E-04	4.31E-04	2.08E-03	4.40E-04	1.67E-06	3.16E-03	2.57E-03	1.34E-03	1.11E-04	3.90E-03
12/31/2056	5.73E-04	8.81E-04	5.96E-03	2.07E-03	9.29E-05	2.04E-04	4.42E-04	2.20E-03	4.44E-04	1.88E-06	3.35E-03	2.62E-03	1.47E-03	1.12E-04	4.00E-03
12/31/2057	6.02E-04	8.95E-04	6.08E-03	2.06E-03	9.35E-05	2.13E-04	4.55E-04	2.31E-03	4.47E-04	2.07E-06	3.51E-03	2.68E-03	1.59E-03	1.12E-04	4.10E-03
12/31/2058	6.54E-04	9.29E-04	6.28E-03	2.04E-03	9.45E-05	2.16E-04	4.70E-04	2.48E-03	4.50E-04	2.36E-06	3.78E-03	2.74E-03	1.78E-03	1.11E-04	4.24E-03
12/31/2059	6.93E-04	9.62E-04	6.44E-03	2.04E-03	9.52E-05	2.20E-04	4.83E-04	2.61E-03	4.51E-04	2.60E-06	3.98E-03	2.80E-03	1.93E-03	1.11E-04	4.36E-03
12/31/2060	7.57E-04	1.01E-03	6.70E-03	2.02E-03	9.64E-05	2.31E-04	5.05E-04	2.82E-03	4.56E-04	2.97E-06	4.32E-03	2.89E-03	2.18E-03	1.11E-04	4.55E-03
12/31/2061	8.06E-04	1.04E-03	6.90E-03	2.00E-03	9.71E-05	2.36E-04	5.23E-04	2.99E-03	4.59E-04	3.28E-06	4.58E-03	2.97E-03	2.39E-03	1.11E-04	4.70E-03
12/31/2062	8.60E-04	1.09E-03	7.13E-03	1.99E-03	9.78E-05	2.44E-04	5.40E-04	3.16E-03	4.60E-04	3.59E-06	4.87E-03	3.04E-03	2.61E-03	1.11E-04	4.84E-03
12/31/2063	8.98E-04	1.12E-03	7.30E-03	1.99E-03	9.85E-05	2.44E-04	5.51E-04	3.27E-03	4.64E-04	3.79E-06	5.07E-03	3.08E-03	2.76E-03	1.13E-04	4.91E-03
12/31/2064	9.11E-04	1.13E-03	7.36E-03	1.99E-03	9.87E-05	2.48E-04	5.59E-04	3.31E-03	4.62E-04	3.88E-06	5.14E-03	3.11E-03	2.83E-03	1.11E-04	4.99E-03
12/31/2065	9.25E-04	1.15E-03	7.43E-03	1.99E-03	9.89E-05	2.43E-04	5.63E-04	3.35E-03	4.64E-04	3.95E-06	5.22E-03	3.11E-03	2.90E-03	1.12E-04	5.03E-03
12/31/2066	9.30E-04	1.14E-03	7.46E-03	1.98E-03	9.89E-05	2.52E-04	5.68E-04	3.37E-03	4.62E-04	4.00E-06	5.25E-03	3.14E-03	2.95E-03	1.11E-04	5.08E-03
12/31/2067	9.39E-04	1.15E-03	7.50E-03	1.98E-03	9.90E-05	2.44E-04	5.69E-04	3.39E-03	4.63E-04	4.04E-06	5.30E-03	3.14E-03	3.00E-03	1.12E-04	5.09E-03
12/31/2068	9.41E-04	1.14E-03	7.52E-03	1.98E-03	9.90E-05	2.48E-04	5.70E-04	3.38E-03	4.62E-04	4.05E-06	5.31E-03	3.14E-03	3.02E-03	1.11E-04	5.10E-03
12/31/2069	9.38E-04	1.14E-03	7.52E-03	1.99E-03	9.89E-05	2.45E-04	5.71E-04	3.37E-03	4.62E-04	4.03E-06	5.30E-03	3.14E-03	3.03E-03	1.11E-04	5.10E-03
12/31/2070	9.46E-04	1.15E-03	7.55E-03	1.98E-03	9.90E-05	2.49E-04	5.73E-04	3.38E-03	4.60E-04	4.07E-06	5.34E-03	3.15E-03	3.08E-03	1.10E-04	5.14E-03
12/31/2071	9.45E-04	1.14E-03	7.55E-03	1.98E-03	9.87E-05	2.54E-04	5.76E-04	3.39E-03	4.60E-04	4.09E-06	5.34E-03	3.16E-03	3.10E-03	1.12E-04	5.15E-03
12/31/2072	9.41E-04	1.13E-03	7.54E-03	1.97E-03	9.84E-05	2.55E-04	5.77E-04	3.38E-03	4.59E-04	4.08E-06	5.32E-03	3.17E-03	3.11E-03	1.11E-04	5.18E-03
12/31/2073	9.38E-04	1.13E-03	7.54E-03	1.97E-03	9.83E-05	2.51E-04	5.77E-04	3.36E-03	4.58E-04	4.06E-06	5.31E-03	3.16E-03	3.11E-03	1.11E-04	5.18E-03
12/31/2074	9.34E-04	1.12E-03	7.53E-03	1.98E-03	9.83E-05	2.49E-04	5.75E-04	3.34E-03	4.57E-04	4.03E-06	5.29E-03	3.15E-03	3.10E-03	1.10E-04	5.17E-03
12/31/2075	9.19E-04	1.11E-03	7.47E-03	1.99E-03	9.81E-05	2.41E-04	5.68E-04	3.27E-03	4.56E-04	3.92E-06	5.21E-03	3.11E-03	3.03E-03	1.11E-04	5.08E-03
12/31/2076	9.11E-04	1.11E-03	7.44E-03	1.99E-03	9.79E-05	2.47E-04	5.66E-04	3.25E-03	4.56E-04	3.87E-06	5.17E-03	3.10E-03	3.02E-03	1.13E-04	5.05E-03
12/31/2077	9.11E-04	1.10E-03	7.45E-03	1.98E-03	9.74E-05	2.61E-04	5.72E-04	3.26E-03	4.53E-04	3.91E-06	5.17E-03	3.14E-03	3.07E-03	1.10E-04	5.12E-03
12/31/2078	9.06E-04	1.09E-03	7.43E-03	1.98E-03	9.73E-05	2.50E-04	5.70E-04	3.24E-03	4.52E-04	3.88E-06	5.14E-03	3.13E-03	3.06E-03	1.10E-04	5.12E-03
12/31/2079	9.06E-04	1.08E-03	7.43E-03	1.97E-03	9.71E-05	2.57E-04	5.72E-04	3.23E-03	4.51E-04	3.89E-06	5.14E-03	3.13E-03	3.09E-03	1.09E-04	5.15E-03
12/31/2080	9.05E-04	1.07E-03	7.43E-03	1.97E-03	9.69E-05	2.57E-04	5.73E-04	3.21E-03	4.49E-04	3.89E-06	5.14E-03	3.13E-03	3.11E-03	1.08E-04	5.18E-03
12/31/2081	8.96E-04	1.07E-03	7.40E-03	1.98E-03	9.68E-05	2.43E-04	5.66E-04	3.16E-03	4.48E-04	3.81E-06	5.10E-03	3.09E-03	3.06E-03	1.08E-04	5.12E-03
12/31/2082	8.88E-04	1.07E-03	7.37E-03	1.98E-03	9.63E-05	2.53E-04	5.65E-04	3.14E-03	4.48E-04	3.76E-06	5.07E-03	3.08E-03	3.05E-03	1.11E-04	5.07E-03
12/31/2083	8.71E-04	1.06E-03	7.28E-03	1.98E-03	9.56E-05	2.39E-04	5.55E-04	3.08E-03	4.45E-04	3.66E-06	4.98E-03	3.04E-03	2.97E-03	1.11E-04	4.99E-03
12/31/2084	8.70E-04	1.05E-03	7.26E-03	1.97E-03	9.51E-05	2.43E-04	5.52E-04	3.05E-03	4.41E-04	3.65E-06	4.98E-03	3.02E-03	2.97E-03	1.10E-04	4.96E-03
12/31/2085	8.68E-04	1.04E-03	7.24E-03	1.96E-03	9.46E-05	2.41E-04	5.49E-04	3.03E-03	4.40E-04	3.64E-06	4.98E-03	3.00E-03	2.96E-03	1.11E-04	4.95E-03
12/31/2086	8.66E-04	1.04E-03	7.23E-03	1.96E-03	9.45E-05	2.41E-04	5.49E-04	3.01E-03	4.38E-04	3.63E-06	4.98E-03	3.00E-03	2.95E-03	1.09E-04	4.95E-03
12/31/2087	8.67E-04	1.03E-03	7.23E-03	1.96E-03	9.43E-05	2.41E-04	5.46E-04	2.99E-03	4.37E-04	3.63E-06	5.00E-03	2.99E-03	2.94E-03	1.10E-04	4.92E-03
12/31/2088	8.65E-04	1.02E-03	7.22E-03	1.96E-03	9.38E-05	2.45E-04	5.44E-04	2.97E-03	4.36E-04	3.62E-06	5.00E-03	2.98E-03	2.94E-03	1.11E-04	4.91E-03
12/31/2089	8.71E-04	1.02E-03	7.24E-03	1.96E-03	9.39E-05	2.40E-04	5.46E-04	2.97E-03	4.37E-04	3.64E-06	5.04E-03	2.98E-03	2.95E-03	1.12E-04	4.90E-03
12/31/2090	8.62E-04	1.01E-03	7.20E-03	1.97E-03	9.39E-05	2.39E-04	5.39E-04	2.92E-03	4.36E-04	3.57E-06	5.01E-03	2.95E-03	2.89E-03	1.11E-04	4.87E-03
12/31/2091	8.63E-04	1.00E-03	7.21E-03	1.96E-03	9.36E-05	2.45E-04	5.43E-04	2.92E-03	4.34E-04	3.59E-06	5.02E-03	2.96E-03	2.92E-03	1.10E-04	4.91E-03
12/31/2092	8.64E-04	1.00E-03	7.21E-03	1.96E-03	9.37E-05	2.36E-04	5.40E-04	2.90E-03	4.33E-04	3.58E-06	5.03E-03	2.94E-03	2.91E-03	1.10E-04	4.89E-03
12/31/2093	8.62E-04	9.99E-04	7.21E-03	1.96E-03	9.35E-05	2.39E-04	5.39E-04	2.88E-03	4.32E-04	3.57E-06	5.03E-03	2.93E-03	2.91E-03	1.09E-04	4.91E-03
12/31/2094	8.63E-04	9.96E-04	7.20E-03	1.97E-03	9.35E-05	2.26E-04	5.32E-04	2.86E-03	4.33E-04	3.54E-06	5.05E-03	2.90E-03	2.85E-03	1.10E-04	4.82E-03
12/31/2095	8.55E-04	9.77E-04	7.17E-03	1.97E-03	9.29E-05	2.44E-04	5.33E-04	2.84E-03	4.31E-04	3.52E-06	5.01E-03	2.92E-03	2.86E-03	1.11E-04	4.85E-03
12/31/2096	8.57E-04	9.72E-04	7.20E-03	1.96E-03	9.25E-05	2.50E-04	5.41E-04	2.85E-03	4.28E-04	3.57E-06	5.03E-03	2.95E-03	2.93E-03	1.10E-04	4.92E-03
12/31/2097	8.62E-04	9.71E-04	7.23E-03	1.95E-03	9.25E-05	2.52E-04	5.45E-04	2.86E-03	4.27E-04	3.60E-06	5.05E-03	2.96E-03	2.99E-03	1.09E-04	4.97E-03
12/31/2098	8.60E-04	9.67E-04	7.22E-03	1.95E-03	9.24E-05	2.46E-04	5.43E-04	2.84E-03	4.26E-04	3.59E-06	5.04E-03	2.95E-03	3.00E-03	1.08E-04	4.98E-03
12/31/2099	8.47E-04	9.60E-04	7.18E-03	1.95E-03	9.18E-05	2.50E-04	5.43E-04	2.81E-03	4.24E-04	3.53E-06	4.97E-03	2.94E-03	2.98E-03	1.09E-04	4.95E-03
12/31/2100	8.27E-04	9.58E-04	7.10E-03	1.96E-03	9.19E-05	2.36E-04	5.36E-04	2.76E-03	4.25E-04	3.40E-06	4.85E-03	2.91E-03	2.91E-03	1.09E-04	4.89E-03
12/31/2101	8.08E-04	9.49E-04	7.05E-03	1.96E-03	9.17E-05	2.42E-04	5.36E-04	2.73E-03	4.25E-04	3.30E-06	4.72E-03	2.91E-03	2.91E-03	1.10E-04	4.85E-03
12/31/2102	7.86E-04	9.37E-04	6.97E-03	1.96E-03	9.15E-05	2.40E-04	5.32E-04	2.69E-03	4.24E-04	3.18E-06	4.59E-03	2.90E-03	2.88E-03	1.11E-04	4.80E-03
12/31/2103	7.81E-04	9.40E-04	6.97E-03	1.96E-03	9.11E-05	2.44E-04	5.36E-04	2.68E-03	4.21E-04	3.17E-06	4.55E-03	2.90E-03	2.93E-03	1.09E-04	4.85E-03
12/31/2104	7.66E-04	9.31E-04	6.91E-03	1.96E-03	9.11E-05	2.34E-04	5.30E-04	2.64E-03	4.21E-04	3.08E-06	4.46E-03	2.88E-03	2.86E-03	1.09E-04	4.82E-03
12/31/2105	7.64E-04	9.31E-04	6.91E-03	1.97E-03	9.13E-05	2.39E-04	5.30E-04	2.63E-03	4.21E-04	3.06E-06	4.45E-03	2.88E-03	2.85E-03	1.08E-04	4.81E-03
12/31/2106	7.60E-04	9.25E-04	6.89E-03	1.96E-03	9.10E-05	2.39E-04	5.28E-04	2.61E-03	4.21E-04	3.05E-06	4.43E-03	2.88E-03	2.86E-03	1.09E-04	4.82E-03
12/31/2107	7.62E-04	9.26E-04	6.91E-03	1.96E-03	9.08E-05	2.44E-04	5.33E-04	2.62E-03	4.19E-04	3.07E-06	4.44E-03	2.89E-03	2.90E-03	1.08E-04	4.86E-03
12/31/2108	7.63E-04	9.33E-04	6.91E-03	1.96E-03	9.11E-05	2.32E-04	5.29E-04	2.61E-03	4.19E-04	3.05E-06	4.45E-03	2.86E-03	2.88E-03	1.08E-04	4.82E-03
12/31/2109	7.61E-04	9.25E-04	6.91E-03	1.96E-03	9.07E-05	2.41E-04	5.29E-04	2.61E-03	4.20E-04	3.04E-06	4.44E-03	2.87E-03	2.89E-03	1.11E-04	4.80E-03
12/31/2110	7.57E-04	9.24E-04	6.89E-03	1.96E-03	9.05E-05	2.41E-04	5.30E-04	2.60E-03	4.18E-04	3.03E-06	4.42E-03	2.87E-03	2.89E-03	1.09E-04	4.82E-03
12/31/2111	7.53E-04	9.19E-04	6.88E-03	1.96E-03	9.04E-05	2.40E-04	5.30E-04	2.58E-03	4.17E-04	3.01E-06	4.40E-03	2.87E-03	2.88E-03	1.09E-04	4.81E-03
1/1/2112	8.99E-04	1.07E-03	7.46E-03	1.97E-03	9.42E-05	4.69E-05	5.39E-04	2.80E-03	4.28E-04	3.47E-06	5.21E-03	2.64E-03	3.24E-03	1.05E-04	4.73E-03
Maxium Concentration	**1.01E-03**	**1.15E-03**	**7.55E-03**	**2.15E-03**	**9.91E-05**	**6.69E-04**	**1.32E-03**	**3.39E-03**	**4.64E-04**	**5.55E-06**	**1.03E-02**	**3.90E-03**	**3.24E-03**	**1.32E-04**	**5.18E-03**

Yearly-Averaged Mean Metal Concentrations in Open Pit (mg/L)

Compound	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc
LWG (mg/L)	**-**	**0.025**	**-**	**0.1**	**0.08**	**0.05**	**1**	**0.3**	**0.1**	**0.003**	**0.05**	**1**	**0.05**	**-**	**0.05**
Year															
12/31/2010	6.05E-05	3.69E-04	3.11E-03	8.17E-04	3.51E-05	2.53E-04	1.76E-04	8.52E-04	1.57E-04	5.52E-09	3.96E-04	2.60E-03	1.73E-04	3.73E-05	2.58E-03
12/31/2011	7.50E-05	3.73E-04	3.80E-03	1.66E-03	6.35E-05	5.22E-05	2.71E-04	5.66E-04	3.00E-04	5.58E-09	6.87E-04	2.21E-03	2.65E-04	8.15E-05	2.89E-03
12/31/2012	8.61E-05	3.70E-04	4.06E-03	1.95E-03	7.34E-05	6.98E-05	3.10E-04	5.12E-04	3.51E-04	5.83E-09	8.22E-04	2.13E-03	2.98E-04	9.65E-05	3.07E-03
12/31/2013	1.59E-04	4.38E-04	4.54E-03	2.08E-03	8.30E-05	1.19E-04	3.55E-04	1.29E-03	3.89E-04	1.41E-06	2.97E-03	2.25E-03	3.66E-04	1.04E-04	3.38E-03
12/31/2014	2.59E-04	4.82E-04	5.02E-03	2.14E-03	9.10E-05	1.21E-04	3.74E-04	1.64E-03	4.07E-04	2.42E-06	5.58E-03	2.33E-03	4.36E-04	1.07E-04	3.64E-03
12/31/2015	3.53E-04	4.92E-04	5.34E-03	2.15E-03	9.38E-05	1.28E-04	3.80E-04	1.83E-03	4.17E-04	3.03E-06	6.76E-03	2.38E-03	4.62E-04	1.11E-04	3.74E-03
12/31/2016	4.49E-04	5.25E-04	5.63E-03	2.15E-03	9.50E-05	1.24E-04	3.85E-04	1.97E-03	4.20E-04	3.56E-06	7.60E-03	2.39E-03	4.79E-04	1.11E-04	3.80E-03
12/31/2017	5.45E-04	5.40E-04	5.92E-03	2.15E-03	9.56E-05	1.30E-04	3.86E-04	2.10E-03	4.21E-04	4.03E-06	8.27E-03	2.41E-03	4.91E-04	1.12E-04	3.81E-03
12/31/2018	6.57E-04	5.63E-04	6.25E-03	2.16E-03	9.66E-05	1.28E-04	3.86E-04	2.24E-03	4.23E-04	4.60E-06	9.09E-03	2.42E-03	5.05E-04	1.12E-04	3.83E-03
12/31/2019	7.51E-04	5.85E-04	6.54E-03	2.16E-03	9.75E-05	1.31E-04	3.88E-04	2.36E-03	4.26E-04	5.07E-06	9.79E-03	2.42E-03	5.17E-04	1.13E-04	3.86E-03
12/31/2020	8.41E-04	6.15E-04	6.82E-03	2.17E-03	9.88E-05	1.18E-04	3.88E-04	2.48E-03	4.32E-04	5.55E-06	1.06E-02	2.42E-03	5.32E-04	1.16E-04	3.87E-03
12/31/2021	8.64E-04	6.01E-04	6.86E-03	2.16E-03	9.85E-05	1.40E-04	3.89E-04	2.50E-03	4.31E-04	5.62E-06	1.06E-02	2.44E-03	5.31E-04	1.14E-04	3.93E-03
12/31/2022	9.04E-04	5.97E-04	6.97E-03	2.15E-03	9.89E-05	1.37E-04	3.91E-04	2.56E-03	4.31E-04	5.80E-06	1.08E-02	2.46E-03	5.47E-04	1.12E-04	3.98E-03
12/31/2023	1.01E-03	6.31E-04	7.31E-03	2.16E-03	1.00E-04	1.37E-04	3.94E-04	2.75E-03	4.37E-04	6.35E-06	1.15E-02	2.48E-03	6.06E-04	1.14E-04	4.02E-03
12/31/2024	1.12E-03	6.65E-04	7.62E-03	2.15E-03	1.01E-04	1.42E-04	3.97E-04	2.92E-03	4.42E-04	6.88E-06	1.22E-02	2.51E-03	6.51E-04	1.16E-04	4.08E-03
12/31/2025	1.19E-03	6.97E-04	7.85E-03	2.15E-03	1.02E-04	1.44E-04	4.01E-04	3.03E-03	4.43E-04	7.26E-06	1.27E-02	2.52E-03	6.82E-04	1.14E-04	4.15E-03
12/31/2026	1.28E-03	7.28E-04	8.12E-03	2.16E-03	1.03E-04	1.33E-04	4.03E-04	3.16E-03	4.47E-04	7.70E-06	1.34E-02	2.53E-03	7.18E-04	1.15E-04	4.16E-03
12/31/2027	1.31E-03	7.36E-04	8.23E-03	2.16E-03	1.04E-04	1.40E-04	4.05E-04	3.22E-03	4.49E-04	7.88E-06	1.36E-02	2.54E-03	7.45E-04	1.14E-04	4.20E-03
12/31/2028	1.30E-03	7.33E-04	8.21E-03	2.16E-03	1.04E-04	1.45E-04	4.07E-04	3.23E-03	4.48E-04	7.83E-06	1.35E-02	2.55E-03	7.60E-04	1.13E-04	4.23E-03
12/31/2029	1.20E-03	7.15E-04	7.88E-03	2.15E-03	1.03E-04	1.41E-04	4.07E-04	3.12E-03	4.47E-04	7.27E-06	1.26E-02	2.57E-03	7.59E-04	1.14E-04	4.17E-03
12/31/2030	9.79E-04	6.86E-04	7.23E-03	2.15E-03	1.01E-04	1.35E-04	4.08E-04	2.87E-03	4.42E-04	6.19E-06	1.10E-02	2.56E-03	7.50E-04	1.13E-04	4.11E-03
12/31/2031	7.22E-04	6.50E-04	6.47E-03	2.14E-03	9.92E-05	1.25E-04	4.07E-04	2.57E-03	4.37E-04	4.93E-06	9.29E-03	2.53E-03	7.41E-04	1.13E-04	4.03E-03
12/31/2032	4.94E-04	6.26E-04	5.82E-03	2.15E-03	9.83E-05	1.14E-04	4.07E-04	2.31E-03	4.35E-04	3.83E-06	7.82E-03	2.51E-03	7.43E-04	1.13E-04	3.95E-03
12/31/2033	3.21E-04	5.30E-04	5.15E-03	2.13E-03	9.17E-05	8.12E-05	3.86E-04	1.43E-03	4.13E-04	1.68E-06	4.91E-03	2.44E-03	6.88E-04	1.10E-04	3.72E-03
12/31/2034	2.45E-04	4.88E-04	4.79E-03	2.11E-03	8.55E-05	8.44E-05	3.80E-04	1.14E-03	4.03E-04	5.05E-07	2.44E-03	2.40E-03	6.41E-04	1.08E-04	3.58E-03
12/31/2035	2.35E-04	4.96E-04	4.74E-03	2.10E-03	8.43E-05	7.31E-05	3.79E-04	1.09E-03	4.03E-04	2.22E-07	1.82E-03	2.39E-03	6.50E-04	1.08E-04	3.55E-03
12/31/2036	2.38E-04	4.95E-04	4.74E-03	2.10E-03	8.41E-05	7.97E-05	3.81E-04	1.10E-03	4.04E-04	1.79E-07	1.67E-03	2.40E-03	6.65E-04	1.10E-04	3.54E-03
12/31/2037	2.42E-04	4.86E-04	4.74E-03	2.09E-03	8.40E-05	8.41E-05	3.82E-04	1.13E-03	4.06E-04	1.95E-07	1.64E-03	2.42E-03	6.78E-04	1.10E-04	3.55E-03
12/31/2038	2.51E-04	4.97E-04	4.78E-03	2.09E-03	8.41E-05	8.16E-05	3.84E-04	1.17E-03	4.07E-04	2.37E-07	1.67E-03	2.43E-03	6.97E-04	1.10E-04	3.54E-03
12/31/2039	2.67E-04	5.26E-04	4.85E-03	2.10E-03	8.49E-05	7.15E-05	3.86E-04	1.20E-03	4.09E-04	2.95E-07	1.75E-03	2.42E-03	7.32E-04	1.10E-04	3.55E-03
12/31/2040	2.69E-04	5.16E-04	4.84E-03	2.09E-03	8.49E-05	9.08E-05	3.87E-04	1.23E-03	4.09E-04	3.36E-07	1.76E-03	2.45E-03	7.39E-04	1.09E-04	3.60E-03
12/31/2041	2.75E-04	5.17E-04	4.86E-03	2.09E-03	8.51E-05	8.01E-05	3.90E-04	1.26E-03	4.10E-04	3.75E-07	1.78E-03	2.46E-03	7.52E-04	1.09E-04	3.62E-03
12/31/2042	2.81E-04	5.27E-04	4.89E-03	2.09E-03	8.54E-05	8.32E-05	3.91E-04	1.27E-03	4.11E-04	3.99E-07	1.82E-03	2.46E-03	7.64E-04	1.09E-04	3.64E-03
12/31/2043	3.26E-04	6.00E-04	5.03E-03	2.09E-03	8.64E-05	2.90E-05	3.75E-04	1.30E-03	4.12E-04	4.88E-07	2.08E-03	2.31E-03	8.49E-04	1.09E-04	3.48E-03
12/31/2044	3.78E-04	6.82E-04	5.21E-03	2.09E-03	8.74E-05	2.56E-05	3.51E-04	1.33E-03	4.15E-04	5.96E-07	2.37E-03	2.12E-03	9.51E-04	1.05E-04	3.36E-03
12/31/2045	4.02E-04	7.18E-04	5.29E-03	2.10E-03	8.80E-05	2.70E-05	3.40E-04	1.34E-03	4.16E-04	6.47E-07	2.50E-03	2.04E-03	9.98E-04	1.02E-04	3.32E-03
12/31/2046	4.16E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.51E-05	3.36E-04	1.36E-03	4.17E-04	6.76E-07	2.58E-03	1.99E-03	1.02E-03	1.00E-04	3.32E-03
12/31/2047	4.19E-04	7.41E-04	5.33E-03	2.10E-03	8.85E-05	2.93E-05	3.33E-04	1.36E-03	4.17E-04	6.86E-07	2.59E-03	1.99E-03	1.03E-03	1.00E-04	3.30E-03
12/31/2048	4.23E-04	7.44E-04	5.35E-03	2.09E-03	8.85E-05	2.73E-05	3.33E-04	1.37E-03	4.17E-04	7.00E-07	2.61E-03	1.98E-03	1.03E-03	1.00E-04	3.28E-03
12/31/2049	4.26E-04	7.48E-04	5.36E-03	2.10E-03	8.84E-05	2.76E-05	3.33E-04	1.38E-03	4.18E-04	7.08E-07	2.63E-03	1.98E-03	1.04E-03	1.01E-04	3.25E-03
12/31/2050	4.34E-04	7.55E-04	5.38E-03	2.09E-03	8.86E-05	2.90E-05	3.35E-04	1.41E-03	4.19E-04	7.52E-07	2.67E-03	1.99E-03	1.06E-03	1.02E-04	3.27E-03
12/31/2051	4.43E-04	7.64E-04	5.42E-03	2.09E-03	8.87E-05	2.70E-05	3.36E-04	1.44E-03	4.20E-04	7.97E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.27E-03
12/31/2052	4.43E-04	7.66E-04	5.41E-03	2.09E-03	8.86E-05	2.99E-05	3.37E-04	1.44E-03	4.20E-04	8.07E-07	2.72E-03	2.00E-03	1.09E-03	1.02E-04	3.29E-03
12/31/2053	4.46E-04	7.67E-04	5.42E-03	2.08E-03	8.86E-05	2.96E-05	3.38E-04	1.46E-03	4.20E-04	8.33E-07	2.73E-03	2.01E-03	1.10E-03	1.02E-04	3.31E-03
12/31/2054	4.63E-04	7.80E-04	5.48E-03	2.08E-03	8.89E-05	3.16E-05	3.42E-04	1.52E-03	4.22E-04	9.24E-07	2.82E-03	2.03E-03	1.15E-03	1.03E-04	3.33E-03
12/31/2055	4.86E-04	8.06E-04	5.58E-03	2.08E-03	8.96E-05	3.04E-05	3.48E-04	1.59E-03	4.23E-04	1.04E-06	2.94E-03	2.05E-03	1.23E-03	1.02E-04	3.38E-03
12/31/2056	5.25E-04	8.46E-04	5.74E-03	2.08E-03	9.05E-05	3.63E-05	3.58E-04	1.70E-03	4.27E-04	1.25E-06	3.15E-03	2.08E-03	1.36E-03	1.02E-04	3.48E-03
12/31/2057	5.60E-04	8.67E-04	5.87E-03	2.06E-03	9.10E-05	4.49E-05	3.71E-04	1.84E-03	4.29E-04	1.47E-06	3.33E-03	2.15E-03	1.50E-03	1.02E-04	3.61E-03
12/31/2058	6.13E-04	8.98E-04	6.08E-03	2.05E-03	9.21E-05	5.38E-05	3.90E-04	2.02E-03	4.34E-04	1.80E-06	3.61E-03	2.23E-03	1.70E-03	1.02E-04	3.78E-03
12/31/2059	6.65E-04	9.38E-04	6.30E-03	2.04E-03	9.31E-05	5.40E-05	4.07E-04	2.19E-03	4.37E-04	2.10E-06	3.88E-03	2.31E-03	1.90E-03	1.02E-04	3.92E-03
12/31/2060	7.28E-04	9.86E-04	6.56E-03	2.02E-03	9.42E-05	6.84E-05	4.31E-04	2.41E-03	4.40E-04	2.49E-06	4.21E-03	2.41E-03	2.16E-03	1.01E-04	4.12E-03
12/31/2061	7.84E-04	1.03E-03	6.79E-03	2.01E-03	9.50E-05	6.69E-05	4.50E-04	2.60E-03	4.44E-04	2.82E-06	4.50E-03	2.50E-03	2.39E-03	1.02E-04	4.31E-03
12/31/2062	8.41E-04	1.06E-03	7.03E-03	1.99E-03	9.59E-05	8.34E-05	4.72E-04	2.79E-03	4.46E-04	3.18E-06	4.81E-03	2.60E-03	2.63E-03	1.02E-04	4.48E-03
12/31/2063	8.91E-04	1.11E-03	7.25E-03	1.99E-03	9.68E-05	8.13E-05	4.86E-04	2.95E-03	4.50E-04	3.45E-06	5.08E-03	2.65E-03	2.83E-03	1.03E-04	4.59E-03
12/31/2064	9.11E-04	1.12E-03	7.35E-03	1.98E-03	9.70E-05	8.86E-05	4.96E-04	3.01E-03	4.50E-04	3.58E-06	5.19E-03	2.69E-03	2.94E-03	1.02E-04	4.68E-03
12/31/2065	9.23E-04	1.13E-03	7.41E-03	1.98E-03	9.72E-05	8.59E-05	5.01E-04	3.04E-03	4.50E-04	3.65E-06	5.25E-03	2.70E-03	3.00E-03	1.02E-04	4.74E-03
12/31/2066	9.33E-04	1.14E-03	7.46E-03	1.98E-03	9.72E-05	8.66E-05	5.06E-04	3.07E-03	4.50E-04	3.71E-06	5.31E-03	2.72E-03	3.07E-03	1.02E-04	4.79E-03
12/31/2067	9.44E-04	1.14E-03	7.52E-03	1.98E-03	9.74E-05	8.44E-05	5.11E-04	3.10E-03	4.50E-04	3.77E-06	5.37E-03	2.74E-03	3.13E-03	1.03E-04	4.82E-03
12/31/2068	9.46E-04	1.14E-03	7.54E-03	1.98E-03	9.74E-05	9.16E-05	5.12E-04	3.10E-03	4.49E-04	3.78E-06	5.38E-03	2.75E-03	3.16E-03	1.02E-04	4.83E-03
12/31/2069	9.41E-04	1.13E-03	7.53E-03	1.98E-03	9.73E-05	8.11E-05	5.12E-04	3.07E-03	4.49E-04	3.75E-06	5.36E-03	2.74E-03	3.16E-03	1.03E-04	4.82E-03
12/31/2070	9.48E-04	1.14E-03	7.56E-03	1.98E-03	9.73E-05	9.01E-05	5.15E-04	3.09E-03	4.48E-04	3.80E-06	5.40E-03	2.75E-03	3.21E-03	1.02E-04	4.86E-03
12/31/2071	9.50E-04	1.14E-03	7.57E-03	1.98E-03	9.72E-05	8.83E-05	5.17E-04	3.10E-03	4.48E-04	3.81E-06	5.42E-03	2.75E-03	3.23E-03	1.03E-04	4.88E-03
12/31/2072	9.44E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.78E-05	5.20E-04	3.09E-03	4.45E-04	3.81E-06	5.38E-03	2.77E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2073	9.42E-04	1.12E-03	7.55E-03	1.97E-03	9.67E-05	9.09E-05	5.19E-04	3.07E-03	4.45E-04	3.80E-06	5.37E-03	2.77E-03	3.26E-03	1.02E-04	4.93E-03
12/31/2074	9.38E-04	1.12E-03	7.54E-03	1.98E-03	9.67E-05	8.86E-05	5.18E-04	3.05E-03	4.44E-04	3.76E-06	5.36E-03	2.75E-03	3.25E-03	1.02E-04	4.91E-03
12/31/2075	9.24E-04	1.11E-03	7.49E-03	1.99E-03	9.66E-05	8.00E-05	5.10E-04	2.98E-03	4.44E-04	3.65E-06	5.29E-03	2.71E-03	3.19E-03	1.03E-04	4.82E-03
12/31/2076	9.14E-04	1.10E-03	7.46E-03	1.99E-03	9.62E-05	8.85E-05	5.08E-04	2.95E-03	4.43E-04	3.59E-06	5.24E-03	2.70E-03	3.16E-03	1.03E-04	4.78E-03
12/31/2077	9.06E-04	1.08E-03	7.43E-03	1.98E-03	9.55E-05	9.98E-05	5.11E-04	2.94E-03	4.39E-04	3.60E-06	5.19E-03	2.73E-03	3.18E-03	1.02E-04	4.83E-03
12/31/2078	9.05E-04	1.07E-03	7.43E-03	1.98E-03	9.54E-05	9.06E-05	5.12E-04	2.93E-03	4.37E-04	3.59E-06	5.18E-03	2.73E-03	3.20E-03	1.01E-04	4.86E-03
12/31/2079	9.01E-04	1.06E-03	7.42E-03	1.97E-03	9.52E-05	9.96E-05	5.13E-04	2.91E-03	4.36E-04	3.58E-06	5.16E-03	2.73E-03	3.22E-03	9.99E-05	4.89E-03
12/31/2080	9.00E-04	1.05E-03	7.42E-03	1.96E-03	9.48E-05	1.03E-04	5.15E-04	2.90E-03	4.34E-04	3.59E-06	5.16E-03	2.74E-03	3.24E-03	9.90E-05	4.93E-03
12/31/2081	8.94E-04	1.05E-03	7.40E-03	1.98E-03	9.49E-05	8.53E-05	5.08E-04	2.85E-03	4.34E-04	3.51E-06	5.14E-03	2.70E-03	3.20E-03	9.98E-05	4.86E-03
12/31/2082	8.87E-04	1.05E-03	7.37E-03	1.98E-03	9.44E-05	9.35E-05	5.04E-04	2.82E-03	4.32E-04	3.47E-06	5.11E-03	2.68E-03	3.18E-03	1.01E-04	4.81E-03
12/31/2083	8.73E-04	1.04E-03	7.28E-03	1.97E-03	9.35E-05	7.48E-05	4.95E-04	2.75E-03	4.29E-04	3.37E-06	5.04E-03	2.62E-03	3.12E-03	1.01E-04	4.71E-03
12/31/2084	8.64E-04	1.03E-03	7.22E-03	1.96E-03	9.26E-05	8.62E-05	4.90E-04	2.71E-03	4.24E-04	3.33E-06	5.00E-03	2.60E-03	3.08E-03	1.00E-04	4.66E-03
12/31/2085	8.65E-04	1.02E-03	7.22E-03	1.95E-03	9.22E-05	8.56E-05	4.88E-04	2.70E-03	4.22E-04	3.35E-06	5.03E-03	2.59E-03	3.09E-03	1.00E-04	4.66E-03
12/31/2086	8.66E-04	1.01E-03	7.21E-03	1.95E-03	9.20E-05	8.08E-05	4.85E-04	2.67E-03	4.21E-04	3.34E-06	5.04E-03	2.57E-03	3.07E-03	1.01E-04	4.64E-03
12/31/2087	8.67E-04	1.01E-03	7.21E-03	1.95E-03	9.17E-05	8.45E-05	4.84E-04	2.65E-03	4.19E-04	3.34E-06	5.06E-03	2.56E-03	3.06E-03	1.00E-04	4.62E-03
12/31/2088	8.68E-04	9.95E-04	7.20E-03	1.95E-03	9.13E-05	8.62E-05	4.81E-04	2.63E-03	4.19E-04	3.34E-06	5.09E-03	2.55E-03	3.05E-03	1.01E-04	4.60E-03
12/31/2089	8.75E-04	9.99E-04	7.23E-03	1.95E-03	9.13E-05	7.95E-05	4.81E-04	2.63E-03	4.19E-04	3.36E-06	5.15E-03	2.54E-03	3.06E-03	1.03E-04	4.59E-03
12/31/2090	8.71E-04	9.89E-04	7.21E-03	1.95E-03	9.14E-05	8.30E-05	4.77E-04	2.59E-03	4.18E-04	3.33E-06	5.14E-03	2.52E-03	3.03E-03	1.02E-04	4.58E-03
12/31/2091	8.67E-04	9.79E-04	7.19E-03	1.95E-03	9.10E-05	8.43E-05	4.78E-04	2.57E-03	4.16E-04	3.32E-06	5.13E-03	2.52E-03	3.02E-03	1.01E-04	4.59E-03
12/31/2092	8.69E-04	9.76E-04	7.20E-03	1.95E-03	9.11E-05	7.87E-05	4.76E-04	2.56E-03	4.16E-04	3.31E-06	5.15E-03	2.51E-03	3.02E-03	1.01E-04	4.58E-03
12/31/2093	8.70E-04	9.70E-04	7.21E-03	1.95E-03	9.08E-05	8.63E-05	4.76E-04	2.54E-03	4.14E-04	3.32E-06	5.16E-03	2.51E-03	3.03E-03	9.97E-05	4.61E-03
12/31/2094	8.73E-04	9.73E-04	7.21E-03	1.96E-03	9.10E-05	6.83E-05	4.68E-04	2.51E-03	4.15E-04	3.28E-06	5.20E-03	2.46E-03	2.96E-03	1.01E-04	4.51E-03
12/31/2095	8.67E-04	9.54E-04	7.18E-03	1.96E-03	9.05E-05	8.65E-05	4.68E-04	2.49E-03	4.13E-04	3.28E-06	5.18E-03	2.48E-03	2.97E-03	1.01E-04	4.53E-03
12/31/2096	8.67E-04	9.41E-04	7.19E-03	1.94E-03	8.98E-05	9.12E-05	4.75E-04	2.50E-03	4.10E-04	3.32E-06	5.17E-03	2.51E-03	3.04E-03	1.00E-04	4.61E-03
12/31/2097	8.68E-04	9.36E-04	7.21E-03	1.94E-03	8.96E-05	9.67E-05	4.81E-04	2.50E-03	4.08E-04	3.34E-06	5.18E-03	2.53E-03	3.09E-03	9.94E-05	4.67E-03
12/31/2098	8.66E-04	9.32E-04	7.20E-03	1.94E-03	8.95E-05	9.00E-05	4.80E-04	2.49E-03	4.07E-04	3.33E-06	5.17E-03	2.52E-03	3.11E-03	9.94E-05	4.67E-03
12/31/2099	8.54E-04	9.28E-04	7.16E-03	1.93E-03	8.89E-05	9.11E-05	4.78E-04	2.45E-03	4.05E-04	3.27E-06	5.10E-03	2.51E-03	3.10E-03	9.96E-05	4.65E-03
12/31/2100	8.29E-04	9.24E-04	7.08E-03	1.94E-03	8.89E-05	7.83E-05	4.72E-04	2.40E-03	4.05E-04	3.12E-06	4.95E-03	2.48E-03	3.05E-03	9.96E-05	4.59E-03
12/31/2101	7.98E-04	9.14E-04	6.98E-03	1.95E-03	8.88E-05	8.03E-05	4.68E-04	2.34E-03	4.05E-04	2.94E-06	4.75E-03	2.46E-03	3.00E-03	1.00E-04	4.51E-03
12/31/2102	7.73E-04	9.07E-04	6.90E-03	1.95E-03	8.86E-05	7.47E-05	4.66E-04	2.29E-03	4.05E-04	2.80E-06	4.58E-03	2.44E-03	2.98E-03	1.01E-04	4.47E-03
12/31/2103	7.60E-04	8.99E-04	6.87E-03	1.94E-03	8.80E-05	8.73E-05	4.71E-04	2.28E-03	4.01E-04	2.77E-06	4.49E-03	2.46E-03	3.03E-03	1.00E-04	4.53E-03
12/31/2104	7.49E-04	8.97E-04	6.84E-03	1.95E-03	8.81E-05	7.25E-05	4.66E-04	2.24E-03	4.01E-04	2.69E-06	4.43E-03	2.44E-03	2.98E-03	9.94E-05	4.49E-03
12/31/2105	7.41E-04	8.92E-04	6.81E-03	1.96E-03	8.82E-05	7.70E-05	4.62E-04	2.22E-03	4.01E-04	2.63E-06	4.38E-03	2.42E-03	2.94E-03	9.96E-05	4.46E-03
12/31/2106	7.39E-04	8.90E-04	6.80E-03	1.95E-03	8.80E-05	7.65E-05	4.63E-04	2.21E-03	4.01E-04	2.63E-06	4.37E-03	2.42E-03	2.96E-03	9.94E-05	4.48E-03
12/31/2107	7.38E-04	8.83E-04	6.80E-03	1.95E-03	8.77E-05	8.40E-05	4.66E-04	2.21E-03	3.98E-04	2.64E-06	4.37E-03	2.44E-03	2.99E-03	9.84E-05	4.52E-03
12/31/2108	7.39E-04	8.95E-04	6.81E-03	1.95E-03	8.79E-05	7.43E-05	4.64E-04	2.20E-03	3.99E-04	2.63E-06	4.38E-03	2.41E-03	2.98E-03	9.87E-05	4.50E-03
12/31/2109	7.36E-04	8.87E-04	6.80E-03	1.95E-03	8.76E-05	8.42E-05	4.62E-04	2.19E-03	3.99E-04	2.62E-06	4.36E-03	2.42E-03	2.99E-03	1.00E-04	4.48E-03
12/31/2110	7.34E-04	8.82E-04	6.79E-03	1.95E-03	8.73E-05	7.87E-05	4.63E-04	2.19E-03	3.98E-04	2.61E-06	4.35E-03	2.42E-03	2.99E-03	1.01E-04	4.48E-03
12/31/2111	7.31E-04	8.79E-04	6.78E-03	1.95E-03	8.72E-05	7.99E-05	4.63E-04	2.17E-03	3.97E-04	2.60E-06	4.34E-03	2.42E-03	2.99E-03	9.96E-05	4.48E-03
1/1/2112	7.36E-04	8.94E-04	6.81E-03	1.98E-03	8.86E-05	1.86E-05	4.61E-04	2.17E-03	4.03E-04	2.55E-06	4.39E-03	2.40E-03	2.94E-03	1.06E-04	4.32E-03
Maxium Concentration	**1.31E-03**	**1.14E-03**	**8.23E-03**	**2.17E-03**	**1.04E-04**	**2.53E-04**	**5.20E-04**	**3.23E-03**	**4.50E-04**	**7.88E-06**	**1.36E-02**	**2.77E-03**	**3.26E-03**	**1.16E-04**	**4.93E-03**

Yearly-Averaged Estimated Metal Concentrations in Fish Tissue
Fish Lake
(mg/kg wet Weight)

Compound	Arsenic	Chromium	Copper	Mercury	Selenium
BCF	**50**	**200**	**3174.025489**	**718.727105**	**170**
References	**US EPA, 2003**	**CSA, 1987**	**McGeer, 2003**	**McGeer, 2003**	**Davis, 1993**
12/31/2010	1.85E-02	5.05E-02	2.70E+00	3.97E-06	2.95E-02
12/31/2011	1.86E-02	1.04E-02	1.80E+00	4.01E-06	4.50E-02
12/31/2012	1.85E-02	1.40E-02	1.63E+00	4.19E-06	5.07E-02
12/31/2013	2.19E-02	2.37E-02	4.11E+00	1.01E-03	6.23E-02
12/31/2014	2.41E-02	2.42E-02	5.20E+00	1.74E-03	7.41E-02
12/31/2015	2.46E-02	2.56E-02	5.81E+00	2.18E-03	7.86E-02
12/31/2016	2.62E-02	2.48E-02	6.26E+00	2.56E-03	8.14E-02
12/31/2017	2.70E-02	2.60E-02	6.66E+00	2.90E-03	8.34E-02
12/31/2018	2.81E-02	2.55E-02	7.11E+00	3.30E-03	8.59E-02
12/31/2019	2.92E-02	2.63E-02	7.49E+00	3.64E-03	8.80E-02
12/31/2020	3.07E-02	2.37E-02	7.86E+00	3.99E-03	9.04E-02
12/31/2021	3.00E-02	2.79E-02	7.95E+00	4.04E-03	9.03E-02
12/31/2022	2.99E-02	2.73E-02	8.13E+00	4.17E-03	9.30E-02
12/31/2023	3.16E-02	2.74E-02	8.72E+00	4.57E-03	1.03E-01
12/31/2024	3.33E-02	2.83E-02	9.26E+00	4.94E-03	1.11E-01
12/31/2025	3.48E-02	2.87E-02	9.63E+00	5.22E-03	1.16E-01
12/31/2026	3.64E-02	2.67E-02	1.00E+01	5.53E-03	1.22E-01
12/31/2027	3.68E-02	2.79E-02	1.02E+01	5.66E-03	1.27E-01
12/31/2028	3.66E-02	2.89E-02	1.02E+01	5.63E-03	1.29E-01
12/31/2029	3.58E-02	2.81E-02	9.90E+00	5.23E-03	1.29E-01
12/31/2030	3.43E-02	2.69E-02	9.11E+00	4.45E-03	1.27E-01
12/31/2031	3.25E-02	2.51E-02	8.16E+00	3.54E-03	1.26E-01
12/31/2032	3.13E-02	2.28E-02	7.34E+00	2.76E-03	1.26E-01
12/31/2033	2.65E-02	1.62E-02	4.53E+00	1.21E-03	1.17E-01
12/31/2034	2.44E-02	1.69E-02	3.63E+00	3.63E-04	1.09E-01
12/31/2035	2.48E-02	1.46E-02	3.46E+00	1.59E-04	1.11E-01
12/31/2036	2.48E-02	1.59E-02	3.50E+00	1.29E-04	1.13E-01
12/31/2037	2.43E-02	1.68E-02	3.59E+00	1.40E-04	1.15E-01
12/31/2038	2.48E-02	1.63E-02	3.70E+00	1.70E-04	1.19E-01
12/31/2039	2.63E-02	1.43E-02	3.81E+00	2.12E-04	1.24E-01
12/31/2040	2.58E-02	1.82E-02	3.90E+00	2.41E-04	1.26E-01
12/31/2041	2.59E-02	1.60E-02	3.99E+00	2.70E-04	1.28E-01
12/31/2042	2.64E-02	1.66E-02	4.03E+00	2.87E-04	1.30E-01
12/31/2043	3.00E-02	5.81E-03	4.12E+00	3.51E-04	1.44E-01
12/31/2044	3.41E-02	5.12E-03	4.23E+00	4.29E-04	1.62E-01
12/31/2045	3.59E-02	5.41E-03	4.27E+00	4.65E-04	1.70E-01
12/31/2046	3.71E-02	5.02E-03	4.30E+00	4.86E-04	1.74E-01
12/31/2047	3.70E-02	5.85E-03	4.32E+00	4.93E-04	1.75E-01
12/31/2048	3.72E-02	5.46E-03	4.35E+00	5.03E-04	1.75E-01
12/31/2049	3.74E-02	5.52E-03	4.38E+00	5.09E-04	1.76E-01
12/31/2050	3.78E-02	5.79E-03	4.47E+00	5.40E-04	1.80E-01
12/31/2051	3.82E-02	5.41E-03	4.56E+00	5.73E-04	1.85E-01
12/31/2052	3.83E-02	5.97E-03	4.58E+00	5.80E-04	1.85E-01
12/31/2053	3.84E-02	5.91E-03	4.64E+00	5.99E-04	1.87E-01
12/31/2054	3.90E-02	6.32E-03	4.82E+00	6.64E-04	1.96E-01
12/31/2055	4.03E-02	6.09E-03	5.04E+00	7.51E-04	2.09E-01
12/31/2056	4.23E-02	7.25E-03	5.41E+00	8.98E-04	2.31E-01
12/31/2057	4.33E-02	8.98E-03	5.83E+00	1.06E-03	2.54E-01
12/31/2058	4.49E-02	1.08E-02	6.41E+00	1.29E-03	2.90E-01
12/31/2059	4.69E-02	1.08E-02	6.95E+00	1.51E-03	3.23E-01
12/31/2060	4.93E-02	1.37E-02	7.65E+00	1.79E-03	3.66E-01
12/31/2061	5.13E-02	1.34E-02	8.25E+00	2.03E-03	4.06E-01
12/31/2062	5.32E-02	1.67E-02	8.86E+00	2.28E-03	4.47E-01
12/31/2063	5.54E-02	1.63E-02	9.35E+00	2.48E-03	4.81E-01
12/31/2064	5.62E-02	1.77E-02	9.56E+00	2.58E-03	4.99E-01
12/31/2065	5.67E-02	1.72E-02	9.64E+00	2.62E-03	5.11E-01
12/31/2066	5.69E-02	1.73E-02	9.74E+00	2.67E-03	5.22E-01
12/31/2067	5.71E-02	1.69E-02	9.83E+00	2.71E-03	5.32E-01
12/31/2068	5.69E-02	1.83E-02	9.83E+00	2.72E-03	5.37E-01
12/31/2069	5.67E-02	1.62E-02	9.76E+00	2.70E-03	5.37E-01
12/31/2070	5.72E-02	1.80E-02	9.81E+00	2.73E-03	5.45E-01
12/31/2071	5.71E-02	1.77E-02	9.83E+00	2.74E-03	5.50E-01
12/31/2072	5.61E-02	1.96E-02	9.79E+00	2.74E-03	5.52E-01
12/31/2073	5.60E-02	1.82E-02	9.75E+00	2.73E-03	5.54E-01
12/31/2074	5.58E-02	1.77E-02	9.67E+00	2.70E-03	5.53E-01
12/31/2075	5.56E-02	1.60E-02	9.47E+00	2.62E-03	5.42E-01
12/31/2076	5.51E-02	1.77E-02	9.36E+00	2.58E-03	5.38E-01
12/31/2077	5.39E-02	2.00E-02	9.33E+00	2.58E-03	5.41E-01
12/31/2078	5.37E-02	1.81E-02	9.29E+00	2.58E-03	5.44E-01
12/31/2079	5.31E-02	1.99E-02	9.23E+00	2.57E-03	5.47E-01
12/31/2080	5.26E-02	2.06E-02	9.20E+00	2.58E-03	5.51E-01
12/31/2081	5.26E-02	1.71E-02	9.05E+00	2.53E-03	5.45E-01
12/31/2082	5.26E-02	1.87E-02	8.94E+00	2.49E-03	5.41E-01
12/31/2083	5.22E-02	1.50E-02	8.74E+00	2.42E-03	5.30E-01
12/31/2084	5.14E-02	1.72E-02	8.60E+00	2.40E-03	5.24E-01
12/31/2085	5.10E-02	1.71E-02	8.56E+00	2.41E-03	5.25E-01
12/31/2086	5.07E-02	1.62E-02	8.48E+00	2.40E-03	5.22E-01
12/31/2087	5.03E-02	1.69E-02	8.42E+00	2.40E-03	5.21E-01
12/31/2088	4.98E-02	1.72E-02	8.36E+00	2.40E-03	5.19E-01
12/31/2089	5.00E-02	1.59E-02	8.35E+00	2.42E-03	5.20E-01
12/31/2090	4.95E-02	1.66E-02	8.23E+00	2.39E-03	5.14E-01
12/31/2091	4.90E-02	1.69E-02	8.16E+00	2.38E-03	5.14E-01
12/31/2092	4.88E-02	1.57E-02	8.12E+00	2.38E-03	5.13E-01
12/31/2093	4.85E-02	1.73E-02	8.06E+00	2.38E-03	5.15E-01
12/31/2094	4.86E-02	1.37E-02	7.96E+00	2.36E-03	5.04E-01
12/31/2095	4.77E-02	1.73E-02	7.91E+00	2.35E-03	5.04E-01
12/31/2096	4.71E-02	1.82E-02	7.93E+00	2.39E-03	5.17E-01
12/31/2097	4.68E-02	1.93E-02	7.94E+00	2.40E-03	5.26E-01
12/31/2098	4.66E-02	1.80E-02	7.89E+00	2.39E-03	5.28E-01
12/31/2099	4.64E-02	1.82E-02	7.79E+00	2.35E-03	5.28E-01
12/31/2100	4.62E-02	1.57E-02	7.61E+00	2.24E-03	5.18E-01
12/31/2101	4.57E-02	1.61E-02	7.42E+00	2.11E-03	5.09E-01
12/31/2102	4.53E-02	1.49E-02	7.28E+00	2.01E-03	5.07E-01
12/31/2103	4.49E-02	1.75E-02	7.24E+00	1.99E-03	5.15E-01
12/31/2104	4.48E-02	1.45E-02	7.12E+00	1.94E-03	5.07E-01
12/31/2105	4.46E-02	1.54E-02	7.03E+00	1.89E-03	5.00E-01
12/31/2106	4.45E-02	1.53E-02	7.01E+00	1.89E-03	5.03E-01
12/31/2107	4.42E-02	1.68E-02	7.00E+00	1.90E-03	5.08E-01
12/31/2108	4.47E-02	1.49E-02	6.98E+00	1.89E-03	5.07E-01
12/31/2109	4.43E-02	1.68E-02	6.96E+00	1.88E-03	5.08E-01
12/31/2110	4.41E-02	1.57E-02	6.94E+00	1.88E-03	5.09E-01
12/31/2111	4.39E-02	1.60E-02	6.90E+00	1.87E-03	5.08E-01
1/1/2112	4.47E-02	3.72E-03	6.89E+00	1.83E-03	5.00E-01
Max	**5.72E-02**	**5.05E-02**	**1.02E+01**	**5.66E-03**	**5.54E-01**
Mean	**4.14E-02**	**1.71E-02**	**7.12E+00**	**2.10E-03**	**3.31E-01**
95th percentile	**5.67E-02**	**2.79E-02**	**9.83E+00**	**4.90E-03**	**5.47E-01**

Davis, P.A., R. Zach, M.E. Stephens, B.D. Amiro, G.A. Bird, J.A.K. Reid, M.I. Sheppard, S.C. Sheppard, and M. Stephenson (1993). The Disposal of Canada's Nuclear Fuel Waste: The Biosphere Model, BIOTRAC, for Postclosure Assessment. AECL Research. AECL-10720, COG-93-10. October 1993.

Yearly-Averaged Estimated Metal Concentrations in Fish Tissue
Upper Fish Creek
(mg/kg wet Weight)

Compound	Arsenic	Chromium	Copper	Mercury	Selenium
BCF	**50**	**200**	**3174.025489**	**718.727105**	**170**
References	**US EPA, 2003**	**CSA, 1987**	**McGeer, 2003**	**McGeer, 2003**	**Davis, 1993**
12/31/2010	4.10E-02	1.34E-01	3.68E+00	0.00E+00	5.93E-02
12/31/2011	3.62E-02	1.32E-01	3.70E+00	0.00E+00	6.05E-02
12/31/2012	1.78E-02	4.71E-02	2.36E+00	2.55E-06	5.28E-02
12/31/2013	1.86E-02	4.75E-02	2.88E+00	3.51E-04	6.02E-02
12/31/2014	2.00E-02	4.88E-02	3.64E+00	8.38E-04	6.82E-02
12/31/2015	2.01E-02	4.98E-02	4.04E+00	1.12E-03	7.11E-02
12/31/2016	2.15E-02	4.94E-02	4.34E+00	1.37E-03	7.29E-02
12/31/2017	2.19E-02	5.00E-02	4.59E+00	1.59E-03	7.43E-02
12/31/2018	2.29E-02	4.98E-02	4.88E+00	1.84E-03	7.58E-02
12/31/2019	2.36E-02	5.02E-02	5.15E+00	2.08E-03	7.73E-02
12/31/2020	2.44E-02	4.87E-02	5.39E+00	2.29E-03	7.86E-02
12/31/2021	2.38E-02	5.19E-02	5.41E+00	2.31E-03	7.86E-02
12/31/2022	2.44E-02	5.08E-02	5.67E+00	2.46E-03	8.45E-02
12/31/2023	2.61E-02	5.08E-02	6.20E+00	2.78E-03	9.57E-02
12/31/2024	2.73E-02	5.22E-02	6.57E+00	3.00E-03	1.02E-01
12/31/2025	2.89E-02	5.27E-02	6.85E+00	3.20E-03	1.07E-01
12/31/2026	3.00E-02	5.08E-02	7.19E+00	3.45E-03	1.14E-01
12/31/2027	3.05E-02	5.14E-02	7.39E+00	3.58E-03	1.19E-01
12/31/2028	3.06E-02	5.27E-02	7.43E+00	3.54E-03	1.22E-01
12/31/2029	3.05E-02	5.26E-02	7.30E+00	3.31E-03	1.23E-01
12/31/2030	2.97E-02	5.26E-02	6.83E+00	2.82E-03	1.24E-01
12/31/2031	2.87E-02	5.11E-02	6.31E+00	2.28E-03	1.25E-01
12/31/2032	2.83E-02	4.95E-02	5.83E+00	1.80E-03	1.28E-01
12/31/2033	2.69E-02	5.04E-02	5.13E+00	1.10E-03	1.23E-01
12/31/2034	2.57E-02	5.07E-02	4.55E+00	5.48E-04	1.20E-01
12/31/2035	2.60E-02	5.02E-02	4.50E+00	4.25E-04	1.22E-01
12/31/2036	2.62E-02	5.05E-02	4.58E+00	4.23E-04	1.26E-01
12/31/2037	2.60E-02	5.16E-02	4.71E+00	4.49E-04	1.29E-01
12/31/2038	2.68E-02	5.06E-02	4.83E+00	4.88E-04	1.33E-01
12/31/2039	2.80E-02	4.94E-02	4.96E+00	5.37E-04	1.39E-01
12/31/2040	2.78E-02	5.25E-02	5.06E+00	5.72E-04	1.41E-01
12/31/2041	2.79E-02	5.12E-02	5.16E+00	6.02E-04	1.44E-01
12/31/2042	2.85E-02	5.15E-02	5.19E+00	6.15E-04	1.45E-01
12/31/2043	3.43E-02	1.77E-02	5.34E+00	7.56E-04	1.78E-01
12/31/2044	3.80E-02	1.68E-02	5.44E+00	8.29E-04	1.93E-01
12/31/2045	3.97E-02	1.72E-02	5.48E+00	8.63E-04	2.01E-01
12/31/2046	4.08E-02	1.66E-02	5.52E+00	8.84E-04	2.05E-01
12/31/2047	4.06E-02	1.77E-02	5.54E+00	8.90E-04	2.05E-01
12/31/2048	4.09E-02	1.73E-02	5.58E+00	9.01E-04	2.06E-01
12/31/2049	4.10E-02	1.74E-02	5.61E+00	9.08E-04	2.07E-01
12/31/2050	4.15E-02	1.77E-02	5.71E+00	9.42E-04	2.12E-01
12/31/2051	4.20E-02	1.73E-02	5.82E+00	9.81E-04	2.17E-01
12/31/2052	4.20E-02	1.81E-02	5.83E+00	9.81E-04	2.16E-01
12/31/2053	4.22E-02	1.80E-02	5.91E+00	1.01E-03	2.19E-01
12/31/2054	4.30E-02	1.87E-02	6.14E+00	1.09E-03	2.30E-01
12/31/2055	4.43E-02	1.82E-02	6.34E+00	1.18E-03	2.43E-01
12/31/2056	4.67E-02	2.03E-02	6.83E+00	1.37E-03	2.72E-01
12/31/2057	4.76E-02	2.24E-02	7.25E+00	1.53E-03	2.95E-01
12/31/2058	4.95E-02	2.41E-02	7.88E+00	1.78E-03	3.34E-01
12/31/2059	5.14E-02	2.46E-02	8.39E+00	1.99E-03	3.66E-01
12/31/2060	5.42E-02	2.82E-02	9.19E+00	2.31E-03	4.15E-01
12/31/2061	5.64E-02	2.93E-02	9.85E+00	2.57E-03	4.58E-01
12/31/2062	5.84E-02	3.26E-02	1.05E+01	2.83E-03	5.01E-01
12/31/2063	6.06E-02	3.28E-02	1.10E+01	3.03E-03	5.36E-01
12/31/2064	6.10E-02	3.37E-02	1.11E+01	3.09E-03	5.49E-01
12/31/2065	6.16E-02	3.31E-02	1.12E+01	3.14E-03	5.61E-01
12/31/2066	6.17E-02	3.42E-02	1.13E+01	3.20E-03	5.74E-01
12/31/2067	6.19E-02	3.31E-02	1.14E+01	3.23E-03	5.82E-01
12/31/2068	6.17E-02	3.45E-02	1.14E+01	3.24E-03	5.88E-01
12/31/2069	6.15E-02	3.30E-02	1.13E+01	3.22E-03	5.88E-01
12/31/2070	6.20E-02	3.46E-02	1.13E+01	3.26E-03	5.97E-01
12/31/2071	6.20E-02	3.48E-02	1.14E+01	3.28E-03	6.03E-01
12/31/2072	6.10E-02	3.61E-02	1.13E+01	3.26E-03	6.05E-01
12/31/2073	6.08E-02	3.48E-02	1.13E+01	3.25E-03	6.05E-01
12/31/2074	6.05E-02	3.43E-02	1.12E+01	3.22E-03	6.03E-01
12/31/2075	6.02E-02	3.22E-02	1.09E+01	3.12E-03	5.90E-01
12/31/2076	5.98E-02	3.39E-02	1.09E+01	3.09E-03	5.88E-01
12/31/2077	5.89E-02	3.71E-02	1.09E+01	3.12E-03	5.97E-01
12/31/2078	5.85E-02	3.45E-02	1.08E+01	3.09E-03	5.95E-01
12/31/2079	5.79E-02	3.65E-02	1.07E+01	3.09E-03	6.00E-01
12/31/2080	5.75E-02	3.69E-02	1.07E+01	3.09E-03	6.04E-01
12/31/2081	5.72E-02	3.33E-02	1.05E+01	3.02E-03	5.94E-01
12/31/2082	5.72E-02	3.55E-02	1.04E+01	3.00E-03	5.93E-01
12/31/2083	5.67E-02	3.12E-02	1.02E+01	2.91E-03	5.77E-01
12/31/2084	5.60E-02	3.32E-02	1.01E+01	2.89E-03	5.75E-01
12/31/2085	5.55E-02	3.31E-02	1.00E+01	2.89E-03	5.75E-01
12/31/2086	5.52E-02	3.22E-02	9.92E+00	2.88E-03	5.72E-01
12/31/2087	5.48E-02	3.27E-02	9.83E+00	2.87E-03	5.70E-01
12/31/2088	5.43E-02	3.35E-02	9.80E+00	2.88E-03	5.72E-01
12/31/2089	5.44E-02	3.23E-02	9.77E+00	2.88E-03	5.71E-01
12/31/2090	5.38E-02	3.17E-02	9.60E+00	2.83E-03	5.61E-01
12/31/2091	5.34E-02	3.33E-02	9.59E+00	2.85E-03	5.67E-01
12/31/2092	5.32E-02	3.15E-02	9.50E+00	2.83E-03	5.63E-01
12/31/2093	5.29E-02	3.26E-02	9.43E+00	2.83E-03	5.64E-01
12/31/2094	5.28E-02	2.89E-02	9.31E+00	2.79E-03	5.50E-01
12/31/2095	5.19E-02	3.32E-02	9.28E+00	2.80E-03	5.56E-01
12/31/2096	5.15E-02	3.45E-02	9.32E+00	2.84E-03	5.70E-01
12/31/2097	5.13E-02	3.54E-02	9.33E+00	2.85E-03	5.80E-01
12/31/2098	5.10E-02	3.41E-02	9.27E+00	2.84E-03	5.82E-01
12/31/2099	5.08E-02	3.47E-02	9.17E+00	2.80E-03	5.80E-01
12/31/2100	5.05E-02	3.11E-02	8.95E+00	2.67E-03	5.64E-01
12/31/2101	5.00E-02	3.25E-02	8.83E+00	2.58E-03	5.63E-01
12/31/2102	4.96E-02	3.15E-02	8.69E+00	2.49E-03	5.59E-01
12/31/2103	4.93E-02	3.37E-02	8.65E+00	2.47E-03	5.68E-01
12/31/2104	4.90E-02	3.04E-02	8.50E+00	2.40E-03	5.54E-01
12/31/2105	4.89E-02	3.15E-02	8.44E+00	2.38E-03	5.53E-01
12/31/2106	4.87E-02	3.16E-02	8.41E+00	2.37E-03	5.54E-01
12/31/2107	4.85E-02	3.31E-02	8.41E+00	2.39E-03	5.61E-01
12/31/2108	4.90E-02	3.06E-02	8.36E+00	2.36E-03	5.56E-01
12/31/2109	4.86E-02	3.27E-02	8.36E+00	2.36E-03	5.60E-01
12/31/2110	4.84E-02	3.20E-02	8.34E+00	2.36E-03	5.61E-01
12/31/2111	4.82E-02	3.21E-02	8.29E+00	2.34E-03	5.58E-01
1/1/2112	5.13E-02	7.14E-03	8.38E+00	2.33E-03	5.42E-01
Max	**6.20E-02**	**1.34E-01**	**1.14E+01**	**3.58E-03**	**6.05E-01**
Mean	**4.39E-02**	**3.77E-02**	**7.78E+00**	**2.15E-03**	**3.64E-01**
95th percentile	**6.16E-02**	**5.26E-02**	**1.13E+01**	**3.26E-03**	**5.99E-01**

Yearly-Averaged Estimated Metal Concentrations in Fish Tissue
Tributary 1
(mg/kg wet Weight)

Compound	Arsenic	Chromium	Copper	Mercury	Selenium
BCF	**50**	**200**	**3174.025489**	**718.727105**	**170**
References	**US EPA, 2003**	**CSA, 1987**	**McGeer, 2003**	**McGeer, 2003**	**Davis, 1993**
12/31/2010	4.13E-02	1.34E-01	3.85E+00	0.00E+00	5.89E-02
12/31/2011	3.92E-02	1.33E-01	3.87E+00	0.00E+00	5.93E-02
12/31/2012	1.80E-02	4.04E-02	2.21E+00	2.85E-06	5.26E-02
12/31/2013	1.89E-02	4.13E-02	2.80E+00	3.99E-04	6.09E-02
12/31/2014	2.04E-02	4.26E-02	3.63E+00	9.27E-04	6.94E-02
12/31/2015	2.06E-02	4.36E-02	4.07E+00	1.24E-03	7.27E-02
12/31/2016	2.21E-02	4.31E-02	4.40E+00	1.52E-03	7.47E-02
12/31/2017	2.26E-02	4.39E-02	4.67E+00	1.76E-03	7.62E-02
12/31/2018	2.36E-02	4.37E-02	5.00E+00	2.05E-03	7.79E-02
12/31/2019	2.45E-02	4.41E-02	5.29E+00	2.30E-03	7.95E-02
12/31/2020	2.55E-02	4.23E-02	5.55E+00	2.55E-03	8.11E-02
12/31/2021	2.48E-02	4.60E-02	5.58E+00	2.56E-03	8.09E-02
12/31/2022	2.55E-02	4.50E-02	5.88E+00	2.74E-03	8.82E-02
12/31/2023	2.75E-02	4.52E-02	6.49E+00	3.09E-03	1.01E-01
12/31/2024	2.89E-02	4.65E-02	6.91E+00	3.35E-03	1.09E-01
12/31/2025	3.07E-02	4.70E-02	7.24E+00	3.57E-03	1.15E-01
12/31/2026	3.20E-02	4.51E-02	7.62E+00	3.85E-03	1.22E-01
12/31/2027	3.26E-02	4.60E-02	7.84E+00	3.99E-03	1.28E-01
12/31/2028	3.28E-02	4.73E-02	7.89E+00	3.95E-03	1.32E-01
12/31/2029	3.26E-02	4.74E-02	7.75E+00	3.68E-03	1.34E-01
12/31/2030	3.19E-02	4.68E-02	7.26E+00	3.16E-03	1.35E-01
12/31/2031	3.08E-02	4.53E-02	6.69E+00	2.56E-03	1.37E-01
12/31/2032	3.04E-02	4.34E-02	6.17E+00	2.03E-03	1.40E-01
12/31/2033	2.87E-02	4.47E-02	5.40E+00	1.26E-03	1.35E-01
12/31/2034	2.75E-02	4.49E-02	4.80E+00	6.70E-04	1.32E-01
12/31/2035	2.80E-02	4.41E-02	4.77E+00	5.48E-04	1.35E-01
12/31/2036	2.83E-02	4.47E-02	4.88E+00	5.51E-04	1.40E-01
12/31/2037	2.82E-02	4.58E-02	5.03E+00	5.84E-04	1.43E-01
12/31/2038	2.91E-02	4.50E-02	5.17E+00	6.30E-04	1.48E-01
12/31/2039	3.05E-02	4.36E-02	5.33E+00	6.90E-04	1.56E-01
12/31/2040	3.02E-02	4.71E-02	5.46E+00	7.30E-04	1.58E-01
12/31/2041	3.05E-02	4.56E-02	5.58E+00	7.70E-04	1.61E-01
12/31/2042	3.10E-02	4.60E-02	5.61E+00	7.82E-04	1.63E-01
12/31/2043	3.38E-02	3.89E-02	5.69E+00	8.34E-04	1.73E-01
12/31/2044	3.66E-02	3.83E-02	5.78E+00	8.95E-04	1.86E-01
12/31/2045	3.80E-02	3.88E-02	5.82E+00	9.23E-04	1.92E-01
12/31/2046	3.90E-02	3.84E-02	5.86E+00	9.42E-04	1.95E-01
12/31/2047	3.88E-02	3.92E-02	5.88E+00	9.48E-04	1.95E-01
12/31/2048	3.90E-02	3.89E-02	5.92E+00	9.59E-04	1.96E-01
12/31/2049	3.92E-02	3.93E-02	5.96E+00	9.64E-04	1.96E-01
12/31/2050	3.95E-02	3.97E-02	6.05E+00	9.94E-04	2.00E-01
12/31/2051	3.99E-02	3.91E-02	6.14E+00	1.03E-03	2.05E-01
12/31/2052	3.99E-02	3.97E-02	6.15E+00	1.03E-03	2.04E-01
12/31/2053	4.00E-02	3.96E-02	6.22E+00	1.05E-03	2.07E-01
12/31/2054	4.09E-02	4.01E-02	6.42E+00	1.13E-03	2.17E-01
12/31/2055	4.22E-02	3.87E-02	6.59E+00	1.20E-03	2.28E-01
12/31/2056	4.41E-02	4.08E-02	6.98E+00	1.35E-03	2.50E-01
12/31/2057	4.47E-02	4.26E-02	7.34E+00	1.49E-03	2.70E-01
12/31/2058	4.64E-02	4.32E-02	7.86E+00	1.70E-03	3.03E-01
12/31/2059	4.81E-02	4.39E-02	8.28E+00	1.87E-03	3.29E-01
12/31/2060	5.06E-02	4.62E-02	8.96E+00	2.14E-03	3.71E-01
12/31/2061	5.22E-02	4.72E-02	9.50E+00	2.36E-03	4.06E-01
12/31/2062	5.44E-02	4.89E-02	1.00E+01	2.58E-03	4.43E-01
12/31/2063	5.60E-02	4.89E-02	1.04E+01	2.73E-03	4.69E-01
12/31/2064	5.65E-02	4.97E-02	1.05E+01	2.79E-03	4.82E-01
12/31/2065	5.73E-02	4.86E-02	1.06E+01	2.84E-03	4.93E-01
12/31/2066	5.70E-02	5.04E-02	1.07E+01	2.87E-03	5.02E-01
12/31/2067	5.73E-02	4.88E-02	1.07E+01	2.90E-03	5.10E-01
12/31/2068	5.72E-02	4.96E-02	1.07E+01	2.91E-03	5.14E-01
12/31/2069	5.70E-02	4.90E-02	1.07E+01	2.90E-03	5.15E-01
12/31/2070	5.74E-02	4.98E-02	1.07E+01	2.93E-03	5.23E-01
12/31/2071	5.72E-02	5.07E-02	1.08E+01	2.94E-03	5.27E-01
12/31/2072	5.65E-02	5.11E-02	1.07E+01	2.93E-03	5.28E-01
12/31/2073	5.64E-02	5.03E-02	1.07E+01	2.92E-03	5.29E-01
12/31/2074	5.62E-02	4.98E-02	1.06E+01	2.89E-03	5.27E-01
12/31/2075	5.57E-02	4.82E-02	1.04E+01	2.81E-03	5.16E-01
12/31/2076	5.55E-02	4.94E-02	1.03E+01	2.78E-03	5.13E-01
12/31/2077	5.48E-02	5.23E-02	1.03E+01	2.81E-03	5.21E-01
12/31/2078	5.45E-02	5.00E-02	1.03E+01	2.79E-03	5.21E-01
12/31/2079	5.40E-02	5.14E-02	1.02E+01	2.79E-03	5.25E-01
12/31/2080	5.37E-02	5.13E-02	1.02E+01	2.79E-03	5.28E-01
12/31/2081	5.35E-02	4.87E-02	1.00E+01	2.74E-03	5.20E-01
12/31/2082	5.34E-02	5.06E-02	9.97E+00	2.70E-03	5.18E-01
12/31/2083	5.29E-02	4.78E-02	9.76E+00	2.63E-03	5.05E-01
12/31/2084	5.25E-02	4.85E-02	9.69E+00	2.63E-03	5.05E-01
12/31/2085	5.20E-02	4.81E-02	9.62E+00	2.62E-03	5.03E-01
12/31/2086	5.18E-02	4.82E-02	9.55E+00	2.61E-03	5.01E-01
12/31/2087	5.14E-02	4.83E-02	9.50E+00	2.61E-03	5.00E-01
12/31/2088	5.08E-02	4.90E-02	9.44E+00	2.60E-03	5.00E-01
12/31/2089	5.10E-02	4.81E-02	9.44E+00	2.61E-03	5.01E-01
12/31/2090	5.04E-02	4.78E-02	9.28E+00	2.57E-03	4.91E-01
12/31/2091	5.02E-02	4.91E-02	9.27E+00	2.58E-03	4.97E-01
12/31/2092	5.01E-02	4.72E-02	9.22E+00	2.57E-03	4.95E-01
12/31/2093	4.99E-02	4.78E-02	9.14E+00	2.57E-03	4.94E-01
12/31/2094	4.98E-02	4.52E-02	9.07E+00	2.54E-03	4.85E-01
12/31/2095	4.89E-02	4.88E-02	9.01E+00	2.53E-03	4.86E-01
12/31/2096	4.86E-02	4.99E-02	9.04E+00	2.57E-03	4.99E-01
12/31/2097	4.86E-02	5.03E-02	9.07E+00	2.59E-03	5.09E-01
12/31/2098	4.84E-02	4.93E-02	9.01E+00	2.58E-03	5.10E-01
12/31/2099	4.80E-02	5.00E-02	8.92E+00	2.53E-03	5.07E-01
12/31/2100	4.79E-02	4.72E-02	8.76E+00	2.44E-03	4.95E-01
12/31/2101	4.74E-02	4.84E-02	8.66E+00	2.37E-03	4.94E-01
12/31/2102	4.69E-02	4.80E-02	8.53E+00	2.29E-03	4.89E-01
12/31/2103	4.70E-02	4.88E-02	8.51E+00	2.28E-03	4.98E-01
12/31/2104	4.65E-02	4.69E-02	8.37E+00	2.22E-03	4.86E-01
12/31/2105	4.65E-02	4.78E-02	8.34E+00	2.20E-03	4.85E-01
12/31/2106	4.63E-02	4.78E-02	8.30E+00	2.19E-03	4.85E-01
12/31/2107	4.63E-02	4.89E-02	8.31E+00	2.21E-03	4.92E-01
12/31/2108	4.67E-02	4.64E-02	8.27E+00	2.19E-03	4.89E-01
12/31/2109	4.63E-02	4.82E-02	8.28E+00	2.19E-03	4.92E-01
12/31/2110	4.62E-02	4.82E-02	8.24E+00	2.18E-03	4.91E-01
12/31/2111	4.59E-02	4.79E-02	8.20E+00	2.17E-03	4.89E-01
1/1/2112	5.37E-02	9.38E-03	8.88E+00	2.49E-03	5.50E-01
Max	**5.74E-02**	**1.34E-01**	**1.08E+01**	**3.99E-03**	**5.50E-01**
Mean	**4.24E-02**	**4.74E-02**	**7.72E+00**	**2.09E-03**	**3.28E-01**
95th percentile	**5.70E-02**	**5.11E-02**	**1.07E+01**	**3.33E-03**	**5.26E-01**

Yearly-Averaged Estimated Metal Concentrations in Fish Tissue
Pit Lake
(mg/kg wet Weight)

Compound	Arsenic	Chromium	Copper	Mercury	Selenium
BCF	**50**	**200**	**3174.025489**	**718.727105**	**170**
Reference	**US EPA, 2003**	**CSA, 1987**	**McGeer, 2003**	**McGeer, 2003**	**Davis, 1993**
12/31/2010	1.85E-02	5.05E-02	2.70E+00	3.97E-06	2.95E-02
12/31/2011	1.86E-02	1.04E-02	1.80E+00	4.01E-06	4.50E-02
12/31/2012	1.85E-02	1.40E-02	1.63E+00	4.19E-06	5.07E-02
12/31/2013	2.19E-02	2.37E-02	4.11E+00	1.01E-03	6.23E-02
12/31/2014	2.41E-02	2.42E-02	5.20E+00	1.74E-03	7.41E-02
12/31/2015	2.46E-02	2.56E-02	5.81E+00	2.18E-03	7.86E-02
12/31/2016	2.62E-02	2.48E-02	6.26E+00	2.56E-03	8.14E-02
12/31/2017	2.70E-02	2.60E-02	6.66E+00	2.90E-03	8.34E-02
12/31/2018	2.81E-02	2.55E-02	7.11E+00	3.30E-03	8.59E-02
12/31/2019	2.92E-02	2.63E-02	7.49E+00	3.64E-03	8.80E-02
12/31/2020	3.07E-02	2.37E-02	7.86E+00	3.99E-03	9.04E-02
12/31/2021	3.00E-02	2.79E-02	7.95E+00	4.04E-03	9.03E-02
12/31/2022	2.99E-02	2.73E-02	8.13E+00	4.17E-03	9.30E-02
12/31/2023	3.16E-02	2.74E-02	8.72E+00	4.57E-03	1.03E-01
12/31/2024	3.33E-02	2.83E-02	9.26E+00	4.94E-03	1.11E-01
12/31/2025	3.48E-02	2.87E-02	9.63E+00	5.22E-03	1.16E-01
12/31/2026	3.64E-02	2.67E-02	1.00E+01	5.53E-03	1.22E-01
12/31/2027	3.68E-02	2.79E-02	1.02E+01	5.66E-03	1.27E-01
12/31/2028	3.66E-02	2.89E-02	1.02E+01	5.63E-03	1.29E-01
12/31/2029	3.58E-02	2.81E-02	9.90E+00	5.23E-03	1.29E-01
12/31/2030	3.43E-02	2.69E-02	9.11E+00	4.45E-03	1.27E-01
12/31/2031	3.25E-02	2.51E-02	8.16E+00	3.54E-03	1.26E-01
12/31/2032	3.13E-02	2.28E-02	7.34E+00	2.76E-03	1.26E-01
12/31/2033	2.65E-02	1.62E-02	4.53E+00	1.21E-03	1.17E-01
12/31/2034	2.44E-02	1.69E-02	3.63E+00	3.63E-04	1.09E-01
12/31/2035	2.48E-02	1.46E-02	3.46E+00	1.59E-04	1.11E-01
12/31/2036	2.48E-02	1.59E-02	3.50E+00	1.29E-04	1.13E-01
12/31/2037	2.43E-02	1.68E-02	3.59E+00	1.40E-04	1.15E-01
12/31/2038	2.48E-02	1.63E-02	3.70E+00	1.70E-04	1.19E-01
12/31/2039	2.63E-02	1.43E-02	3.81E+00	2.12E-04	1.24E-01
12/31/2040	2.58E-02	1.82E-02	3.90E+00	2.41E-04	1.26E-01
12/31/2041	2.59E-02	1.60E-02	3.99E+00	2.70E-04	1.28E-01
12/31/2042	2.64E-02	1.66E-02	4.03E+00	2.87E-04	1.30E-01
12/31/2043	3.00E-02	5.81E-03	4.12E+00	3.51E-04	1.44E-01
12/31/2044	3.41E-02	5.12E-03	4.23E+00	4.29E-04	1.62E-01
12/31/2045	3.59E-02	5.41E-03	4.27E+00	4.65E-04	1.70E-01
12/31/2046	3.71E-02	5.02E-03	4.30E+00	4.86E-04	1.74E-01
12/31/2047	3.70E-02	5.85E-03	4.32E+00	4.93E-04	1.75E-01
12/31/2048	3.72E-02	5.46E-03	4.35E+00	5.03E-04	1.75E-01
12/31/2049	3.74E-02	5.52E-03	4.38E+00	5.09E-04	1.76E-01
12/31/2050	3.78E-02	5.79E-03	4.47E+00	5.40E-04	1.80E-01
12/31/2051	3.82E-02	5.41E-03	4.56E+00	5.73E-04	1.85E-01
12/31/2052	3.83E-02	5.97E-03	4.58E+00	5.80E-04	1.85E-01
12/31/2053	3.84E-02	5.91E-03	4.64E+00	5.99E-04	1.87E-01
12/31/2054	3.90E-02	6.32E-03	4.82E+00	6.64E-04	1.96E-01
12/31/2055	4.03E-02	6.09E-03	5.04E+00	7.51E-04	2.09E-01
12/31/2056	4.23E-02	7.25E-03	5.41E+00	8.98E-04	2.31E-01
12/31/2057	4.33E-02	8.98E-03	5.83E+00	1.06E-03	2.54E-01
12/31/2058	4.49E-02	1.08E-02	6.41E+00	1.29E-03	2.90E-01
12/31/2059	4.69E-02	1.08E-02	6.95E+00	1.51E-03	3.23E-01
12/31/2060	4.93E-02	1.37E-02	7.65E+00	1.79E-03	3.66E-01
12/31/2061	5.13E-02	1.34E-02	8.25E+00	2.03E-03	4.06E-01
12/31/2062	5.32E-02	1.67E-02	8.86E+00	2.28E-03	4.47E-01
12/31/2063	5.54E-02	1.63E-02	9.35E+00	2.48E-03	4.81E-01
12/31/2064	5.62E-02	1.77E-02	9.56E+00	2.58E-03	4.99E-01
12/31/2065	5.67E-02	1.72E-02	9.64E+00	2.62E-03	5.11E-01
12/31/2066	5.69E-02	1.73E-02	9.74E+00	2.67E-03	5.22E-01
12/31/2067	5.71E-02	1.69E-02	9.83E+00	2.71E-03	5.32E-01
12/31/2068	5.69E-02	1.83E-02	9.83E+00	2.72E-03	5.37E-01
12/31/2069	5.67E-02	1.62E-02	9.76E+00	2.70E-03	5.37E-01
12/31/2070	5.72E-02	1.80E-02	9.81E+00	2.73E-03	5.45E-01
12/31/2071	5.71E-02	1.77E-02	9.83E+00	2.74E-03	5.50E-01
12/31/2072	5.61E-02	1.96E-02	9.79E+00	2.74E-03	5.52E-01
12/31/2073	5.60E-02	1.82E-02	9.75E+00	2.73E-03	5.54E-01
12/31/2074	5.58E-02	1.77E-02	9.67E+00	2.70E-03	5.53E-01
12/31/2075	5.56E-02	1.60E-02	9.47E+00	2.62E-03	5.42E-01
12/31/2076	5.51E-02	1.77E-02	9.36E+00	2.58E-03	5.38E-01
12/31/2077	5.39E-02	2.00E-02	9.33E+00	2.58E-03	5.41E-01
12/31/2078	5.37E-02	1.81E-02	9.29E+00	2.58E-03	5.44E-01
12/31/2079	5.31E-02	1.99E-02	9.23E+00	2.57E-03	5.47E-01
12/31/2080	5.26E-02	2.06E-02	9.20E+00	2.58E-03	5.51E-01
12/31/2081	5.26E-02	1.71E-02	9.05E+00	2.53E-03	5.45E-01
12/31/2082	5.26E-02	1.87E-02	8.94E+00	2.49E-03	5.41E-01
12/31/2083	5.22E-02	1.50E-02	8.74E+00	2.42E-03	5.30E-01
12/31/2084	5.14E-02	1.72E-02	8.60E+00	2.40E-03	5.24E-01
12/31/2085	5.10E-02	1.71E-02	8.56E+00	2.41E-03	5.25E-01
12/31/2086	5.07E-02	1.62E-02	8.48E+00	2.40E-03	5.22E-01
12/31/2087	5.03E-02	1.69E-02	8.42E+00	2.40E-03	5.21E-01
12/31/2088	4.98E-02	1.72E-02	8.36E+00	2.40E-03	5.19E-01
12/31/2089	5.00E-02	1.59E-02	8.35E+00	2.42E-03	5.20E-01
12/31/2090	4.95E-02	1.66E-02	8.23E+00	2.39E-03	5.14E-01
12/31/2091	4.90E-02	1.69E-02	8.16E+00	2.38E-03	5.14E-01
12/31/2092	4.88E-02	1.57E-02	8.12E+00	2.38E-03	5.13E-01
12/31/2093	4.85E-02	1.73E-02	8.06E+00	2.38E-03	5.15E-01
12/31/2094	4.86E-02	1.37E-02	7.96E+00	2.36E-03	5.04E-01
12/31/2095	4.77E-02	1.73E-02	7.91E+00	2.35E-03	5.04E-01
12/31/2096	4.71E-02	1.82E-02	7.93E+00	2.39E-03	5.17E-01
12/31/2097	4.68E-02	1.93E-02	7.94E+00	2.40E-03	5.26E-01
12/31/2098	4.66E-02	1.80E-02	7.89E+00	2.39E-03	5.28E-01
12/31/2099	4.64E-02	1.82E-02	7.79E+00	2.35E-03	5.28E-01
12/31/2100	4.62E-02	1.57E-02	7.61E+00	2.24E-03	5.18E-01
12/31/2101	4.57E-02	1.61E-02	7.42E+00	2.11E-03	5.09E-01
12/31/2102	4.53E-02	1.49E-02	7.28E+00	2.01E-03	5.07E-01
12/31/2103	4.49E-02	1.75E-02	7.24E+00	1.99E-03	5.15E-01
12/31/2104	4.48E-02	1.45E-02	7.12E+00	1.94E-03	5.07E-01
12/31/2105	4.46E-02	1.54E-02	7.03E+00	1.89E-03	5.00E-01
12/31/2106	4.45E-02	1.53E-02	7.01E+00	1.89E-03	5.03E-01
12/31/2107	4.42E-02	1.68E-02	7.00E+00	1.90E-03	5.08E-01
12/31/2108	4.47E-02	1.49E-02	6.98E+00	1.89E-03	5.07E-01
12/31/2109	4.43E-02	1.68E-02	6.96E+00	1.88E-03	5.08E-01
12/31/2110	4.41E-02	1.57E-02	6.94E+00	1.88E-03	5.09E-01
12/31/2111	4.39E-02	1.60E-02	6.90E+00	1.87E-03	5.08E-01
1/1/2112	4.47E-02	3.72E-03	6.89E+00	1.83E-03	5.00E-01
Max	**5.72E-02**	**5.05E-02**	**1.02E+01**	**5.66E-03**	**5.54E-01**
Mean	**4.14E-02**	**1.71E-02**	**7.12E+00**	**2.10E-03**	**3.31E-01**
95th percentile	**5.67E-02**	**2.79E-02**	**9.83E+00**	**4.90E-03**	**5.47E-01**