Gold King Mine Discharge

	8/10/2015	8/13/2015	8/15/2015	8/17/2015	8/19/2015
DISSOLVED METALS					
Aluminum (ug/L)	35000	36000	34000	33000	32000
Antimony (ug/L)	0.5 J	10	3.7	0.44 J	0.69 J
Arsenic (ug/L)	3.7	140	44	2.6	6.6
Barium (ug/L)	8.9	12	8.6	8.9	9.3
Beryllium (ug/L)	11	11	11	9.8	8.5 ^
Cadmium (ug/L)	65	66 B	82	80	83
Calcium (ug/L)	380000	360000	370000 B	370000 B	370000
Chromium (ug/L)	2.7	8.6	5.5	2.5	2.5 ^
Cobalt (ug/L)	110	110	110	100	100 ^
Copper (ug/L)	6000 E	6100 E	4600 E	5800 E	5600 E
Iron (ug/L)	120000	370000	150000	110000	110000
Lead (ug/L)	32	78	42	32	28
Magnesium (ug/L)	33000	26000	27000	26000	26000
Manganese (ug/L)	33000 E	34000 E	36000	32000 E	32000 E
Mercury (ug/L)	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Molybdenum (ug/L)	0.84 J	16	4.2	0.45 U	1.7
Nickel (ug/L)	72	69	69	62	64
Potassium (ug/L)	2700	2700	2400	2600	2600
Selenium (ug/L)	1.7 JB	4.8	4.7 B ^	12 B^	11 B^
Silver (ug/L)	0.1 U	0.33 J	0.1 J	0.1 U	0.1 U^
Sodium (ug/L)	3900	480 U	5300	5500	480 U
Thallium (ug/L)	0.32	0.35	0.29	0.27	0.29
Vanadium (ug/L)	2	87	38	1.1	2.6
Zinc (ug/L)	25000 E	26000 E	20000 E	24000 E	22000 ^E
TOTAL METALS AND MISC					
Alkalinity (mg/L)	NA	5 U	5 U	5 U	5 U
Aluminum (ug/L)	38000	36000	33000	33000	33000
Antimony (ug/L)	4.3	9.4	0.62 J	3.5	3.7
Arsenic (ug/L)	49	130 B	5.5	45	49
Barium (ug/L)	9.5	11 B	8.7	9	8.8
Beryllium (ug/L)	11	11	11	9.8	8.6 ^
Cadmium (ug/L)	67	68	85	77	79
Calcium (ug/L)	380000	380000	380000 B	360000 B	370000
Chloride (mg/L)	NA	0.34 J	0.36 J	0.36 J	NA
Chromium (ug/L)	5.7	7 ^	3	4.2	4.6 ^
Cobalt (ug/L)	120	110	110	100	100 ^
Copper (ug/L)	6300 E	6000 E	4600 E	5800 E	5600 E
Fluoride (mg/L)	NA	11	10	11	NA
Iron (ug/L)	190000	310000	120000	140000	140000
Lead (ug/L)	51	69	29	41	41
Magnesium (ug/L)	28000	28000	27000	26000	25000
Manganese (ug/L)	34000 E	35000 E	36000	32000 E	32000 E

Mercury (ug/L)	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Molybdenum (ug/L)	4.8	14	0.77 J	4.3	6
Nickel (ug/L)	74	70	72	63	63
Nitrate as N (mg/L)	NA	0.023 U	0.023 U H	0.046 UH	0.023 UH
pH	NA	3.06 HF	2.93 HF	3.03 HF	2.92 HF
Potassium (ug/L)	2900	2700	2500	2600	2600
Selenium (ug/L)	2.5 ^	4.3 B^	3.3 ^ B	15 B^	8.3 B^
Silver (ug/L)	0.15 J	0.3 J	0.1 U	0.1 U	0.16 J^
Sodium (ug/L)	4000	4800 U	5200	5300	480 U
Sulfate (mg/L)	NA	1600	1600	1600	NA
Thallium (ug/L)	0.33	0.35	0.29	0.27	0.29
Total Hardness (mg/L)	1100	1100	1100	1000	1000
Vanadium (ug/L)	44	71 E	2.5	32	32
Zinc (ug/L)	27000 E	26000	20000 E	24000 E	21000 E^

NA	Not analyzed
E	Result exceeded sample range
U	The analyte was analyzed for but not detected
J	The result is less than the reporting limit but greater than or equal to the MDL and the con
^	Instrument related QC is outside acceptance limits

centration is an approximate value.

	Pond System Discharge				
	8/11/2015	8/13/2015	8/15/2015	8/17/2015	8/19/2015
DISSOLVED METALS					
Aluminum (ug/L)	8500	11000	28000	17000	26000
Antimony (ug/L)	0.4 U	1.4	1.5	0.4 U	0.4 U
Arsenic (ug/L)	0.37 U	13	16	0.52 J	1
Barium (ug/L)	9.4	9.1	8.5	13	10
Beryllium (ug/L)	3.4	3.6	9	5.8	6.8 ^
Cadmium (ug/L)	80	70 B	80	63	79
Calcium (ug/L)	340000	340000	350000 B	310000 B	340000
Chromium (ug/L)	1 U	1.4 J	3.3	1 U	1 U^
Cobalt (ug/L)	100	93	100	80	95 ^
Copper (ug/L)	2800	1800	3900 E	3300	4400 E
Iron (ug/L)	63000	90000	96000	52000	63000
Lead (ug/L)	2.6	16	24	8.8	11
Magnesium (ug/L)	26000	26000	26000	22000	25000
Manganese (ug/L)	30000 E	29000 E	31000	24000 E	28000 E
Mercury (ug/L)	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Molybdenum (ug/L)	0.64 J	2.2	1.4	0.45 U	1.3
Nickel (ug/L)	58	55	68	48	58
Potassium (ug/L)	2300	2300	2200	2000	2600
Selenium (ug/L)	0.58 U	3.1	3.8 B ^	11 B^	9.1 B^
Silver (ug/L)	0.1 U	0.11 J	0.1 U	0.1 U	0.1 U^
Sodium (ug/L)	120000 E	150000 E	52000	50000	46000
Thallium (ug/L)	0.25	0.25	0.23	0.17 J	0.24
Vanadium (ug/L)	0.3 U	9.7	14	0.3 U	0.3 U
Zinc (ug/L)	22000 E	19000 E	18000 E	17000 E	19000 ^E
TOTAL METALS AND MISC					
Alkalinity	5 U	5 U	5 U	5 U	5 U
Aluminum	21000	11000	26000	22000	24000
Antimony	1.3	1.3	0.4 U	1.1	1.3
Arsenic	12	14 B	1.2	14	17
Barium	9.5	9.3 B	9	12	11
Beryllium	6.6	3.5	8.6	6.5	7 ^
Cadmium	79	71	84	62	70
Calcium	340000	350000	360000 B	310000 B	320000
Chloride	0.9	2.8	1.2	1.1	NA
Chromium	2.6	1.1 J^	1 U	1.8 J	2.2 ^
Cobalt	99	95	100	80	90 ^
Copper	3900 E	1800	3800 E	3600	4100 E
Fluoride	7.2	5.5	8.9	7.8	NA
Iron	99000	87000	70000	76000	78000
Lead	22	16	11	26	26
Magnesium	26000	27000	28000	23000	23000
Manganese	29000 E	30000 E	32000	25000 E	27000 E

Mercury	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Molybdenum	1.6	2.3	0.45 U	1	2.7
Nickel	60	57	70	50	55
Nitrate as N	0.046 U	0.023 U	0.025 J H	0.046 UH	0.023 UH
pH	4.59 J	4.52 HF	3.19 HF	3.69 HF	3.35 HF
Potassium	2300	2400	2200	2100	2500 F1
Selenium	0.58 U	3.9 B^	3.2 ^ B	14 B^	6.7 ^B
Silver	0.11 J	0.11 J	0.1 U	0.1 U	0.11 J
Sodium	120000 E	140000	54000	51000	40000
Sulfate	1400	1400	1400	1300	NA
Thallium	0.27	0.27	0.23	0.18 J	0.22
Total Hardness	950	980	1000	870	890
Vanadium	13	8.4	0.3 U	10	13
Zinc	21000 E	20000 E	18000 E	17000 E	17000 E

NA	Not analyzed
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U	The analyte was analyzed for but not detected
J	The result is less than the reporting limit but greater than or equal to the MDL and the con
^	Instrument related QC is outside acceptance limits

centration is an approximate value.

Location	GKM 8/10/2015	Ponds 8/11/2015	% Removal in Ponds	GKM 8/13/2015	Ponds 8/13/2015
DISSOLVED METALS					
Aluminum (ug/L)	35000	8500	76%	36000	11000
Antimony (ug/L)	0.5	0.4 U	NA	10	1.4
Arsenic (ug/L)	3.7	0.37 U	NA	140	13
Barium (ug/L)	8.9	9.4	-6%	12	9.1
Beryllium (ug/L)	11	3.4	69%	11	3.6
Cadmium (ug/L)	65	80	-23%	66	70
Calcium (ug/L)	380000	340000	11%	360000	340000
Chromium (ug/L)	2.7	1 U	NA	8.6	1.4
Cobalt (ug/L)	110	100	9%	110	93
Copper (ug/L)	6000	2800	53%	6100	1800
Iron (ug/L)	120000	63000	48%	370000	90000
Lead (ug/L)	32	2.6	92%	78	16
Magnesium (ug/L)	33000	26000	21%	26000	26000
Manganese (ug/L)	33000	30000	9%	34000	29000
Mercury (ug/L)	0.08 U	0.08 U	NA	0.08 U	0.08 U
Molybdenum (ug/L)	0.84	0.64	24%	16	2.2
Nickel (ug/L)	72	58	19%	69	55
Potassium (ug/L)	2700	2300	15%	2700	2300
Selenium (ug/L)	1.7	0.58 U	NA	4.8	3.1
Silver (ug/L)	0.1 U	0.1 U	NA	0.33	0.11
Sodium (ug/L)	3900	120000	-2977%	480 U	150000
Thallium (ug/L)	0.32	0.25	22%	0.35	0.25
Vanadium (ug/L)	2	0.3 U	NA	87	9.7
Zinc (ug/L)	25000	22000	12%	26000	19000
TOTAL METALS AND MISC					
Alkalinity (mg/L)	NA	5 U	NA	5 U	5 U
Aluminum (ug/L)	38000	21000	45%	36000	11000
Antimony (ug/L)	4.3	1.3	70%	9.4	1.3
Arsenic (ug/L)	49	12	76%	130	14
Barium (ug/L)	9.5	9.5	0%	11	9.3
Beryllium (ug/L)	11	6.6	40%	11	3.5
Cadmium (ug/L)	67	79	-18%	68	71
Calcium (ug/L)	380000	340000	11%	380000	350000
Chloride (mg/L)	NA	0.9	NA	0.34	2.8
Chromium (ug/L)	5.7	2.6	54%	7	1.1
Cobalt (ug/L)	120	99	18%	110	95
Copper (ug/L)	6300	3900	38%	6000	1800
Fluoride (mg/L)	NA	7.2	NA	11	5.5
Iron (ug/L)	190000	99000	48%	310000	87000
Lead (ug/L)	51	22	57%	69	16
Magnesium (ug/L)	28000	26000	7%	28000	27000
Manganese (ug/L)	34000	29000	15%	35000	30000

Mercury (ug/L)	0.08 U	0.08 U	NA	0.08 U	0.08 U
Molybdenum (ug/L)	4.8	1.6	67%	14	2.3
Nickel (ug/L)	74	60	19%	70	57
Nitrate as N (mg/L)	NA	0.046 U	NA	0.023 U	0.023 U
pH	NA	4.59	NA	3.06	4.52
Potassium (ug/L)	2900	2300	21%	2700	2400
Selenium (ug/L)	2.5	0.58 U	NA	4.3	3.9
Silver (ug/L)	0.15	0.11	27%	0.3	0.11
Sodium (ug/L)	4000	120000	-2900%	4800 U	140000
Sulfate (mg/L)	NA	1400	NA	1600	1400
Thallium (ug/L)	0.33	0.27	18%	0.35	0.27
Total Hardness (mg/L)	1100	950	14%	1100	980
Vanadium (ug/L)	44	13	70%	71	8.4
Zinc (ug/L)	27000	21000	22%	26000	20000

NA	Not analyzed	Not analyzed
E	Result exceeded	Result exceeded sample range
U	The analyte was	The analyte was analyzed for but not detected
J	The result is less	The result is less than the reporting limit but greater than or equal to the
^	Instrument relat	Instrument related QC is outside acceptance limits

% Removal in Ponds	GKM 8/15/2015	Ponds 8/15/2015	% Removal in Ponds	Mine 8/17/2015	Ponds 8/17/2015
69%	34000	28000	18%	33000	17000
86%	3.7	1.5	59%	0.44	0.4
91%	44	16	64%	2.6	0.52
24%	8.6	8.5	1%	8.9	13
67%	11	9	18%	9.8	5.8
-6%	82	80	2%	80	63
6%	370000	350000	5%	370000	310000
84%	5.5	3.3	40%	2.5	1 U
15%	110	100	9%	100	80
70%	4600	3900	15%	5800	3300
76%	150000	96000	36%	110000	52000
79%	42	24	43%	32	8.8
0%	27000	26000	4%	26000	22000
15%	36000	31000	14%	32000	24000
NA	0.08 U	0.08 U	NA	0.08 U	0.08 U
86%	4.2	1.4	67%	0.45	0.45
20%	69	68	1%	62	48
15%	2400	2200	8%	2600	2000
35%	4.7	3.8	19%	12	11
67%	0.1	0.1 U	NA	0.1 U	0.1 U
NA	5300	52000	-881%	5500	50000
29%	0.29	0.23	21%	0.27	0.17
89%	38	14	63%	1.1	0.3
27%	20000	18000	10%	24000	17000
NA	5 U	5 U	NA	5	5
69%	33000	26000	21%	33000	22000
86%	0.62	0.4 U	NA	3.5	1.1
89%	5.5	1.2	78%	45	14
15%	8.7	9	-3%	9	12
68%	11	8.6	22%	9.8	6.5
-4%	85	84	1%	77	62
8%	380000	360000	5%	360000	310000
-724%	0.36	1.2	-233%	0.36	1.1
84%	3	1 U	NA	4.2	1.8
14%	110	100	9%	100	80
70%	4600	3800	17%	5800	3600
50%	10	8.9	11%	11	7.8
72%	120000	70000	42%	140000	76000
77%	29	11	62%	41	26
4%	27000	28000	-4%	26000	23000
14%	36000	32000	11%	32000	25000

NA	0.08 U	0.08 U	NA	0.08 U	0.08 U
84%	0.77	0.45 U	NA	4.3	1
19%	72	70	3%	63	50
NA	0.023 U	0.025	NA	0.046 UH	0.046 UH
-48%	2.93	**3.19**	-9%	**3.03**	**3.69**
11%	2500	2200	12%	2600	2100
9%	3.3	3.2	3%	15	14
63%	0.1 U	0.1 U	NA	0.1 U	0.1 U
NA	5200	54000	-938%	5300	51000
13%	1600	1400	13%	1600	1300
23%	0.29	0.23	21%	0.27	0.18
11%	1100	1000	9%	1000	870
88%	2.5	0.3 U	NA	32	17000 E
23%	20000	18000	10%	24000 E	

MDL and the approximate value.

MDL and the approximate value.

% Removal in Ponds	8/19/2015	8/19/2015	% Removal in Ponds
48%	32000	26000	19%
9%	0.69	0.4	42%
80%	6.6	1	85%
-46%	9.3	10	-8%
41%	8.5	6.8	20%
21%	83	79	5%
16%	370000	340000	8%
NA	2.5	1	NA
20%	100	95	5%
43%	5600	4400	21%
53%	110000	63000	43%
73%	28	11	61%
15%	26000	25000	4%
25%	32000	28000	13%
NA	0.08	0.08	NA
0%	1.7	1.3	24%
23%	64	58	9%
23%	2600	2600	0%
8%	11	9.1	17%
NA	0.1	0.1	NA
-809%	480	46000	-9483%
37%	0.29	0.24	17%
73%	2.6	0.3	88%
29%	22000	19000	14%
NA	5	5	NA
33%	33000	24000	27%
NA	3.7	1.3	NA
69%	49	17	65%
-33%	8.8	11	-25%
34%	8.6	7	19%
19%	79	70	11%
14%	370000	320000	14%
-206%	NA	NA	
NA	4.6	2.2	NA
20%	100	90	10%
38%	5600	4100	27%
29%	NA	NA	
46%	140000	78000	44%
37%	41	26	37%
12%	25000	23000	8%
22%	32000	27000	16%

NA	0.08	0.08	NA
NA	6	2.7	NA
21%	63	55	13%
NA	0.023	0.023	NA
-22%	2.92	3.35	-15%
19%	2600	2500	4%
7%	8.3	6.7	19%
NA	0.16	0.11	NA
-862%	480	40000	-8233%
19%	NA	NA	
33%	0.29	0.22	24%
13%	1000	890	11%
NA	32	13	NA
#VALUE!	21000	17000	19%