

Appendix V5-1T

Summary of Maximum Effects of the Project on Monthly
Flows, Lake Elevations, and Lake Volumes under High
Groundwater Sensitivity Case



Table T-1. Hope Bay Project Effects on Outflow of Wolverine Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	0.053	0	0	0	0	0	0	0.004
Baseline (with climate change) ^b		22	2040	0	0	0	0	0	0.052	0	0	0	0	0	0	0.004
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	0.053	0	0	0	0	0	0	0.004
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0
Construction ^f	Monthly streamflow (m ³ /s)	4	2022	0	0	0	0	0	0.052	0	0	0	0	0	0	0.004
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.2%	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.2%
Operation ^f	Monthly streamflow (m ³ /s)	14	2032	0	0	0	0	0	0	0	0	0	0	0	0	0
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-100.0%	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-100.0%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0	0	0	0	0	0	0	0	0
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-100.0%	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-100.0%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0	0.052	0	0	0	0	0	0	0.004
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-2. Hope Bay Project Effects on Elevation of Wolverine Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	33.300	33.300	33.300	33.300	33.280	33.320	33.290	33.260	33.260	33.290	33.300	33.300	33.292
Baseline (with climate change) ^b		22	2040	33.290	33.290	33.290	33.290	33.270	33.320	33.290	33.250	33.260	33.280	33.290	33.290	33.284
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	33.300	33.300	33.300	33.300	33.280	33.320	33.290	33.260	33.260	33.290	33.300	33.300	33.292
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly lake elevation (m)	4	2022	33.300	33.300	33.300	33.300	33.280	33.320	33.290	33.260	33.260	33.290	33.290	33.290	33.290
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	-0.010	-0.010	-0.002
Operation ^f	Monthly lake elevation (m)	13	2031	33.190	33.180	33.160	33.150	33.120	33.230	33.210	33.160	33.150	33.160	33.150	33.140	33.167
	Change from baseline elevation (m) ^d			-0.100	-0.110	-0.130	-0.140	-0.150	-0.090	-0.080	-0.100	-0.110	-0.130	-0.140	-0.150	-0.119
Closure ^f	Monthly lake elevation (m)	15	2033	33.060	33.050	33.050	33.050	33.040	33.160	33.160	33.120	33.130	33.160	33.160	33.160	33.109
	Change from baseline elevation (m) ^d			-0.230	-0.240	-0.240	-0.240	-0.230	-0.160	-0.130	-0.140	-0.130	-0.130	-0.130	-0.130	-0.177
Post-Closure ^f	Monthly lake elevation (m)	18	2036	33.290	33.290	33.290	33.290	33.270	33.320	33.290	33.250	33.260	33.290	33.290	33.290	33.285
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-3. Hope Bay Project Effects on Volume of Wolverine Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	3.512	3.512	3.512	3.512	3.489	3.541	3.510	3.465	3.469	3.506	3.512	3.512	3.504
Baseline (with climate change) ^b		22	2040	3.505	3.505	3.505	3.505	3.480	3.542	3.505	3.456	3.459	3.497	3.505	3.505	3.497
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	3.512	3.512	3.512	3.512	3.489	3.541	3.510	3.465	3.469	3.506	3.512	3.512	3.504
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly volume (Mm ³ /s)	4	2022	3.511	3.511	3.511	3.511	3.487	3.541	3.509	3.463	3.467	3.504	3.510	3.510	3.503
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	-0.0%	0	0	-0.0%	-0.0%	-0.0%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	3.376	3.358	3.341	3.322	3.281	3.424	3.396	3.332	3.317	3.335	3.323	3.304	3.342
	Change from baseline (% of baseline volume) ^d			-3.8%	-4.3%	-4.8%	-5.3%	-5.8%	-3.3%	-3.2%	-3.7%	-4.2%	-4.7%	-5.3%	-5.8%	-4.5%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	3.203	3.200	3.200	3.200	3.178	3.341	3.332	3.288	3.292	3.329	3.336	3.336	3.270
	Change from baseline (% of baseline volume) ^d			-8.7%	-8.8%	-8.8%	-8.8%	-8.8%	-5.7%	-5.0%	-4.9%	-4.9%	-4.9%	-4.9%	-4.9%	-6.6%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	3.506	3.506	3.506	3.506	3.482	3.542	3.506	3.458	3.461	3.499	3.506	3.506	3.499
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-4. Hope Bay Project Effects on Outflow of Patch Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	0.427	0.230	0.122	0.104	0	0	0	0.074
Baseline (with climate change) ^b		22	2040	0	0	0	0	0	0.463	0.225	0.118	0.103	0	0	0	0.076
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	0.427	0.230	0.122	0.104	0	0	0	0.074
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	0	0	0	n/a ^e	n/a ^e	n/a ^e	0
Construction ^f	Monthly streamflow (m ³ /s)	4	2022	0	0	0	0	0	0.277	0.168	0.089	0.077	0	0	0	0.051
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-36.3%	-26.8%	-26.3%	-26.3%	n/a ^e	n/a ^e	n/a ^e	-31.2%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0	0.109	0.077	0.042	0.037	0	0	0	0.022
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-75.8%	-65.8%	-65.1%	-63.7%	n/a ^e	n/a ^e	n/a ^e	-70.4%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0	0.340	0.192	0.106	0.095	0	0	0	0.061
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-24.8%	-15.1%	-10.9%	-7.8%	n/a ^e	n/a ^e	n/a ^e	-18.5%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0	0.456	0.225	0.119	0.103	0	0	0	0.075
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.3%	-0.1%	-0.1%	-0.1%	n/a ^e	n/a ^e	n/a ^e	-0.2%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-5. Hope Bay Project Effects on Elevation of Patch Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	28.370	28.370	28.370	28.370	28.360	28.530	28.440	28.360	28.340	28.370	28.380	28.380	28.387
Baseline (with climate change) ^b		22	2040	28.380	28.380	28.380	28.380	28.360	28.540	28.440	28.360	28.340	28.370	28.380	28.380	28.391
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	28.370	28.370	28.370	28.370	28.360	28.530	28.440	28.360	28.340	28.370	28.380	28.380	28.387
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly lake elevation (m)	4	2022	28.310	28.300	28.290	28.280	28.250	28.450	28.400	28.330	28.310	28.330	28.330	28.320	28.325
	Change from baseline elevation (m) ^d			-0.070	-0.080	-0.090	-0.100	-0.110	-0.080	-0.040	-0.030	-0.030	-0.040	-0.050	-0.060	-0.065
Operation ^f	Monthly lake elevation (m)	13	2031	28.210	28.190	28.170	28.150	28.110	28.320	28.310	28.250	28.240	28.260	28.250	28.230	28.224
	Change from baseline elevation (m) ^d			-0.170	-0.190	-0.210	-0.230	-0.250	-0.220	-0.130	-0.110	-0.100	-0.110	-0.130	-0.150	-0.166
Closure ^f	Monthly lake elevation (m)	15	2033	28.320	28.320	28.320	28.320	28.300	28.490	28.420	28.350	28.330	28.360	28.370	28.370	28.356
	Change from baseline elevation (m) ^d			-0.060	-0.060	-0.060	-0.060	-0.060	-0.050	-0.020	-0.010	-0.010	-0.010	-0.010	-0.010	-0.035
Post-Closure ^f	Monthly lake elevation (m)	18	2036	28.380	28.380	28.380	28.380	28.360	28.540	28.440	28.360	28.340	28.370	28.380	28.380	28.391
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-6. Hope Bay Project Effects on Volume of Patch Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	31.890	31.890	31.890	31.890	31.780	32.850	32.310	31.810	31.680	31.850	31.900	31.900	31.969
Baseline (with climate change) ^b		22	2040	31.910	31.910	31.910	31.910	31.800	32.930	32.290	31.790	31.670	31.850	31.910	31.910	31.982
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	31.890	31.890	31.890	31.890	31.780	32.850	32.310	31.810	31.680	31.850	31.900	31.900	31.969
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly volume (Mm ³ /s)	4	2022	31.530	31.460	31.400	31.340	31.160	32.380	32.050	31.600	31.490	31.630	31.610	31.550	31.600
	Change from baseline (% of baseline volume) ^d			-1.2%	-1.4%	-1.6%	-1.8%	-2.0%	-1.5%	-0.8%	-0.7%	-0.6%	-0.7%	-0.9%	-1.1%	-1.2%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	30.920	30.790	30.660	30.530	30.290	31.590	31.500	31.160	31.090	31.220	31.140	31.010	30.992
	Change from baseline (% of baseline volume) ^d			-3.1%	-3.5%	-3.9%	-4.3%	-4.7%	-4.0%	-2.4%	-2.0%	-1.9%	-2.0%	-2.4%	-2.8%	-3.1%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	31.560	31.560	31.560	31.560	31.450	32.600	32.150	31.720	31.620	31.810	31.860	31.860	31.776
	Change from baseline (% of baseline volume) ^d			-1.1%	-1.1%	-1.1%	-1.1%	-1.1%	-0.9%	-0.4%	-0.3%	-0.2%	-0.1%	-0.2%	-0.2%	-0.6%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	31.900	31.900	31.900	31.900	31.790	32.910	32.290	31.790	31.670	31.850	31.910	31.910	31.976
	Change from baseline (% of baseline volume) ^d			-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	0	-0.0%	-0.0%	0	0	0	-0.0%

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-7. Hope Bay Project Effects on Outflow of PO Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	0.552	0.250	0.138	0.125	0	0	0	0.089
Baseline (with climate change) ^b		22	2040	0	0	0	0	0	0.593	0.245	0.135	0.124	0	0	0	0.091
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	0.552	0.250	0.138	0.125	0	0	0	0.089
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	0	0	0	n/a ^e	n/a ^e	n/a ^e	0
Construction ^f	Monthly streamflow (m ³ /s)	1	2019	0	0	0	0	0	0.555	0.251	0.138	0.125	0	0	0	0.089
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	0	0	0	n/a ^e	n/a ^e	n/a ^e	0
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0	0.250	0.091	0.055	0.056	0	0	0	0.038
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-56.7%	-62.9%	-59.4%	-54.6%	n/a ^e	n/a ^e	n/a ^e	-58.2%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0	0.468	0.210	0.121	0.116	0	0	0	0.076
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-19.5%	-14.7%	-10.2%	-6.9%	n/a ^e	n/a ^e	n/a ^e	-15.8%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0	0.585	0.246	0.135	0.124	0	0	0	0.091
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.2%	-0.1%	-0.1%	-0.1%	n/a ^e	n/a ^e	n/a ^e	-0.2%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-8. Hope Bay Project Effects on Elevation of PO Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	26.250	26.250	26.250	26.250	26.230	26.310	26.250	26.210	26.200	26.240	26.250	26.250	26.245
Baseline (with climate change) ^b		22	2040	26.250	26.250	26.250	26.250	26.230	26.320	26.250	26.210	26.200	26.240	26.250	26.250	26.246
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	26.250	26.250	26.250	26.250	26.230	26.310	26.250	26.210	26.200	26.240	26.250	26.250	26.245
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly lake elevation (m)	4	2022	26.240	26.240	26.240	26.240	26.220	26.280	26.230	26.200	26.190	26.220	26.240	26.240	26.232
	Change from baseline elevation (m) ^d			-0.010	-0.010	-0.010	-0.010	-0.010	-0.030	-0.020	-0.010	-0.010	-0.020	-0.010	-0.010	-0.013
Operation ^f	Monthly lake elevation (m)	13	2031	26.220	26.220	26.220	26.220	26.200	26.240	26.190	26.170	26.170	26.200	26.220	26.220	26.207
	Change from baseline elevation (m) ^d			-0.030	-0.030	-0.030	-0.030	-0.030	-0.080	-0.060	-0.040	-0.030	-0.040	-0.030	-0.030	-0.038
Closure ^f	Monthly lake elevation (m)	15	2033	26.230	26.230	26.230	26.230	26.210	26.290	26.240	26.200	26.200	26.240	26.250	26.250	26.233
	Change from baseline elevation (m) ^d			-0.020	-0.020	-0.020	-0.020	-0.020	-0.030	-0.010	-0.010	0	0	0	0	-0.012
Post-Closure ^f	Monthly lake elevation (m)	18	2036	26.250	26.250	26.250	26.250	26.230	26.320	26.250	26.210	26.200	26.240	26.250	26.250	26.246
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-9. Hope Bay Project Effects on Volume of PO Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	1.540	1.540	1.540	1.540	1.526	1.592	1.541	1.511	1.505	1.531	1.540	1.540	1.537
Baseline (with climate change) ^b		22	2040	1.543	1.543	1.543	1.543	1.528	1.597	1.540	1.510	1.505	1.533	1.543	1.543	1.539
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	1.540	1.540	1.540	1.540	1.526	1.592	1.541	1.511	1.505	1.531	1.540	1.540	1.537
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly volume (Mm ³ /s)	4	2022	1.533	1.533	1.533	1.533	1.519	1.569	1.525	1.499	1.495	1.522	1.531	1.531	1.527
	Change from baseline (% of baseline volume) ^d			-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-1.5%	-1.0%	-0.8%	-0.7%	-0.7%	-0.6%	-0.6%	-0.7%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	1.516	1.516	1.516	1.516	1.502	1.533	1.492	1.475	1.475	1.504	1.514	1.514	1.506
	Change from baseline (% of baseline volume) ^d			-1.7%	-1.7%	-1.7%	-1.7%	-1.7%	-3.9%	-3.1%	-2.3%	-2.0%	-1.8%	-1.8%	-1.8%	-2.1%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	1.528	1.528	1.528	1.528	1.513	1.578	1.531	1.505	1.502	1.530	1.539	1.539	1.529
	Change from baseline (% of baseline volume) ^d			-0.9%	-0.9%	-0.9%	-0.9%	-1.0%	-1.1%	-0.6%	-0.3%	-0.2%	-0.1%	-0.2%	-0.2%	-0.6%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	1.542	1.542	1.542	1.542	1.527	1.596	1.540	1.510	1.505	1.533	1.542	1.542	1.538
	Change from baseline (% of baseline volume) ^d			0	0	0	0	-0.1%	0	0	0	0	0	-0.1%	-0.1%	-0.0%

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-10. Hope Bay Project Effects on Inflow of Ogama Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	1.830	0.464	0.329	0.321	0.087	0	0	0.252
Baseline (with climate change) ^b		22	2040	0	0	0	0	0.024	1.899	0.468	0.333	0.328	0.094	0	0	0.261
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	1.830	0.464	0.329	0.321	0.087	0	0	0.252
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	0	0	0	0	n/a ^e	n/a ^e	0
Construction ^f	Monthly streamflow (m ³ /s)	4	2022	0	0	0	0	0	1.694	0.401	0.297	0.295	0.089	0	0	0.230
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-8.3%	-13.8%	-9.9%	-8.7%	0	n/a ^e	n/a ^e	-9.1%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0.016	1.543	0.310	0.251	0.257	0.091	0	0	0.205
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-17.5%	-33.3%	-24.3%	-20.9%	0	n/a ^e	n/a ^e	-20.4%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0.016	1.765	0.430	0.318	0.317	0.092	0	0	0.244
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-6.0%	-7.8%	-4.2%	-2.6%	0	n/a ^e	n/a ^e	-5.5%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0.016	1.890	0.466	0.332	0.327	0.093	0	0	0.259
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.1%	-0.1%	-0.0%	-0.0%	0	n/a ^e	n/a ^e	-0.1%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-11. Hope Bay Project Effects on Outflow of Ogama Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	1.776	0.476	0.314	0.291	0.000	0	0	0.237
Baseline (with climate change) ^b		22	2040	0	0	0	0	0.001	1.873	0.476	0.316	0.296	0.001	0	0	0.246
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	1.776	0.476	0.314	0.291	0.000	0	0	0.237
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0	0	0	0	0	n/a ^e	n/a ^e	0
Construction ^f	Monthly streamflow (m ³ /s)	4	2022	0	0	0	0	0	1.656	0.405	0.278	0.263	0.000	0	0	0.216
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-7.6%	-14.9%	-11.7%	-10.0%	-35.5%	n/a ^e	n/a ^e	-9.6%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0.000	1.542	0.304	0.222	0.223	0.000	0	0	0.190
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-15.9%	-36.0%	-29.3%	-24.3%	-69.4%	n/a ^e	n/a ^e	-21.6%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0.000	1.733	0.433	0.298	0.284	0.001	0	0	0.228
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-6.0%	-9.0%	-5.4%	-3.3%	-10.0%	n/a ^e	n/a ^e	-6.2%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0.001	1.854	0.475	0.315	0.295	0.001	0	0	0.244
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.1%	-0.1%	-0.0%	-0.0%	-0.1%	n/a ^e	n/a ^e	-0.1%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-12. Hope Bay Project Effects on Elevation of Ogama Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	24.050	24.050	24.050	24.050	24.030	24.170	23.950	23.900	23.890	24.010	24.050	24.050	24.020
Baseline (with climate change) ^b		22	2040	24.060	24.060	24.060	24.060	24.050	24.170	23.950	23.900	23.890	24.020	24.060	24.060	24.028
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	24.050	24.050	24.050	24.050	24.030	24.170	23.950	23.900	23.890	24.010	24.050	24.050	24.020
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly lake elevation (m)	4	2022	24.050	24.050	24.050	24.050	24.030	24.140	23.930	23.880	23.870	24.000	24.040	24.040	24.010
	Change from baseline elevation (m) ^d			0	0	0	0	-0.010	-0.030	-0.020	-0.020	-0.020	-0.010	-0.010	-0.010	-0.011
Operation ^f	Monthly lake elevation (m)	13	2031	24.030	24.030	24.030	24.030	24.020	24.100	23.890	23.850	23.850	23.990	24.030	24.030	23.990
	Change from baseline elevation (m) ^d			-0.030	-0.030	-0.030	-0.030	-0.020	-0.070	-0.060	-0.050	-0.040	-0.020	-0.030	-0.030	-0.037
Closure ^f	Monthly lake elevation (m)	15	2033	24.040	24.040	24.040	24.040	24.030	24.140	23.940	23.890	23.880	24.010	24.060	24.060	24.014
	Change from baseline elevation (m) ^d			-0.020	-0.020	-0.020	-0.020	-0.010	-0.030	-0.010	-0.010	-0.010	-0.010	0	0	-0.013
Post-Closure ^f	Monthly lake elevation (m)	18	2036	24.060	24.060	24.060	24.060	24.040	24.160	23.950	23.900	23.890	24.020	24.060	24.060	24.026
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-13. Hope Bay Project Effects on Volume of Ogama Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	5.438	5.438	5.438	5.438	5.409	5.625	5.284	5.193	5.175	5.372	5.439	5.439	5.390
Baseline (with climate change) ^b		22	2040	5.458	5.458	5.458	5.458	5.431	5.623	5.283	5.194	5.178	5.386	5.458	5.458	5.403
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	5.438	5.438	5.438	5.438	5.409	5.625	5.284	5.193	5.175	5.372	5.439	5.439	5.390
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly volume (Mm ³ /s)	4	2022	5.429	5.429	5.429	5.429	5.400	5.583	5.246	5.168	5.155	5.357	5.425	5.425	5.372
	Change from baseline (% of baseline volume) ^d			-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.8%	-0.7%	-0.5%	-0.4%	-0.3%	-0.3%	-0.3%	-0.4%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	5.407	5.407	5.407	5.407	5.381	5.524	5.183	5.124	5.123	5.333	5.405	5.405	5.341
	Change from baseline (% of baseline volume) ^d			-0.8%	-0.8%	-0.8%	-0.8%	-0.8%	-1.7%	-1.9%	-1.3%	-1.0%	-0.9%	-0.8%	-0.8%	-1.0%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	5.425	5.425	5.425	5.425	5.399	5.590	5.261	5.182	5.170	5.376	5.447	5.447	5.380
	Change from baseline (% of baseline volume) ^d			-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	-0.6%	-0.4%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.3%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	5.453	5.453	5.453	5.453	5.427	5.621	5.283	5.194	5.178	5.384	5.456	5.456	5.400
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	-0.0%	0	0	0	0	0	0	-0.0%

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-14. Hope Bay Project Effects on Outflow of Doris Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	1.943	0.638	0.344	0.345	0.196	0.005	0	0.288
Baseline (with climate change) ^b		22	2040	0	0	0	0	0.003	2.050	0.625	0.342	0.349	0.202	0.024	0	0.299
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	1.666	0.587	0.305	0.294	0.151	0.003	0	0.250
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-14.2%	-8.1%	-11.2%	-14.8%	-23.0%	n/a ^e	n/a ^e	-13.4%
Construction ^f	Monthly streamflow (m ³ /s)	2	2020	0	0	0	0	0	1.527	0.578	0.301	0.292	0.150	0.003	0	0.237
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-22.0%	-9.5%	-12.5%	-15.6%	-23.6%	n/a ^e	n/a ^e	-18.2%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0	1.070	0.379	0.206	0.227	0.113	0.005	0	0.166
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-46.6%	-39.9%	-39.8%	-34.5%	-43.5%	n/a ^e	n/a ^e	-43.6%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0	1.643	0.541	0.299	0.303	0.166	0.015	0	0.247
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-18.4%	-13.9%	-12.6%	-12.7%	-16.8%	n/a ^e	n/a ^e	-16.5%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0.005	2.055	0.638	0.362	0.358	0.196	0.021	0	0.302
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	1.3%	1.7%	5.7%	2.9%	-2.1%	n/a ^e	n/a ^e	1.8%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-15. Hope Bay Project Effects on Elevation of Doris Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	22.610	22.610	22.610	22.610	22.600	23.030	22.790	22.720	22.720	22.670	22.610	22.610	22.682
Baseline (with climate change) ^b		22	2040	22.600	22.600	22.600	22.600	22.580	23.050	22.780	22.720	22.720	22.670	22.600	22.600	22.677
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	22.590	22.580	22.560	22.550	22.510	22.960	22.780	22.710	22.700	22.650	22.580	22.560	22.644
	Change from baseline elevation (m) ^d			-0.020	-0.030	-0.050	-0.060	-0.090	-0.070	-0.010	-0.010	-0.020	-0.020	-0.030	-0.050	-0.038
Construction ^f	Monthly lake elevation (m)	2	2020	22.530	22.500	22.480	22.450	22.410	22.920	22.770	22.710	22.700	22.650	22.580	22.560	22.605
	Change from baseline elevation (m) ^d			-0.080	-0.110	-0.130	-0.160	-0.190	-0.110	-0.020	-0.010	-0.020	-0.020	-0.030	-0.050	-0.077
Operation ^f	Monthly lake elevation (m)	13	2031	22.430	22.370	22.320	22.260	22.190	22.800	22.730	22.670	22.680	22.630	22.540	22.490	22.510
	Change from baseline elevation (m) ^d			-0.180	-0.240	-0.290	-0.350	-0.400	-0.240	-0.060	-0.050	-0.040	-0.040	-0.070	-0.110	-0.172
Closure ^f	Monthly lake elevation (m)	15	2033	22.530	22.520	22.520	22.510	22.490	22.960	22.770	22.710	22.700	22.660	22.590	22.590	22.629
	Change from baseline elevation (m) ^d			-0.070	-0.080	-0.080	-0.090	-0.100	-0.080	-0.020	-0.010	-0.020	-0.010	-0.020	-0.010	-0.049
Post-Closure ^f	Monthly lake elevation (m)	18	2036	22.600	22.600	22.600	22.600	22.580	23.020	22.780	22.720	22.710	22.660	22.600	22.600	22.672
	Change from baseline elevation (m) ^d			0	0	0	0	0	-0.030	-0.010	0	-0.010	-0.010	0	0	-0.005

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-16. Hope Bay Project Effects on Volume of Doris Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	29.490	29.490	29.490	29.490	29.430	30.950	30.100	29.860	29.850	29.680	29.490	29.490	29.734
Baseline (with climate change) ^b		22	2040	29.450	29.450	29.450	29.450	29.390	31.020	30.090	29.860	29.860	29.690	29.460	29.450	29.718
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	29.410	29.370	29.320	29.270	29.150	30.720	30.060	29.820	29.800	29.620	29.390	29.320	29.604
	Change from baseline (% of baseline volume) ^d			-0.3%	-0.4%	-0.6%	-0.7%	-1.0%	-0.7%	-0.1%	-0.1%	-0.2%	-0.2%	-0.3%	-0.6%	-0.4%
Construction ^f	Monthly volume (Mm ³ /s)	2	2020	29.200	29.110	29.030	28.940	28.790	30.570	30.060	29.820	29.800	29.610	29.390	29.320	29.471
	Change from baseline (% of baseline volume) ^d			-1.0%	-1.3%	-1.6%	-1.9%	-2.2%	-1.3%	-0.1%	-0.1%	-0.2%	-0.2%	-0.4%	-0.6%	-0.9%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	28.850	28.660	28.470	28.280	28.020	30.130	29.890	29.710	29.720	29.550	29.250	29.060	29.134
	Change from baseline (% of baseline volume) ^d			-2.1%	-2.7%	-3.4%	-4.0%	-4.7%	-2.8%	-0.7%	-0.5%	-0.4%	-0.5%	-0.7%	-1.4%	-2.0%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	29.200	29.180	29.160	29.140	29.050	30.720	30.030	29.820	29.810	29.640	29.430	29.400	29.549
	Change from baseline (% of baseline volume) ^d			-0.9%	-1.0%	-1.0%	-1.1%	-1.2%	-0.9%	-0.2%	-0.1%	-0.1%	-0.2%	-0.1%	-0.2%	-0.6%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	29.450	29.450	29.450	29.450	29.390	30.930	30.080	29.860	29.840	29.670	29.460	29.450	29.706
	Change from baseline (% of baseline volume) ^d			-0.0%	-0.0%	-0.0%	-0.0%	0	-0.3%	-0.0%	0	-0.1%	-0.1%	0	-0.0%	-0.1%

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-17. Hope Bay Project Effects on Outflow of Little Roberts Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	7.091	1.802	1.159	1.166	0.612	0.011	0	0.983
Baseline (with climate change) ^b		22	2040	0	0	0	0	0.065	7.377	1.798	1.175	1.193	0.638	0.048	0	1.021
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	6.539	1.700	1.082	1.064	0.522	0.007	0	0.906
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-7.8%	-5.7%	-6.7%	-8.8%	-14.7%	n/a ^e	n/a ^e	-7.8%
Construction ^f	Monthly streamflow (m ³ /s)	2	2020	0	0	0	0	0	6.269	1.683	1.075	1.061	0.523	0.007	0	0.882
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-12.1%	-6.7%	-7.4%	-9.2%	-15.1%	n/a ^e	n/a ^e	-10.7%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0.038	5.382	1.296	0.895	0.942	0.454	0.010	0	0.748
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-25.8%	-27.9%	-23.4%	-20.3%	-27.7%	n/a ^e	n/a ^e	-25.6%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0.039	6.539	1.623	1.083	1.095	0.562	0.031	0	0.911
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-10.2%	-9.7%	-7.3%	-7.5%	-10.6%	n/a ^e	n/a ^e	-9.6%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0.049	7.384	1.820	1.210	1.208	0.626	0.042	0	1.024
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	0.7%	1.2%	3.3%	1.7%	-1.4%	n/a ^e	n/a ^e	1.0%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-18. Hope Bay Project Effects on Elevation of Imniagut Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	27.320	27.320	27.320	27.320	27.300	27.360	27.330	27.290	27.280	27.300	27.300	27.300	27.312
Baseline (with climate change) ^b		22	2040	27.020	27.020	27.020	27.020	27.010	27.080	27.040	27.000	26.990	27.010	27.010	27.010	27.019
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	27.320	27.320	27.320	27.320	27.300	27.360	27.330	27.290	27.280	27.300	27.300	27.300	27.312
	Change from baseline elevation (m) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly lake elevation (m)	4	2022	27.170	27.160	27.150	27.140	27.120	27.180	27.140	27.080	27.070	27.080	27.070	27.060	27.118
	Change from baseline elevation (m) ^d			-0.090	-0.100	-0.110	-0.120	-0.120	-0.130	-0.140	-0.150	-0.160	-0.160	-0.180	-0.190	-0.138
Operation ^f	Monthly lake elevation (m)	13	2031	25.000	24.900	24.770	24.560	23.670	24.870	24.980	24.900	24.850	24.820	24.690	24.210	24.683
	Change from baseline elevation (m) ^d			-2.140	-2.240	-2.370	-2.580	-3.450	-2.320	-2.180	-2.210	-2.250	-2.300	-2.440	-2.920	-2.452
Closure ^f	Monthly lake elevation (m)	15	2033	25.200	25.200	25.200	25.200	25.180	25.360	25.370	25.340	25.350	25.390	25.390	25.390	25.298
	Change from baseline elevation (m) ^d			-1.910	-1.910	-1.910	-1.910	-1.910	-1.810	-1.760	-1.750	-1.730	-1.710	-1.710	-1.710	-1.810
Post-Closure ^f	Monthly lake elevation (m)	18	2036	25.580	25.580	25.580	25.580	25.560	25.670	25.650	25.610	25.610	25.640	25.640	25.640	25.612
	Change from baseline elevation (m) ^d			-1.490	-1.490	-1.490	-1.490	-1.500	-1.460	-1.440	-1.440	-1.430	-1.420	-1.420	-1.420	-1.457

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-19. Hope Bay Project Effects on Volume of Imniagut Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0.239	0.239	0.239	0.239	0.237	0.245	0.241	0.236	0.235	0.237	0.237	0.237	0.238
Baseline (with climate change) ^b		22	2040	0.202	0.202	0.202	0.202	0.200	0.209	0.204	0.199	0.197	0.200	0.200	0.200	0.201
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	0.239	0.239	0.239	0.239	0.237	0.245	0.241	0.236	0.235	0.237	0.237	0.237	0.238
	Change from baseline (% of baseline volume) ^d			0	0	0	0	0	0	0	0	0	0	0	0	0
Construction ^f	Monthly volume (Mm ³ /s)	4	2022	0.220	0.219	0.218	0.217	0.214	0.221	0.216	0.210	0.207	0.209	0.208	0.207	0.214
	Change from baseline (% of baseline volume) ^d			-5.2%	-5.6%	-6.1%	-6.5%	-7.0%	-7.2%	-7.7%	-8.3%	-8.8%	-9.2%	-9.6%	-10.1%	-7.6%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	0.010	0.007	0.005	0.002	0.000	0.009	0.009	0.007	0.006	0.006	0.003	0.001	0.005
	Change from baseline (% of baseline volume) ^d			-95.5%	-96.7%	-97.8%	-99.1%	-100.0%	-95.9%	-95.7%	-96.6%	-97.0%	-97.3%	-98.4%	-99.6%	-97.5%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	0.017	0.017	0.017	0.017	0.016	0.026	0.026	0.025	0.026	0.028	0.028	0.028	0.023
	Change from baseline (% of baseline volume) ^d			-92.1%	-92.1%	-92.1%	-92.1%	-92.3%	-88.2%	-87.8%	-88.2%	-87.8%	-86.9%	-86.7%	-86.7%	-89.4%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	0.043	0.043	0.043	0.043	0.041	0.051	0.049	0.045	0.045	0.048	0.048	0.048	0.045
	Change from baseline (% of baseline volume) ^d			-79.6%	-79.6%	-79.6%	-79.6%	-80.1%	-76.4%	-76.8%	-77.8%	-77.7%	-76.9%	-76.7%	-76.7%	-78.1%

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-20. Hope Bay Project Effects on Outflow of Windy Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	0.183	0.079	0.027	0.025	0	0	0	0.026
Baseline (with climate change) ^b		22	2040	0	0	0	0	0	0.197	0.075	0.025	0.023	0	0	0	0.027
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	0.171	0.074	0.025	0.023	0	0	0	0.024
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-6.7%	-5.8%	-8.0%	-8.1%	n/a ^e	n/a ^e	n/a ^e	-6.7%
Construction ^f	Monthly streamflow (m ³ /s)	4	2022	0	0	0	0	0	0.173	0.074	0.025	0.023	0	0	0	0.025
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-6.9%	-6.1%	-8.4%	-8.5%	n/a ^e	n/a ^e	n/a ^e	-7.0%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0	0.177	0.071	0.023	0.022	0	0	0	0.024
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-7.9%	-6.9%	-9.8%	-10.0%	n/a ^e	n/a ^e	n/a ^e	-8.0%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0	0.180	0.072	0.023	0.022	0	0	0	0.025
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-7.0%	-6.1%	-8.6%	-8.8%	n/a ^e	n/a ^e	n/a ^e	-7.0%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0	0.194	0.076	0.025	0.023	0	0	0	0.026
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.3%	-0.2%	-0.2%	-0.2%	n/a ^e	n/a ^e	n/a ^e	-0.3%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-21. Hope Bay Project Effects on Elevation of Windy Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	15.760	15.760	15.760	15.760	15.740	15.850	15.790	15.730	15.730	15.760	15.760	15.760	15.763
Baseline (with climate change) ^b		22	2040	15.760	15.760	15.760	15.760	15.740	15.860	15.780	15.730	15.730	15.760	15.760	15.760	15.763
No Madrid-Boston development ^c	Monthly lake elevation (m)	0	2018	15.760	15.750	15.750	15.750	15.730	15.840	15.780	15.730	15.730	15.750	15.760	15.760	15.757
	Change from baseline elevation (m) ^d			0	-0.010	-0.010	-0.010	-0.010	-0.010	-0.010	0	0	-0.010	0	0	-0.006
Construction ^f	Monthly lake elevation (m)	4	2022	15.760	15.760	15.750	15.750	15.740	15.840	15.780	15.730	15.730	15.750	15.760	15.760	15.759
	Change from baseline elevation (m) ^d			0	0	-0.010	-0.010	0	-0.010	-0.010	0	0	-0.010	0	0	-0.004
Operation ^f	Monthly lake elevation (m)	13	2031	15.750	15.750	15.750	15.750	15.730	15.850	15.780	15.730	15.720	15.750	15.760	15.760	15.757
	Change from baseline elevation (m) ^d			-0.010	-0.010	-0.010	-0.010	-0.010	0	-0.010	0	-0.010	-0.010	0	0	-0.007
Closure ^f	Monthly lake elevation (m)	15	2033	15.760	15.750	15.750	15.750	15.730	15.850	15.780	15.730	15.720	15.750	15.760	15.760	15.757
	Change from baseline elevation (m) ^d			0	-0.010	-0.010	-0.010	-0.010	0	-0.010	0	-0.010	-0.010	0	0	-0.006
Post-Closure ^f	Monthly lake elevation (m)	18	2036	15.760	15.760	15.760	15.760	15.740	15.850	15.780	15.730	15.730	15.760	15.760	15.760	15.762
	Change from baseline elevation (m) ^d			0	0	0	0	0	-0.010	0	0	0	0	0	0	-0.001

Notes:

^a Baseline condition (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline condition (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake levations in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected lake elevations. For example, project-affected elevations in Year 10 are compared with baseline elevations in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-22. Hope Bay Project Effects on Volume of Windy Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	46.010	46.010	46.010	46.010	45.920	46.440	46.140	45.870	45.850	45.980	46.010	46.010	46.021
Baseline (with climate change) ^b		22	2040	46.010	46.010	46.010	46.010	45.920	46.480	46.120	45.850	45.840	45.980	46.010	46.010	46.020
No Madrid-Boston development ^c	Monthly volume (Mm ³)	0	2018	45.980	45.970	45.970	45.970	45.880	46.410	46.120	45.860	45.840	45.970	45.990	45.990	45.995
	Change from baseline (% of baseline volume) ^d			-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	-0.1%
Construction ^f	Monthly volume (Mm ³ /s)	4	2022	45.980	45.980	45.980	45.970	45.880	46.420	46.120	45.860	45.840	45.960	45.990	45.990	45.997
	Change from baseline (% of baseline volume) ^d			-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	-0.1%
Operation ^f	Monthly volume (Mm ³ /s)	13	2031	45.980	45.970	45.970	45.960	45.870	46.430	46.100	45.840	45.830	45.960	45.980	45.980	45.989
	Change from baseline (% of baseline volume) ^d			-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.0%	-0.0%	-0.0%	-0.1%	-0.1%	-0.1%
Closure ^f	Monthly volume (Mm ³ /s)	15	2033	45.980	45.980	45.970	45.970	45.870	46.430	46.110	45.840	45.830	45.960	45.990	45.980	45.992
	Change from baseline (% of baseline volume) ^d			-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.0%	-0.0%	-0.0%	-0.0%	-0.0%	-0.1%	-0.1%
Post-Closure ^f	Monthly volume (Mm ³ /s)	18	2036	46.010	46.010	46.010	46.010	45.910	46.470	46.120	45.860	45.840	45.980	46.010	46.010	46.019
	Change from baseline (% of baseline volume) ^d			0	0	0	0	-0.0%	0	0	0	0	0	0	0	-0.0%

Notes:

^a Baseline volume (natural hydrology if no infrastructure had been developed) in Project Year 0

^a Baseline volume (natural hydrology if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Lake volumes in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Bostoninfrastructure commences.

^d Climate change effects are considered in both baseline and project-affected volumes. For example, project-affected volumes in Year 10 are compared with baseline volumes in Year 10.

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.

Table T-23. Hope Bay Project Effects on Outflow of Glenn Lake, during Years with Maximum Project Effects, under High Groundwater Sensitivity Case

Project Phase		Project Year	Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Baseline (current climate) ^a		0	2018	0	0	0	0	0	0.728	0.111	0.075	0.115	0.045	0	0	0.089
Baseline (with climate change) ^b		22	2040	0	0	0	0	0	0.762	0.107	0.073	0.116	0.048	0	0	0.092
No Madrid-Boston development ^c	Monthly streamflow (m ³ /s)	0	2018	0	0	0	0	0	0.716	0.107	0.073	0.113	0.045	0	0	0.087
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-1.7%	-4.1%	-3.0%	-1.8%	0	n/a ^e	n/a ^e	-2.0%
Construction ^f	Monthly streamflow (m ³ /s)	4	2022	0	0	0	0	0	0.721	0.106	0.073	0.113	0.046	0	0	0.088
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-1.7%	-4.2%	-3.1%	-1.8%	0	n/a ^e	n/a ^e	-2.0%
Operation ^f	Monthly streamflow (m ³ /s)	13	2031	0	0	0	0	0	0.733	0.103	0.071	0.113	0.047	0	0	0.088
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-2.0%	-4.8%	-3.5%	-2.1%	0	n/a ^e	n/a ^e	-2.3%
Closure ^f	Monthly streamflow (m ³ /s)	15	2033	0	0	0	0	0	0.738	0.104	0.071	0.113	0.047	0	0	0.089
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-1.8%	-4.2%	-3.1%	-1.8%	0	n/a ^e	n/a ^e	-2.1%
Post-Closure ^f	Monthly streamflow (m ³ /s)	18	2036	0	0	0	0	0	0.755	0.108	0.073	0.116	0.048	0	0	0.091
	Change from baseline (% of baseline flow) ^d			n/a ^e	n/a ^e	n/a ^e	n/a ^e	n/a ^e	-0.1%	-0.2%	-0.1%	-0.0%	0	n/a ^e	n/a ^e	-0.1%

Notes:

^a Baseline flow (natural flows if no infrastructure had been developed) in Project Year 0

^a Baseline flow (natural flows if no infrastructure had been developed) at the end of mine life (i.e., Year 22), including the effects of climate change

^c Flows in Project Year 0 with currently permitted infrastructure, before Construction of Madrid-Boston infrastructure commences.

^d Climate change effects are considered in both baseline and project-affected flows. For example, project-affected flows in Year 10 are compared with baseline flows in Year 10.

^e When baseline flow is zero (i.e., December to April) or monthly-averaged flow is misleading because flow is zero during part of the month (i.e., May and November), percent changes are described as n/a

^f For each phase of the Project, the year with maximum difference from baseline condiitons is shown on the table.