Table 1. Early actions to reduce arsenic load to surface waters from legacy mining features at Stibnite.

Location	Type	Feature	Aluminum, Diss. (lb/yr)	Antimony, Diss. (lb/yr)	Arsenic, Diss. (lb/yr)	Selenium, Diss. (lb/yr)	Solids, Total Diss. (lb/yr) (TDS)	Solids, Total Suspended (TSS)	Relative Arsenic Load	Status under PRO Mining Permit	Year Modified (if mining occurs per PRO)	Land Status	Early Action Candidate Site Work Descriptions	Regulatory Mechanism	Capital Cost Estimate (in $1000s)	Annual O&M Cost Estimate (in $1000s)
Early Action Sites Suggested by Midas (Year 1)																
Near EFSFSSR & Sugar Ck confluence	Waste (divert sfc water)	Bradley Dump			164.25				2	Partially removed by PRO	2-10	Unpatented	Divert Hennessey Creek around Bradley Dump (Midas, 2020).	CERCLA TCRA		
Meadow Creek above EFSFSR	Waste (divert sfc water)	BMC Meadow Creek Mill+Smelter Site	0.51	85.05	59.06	0.18	14174.80	1352.51	5	Removed by PRO	2-10	Patented	Divert upgradient water around mineralized backfill materials (Midas, 2020).	CERCLA TCRA		
EFSFSR above Fiddle Creek	Waste (divert sfc water)	SW flow from DMEA waste rock pile	0.18	1.06	7.09	0.04	6693.66	2953.08	13	N/A		Unpatented	Divert unnamed stream around DMEA waste rock pile (Midas, 2020).	CERCLA TCRA		
Candidate Studies to Support Future Control of Adit Discharge (Year 1)																
EFSFSR below Sugar Creek	Adit Discharge	SW flow from Bailey Tunnel Adit Seep	0.71	33.67	26.58	0.18	83454.15	900.10	8	Minimized by PRO dewatering	3	Patented	For bulkhead basis of design, monitor site weather station continuously, and collect continuous flow and water quality data. Use data to design collection system (sumps or interceptor trenches with transfer pumps to holding tanks for baseflow (minimum to average flowrates)) and to evaluate treatment options (land to treatment plant, sulfate bioreactor or vertical wetlands). Evaluate adit for access and scope (Year 2) geotechnical study (Best Practices for Preventing Sudden, Uncontrolled Flud Mining Waste Releases, EPA, 2017, OLEM 9200.3-118).	N/A - study informing NTCRA EE/CA	400	
Meadow Creek above EFSFSR	Adit Discharge	SW flow from Meadow Creek Mine adit seep	0.03	0.09	23.51	0.01	3705.14	937.11	9	N/A		Patented				
EFSFSR above Yellow Pine Pit	Adit Discharge	SW flow from Cinnabar Tunnel adit seep	0.41	9.65	21.66	0.20	25593.39	984.36	10	N/A		Unpatented				
EFSFSR above Fiddle Creek	Adit Discharge	SW flow from DMEA Adit seep	0.03	0.26	2.83	0.01	2327.03	59.06	18	N/A		Unpatented				
EFSFSR below Sugar Creek	Adit Discharge	SW flow from Bonanza Adit Seep	0.17	4.33	1.04	0.02	3642.14	988.30	19	N/A		Unpatented				
EFSFSR above Yellow Pine Pit	Adit Discharge	SW flow from Monday Tunnel adit seep	0.06	0.02	0.54	0.01	1345.03	979.83	20	N/A		Unpatented				
Candidate Studies to Support Future In Water Work (Year 1)																
Meadow Creek above EFSFSR	Surface Water	SW flow from pond downgradient of Yellow Pine Pit	2.36	31.50	110.25	0.20	30515.20	984.36	3	Mitigated during dewatering	3	Patented	Evaluate flow and water quality into and out of the pond.	N/A - study informing CERCLA TCRA	100	
Meadow Creek above EFSFSR	Surface Water	SW flow from Keyway Marsh Outlet	1.57	15.71	28.80	0.37	80796.37	9725.49	7	N/A		Mixed, mostly Unpatented	Evaluate flow and water quality into and out of the marsh. Collect data necessary to characterize substrate, vegetation, groundwater exchange, hydraulic residence time and loading rate, evapotranspiration and water balance within the marsh. Evaluate whether marsh can be enhanced to treat effluent to target concentrations.	N/A - study informing CERCLA TCRA	20	
EFSFSR below Sugar Creek	Waste Rock	Seepage from Lower West End DRSF	1.51	9.04	60.24	0.33	56896.08	25101.21	6	Minimized by PRO dewatering	3	Mixed	To support in-water work planning and engineering requirements: map wetlands and Ordinary High Water Mark around waste rock piles and stream; prepare vicinity map, plan view and cross-section view of waste rock removal project; prepare plans and specifications for protection of fish life; prepare wetlands mitigation table where necessary.	N/A - study informing CERCLA TCRA	100	
EFSFSR below Sugar Creek	Waste Rock	Seepage from BMC NW DRSF	0.45	2.71	18.07	0.10	17068.82	7530.36	12	Removed by PRO	2-10	Patented				
EFSFSR above Fiddle Creek	Waste Rock	CSM-PMC-SMI Upper MacCamp DRSF	0.09	0.53	3.54	0.02	3346.83	1476.54	16	N/A		Unpatented				
EFSFSR below Yellow Pine Pit	Waste Rock	Seepage from BMC NE Oxide stockpile #1	0.09	0.53	3.54	0.02	3346.83	1476.54	17	N/A		Unpatented				
EFSFSR above Fiddle Creek	Seep	SW flow from Garnet pit seep	0.63	2.26	13.78	0.10	7894.58	1850.60	14	N/A		Unpatented	For vertical wetlands evaluation, monitor site weather station continuously, and install Modified Parshall Flume near adit and collect flow and water quality data.	N/A - study informing CERCLA TCRA	60	
Candidate Early Action Site Pilot Studies (Year 2)																
Meadow Creek above EFSFSR	Surface Water	SW flow from pond downgradient of Yellow Pine Pit	2.36	31.50	110.25	0.20	30515.20	984.36	3	Mitigated during dewatering	3	Patented	Construct batch treatment pilot and intake and conduct pilot test treatment of flow from pond.	Pilot Test for TCRA EE/CA	1,000	
Meadow Creek above EFSFSR	Surface Water	SW flow from Keyway Marsh Outlet	1.57	15.71	28.80	0.37	80796.37	9725.49	7	N/A		Mixed	Based upon Year 1 evaluations, pilot test marsh enhancements or construct a pilot test of a vertical wetlands to treat discharge from the marsh.	Pilot test under CERCLA TCRA	200	
EFSFSR above Fiddle Creek	Seep	SW flow from Garnet pit seep	0.63	2.26	13.78	0.10	7894.58	1850.60	14	N/A		Unpatented	Construct a pilot test of a vertical wetlands to treat discharge from the pit.	Pilot test under CERCLA TCRA	100	
EFSFSR above Fiddle Creek	Adit Discharge	SW flow from DMEA Adit seep	0.03	0.26	2.83	0.01	2327.03	59.06	18	N/A		Unpatented	Pilot test and geotech study informing NTCRA EE/CA For adits install collection system with baseflow to holding tanks and bypass to existing stream. Based upon Year 1 evaluations pilot test bioreactor or vertical wetlands, or complete road work necessary to haul baseflow to batch plant for treatment prior to discharge. Conduct geotechnical studies to support bulkhead design.		600	
EFSFSR above Yellow Pine Pit	Adit Discharge	SW flow from Cinnabar Tunnel adit seep	0.41	9.65	21.66	0.20	25593.39	984.36	10	N/A		Unpatented				
EFSFSR below Sugar Creek	Adit Discharge	SW flow from Bonanza Adit Seep	0.17	4.33	1.04	0.02	3642.14	988.30	19	N/A		Unpatented				
EFSFSR below Sugar Creek	Adit Discharge	SW flow from Bailey Tunnel Adit Seep	0.71	33.67	26.58	0.18	83454.15	900.10	8	Minimized by PRO dewatering	3	Unpatented				
Meadow Creek above EFSFSR	Adit Discharge	SW flow from Meadow Creek Mine adit seep	0.03	0.09	23.51	0.01	3705.14	937.11	9	N/A		Patented				
EFSFSR above Yellow Pine Pit	Adit Discharge	SW flow from Monday Tunnel adit seep	0.06	0.02	0.54	0.01	1345.03	979.83	20	N/A		Unpatented				
Candidate Early Action Removal Actions (Year 2)																
EFSFSR below Sugar Creek	Waste Rock	Seepage from Lower West End DRSF	1.51	9.04	60.24	0.33	56896.08	25101.21	6	Minimized by PRO dewatering	3	Mixed	Move waste rock to (upland) staging area for one of the PRO DRSFs.	CERCLA TCRA	1,000	
EFSFSR below Sugar Creek	Waste Rock	Seepage from BMC NW DRSF	0.45	2.71	18.07	0.10	17068.82	7530.36	12	Removed by PRO	2-10	Patented			10,000	
EFSFSR above Fiddle Creek	Waste Rock	CSM-PMC-SMI Upper MacCamp DRSF	0.09	0.53	3.54	0.02	3346.83	1476.54	16	N/A		Unpatented			300	
EFSFSR below Yellow Pine Pit	Waste Rock	Seepage from BMC NE Oxide stockpile #1	0.09	0.53	3.54	0.02	3346.83	1476.54	17	N/A		Unpatented			1,000	
EFSFSR above Fiddle Creek	Waste Rock	Bradley Dump			164.25				2	Partially removed by PRO	2-10	Unpatented	Move in-water waste rock to (upland) staging area for one of the PRO DRSFs.	CERCLA TCRA	1,000	
EFSFSR below Yellow Pine Pit	Waste Rock	BMC Meadow Creek Mill+Smelter Site	0.51	85.05	59.06	0.18	14174.80	1352.51	5	Removed by PRO	2-10	Mixed			1,000	
Candidate Early Remedial Actions (Year 3)																
Meadow Creek above EFSFSR	Surface Water	SW flow from pond downgradient of Yellow Pine Pit	2.36	31.50	110.25	0.20	30515.20	984.36	3	Mitigated during dewatering	3	Patented	Ramp up intake volumes to batch plant to treat average flows, automate with winterization and shutdown capabilities to operate with minimal maintenance during winter months.	TCRA	2,000	1,000
Meadow Creek above EFSFSR	Surface Water	SW flow from Keyway Marsh Outlet	1.57	15.71	28.80	0.37	80796.37	9725.49	7	N/A		Mixed	Based on results of Year 2 work, enhance Keyway Marsh with substrate, vegetation and drainage features to optimize hydraulic residence time and loading rate, or construct full-scale vertical wetlands treatment system discharge from marsh.	CERCLA TCRA	400	200
EFSFSR above Fiddle Creek	Adit Discharge	SW flow from DMEA Adit seep	0.03	0.26	2.83	0.01	2327.03	59.06	18	N/A		Unpatented	Continue baseline flow and water quality studies to support bulkhead design, complete geotechnical data gap investigations, ramp up treatment systems to treat average flows, and automate with winterization and shutdown capabilities to operate with minimal maintenance during winter months.	NTCRA EE/CA	600	300
EFSFSR above Yellow Pine Pit	Adit Discharge	SW flow from Cinnabar Tunnel adit seep	0.41	9.65	21.66	0.20	25593.39	984.36	10	N/A		Unpatented				
EFSFSR below Sugar Creek	Adit Discharge	SW flow from Bonanza Adit Seep	0.17	4.33	1.04	0.02	3642.14	988.30	19	N/A		Unpatented				
EFSFSR below Sugar Creek	Adit Discharge	SW flow from Bailey Tunnel Adit Seep	0.71	33.67	26.58	0.18	83454.15	900.10	8	Minimized by PRO dewatering	3	Unpatented				
Meadow Creek above EFSFSR	Adit Discharge	SW flow from Meadow Creek Mine adit seep	0.03	0.09	23.51	0.01	3705.14	937.11	9	N/A		Patented				
EFSFSR above Yellow Pine Pit	Adit Discharge	SW flow from Monday Tunnel adit seep	0.06	0.02	0.54	0.01	1345.03	979.83	20	N/A		Unpatented				
EFSFSR above Fiddle Creek	Seep	SW flow from Garnet pit seep	0.63	2.26	13.78	0.10	7894.58	1850.60	14	N/A		Unpatented	Ramp up intake volumes to batch plant to treat average flows, automate with winterization and shutdown capabilities to operate with minimal maintenance during winter months.	CERCLA TRCA	200	100

DRSF - Development Rock Storage Facility (Waste Rock)
IPDES - Idaho Pollutant Discharge Elimination System
PRO - Midas proposed mining Alternatives 1, 2 or 4.
sfc - surface; SW - surface water
N/A - Not Applicable (i.e., not modified by actions in the mining proposal).
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act (a.k.a. Superfund)
TCRA - Time Critical Removal Action
NTCRA - Non-Time Critical Removal Action
ROD/RA - CERCLA Record of Decision / Remedial Action
RI/FS - CERCLA Remedial Investigation/Feasibility Study
EE/CA - Engineering Evaluation/Cost Analysis (NTCRA under CERCLA)
CWA / NPDES - Clean Water Act / National Pollutant Discharge Elimination System (permit)

EPA, 2017, Best Practices for Preventing Sudden, Uncontrolled Fluid Mining Waste Releases, OLEM 9200.3-118
Midas, 2020, Proposed Early Actions - Midas Gold Stibnite Mine Site, Memo from John Meyer to Brad Martin, 24 pages.
Jetason, 1963, Modified Parshall Flume, USGS Open-File Report, 8 pages.

Notes: Early treatment of Yellow Pine Pit Lake deferred because of current function of Lake as sediment trap. Early treatment of seeps and springs associated with Meadow Creek tailings and DRSFs that are not in floodpain, and installation of bulkheads, deferred until disposition of PRO is known.
Year 1 Cost estimate total (not including Midas proposed early actions) - 680K; Year 2 -16.2M; Year 3 (including O&M) - 4.8M

Table 3: Average Surface Water Chemistry used in the Mass Balance Calculations

Parameter	Units	Surface Water Chemistry (HDR, 2017)																			
		YP-AS-1	YP-AS-2	YP-AS-3	YP-AS-4	YP-AS-6	YP-AS-7	YP-M-3	YP-M-9	YP-S-1	YP-S-10	YP-S-2	YP-S-3	YP-S-5	YP-S-6	YP-S-8	YP-S-9	YP-SEBS-1	YP-SEBS- 2	YP-SR-10	YP-SR-11
pH	pH units	7.27	7.27	7.04	7.43	7.33	7.15	7.08	6.91	7.50	7.26	7.40	7.01	7.66	7.21	7.02	7.23	7.35	7.46	7.40	7.49
Alkalinity as $CaCO_3$, Total	mg/L	148	102	94.7	106	138	360	28.9	26.0	93.8	99.8	35.4	62.5	100	171	133	107	168	109	39.3	38.4
Aluminum, Dissolved	mg/L	0.0086	0.0040	0.0044	0.0021	0.0026	0.0065	0.049	0.012	0.038	0.0042	0.074	0.0064	1.91	0.0072	0.0031	0.015	0.0025	0.0021	0.0096	0.0075
Antimony, Dissolved	mg/L	0.22	0.19	0.0013	0.049	0.022	0.022	0.022	0.16	0.00055	0.042	0.014	0.023	2.00	0.030	0.32	0.091	0.018	0.055	0.012	0.0011
Arsenic, Dissolved	mg/L	0.053	0.15	0.039	0.11	0.24	5.97	0.083	0.56	0.042	0.077	0.98	0.14	1.74	0.43	2.33	0.14	0.099	0.14	0.024	0.0100
Barium, Dissolved	mg/L	0.078	0.021	0.11	0.0096	0.039	0.025	0.0033	0.013	0.079	0.016	0.040	0.0072	0.066	0.038	0.053	0.0063	0.14	0.013	0.0067	0.0097
Beryllium, Dissolved	mg/L	2.0E-05	6.0E-05	2.0E-05	2.0E-05	2.0E-05	4.6E-05	2.7E-05	3.6E-05	2.3E-05	2.0E-05	2.7E-05	3.2E-05	0.00040	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Boron, Dissolved	mg/L	0.028	0.028	0.026	0.028	0.025	0.023	0.025	0.021	0.032	0.025	0.025	0.028	0.032	0.025	0.025	0.027	0.029	0.029	0.026	0.026
Cadmium, Dissolved	mg/L	2.0E-05	2.1E-05	2.1E-05	2.0E-05	2.0E-05	3.0E-05	2.1E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	6.1E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Calcium, Dissolved	mg/L	39.6	90.6	20.1	31.0	48.5	215	9.42	24.0	30.5	45.8	16.0	17.8	50.5	78.3	65.6	25.7	55.8	34.5	10.2	8.75
Chloride	mg/L	0.65	0.54	0.64	0.36	0.38	0.48	0.49	1.02	0.48	29.4	1.40	0.36	1.77	34.9	41.1	0.43	0.46	0.38	0.67	0.38
Chromium, Dissolved	mg/L	0.00022	0.00021	0.00021	0.00021	0.00023	0.00031	0.00031	0.00020	0.00020	0.00020	0.00022	0.00026	0.0028	0.00022	0.00020	0.00026	0.00028	0.00023	0.00024	0.00021
Cobalt, Dissolved	mg/L	0.00012	0.00040	0.00028	3.7E-05	4.8E-05	0.0026	0.00041	4.9E-05	4.0E-05	0.0016	6.5E-05	2.5E-05	0.0022	0.0041	0.0028	3.8E-05	2.9E-05	2.5E-05	7.0E-05	2.4E-05
Copper, Dissolved	mg/L	0.00038	0.00064	0.00019	0.00022	0.00035	0.00018	0.00049	0.0027	0.00026	0.00031	0.00028	0.00032	0.012	0.00032	0.00017	0.00046	0.00019	0.00017	0.00024	0.00021
Fluoride	mg/L	0.27	0.26	0.26	0.26	0.28	0.80	0.26	0.20	0.30	0.26	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.29	0.29
Iron, Dissolved	mg/L	0.067	0.046	0.18	0.020	0.023	23.0	0.29	0.042	0.050	0.070	0.11	0.021	9.30	1.51	6.89	0.034	0.023	0.020	0.039	0.020
Lead, Dissolved	mg/L	2.4E-05	2.2E-05	2.1E-05	2.0E-05	2.1E-05	3.1E-05	0.00013	4.3E-05	2.7E-05	2.2E-05	5.2E-05	2.0E-05	0.0055	2.9E-05	2.1E-05	2.2E-05	2.0E-05	2.0E-05	2.1E-05	2.1E-05
Magnesium, Dissolved	mg/L	13.4	27.3	7.01	8.65	11.9	51.6	1.45	4.98	4.48	11.1	2.89	2.72	8.33	21.4	14.8	9.20	21.0	9.68	2.23	2.24
Manganese, Dissolved	mg/L	0.039	0.14	0.26	0.0020	0.0028	1.81	0.013	0.0093	0.0030	0.087	0.020	0.0021	0.39	1.08	1.00	0.0028	0.0049	0.0021	0.013	0.0016
Mercury, Dissolved	mg/L	2.0E-05	8.3E-07	1.4E-06	1.3E-06	1.3E-06	4.0E-06	1.4E-05	1.8E-06	3.1E-06	2.6E-06	4.8E-05	2.7E-06	0.00017	9.2E-06	1.4E-06	2.4E-06	7.8E-07	9.2E-07	2.4E-06	3.0E-06
Molybdenum, Dissolved	mg/L	0.0025	0.00075	9.3E-05	0.0010	0.0039	0.00034	0.00040	0.00019	0.00014	0.0015	0.00020	0.0016	0.0020	0.0035	0.0045	0.0014	0.0010	0.00098	0.00089	0.00091
Nickel, Dissolved	mg/L	0.00056	0.00099	0.00028	0.00029	0.00041	0.0028	0.00075	0.00045	0.00029	0.00056	0.00025	0.00026	0.0042	0.0011	0.0011	0.00030	0.00034	0.00025	0.00023	0.00024
Nitrate + Nitrite as Nitrogen	mg/L	0.050	0.070	0.090	0.22	0.050	0.050	0.10	0.050	0.050	0.064	0.064	0.11	0.087	0.093	0.050	0.050	0.22	0.14	0.050	0.050
Phosphorus, Dissolved	mg/L	0.036	0.038	0.037	0.036	0.037	0.11	0.040	0.042	0.033	0.039	0.11	0.038	0.49	0.042	0.050	0.039	0.036	0.036	0.035	0.035
Potassium, Dissolved	mg/L	2.10	2.06	1.09	1.58	1.32	3.38	0.89	2.49	1.18	4.82	1.48	1.05	6.84	7.58	5.96	3.37	1.92	1.66	0.78	0.69
Selenium, Dissolved	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0015	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0029	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
Silver, Dissolved	mg/L	2.0E-05	2.0E-05	2.1E-05	2.0E-05	2.1E-05	3.3E-05	2.5E-05	2.0E-05	2.1E-05	2.1E-05	2.0E-05	2.0E-05	0.0013	2.2E-05	2.2E-05	2.0E-05	2.0E-05	2.0E-05	2.1E-05	2.1E-05
Sodium, Dissolved	mg/L	6.57	3.49	5.22	0.95	5.01	7.53	3.82	5.36	3.18	11.6	2.30	2.72	7.54	15.5	14.1	0.88	2.79	1.06	2.12	1.68
Solids, Total Dissolved (TDS)	mg/L	185	471	97.6	130	197	941	60.3	155	133	216	92.2	80.2	217	385	290	104	263	146	51.9	45.1
Solids, Total Suspended (TSS)	mg/L	50.2	5.08	71.1	5.00	5.00	238	89.3	5.00	44.9	26.0	21.1	18.8	26.5	61.6	35.2	43.2	6.85	5.00	5.68	5.04
Sulfate	mg/L	23.7	241	3.10	12.2	42.4	406	11.1	78.3	13.0	36.6	19.6	4.22	70.0	93.0	68.1	3.72	61.0	20.7	4.03	1.58
Thallium, Dissolved	mg/L	2.0E-05	2.1E-05	2.0E-05	2.0E-05	2.0E-05	3.7E-05	2.3E-05	2.0E-05	2.0E-05	2.0E-05	8.5E-05	2.0E-05	0.00022	2.2E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
Vanadium, Dissolved	mg/L	0.00020	0.00020	0.00020	0.00020	0.00020	0.00030	0.00060	0.00020	0.00020	0.00020	0.00020	0.00021	0.0050	0.00021	0.00020	0.00038	0.00020	0.00020	0.00021	0.00020
Zinc, Dissolved	mg/L	0.00079	0.0085	0.0026	0.00062	0.0041	0.0020	0.0011	0.0030	0.00083	0.00062	0.0013	0.00078	0.36	0.00088	0.0011	0.00064	0.00072	0.00063	0.00063	0.00070

YP-SR-2	YP-SR-4	YP-SR-6	YP-SR-8	YP-T-1	YP-T-10	YP-T-11	YP-T-15	YP-T-17	YP-T-22	YP-T-23A	YP-T-27	YP-T-29	YP-T-35	YP-T-41	YP-T-48	YP-YPP- 01
7.61	7.50	7.38	7.48	7.68	8.10	7.19	7.41	7.34	7.44	7.06	7.39	7.60	7.49	7.10	7.20	6.43
47.6	42.8	40.9	43.0	56.7	90.3	25.3	46.6	95.4	39.7	61.6	38.2	41.5	51.4	21.5	21.9	56.0
0.016	0.012	0.011	0.010	0.011	0.0044	0.017	0.0066	0.0045	0.014	0.0086	0.013	0.012	0.0061	0.016	0.010	0.0063
0.022	0.031	0.019	0.017	0.0036	0.046	0.00056	0.045	0.027	0.0078	1.44	0.0060	0.0010	0.044	0.00052	0.027	0.035
0.043	0.061	0.030	0.028	0.013	0.091	0.0016	0.086	0.18	0.033	1.00	0.033	0.0063	0.16	0.0022	0.026	0.085
0.011	0.011	0.010	0.0099	0.011	0.0083	0.012	0.0090	0.033	0.0073	0.034	0.0053	0.012	0.0077	0.016	0.015	0.013
2.0E-05	2.1E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
0.026	0.026	0.026	0.026	0.028	0.028	0.027	0.027	0.025	0.025	0.026	0.025	0.025	0.026	0.028	0.022	0.021
2.0E-05	2.0E-05	2.0E-05	2.8E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.2E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
14.2	12.6	11.3	11.3	16.3	25.2	5.60	12.2	37.5	11.1	53.0	11.3	9.94	14.2	4.47	5.37	15.0
0.52	0.66	0.68	0.73	0.38	1.55	0.39	0.38	0.42	0.99	0.83	1.22	0.38	0.38	0.38	0.39	0.50
0.00021	0.00022	0.00020	0.00022	0.00020	0.00021	0.00026	0.00023	0.00022	0.00025	0.00021	0.00022	0.00022	0.00023	0.00021	0.00020	0.00020
7.2E-05	0.00011	9.6E-05	0.00011	2.9E-05	3.4E-05	2.2E-05	2.5E-05	5.5E-05	0.00010	0.00088	0.00012	3.0E-05	3.4E-05	2.3E-05	2.1E-05	7.9E-05
0.00023	0.00025	0.00023	0.00032	0.00046	0.00021	0.00021	0.00024	0.00026	0.00027	0.0014	0.00024	0.00027	0.00029	0.00029	0.00022	0.00038
0.29	0.29	0.29	0.29	0.29	0.28	0.28	0.29	0.26	0.28	0.32	0.28	0.28	0.29	0.28	0.21	0.20
0.037	0.057	0.029	0.034	0.021	0.020	0.023	0.023	0.052	0.071	1.04	0.063	0.028	0.021	0.042	0.023	0.048
2.1E-05	2.0E-05	2.0E-05	2.2E-05	2.3E-05	2.0E-05	2.0E-05	2.0E-05	2.5E-05	2.1E-05	3.5E-05	2.0E-05	2.3E-05	2.1E-05	2.0E-05	2.0E-05	2.0E-05
2.97	2.86	2.51	2.52	3.05	8.26	0.73	3.50	9.42	2.15	5.87	2.10	2.10	3.41	0.57	1.18	3.49
0.011	0.020	0.0087	0.011	0.0021	0.0019	0.0019	0.0029	0.0083	0.022	0.36	0.025	0.0046	0.0021	0.0064	0.0018	0.016
5.7E-06	2.4E-06	2.4E-06	2.5E-06	7.6E-06	3.9E-06	1.9E-06	1.5E-06	2.2E-06	1.7E-06	6.2E-06	1.5E-06	2.0E-06	3.6E-06	2.0E-06	2.0E-06	2.1E-06
0.00086	0.00082	0.00079	0.00088	0.00095	0.00099	0.00011	0.0012	0.0022	0.00088	0.0016	0.00094	0.00067	0.0012	8.4E-05	8.6E-05	0.00093
0.00024	0.00023	0.00026	0.00021	0.00025	0.00027	0.00021	0.00021	0.00035	0.00027	0.0013	0.00023	0.00034	0.00024	0.00020	0.00020	0.00020
0.053	0.051	0.052	0.052	0.051	0.27	0.053	0.050	0.050	0.052	0.20	0.053	0.051	0.054	0.081	0.073	0.050
0.035	0.035	0.034	0.034	0.035	0.033	0.035	0.035	0.038	0.036	0.057	0.036	0.036	0.036	0.036	0.040	0.042
0.84	0.88	0.82	0.82	0.76	1.53	0.55	1.07	1.55	0.84	3.43	0.87	0.69	0.91	0.58	0.58	1.13
0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0030	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
2.1E-05	2.1E-05	2.1E-05	2.1E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.1E-05	2.1E-05	2.4E-05	2.1E-05	2.1E-05	2.1E-05	2.0E-05	2.0E-05	2.0E-05
2.30	2.29	2.33	2.35	2.25	0.79	2.20	1.86	4.04	2.42	6.57	2.43	2.10	1.82	2.45	2.41	2.52
56.5	68.0	57.3	59.4	125	111	36.5	62.9	170	54.8	240	56.2	61.2	68.2	33.4	37.7	76.5
5.43	5.88	6.46	5.93	7.16	5.97	5.78	5.82	75.0	9.74	22.9	5.18	15.1	6.00	5.46	10.1	5.00
9.08	8.74	6.33	6.67	8.50	13.0	1.70	6.25	46.2	4.97	105	5.72	2.09	8.05	1.67	6.24	10.1
2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	3.8E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05	2.0E-05
0.00020	0.00021	0.00020	0.00020	0.00020	0.00020	0.00021	0.00021	0.00020	0.00025	0.00031	0.00022	0.00030	0.00020	0.00021	0.00020	0.00021
0.00069	0.00071	0.00077	0.00070	0.00089	0.00060	0.00061	0.00062	0.00092	0.00066	0.0076	0.00071	0.00073	0.00074	0.00068	0.0051	0.0020

Table 2: Existing Conditions SWWC Model Chemistry and Water Balance Inputs

Location	Details	Water Balance Input[a]	Chemistry Input	Period of Record
YP-T-22	Meadow Creek above EFSFSR	Upgradient SW inflow in Meadow Creek	SW monitoring data from YP-T-27	April 2012 – Q3 2016
		Upgradient SW inflow from Blowout Creek	SW monitoring data from YP-T-29	April 2012 – Q3 2016
		SW flow from settling pond on NE corner of SODA	SW monitoring data from YP-M-3	May 2012 - Q3 2016
		SW flow from South Keyway Dam Seep	SW monitoring data from YP-S-6	May 2012 - Q3 2016
		SW flow from North Keyway Dam Seep	SW monitoring data from YP-S-8	May 2012 - Q3 2016
		SW flow from Keyway Marsh Outlet	SW monitoring data from YP-S-10	May 2012 - Q3 2016
		SW flow from Meadow Creek fault seep	SW monitoring data from YP-S-2	May 2012 - Q3 2016
		SW flow from Smelter Flats seep	SW monitoring data from YP-S-5	May 2012 - Q3 2016
		SW flow from Meadow Creek Mine adit seep	SW monitoring data from YP-AS-7	May 2012 - Q3 2016
		SW flow from heap leach seep	SW monitoring data from YP-T-23A	April 2012 – Q3 2016
YP-SR-10	EFSFSR below Meadow Creek	SW flow from Meadow Creek	Chemistry predicted for YP-T-22	April 2012 – Q3 2016
		Upgradient SW flow in EFSFSR	SW monitoring data from YP-SR-11	April 2012 – Q3 2016
		Estimated GW inflow[b]	GW monitoring data from MWH-A08	March 2013 - Q3 2016
YP-SR-8	EFSFSR above Fiddle Creek	Upgradient SW flow in EFSFSR	Chemistry predicted from YP-SR-10	April 2012 – Q3 2016
		SW flow from Garnet Creek	SW monitoring data from YP-T-35	April 2012 – Q3 2016
		SW flow from Scout Creek	SW monitoring data from YP-T-15	April 2012 – Q3 2016
		SW flow from DMEA waste rock seep	SW monitoring data from YP-T-17	May 2012 - Q3 2016
		SW flow from DMEA adit seep	SW monitoring data from YP-AS-6	May 2012 - Q3 2016
		SW flow from Garnet pit seep	SW monitoring data from YP-S-3	May 2012 - Q3 2016
		SW flow from Old Haul Road seep	SW monitoring data from YP-S-9	May 2012 - Q3 2016
YP-SR-6	EFSFSR above Yellow Pine Pit	Upgradient SW flow from Fiddle Creek	SW monitoring data for YP-T-11	April 2012 – Q3 2016
		Upgradient SW flow in EFSFSR	Chemistry predicted from YP-SR-8	April 2012 – Q3 2016
		SW flow from Monday Tunnel adit seep	SW monitoring data from YP-AS-3	May 2012 - Q3 2016
		SW flow from Cinnabar Tunnel adit seep	SW monitoring data from YP-AS-4	May 2012 - Q3 2016
		Seepage from BMC Monday Camp DRSF	Calculated source term	N/A
		Estimated GW inflow[b]	GW monitoring data from MWH-A09, MWH-A10, MWH-A12, MWH-A13	Sept 2012 - Q3 2016
YP-SR-4	EFSFSR below Yellow Pine Pit	Upgradient SW flow from EFSFSR	Chemistry predicted for YP-SR-6	April 2012 – Q3 2016
		SW flow from Midnight Creek	SW monitoring data for YP-T-10	April 2012 – Q3 2016
		SW flow from Bradley Dump seep 1	SW monitoring data for YP-SEBS-1	May 2012 - Q3 2016
		SW flow from Bradley Dump seep 2	SW monitoring data for YP-SEBS-2	May 2012 - Q3 2016
		SW flow from Hennessy Creek[f]	SW monitoring data for YP-T-41	April 2012 – Q3 2016
		SW flow from Yellow Pine pit	SW monitoring data for YP-YPP-01	Aug-17
		Seepage from BMC NE Oxide stockpile #1	Calculated source term	N/A
		Seepage from BMC NE Oxide stockpile #2	Calculated source term	N/A
		Seepage from BMC West Lower DRSF	Calculated source term	N/A
		Seepage from BMC NW DRSF	Calculated source term	N/A
		Seepage from BMC West Middle DRSF	Calculated source term	N/A
		Seepage from BMC West Upper DRSF	Calculated source term	N/A
		Seepage from BMC SE DRSF	Calculated source term	N/A
		SW flow from pond downgradient of Yellow Pine Pit	SW monitoring data for YP-M-9	Aug-17
YP-SR-2	EFSFSR below Sugar Creek	Upgradient SW flow from Sugar Creek	SW monitoring data for YP-T-1	April 2012 – Q3 2016
		SW flow from Bonanza Adit Seep	SW monitoring data for YP-AS-1	May 2012 - Q3 2016
		SW flow from Bailey Tunnel Adit Seep	SW monitoring data for YP-AS-2	May 2012 - Q3 2016
		SW flow from Hennessy Creek[g]	SW monitoring data for YP-T-48	June 2013 - Q3 2016
		SW flow from Hillside seep	SW monitoring data for YP-S-1	May 2012 - Q3 2016
		Upgradient SW flow from EFSFSR	Chemistry predicted for YP-SR-4	April 2012 – Q3 2016
		Seepage from Lower West End DRSF	Calculated source term	N/A
		Seepage from Upper West End DRSF	Calculated source term	N/A
		Seepage from HMC Homestake Pit Backfill	Calculated source term	N/A

Number of Flow Rate Measurements	Number of Water Quality Samples	Source of Flow Data[e]	Minimum Flow Rate (cfs)[d]	Maximum Flow Rate (cfs)[d]	Average Flow Rate (cfs)[d]	Mixing Ratio for Model (%)[e]	Sum
37	37	HDR (2017)	2.55	76.5	17.4	75.4%	
37	37	HDR (2017)	0.78	22.2	5.27	22.9%	
34	18	HDR (2017)	0.01	0.75	0.12	0.5%	
3	18	HDR (2017)	0.00028	0.011	0.006	0.02%	
30	17	HDR (2017)	0.00031	0.095	0.011	0.05%	
34	18	HDR (2017)	0.03	0.86	0.19	0.8%	100%
17	6	HDR (2017)	4.1×10^{-7}	0.02	0.003	0.01%	
13	7	HDR (2017)	0.0008	0.19	0.03	0.1%	
17	8	HDR (2017)	8.2×10^{-6}	0.005	0.002	0.01%	
19	22	HDR (2017)	0.004	0.13	0.03	0.1%	
37	37	HDR (2017)	3.9	87.0	22.6	55.7%	
37	37	HDR (2017)	3.32	80	16.4	40.3%	100%
-	18	BC (2017)	-	-	1.65	4.1%	
37	37	HDR (2017)	6.23	169	39.3	98.7%	100%
32	33	HDR (2017)	0.01	1.88	0.28	0.7%	
37	37	HDR (2017)	0.01	0.98	0.17	0.4%	
34	18	HDR (2017)	0.0004	0.12	0.02	0.04%	
33	17	HDR (2017)	0.0004	0.02	0.006	0.01%	
24	14	HDR (2017)	0.005	0.23	0.05	0.1%	
22	13	HDR (2017)	0.0008	0.006	0.002	0.01%	
37	37	HDR (2017)	0.22	20.6	3.56	7.2%	
37	37	HDR (2017)	5.88	195	42.4	86.2%	
34	18	HDR (2017)	0.0004	0.04	0.007	0.01%	
35	18	HDR (2017)	0.01	0.37	0.1	0.2%	100%
N/A	N/A	Calculated[h]	0.0069	0.0145	0.01	0.02%	
-	59	BC (2017)	-	-	3.08	6.3%	
37	37	HDR (2017)	6.95	216	50.6	91.8%	
36	36	HDR (2017)	0.15	3.35	0.85	1.5%	
24	13	HDR (2017)	0.006	0.08	0.03	0.1%	
24	13	HDR (2017)	0.02	0.54	0.27	0.5%	
37	37	HDR (2017)	0.15	7.37	1.38	2.5%	
0	1	Calculated[i]	0.68	10.4	1.75	3.2%	
N/A	N/A	Calculated[h]	0.0065	0.0138	0.010	0.02%	
N/A	N/A	Calculated[h]	0.0078	0.0165	0.012	0.02%	100%
N/A	N/A	Calculated[h]	0.0078	0.0165	0.012	0.02%	
N/A	N/A	Calculated[h]	0.0338	0.0714	0.051	0.1%	
N/A	N/A	Calculated[h]	0.0070	0.0149	0.011	0.02%	
N/A	N/A	Calculated[h]	0.008	0.016	0.011	0.02%	
N/A	N/A	Calculated[h]	0.01	0.02	0.02	0.03%	
0	1	Calculated[i]	0.04	0.58	0.10	0.2%	
37	37	HDR (2017)	4.2	213	36.7	40.5%	
27	16	HDR (2017)	0.0002	0.0941	0.01	0.01%	
36	18	HDR (2017)	0.03	0.22	0.09	0.1%	
18	18	HDR (2017)	0.09	5.1	1.05	1.2%	
27	10	HDR (2017)	0.00003	0.03	0.004	0.004%	100%
37	37	HDR (2017)	7.67	227	52.5	58.0%	
N/A	N/A	Calculated[h]	0.113	0.240	0.17	0.2%	
N/A	N/A	Calculated[h]	0.020	0.043	0.03	0.03%	
N/A	N/A	Calculated[h]	0.020	0.042	0.03	0.03%	

N/A = not applicable
* SW = surface water; GW = groundwater

November 2017

Seeps and Adits Contributing Significant Metals to EFSFSR

Location
SEEPS
Meadow Creek above EFSFSR
Meadow Creek above EFSFSR
EFSFSR Below Yellow Pine Pit
EFSFSR Below Yellow Pine Pit

ADITS

Meadow Creek above EFSFSR
EFSFSR above Fiddle Creek
EFSFSR above Yellow Pine Pit
EFSFSR above Yellow Pine Pit
EFSFSR below Sugar Creek
EFSFSR below Sugar Creek

PITS

EFSFSR above Fiddle Creek
EFSFSR below Yellow Pine Pit
EFSFSR below Yellow Pine Pit

DRSF

EFSFSR below Sugar Creek
EFSFSR below Sugar Creek
EFSFSR above Fiddle Creek
EFSFSR below Yellow Pine Pit
Sugar Creek

Midas Suggested Early-Action sites address Bradley Dump seeps 1 and 2, DMEA adit seep and the BMC Meadow Creek Mill+Smelter Site

Meadow Creek above EFSFSR
EFSFSR above Fiddle Creek

* Analytical data for DRSFs is not available; seep data from the DMEA waste rock pile (YPT-T-17) is used to estimate loads.

Water Balance Input[a]	Chemistry Input	Period of Record	Number of Flow Rate Measure-ments	Number of Water Quality Samples	Source of Flow Data[c]	Minimum Flow Rate (cfs)[d]
SW flow from settling pond on NE corner of SODA	YP-M-3	May 2012 - Q3 2016	34	18	HDR (2017)	0.01
SW flow from Keyway Marsh Outlet	YP-S-10	May 2012 - Q3 2016	34	18	HDR (2017)	0.03
SW flow from Bradley Dump seep 1	YP-SEBS-1	May 2012 - Q3 2016	24	13	HDR (2017)	0.006
SW flow from Bradley Dump seep 2	YP-SEBS-2	May 2012 - Q3 2016	24	13	HDR (2017)	0.02
SW flow from Meadow Creek Mine adit seep	YP-AS-7	May 2012 - Q3 2016	17	8	HDR (2017)	8.2×10^{-6}
SW flow from DMEA adit seep	YP-AS-6	May 2012 - Q3 2016	33	17	HDR (2017)	0.0004
SW flow from Monday Tunnel adit seep	YP-AS-3	May 2012 - Q3 2016	34	18	HDR (2017)	0.0004
SW flow from Cinnabar Tunnel adit seep	YP-AS-4	May 2012 - Q3 2016	35	18	HDR (2017)	0.01
SW flow from Bonanza Adit Seep	YP-AS-1	May 2012 - Q3 2016	27	16	HDR (2017)	0.0002
SW flow from Bailey Tunnel Adit Seep	YP-AS-2	May 2012 - Q3 2016	36	18	HDR (2017)	0.03
SW flow from Garnet pit seep	YP-S-3	May 2012 - Q3 2016	24	14	HDR (2017)	0.0050
SW flow from Yellow Pine pit	YP-YPP-01	Aug-17	0	1	Calculated[i]	0.6800
SW flow from pond downgradient of Yellow Pine Pit	YP-M-9	Aug-17	0	1	Calculated[i]	0.0400
Seepage from BMC NW DRSF	YP-T-17*	N/A	N/A	N/A	Calculated[h]	0.0338
Seepage from Lower West End DRSF	YP-T-17*	N/A	N/A	N/A	Calculated[h]	0.1130
CSM-PMC-SMI Upper ManCamp DRSF	YP-T-17*	N/A	N/A	N/A	Calculated[h]	0.0069
Seepage from BMC NE Oxide stockpile #1	YP-T-17*	N/A	N/A	N/A	Calculated[h]	0.0065
Seepage from Bonanza DRSF	YP-AS-1					
BMC Meadow Creek Mill+Smelter Site	YP-T-23a	April 2012 – Q3 2016	19	22	HDR (2017)	0.004
SW flow from DMEA waste rock pile	YPT-T-17	May 2012 - Q3 2016	34	18	HDR (2017)	0.0004

Maximum Flow Rate (cfs)[d]	Average Flow Rate (cfs)[d]	Mixing Ratio for Model (%)[e]	pH (s.u.)	Alkalinity as $CaCO_3$, Total (mg/l)	Aluminum, Diss. (mg/l)	Antimony, Diss. (mg/l)	Arsenic, Diss. (mg/l)	Barium, Diss. (mg/l)	Beryllium, Diss. (mg/l)	Boron, Diss. (mg/l)
0.75	0.12	0.005	7.08	28.9	0.049	0.022	0.083	0.0033	2.7E-05	0.025
0.86	0.19	0.8%	7.26	99.8	0.0042	0.042	0.077	0.016	2.0E-05	0.025
0.08	0.03	0.1%	7.35	168	0.0025	0.018	0.099	0.14	2.0E-05	0.029
0.54	0.27	0.5%	7.46	109	0.0021	0.055	0.14	0.013	2.0E-05	0.029
0.005	0.002	0.0001	7.15	360	0.0065	0.022	5.97	0.025	4.6E-05	0.023
0.02	0.006	0.0001	7.33	138	0.0026	0.022	0.24	0.039	2.0E-05	0.025
0.04	0.007	0.01%	7.04	94.7	0.0044	0.0013	0.039	0.11	2.0E-05	0.026
0.37	0.1	0.2%	7.43	106	0.0021	0.049	0.11	0.0096	2.0E-05	0.028
0.0941	0.01	0.01%	7.27	148	0.0086	0.22	0.053	0.078	2.0E-05	0.028
0.22	0.09	0.1%	7.27	102	0.0040	0.19	0.15	0.021	6.0E-05	0.028
0.23	0.050	0.10%	7.01	62.5	0.0064	0.0230	0.140	0.01	3.2E-05	0.028
10.40	1.750	3.20%	6.43	56.0	0.0063	0.0350	0.085	0.01	2.0E-05	0.021
0.58	0.100	0.20%	6.91	26.0	0.0120	0.1600	0.560	0.01	3.6E-05	0.021
0.07	0.051	0.10%	7.34	95.4	0.0045	0.0270	0.180	0.03	2.0E-05	0.025
0.24	0.170	0.20%	7.34	95.4	0.0045	0.0270	0.180	0.03	2.0E-05	0.025
0.0145	0.0100	0.0002	7.34	95.4	0.0045	0.0270	0.180	0.03	2.0E-05	0.025
0.0138	0.0100	0.0002	7.34	95.4	0.0045	0.0270	0.180	0.03	2.0E-05	0.025
0.13	0.03	0.001	7.06	61.6	0.0086	1.44	1	0.034	0.00002	0.026
0.12	0.02	0.0004	7.34	95.4	0.0045	0.027	0.18	0.033	0.00002	0.025

Cadmium, Diss. (mg/l)	Calcium, Diss. (mg/l)	Chloride (mg/l)	Chromium, Diss. (mg/l)	Cobalt, Diss. (mg/l)	Copper, Diss. (mg/l)	Fluoride (mg/l)	Iron, Diss. (mg/l)	Lead, Diss. (mg/l)	Magnesium, Diss. (mg/l)	Manganese, Diss. (mg/l)
2.1E-05	9.42	0.49	0.00031	0.00041	0.00049	0.26	0.29	0.00013	1.45	0.013
2.0E-05	45.8	29.4	0.00020	0.0016	0.00031	0.26	0.070	2.2E-05	11.1	0.087
2.0E-05	55.8	0.46	0.00026	2.9E-05	0.00019	0.26	0.023	2.0E-05	21.0	0.0049
2.0E-05	34.5	0.38	0.00023	2.5E-05	0.00017	0.26	0.020	2.0E-05	9.68	0.0021
3.0E-05	215	0.48	0.00031	0.0026	0.00018	0.80	23.0	3.1E-05	51.6	1.81
2.0E-05	48.5	0.38	0.00023	4.8E-05	0.00035	0.28	0.023	2.1E-05	11.9	0.0028
2.1E-05	20.1	0.64	0.00021	0.00028	0.00019	0.26	0.18	2.1E-05	7.01	0.26
2.0E-05	31.0	0.36	0.00021	3.7E-05	0.00022	0.26	0.020	2.0E-05	8.65	0.0020
2.0E-05	39.6	0.65	0.00022	0.00012	0.00038	0.27	0.067	2.4E-05	13.4	0.039
2.1E-05	90.6	0.54	0.00021	0.00040	0.00064	0.26	0.046	2.2E-05	27.3	0.14
2.0E-05	17.8	0.36	0.00026	0.00003	0.00032	0.26	0.02	2.0E-05	2.72	0.00
2.0E-05	15.0	0.50	0.00020	0.00008	0.00038	0.20	0.05	2.0E-05	3.49	0.02
2.0E-05	24.0	1.02	0.00020	0.00005	0.00270	0.20	0.04	4.3E-05	4.98	0.01
2.0E-05	37.5	0.42	0.00022	0.00006	0.00026	0.26	0.05	2.5E-05	9.42	0.01
2.0E-05	37.5	0.42	0.00022	0.00006	0.00026	0.26	0.05	2.5E-05	9.42	0.01
2.0E-05	37.5	0.42	0.00022	0.00006	0.00026	0.26	0.05	2.5E-05	9.42	0.01
2.0E-05	37.5	0.42	0.00022	0.00006	0.00026	0.26	0.05	2.5E-05	9.42	0.01
0.000022	53	0.83	0.00021	0.00088	0.0014	0.32	1.04	0.000035	5.87	0.36
0.00002	37.5	0.42	0.00022	0.000055	0.00026	0.26	0.052	0.000025	9.42	0.0083

Mercury, Diss. (mg/l)	Molybdenum, Diss. (mg/l)	Nickel, Diss. (mg/l)	Nitrate + Nitrite as Nitrogen	Phosphorus, Diss. (mg/l)	Potassium, Diss. (mg/l)	Selenium, Diss. (mg/l)	Silver, Diss. (mg/l)	Sodium, Diss. (mg/l)	Solids, Total Diss. (mg/l) (TDS)	Solids, Total Suspended (TSS)
1.4E-05	0.00040	0.00075	0.10	0.040	0.89	0.0010	2.5E-05	3.82	60.3	89.3
2.6E-06	0.0015	0.00056	0.064	0.039	4.62	0.0010	2.1E-05	11.6	216	26.0
7.8E-07	0.0010	0.00034	0.22	0.036	1.92	0.0010	2.0E-05	2.79	263	6.85
9.2E-07	0.00098	0.00025	0.14	0.036	1.66	0.0010	2.0E-05	1.06	146	5.00
4.0E-06	0.00034	0.0028	0.050	0.11	3.38	0.0015	3.3E-05	7.53	941	238
1.3E-06	0.0039	0.00041	0.050	0.037	1.32	0.0010	2.1E-05	5.01	197	5.00
1.4E-06	9.3E-05	0.00028	0.090	0.037	1.09	0.0010	2.1E-05	6.22	97.6	71.1
1.3E-06	0.0010	0.00029	0.22	0.036	1.58	0.0010	2.0E-05	0.95	130	5.00
2.0E-05	0.0025	0.00056	0.050	0.036	2.10	0.0010	2.0E-05	6.57	185	50.2
8.3E-07	0.00075	0.00099	0.070	0.038	2.06	0.0010	2.0E-05	3.49	471	5.08
2.7E-06	1.6E-03	0.00026	0.110	0.038	1.05	0.0010	2.0E-05	2.72	80.2	18.8
2.1E-06	9.3E-04	0.00020	0.050	0.042	1.13	0.0010	2.0E-05	2.52	76.5	5.0
1.6E-06	1.9E-04	0.00045	0.050	0.042	2.49	0.0010	2.0E-05	5.36	155.0	5.0
2.2E-06	2.2E-03	0.00035	0.050	0.038	1.55	0.0010	2.1E-05	4.04	170.0	75.0
2.2E-06	2.2E-03	0.00035	0.050	0.038	1.55	0.0010	2.1E-05	4.04	170.0	75.0
2.2E-06	2.2E-03	0.00035	0.050	0.038	1.55	0.0010	2.1E-05	4.04	170.0	75.0
2.2E-06	2.2E-03	0.00035	0.050	0.038	1.55	0.0010	2.1E-05	4.04	170.0	75.0
0.0000062	0.0016	0.0013	0.2	0.057	3.43	0.003	0.000024	6.57	240	22.9
0.0000022	0.0022	0.00035	0.05	0.038	1.55	0.001	0.000021	4.04	170	75

Sulfate (mg/l)	Thallium, Diss. (mg/l)	Vanadium, Diss. (mg/l)	Zinc, Diss. (mg/l)	Aluminum, Diss. (lb/yr)	Antimony, Diss. (lb/yr)	Arsenic, Diss. (lb/yr)	Barium, Diss. (lb/yr)	Beryllium, Diss. (lb/yr)	Boron, Diss. (lb/yr)	Cadmium, Diss. (lb/yr)
11.1	2.3E-05	0.00080	0.0011	11.57608879	5.197427622	19.60847694	0.779614143	0.006378661	5.906167752	0.004961181
36.6	2.0E-05	0.00020	0.00062	1.571040622	15.71040622	28.80241141	5.984916656	0.007481146	9.351432275	0.007481146
61.0	2.0E-05	0.00020	0.00072	0.147654194	1.063110195	5.847106075	8.268634853	0.001181234	1.712788648	0.001181234
20.7	2.0E-05	0.00020	0.00063	1.116265705	29.23553037	74.41771368	6.91021627	0.010631102	15.41509783	0.010631102
406	3.7E-05	0.00030	0.0020	0.025593394	0.086623794	23.50654765	0.098436129	0.000181122	0.090561239	0.000118123
42.4	2.0E-05	0.00020	0.0041	0.030712072	0.259871381	2.834960521	0.460681085	0.000236247	0.295308388	0.000236247
3.10	2.0E-05	0.00020	0.0026	0.060636656	0.017915376	0.537461265	1.51591639	0.000275621	0.35830751	0.000289402
12.2	2.0E-05	0.00020	0.00062	0.413431743	9.646740662	21.65594843	1.889973681	0.003937445	5.512423236	0.003937445
23.7	2.0E-05	0.00020	0.00079	0.169310142	4.331189685	1.04342297	1.535603616	0.000393745	0.551242324	0.000393745
241	2.1E-05	0.00020	0.0085	0.70874013	33.66515619	26.57775489	3.720885684	0.010631102	4.961180912	0.003720886
4.22	2.0E-05	0.00021	0.0008	0.629991227	2.264030972	13.78105809	0.70874013	0.003149956	2.756211618	0.001968723
10.10	2.0E-05	0.00021	0.0020	21.70516649	120.5842583	292.8474844	44.78843879	0.06890529	72.35055497	0.06890529
78.30	2.0E-05	0.00020	0.0030	2.362467101	31.49956135	110.2484647	2.559339359	0.007087401	4.134317427	0.003937445
46.20	2.0E-05	0.00020	0.0009	0.451821833	2.710930998	18.07287332	3.313360109	0.002008097	2.510121295	0.002008097
46.20	2.0E-05	0.00020	0.0009	1.506072777	9.036436661	60.24291107	11.0445337	0.006693657	8.367070982	0.006693657
46.20	2.0E-05	0.00020	0.0009	0.088592516	0.531555098	3.543700651	0.649678453	0.000393745	0.492180646	0.000393745
46.20	2.0E-05	0.00020	0.0009	0.088592516	0.531555098	3.543700651	0.649678453	0.000393745	0.492180646	0.000393745
105	0.000038	0.00031	0.0076	0.507930427	85.04881563	59.06167752	2.008097036	0.001181234	1.535603616	0.001299357
46.2	0.00002	0.0002	0.00092	0.177185033	1.063110195	7.087401303	1.299356906	0.000787489	0.984361292	0.000787489

Calcium, Diss. (lb/yr)	Chloride (lb/yr)	Chromium, Diss. (lb/yr)	Cobalt, Diss. (lb/yr)	Copper, Diss. (lb/yr)	Fluoride (lb/yr)	Iron, Diss. (lb/yr)	Lead, Diss. (lb/yr)	Magnesium, Diss. (lb/yr)	Manganese, Diss. (lb/yr)	Mercury, Diss. (lb/yr)
2225.444009	115.7608879	0.07323648	0.096861151	0.115760888	61.42414462	68.51154593	0.030712072	342.5577296	3.071207231	0.003307454
17131.82393	10997.28435	0.074811458	0.598491666	0.11595776	97.25489566	26.18401037	0.00822926	4152.03593	32.54298432	0.000972549
3295.641606	27.16837166	0.015356036	0.001712789	0.011221719	15.35603616	1.358418583	0.001181234	1240.295228	0.28940222	4.60681E-05
18338.65087	201.9909371	0.122257672	0.013288877	0.090364367	138.2043254	10.63110195	0.010631102	5145.453346	1.116265705	0.000489031
846.5507112	1.889973681	0.001220608	0.010237357	0.00070874	3.149956135	90.56123887	0.000122061	203.1721707	7.126775754	1.57498E-05
572.898272	4.488687492	0.002716837	0.000566992	0.004134317	3.307453941	0.271683717	0.000248059	140.5667925	0.033074539	1.5356E-05
276.9992676	8.819877177	0.002894022	0.003858696	0.002618401	3.583075103	2.480590456	0.000289402	96.6052172	3.583075103	1.92935E-05
6103.040011	70.87401303	0.041343174	0.007284274	0.043311897	51.18678719	3.937445168	0.003937445	1702.945035	0.393744517	0.000255934
779.6141433	12.7966968	0.00433119	0.002362467	0.007481146	5.315550977	1.319044131	0.000472493	263.8088263	0.767801808	0.000393745
16052.96395	95.67991759	0.037208857	0.070874013	0.113398421	46.06810847	8.150511498	0.003898071	4837.151389	24.80590456	0.000147064
1752.1631	35.43700651	0.025593394	0.002460903	0.031499561	25.59339359	2.067158713	0.001968723	267.7462714	0.206715871	0.000265778
51678.96783	1722.632261	0.689052904	0.272175897	1.309200518	689.0529044	165.3726971	0.06890529	12023.97318	55.12423236	0.007235055
4724.934202	200.8097036	0.039374452	0.009646741	0.531555098	39.37445168	8.268634853	0.008465507	980.4238469	1.830912003	0.000314996
3765.181942	42.17003775	0.022089067	0.005522267	0.026105261	26.10526147	5.221052293	0.002510121	945.8137039	0.83336027	0.000220891
12550.60647	140.5667925	0.073630225	0.018407556	0.087017538	87.01753822	17.40350764	0.008367071	3152.712346	2.777867566	0.000736302
738.270969	8.268634853	0.00433119	0.001082797	0.005118679	5.118678719	1.023735744	0.000492181	185.4536674	0.163403974	4.33119E-05
738.270969	8.268634853	0.00433119	0.001082797	0.005118679	5.118678719	1.023735744	0.000492181	185.4536674	0.163403974	4.33119E-05
3130.268909	49.02119234	0.012402952	0.051974276	0.082686349	18.89973681	61.42414462	0.002067159	346.6920471	21.26220391	0.000366182
1476.541938	16.53726971	0.008662379	0.002165595	0.010237357	10.23735744	2.047471487	0.000984361	370.9073348	0.326807949	8.66238E-05

Molybdenum, Diss. (lb/yr)	Nickel, Diss. (lb/yr)	Nitrate + Nitrite as Nitrogen (lb/yr)	Phosphorus, Diss. (lb/yr)	Potassium, Diss. (lb/yr)	Selenium, Diss. (lb/yr)	Silver, Diss. (lb/yr)	Sodium, Diss. (lb/yr)	Solids, Total Diss. (lb/yr) (TDS)	Solids, Total Suspended (TSS)	Sulfate (lb/yr)
0.094498684	0.177185033	23.62467101	9.449868404	210.259572	0.23624671	0.005906168	902.4624326	14245.67662	21096.83121	2622.338482
0.561085936	0.209472083	23.93966662	14.58823435	1728.144684	0.374057291	0.007855203	4339.064575	80796.37485	9725.489566	13690.49685
0.059061678	0.02008097	12.99356906	2.126220391	113.3984208	0.059061678	0.001181234	164.7820803	15533.22119	404.572491	3602.762329
0.520923996	0.132888774	74.41771368	19.13598352	882.3814622	0.531555098	0.010631102	563.4484036	77607.04427	2657.775489	11003.19052
0.001338731	0.011024846	0.196872258	0.433118969	13.30856467	0.005906168	0.000129936	29.64896212	3705.135903	937.11195	1598.602738
0.046068108	0.004843058	0.590616775	0.437056414	15.59228287	0.011812336	0.000248059	59.17980088	2327.030094	59.06167752	500.8430254
0.001281638	0.003858696	1.240295228	0.509899149	15.02135332	0.013781058	0.000289402	85.71818131	1345.031269	979.8332301	42.72128008
0.196872258	0.057092955	43.31189685	7.087401303	311.0581683	0.196872258	0.003937445	187.0286455	25593.39359	984.3612921	2401.841553
0.049218065	0.011024846	0.984361292	0.70874013	41.34317427	0.019687226	0.000393745	129.3450738	3642.136781	988.2987372	466.5872524
0.132888774	0.175413182	12.40295228	6.733031238	365.0011671	0.177185033	0.003543701	618.3757637	83454.15034	900.0999655	42701.59285
0.157497807	0.025593394	10.82797421	3.74057291	103.3579357	0.098436129	0.001968723	267.7462714	7894.577562	1850.599229	415.4004652
3.204096006	0.689052904	172.2632261	144.7011099	3893.14891	3.445264522	0.06890529	8682.066596	263562.7359	17226.32261	34797.17167
0.037405729	0.088592516	9.843612921	8.268634853	490.2119234	0.196872258	0.003937445	1055.235305	30515.20005	984.3612921	15415.09783
0.220890674	0.035141698	5.020242589	3.815384368	155.6275203	0.100404852	0.002108502	405.6356012	17068.8248	7530.363884	4638.704153
0.736302246	0.117138994	16.73414196	12.71794789	518.7584009	0.334682839	0.00702834	1352.118671	56896.08268	25101.21295	15462.34718
0.043311897	0.006890529	0.984361292	0.748114582	30.51520005	0.019687226	0.000413432	79.5363924	3346.828393	1476.541938	909.5498339
0.043311897	0.006890529	0.984361292	0.748114582	30.51520005	0.019687226	0.000413432	79.5363924	3346.828393	1476.541938	909.5498339
0.094498684	0.076780181	11.8123355	3.366515619	202.5815539	0.177185033	0.00141748	388.0352213	14174.80261	1352.512415	6201.47614
0.086623794	0.013781058	1.968722584	1.496229164	61.03040011	0.039374452	0.000826863	159.0727848	6693.656786	2953.083876	1819.099668

Thallium, Diss. (lb/yr)	Vanadium, Diss. (lb/yr)	Zinc, Diss. (lb/yr)
0.005433674	0.188997368	0.259871381
0.007481146	0.074811458	0.23191552
0.001181234	0.011812336	0.042524408
0.010631102	0.10631102	0.334879712

0.000145685	0.001181234	0.00787489
0.000236247	0.002362467	0.048430576
0.000275621	0.002756212	0.035830751
0.003937445	0.039374452	0.1220608
0.000393745	0.003937445	0.015552908
0.003720886	0.035437007	1.506072777

0.001968723	0.020671587	0.076780181
0.06890529	0.72350555	6.890529044
0.003937445	0.039374452	0.590616775

0.002008097	0.02008097	0.092372464
0.006693657	0.066936568	0.307908212
0.000393745	0.003937445	0.018112248
0.000393745	0.003937445	0.018112248

0.002244344	0.01830912	0.448868749
0.000787489	0.00787489	0.036224496

Seeps and Adits Contributing Significant Metals to EFSFSR

Location	Feature	Aluminum, Diss. (lb/yr)	Antimony, Diss. (lb/yr)	Arsenic, Diss. (lb/yr)	Selenium, Diss. (lb/yr)	Solids, Total Diss. (lb/yr) (TDS)	Solids, Total Suspended (TSS)
SEEPS							
Meadow Creek above EFSFSR	SW flow from settling pond on NE corner of SODA	11.58	5.20	19.61	0.24	14245.68	21096.83
Meadow Creek above EFSFSR	SW flow from Keyway Marsh Outlet	1.57	15.71	28.80	0.37	80796.37	9725.49
EFSFSR Below Yellow Pine Pit	SW flow from Bradley Dump seep 1	0.15	1.06	5.85	0.06	15533.22	404.57
EFSFSR Below Yellow Pine Pit	SW flow from Bradley Dump seep 2	1.12	29.24	74.42	0.53	77607.04	2657.78
ADITS							
Meadow Creek above EFSFSR	SW flow from Meadow Creek Mine adit seep	0.03	0.09	23.51	0.01	3705.14	937.11
EFSFSR above Fiddle Creek	SW flow from DMEA adit seep	0.03	0.26	2.83	0.01	2327.03	59.06
EFSFSR above Yellow Pine Pit	SW flow from Monday Tunnel adit seep	0.06	0.02	0.54	0.01	1345.03	979.83
EFSFSR above Yellow Pine Pit	SW flow from Cinnabar Tunnel adit seep	0.41	9.65	21.66	0.20	25593.39	984.36
EFSFSR below Sugar Creek	SW flow from Bonanza Adit Seep	0.17	4.33	1.04	0.02	3642.14	988.30
EFSFSR below Sugar Creek	SW flow from Bailey Tunnel Adit Seep	0.71	33.67	26.58	0.18	83454.15	900.10
PITS							
EFSFSR above Fiddle Creek	SW flow from Garnet pit seep	0.63	2.26	13.78	0.10	7894.58	1850.60
EFSFSR below Yellow Pine Pit	SW flow from Yellow Pine pit	21.71	120.58	292.85	3.45	263562.74	17226.32
EFSFSR below Yellow Pine Pit	SW flow from pond downgradient of Yellow Pine Pit	2.36	31.50	110.25	0.20	30515.20	984.36
DRSF							
EFSFSR below Sugar Creek	Seepage from BMC NW DRSF	0.45	2.71	18.07	0.10	17068.82	7530.36
EFSFSR below Sugar Creek	Seepage from Lower West End DRSF	1.51	9.04	60.24	0.33	56896.08	25101.21
EFSFSR above Fiddle Creek	CSM-PMC-SMI Upper ManCamp DRSF	0.09	0.53	3.54	0.02	3346.83	1476.54
EFSFSR below Yellow Pine Pit	Seepage from BMC NE Oxide stockpile #1	0.09	0.53	3.54	0.02	3346.83	1476.54

Midas Suggested Early-Action sites address Bradley Dump seeps 1 and 2, DMEA adit seep and the BMC Meadow Creek Mill+Smelter Site

Meadow Creek above EFSFSR	BMC Meadow Creek Mill+Smelter Site	0.51	85.05	59.06	0.18	14174.80	1352.51
EFSFSR above Fiddle Creek	SW flow from DMEA waste rock pile	0.18	1.06	7.09	0.04	6693.66	2953.08

Table 1. Ranking of relative arsenic load to surface waters from leagacy mining features at Stibnite.

Location	Type	Feature	Aluminum, Diss. (lb/yr)	Antimony, Diss. (lb/yr)	Arsenic, Diss. (lb/yr)	Selenium, Diss. (lb/yr)	Solids, Total Diss. (lb/yr) (TDS)	Solids, Total Suspended (TSS)	Relative Arsenic Load	Modified by PRO	Mine Year (if Modified by PRO)	Owner
EFSFSR below Yellow Pine Pit	Pit	SW flow from Yellow Pine pit	21.71	120.58	292.85	3.45	263562.74	17226.32	1	Mitigated during dewatering	3	Midas
EFSFSR below Yellow Pine Pit	Pit	SW flow from pond downgradient of Yellow Pine Pit	2.36	31.50	110.25	0.20	30515.20	984.36	3	Mitigated during dewatering	3	Midas
EFSFSR Below Yellow Pine Pit	Seep	SW flow from Bradley Dump seep 2	1.12	29.24	74.42	0.53	77607.04	2657.78	4	Mitigated during dewatering	3	Midas
EFSFSR below Sugar Creek	Waste Rock	Seepage from Lower West End DRSF	1.51	9.04	60.24	0.33	56896.08	25101.21	6	Minimized by dewatering	3	Midas/USFS
Meadow Creek above EFSFSR	Seep	SW flow from Keyway Marsh Outlet	1.57	15.71	28.80	0.37	80796.37	9725.49	7	N/A		Midas/USFS
EFSFSR below Sugar Creek	Spring	SW flow from Bailey Tunnel Adit Seep	0.71	33.67	26.58	0.18	83454.15	900.10	8	Mitigated during dewatering	3	USFS
Meadow Creek above EFSFSR	Spring	SW flow from Meadow Creek Mine adit seep	0.03	0.09	23.51	0.01	3705.14	937.11	9	N/A		Midas
EFSFSR above Yellow Pine Pit	Spring	SW flow from Cinnabar Tunnel adit seep	0.41	9.65	21.66	0.20	25593.39	984.36	10	N/A		USFS
Meadow Creek above EFSFSR	Seep	SW flow from settling pond on NE corner of SODA	11.58	5.20	19.61	0.24	14245.68	21096.83	11	Alt 1, 2 and 4		Midas
EFSFSR below Sugar Creek	Waste Rock	Seepage from BMC NW DRSF	0.45	2.71	18.07	0.10	17068.82	7530.36	12	Alt 1, 2 and 4		Midas
EFSFSR above Fiddle Creek	Pit	SW flow from Garnet pit seep	0.63	2.26	13.78	0.10	7894.58	1850.60	14	N/A		USFS
EFSFSR Below Yellow Pine Pit	Seep	SW flow from Bradley Dump seep 1	0.15	1.06	5.85	0.06	15533.22	404.57	15	Removed by PRO	2-10	Midas
EFSFSR above Fiddle Creek	Waste Rock	CSM-PMC-SMI Upper ManCamp DRSF	0.09	0.53	3.54	0.02	3346.83	1476.54	16	N/A		USFS
EFSFSR below Yellow Pine Pit	Waste Rock	Seepage from BMC NE Oxide stockpile #1	0.09	0.53	3.54	0.02	3346.83	1476.54	17	N/A		USFS
EFSFSR above Fiddle Creek	Spring	SW flow from DMEA adit seep	0.03	0.26	2.83	0.01	2327.03	59.06	18	N/A		USFS
EFSFSR below Sugar Creek	Spring	SW flow from Bonanza Adit Seep	0.17	4.33	1.04	0.02	3642.14	988.30	19	N/A		USFS
EFSFSR above Yellow Pine Pit	Spring	SW flow from Monday Tunnel adit seep	0.06	0.02	0.54	0.01	1345.03	979.83	20	N/A		USFS
Midas Suggested Early-Action sites address Bradley Dump seeps 1 and 2, DMEA adit seep and the BMC Meadow Creek Mill+Smelter Site												
Meadow Creek above EFSFSR	Waste (divert sfc water)	BMC Meadow Creek Mill+Smelter Site	0.51	85.05	59.06	0.18	14174.80	1352.51	5	Removed by PRO	2-10	Midas
EFSFSR above Fiddle Creek	Waste (divert sfc water)	SW flow from DMEA waste rock pile	0.18	1.06	7.09	0.04	6693.66	2953.08	13	N/A		USFS
	Waste (divert sfc water)	Bradley Dump			164.25				2	Partially removed by PRO	43871	USFS

Table 2. Type of action and relative cost for potential early action items for Stibnite.

Location	Feature	Type of Action	Investigation and Design	Cost* (K$)	Time to Implement (years)	Comments	Priority**
SEEPS							
Meadow Creek above EFSFSR	SW flow from settling pond on NE corner of SODA	IRM	EE/CA	220	1	Mitigated by PRO	9
Meadow Creek above EFSFSR	SW flow from Keyway Marsh Outlet	IRM	EE/CA	290	1		5
EFSFSR Below Yellow Pine Pit	SW flow from Bradley Dump seep 1	IRM	EE/CA	130	1	Mitigated by PRO	12
EFSFSR Below Yellow Pine Pit	SW flow from Bradley Dump seep 2	IRM	EE/CA	370	1	Mitigated by PRO	3
ADITS							
Meadow Creek above EFSFSR	SW flow from Meadow Creek Mine adit seep	IRM	EE/CA	90	2		7
EFSFSR above Fiddle Creek	SW flow from DMEA adit seep	IRM	EE/CA	90	2		15
EFSFSR above Yellow Pine Pit	SW flow from Monday Tunnel adit seep	IRM	EE/CA	110	2		17
EFSFSR above Yellow Pine Pit	SW flow from Cinnabar Tunnel adit seep	IRM	EE/CA	160	2		8
EFSFSR below Sugar Creek	SW flow from Bonanza Adit Seep	IRM	EE/CA	110	2		16
EFSFSR below Sugar Creek	SW flow from Bailey Tunnel Adit Seep	IRM	EE/CA	160	2		6
PITS							
EFSFSR above Fiddle Creek	SW flow from Garnet pit seep	IRM	EE/CA	4500	1		11
EFSFSR below Yellow Pine Pit	SW flow from Yellow Pine pit	IRM	EE/CA	1850	1	Mitigated by PRO	1
EFSFSR below Yellow Pine Pit	SW flow from pond downgradient of Yellow Pine Pit	IRM	EE/CA	200	1	Mitigated by PRO	2
DRSF							
EFSFSR below Sugar Creek	Seepage from BMC NW DRSF	IRM	RD/RA	8889	0.5	Waste rock with relatively greater source term - 40M cf DRSF moved to PRO location	10
EFSFSR below Sugar Creek	Seepage from Lower West End DRSF	IRM	RD/RA	1111	0.5	Waste rock with relatively greater source term - 5M cf DRSF moved to PRO location	4
EFSFSR above Fiddle Creek	CSM-PMC-SMI Upper ManCamp DRSF	IRM	RD/RA	267	0.5	Unclear under PRO whether DRSF is mitigated; Waste rock on streambank - 1.2M cf DRSF	13
EFSFSR above Fiddle Creek	BMC Sawmill/Lower ManCamp DRSF	IRM	RD/RA	244	0.5	Unclear under PRO whether DRSF is mitigated; Waste rock on streambank - 1.1M cf DRSF	14
	BMC NE Oxide Pile 1			1111			

10% capital

10	
30	
35	
500	
50	
450	

1st well	40
2nd well	20
seep Q	10
Quarterly monitoring * 4	40

cost for 1 well = 90
cost for 2 wells =110
cost for 4 wells and 2 seep Q = 160

IRM - Interim Remedial Measure focuses on reduction of metals loading to surface water. Note that water quality criteria will not be met by most IRMs.
EE/CA - for seeps entails subsurface exploration, bench-scale treatment test, evaluation of presumptive remedies (trench or well water capture with treatment system).
EE/CA for adits entails subsurface exploration, instrumentation for water balance and at least one-year of data collection,

bench-scale treatment test and evaluation of presumptive remedy (bulkhead with treatment system).

RD/RA - Removal Design for DRSFs entails repository design, and planning documents for removal action.
* Cost for sites within the proposed action are based upon 6 years (estimated time to Mine Year 0) minus the time to implement.
** Priority ranking based upon relative arsenic load to EFSFSR except for DRSF on streambank (denoted with SB).

Midas suggested early actio sites

	flow
SW diversion around HECLA leach dump	0.006