2018 - Mine Permit Groundwater Quality Monitoring Data
HW-1L (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.75	0.45	1.29
ORP	mV	-	274.5	-298.6	-284.1
pH	SU	8.14-9.14	8.49	8.48	8.33
Specific Conductance	uS/cm	-	382.5	385.1	377.6
Temperature	C	-	7.9	9.69	9.03
Turbidity	NTU	-	3.54	2.99	4.65
Water Elevation	ft MSL	-	1458.45	1512.15	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.18**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	745.21	-	-	**621**
Cadmium	ug/L	3.000	-	-	<0.10
Chromium	ug/L	40	-	-	<0.10
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	1186.83	**446**	**831**	**795**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	23.04	-	-	**15.7**
Manganese	ug/L	200	< 50	< 50	<1.1
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20	**0.17**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.8	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	109.06	**80**	**80.3**	**81.6**
Alkalinity, Carbonate	mg/L	7.8	< 2.0	< 2.0	<2.0
Chloride	mg/L	57.2	**44.8**	**44.5**	**44.4**
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.1	< 0.025	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.10	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.10	**0.007**
Sulfate	mg/L	33.01	**25.4**	**27.3**	**25.1**
Sulfide	mg/L	0.8	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	34.39	**25.4**	**25.9**	**27.5**
Magnesium	mg/L	14.63	**10.4**	**10.8**	**11.1**
Potassium	mg/L	6.17	**1.8**	**1.8**	**1.8**
Sodium	mg/L	28.01	**21.9**	**22.9**	**22.6**
General					
Hardness	mg/L	155.68	**139**	**120**	**114**
		-			
		-			

2018 - Mine Permit Groundwater Quality Monitoring Data
HW-1U LLA (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.68	0.54	1.28
ORP	mV	-	-91.4	-183.4	-215.6
pH	SU	8.06-9.06	9.43	8.95	8.31
Specific Conductance	uS/cm	-	523.1	449.1	432.8
Temperature	C	-	6.4	10.24	9.34
Turbidity	NTU	-	893	126.4	4.52
Water Elevation	ft MSL	-	1521.55	1475.83	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<2.0
Arsenic	ug/L	9.6	**8.6**	< 5.0	<0.10
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	<8.4
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.99**
Cobalt	ug/L	80	-	-	<20.0
Copper	ug/L	8.56	**7.7**	< 4.0	<4.0
Iron	ug/L	56769.6	**45200**	< 200	<13.0
Lead	ug/L	15.0	**86.7**	< 3.0	<0.10
Lithium	ug/L	17.39	-	-	**13.0**
Manganese	ug/L	672.84	**455**	< 50.0	<1.1
Mercury	ng/L	14.2	**3.95**	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.78**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.20
Thallium	ug/L	2.0	-	-	<2.0
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	44.15	**33.8**	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	156.67	**48.5**	**93.6**	**111**
Alkalinity, Carbonate	mg/L	64.24	**82.8**	**21.7**	<2.0
Chloride	mg/L	61.2	**90.1**	**21.4**	**20.8**
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.299	**0.567**	**0.266**	**0.177**
Nitrogen, Nitrate	mg/L	0.57	**0.129**	< 0.10	<0.0089
Nitrogen, Nitrite	mg/L	0.78	< 0.1	**0.115**	**0.006**
Sulfate	mg/L	395.42	**299**	**84.9**	**58.0**
Sulfide	mg/L	0.80	< 5.0	< 1.0	<0.011
Major Cations					
Calcium	mg/L	61.29	**64**	**6.5**	**25.1**
Magnesium	mg/L	25.82	**26.4**	**2**	**9.3**
Potassium	mg/L	16.88	**5.3**	**3.4**	**3.6**
Sodium	mg/L	134.27	**136**	**80.2**	**42.8**
General					
Hardness	mg/L	170.91	**30**	**28**	**101**
		-			
		-			

2018 - Mine Permit Groundwater Quality Monitoring Data
HW-1U UFB (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.48	0.52	1.2
ORP	mV	-	-281.4	-291.1	-364.5
pH	SU	8.4-9.4	8.94	8.67	8.77
Specific Conductance	uS/cm	-	182.8	158.5	202.2
Temperature	C	-	5.7	8.95	10.63
Turbidity	NTU	-	4.72	29.32	5.06
Water Elevation	ft MSL	-	1531.72	1532.65	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	9.3	< 5.0	< 5.0	**0.37**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**51.6**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.44**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	1364.17	<200	< 200	**344**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	16.74	-	-	<4.6
Manganese	ug/L	80.14	< 50	**79**	**54.7**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.31**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	121.72	**81.0**	**141.0**	**70.6**
Alkalinity, Carbonate	mg/L	17.08	< 2.0	< 2.0	**8.0**
Chloride	mg/L	96.09	< 10	< 10.0	<0.72
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.058**
Nitrogen, Ammonia	mg/L	0.097	**0.028**	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**0.005**
Sulfate	mg/L	72.34	**2.1**	**1.5**	<0.86
Sulfide	mg/L	2.47	< 0.20	< 0.20	**0.023**
Major Cations					
Calcium	mg/L	34.03	**14.8**	**14.6**	**19.6**
Magnesium	mg/L	15.63	**5.5**	**4.3**	**5.4**
Potassium	mg/L	20.91	**3.4**	**2.9**	**3.1**
Sodium	mg/L	67.74	**7.7**	**6**	**5.8**
General					
Hardness	mg/L	146.74	**88.2**	**56**	**71.1**
		-			
		-			

2017

Mine Permit Groundwater Quality Monitoring Data

HW-2 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.49	1.36	1.35
ORP	mV	-	-231.9	-227.1	-243.6
pH	SU	7.29-8.29	8.07	8.29	8.21
Specific Conductance	uS/cm	-	699.2	675.1	613.3
Temperature	C	-	10.1	10.41	9.43
Turbidity	NTU	-	356.1	29.15	19.91
Water Elevation	ft MSL	-	1533.17	1534.04	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.25**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**99.5**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.42**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	2594.79	**912**	**426**	**683**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	333.37	**304**	**282**	**284**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.36**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	141.40	**99**	**95.6**	**88.6**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	34.7	**33.5**	**32.8**	**28.9**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.088**
Nitrogen, Ammonia	mg/L	0.083	<0.025	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.10	<0.0089
Nitrogen, Nitrite	mg/L	0.4	<0.1	< 0.10	<0.0037
Sulfate	mg/L	175.33	**135**	**169**	**154**
Sulfide	mg/L	0.52	< 0.20	< 0.20	<0.20
Major Cations					
Calcium	mg/L	71.88	**57**	**56.3**	**54.6**
Magnesium	mg/L	26.49	**22.7**	**22.5**	**20.6**
Potassium	mg/L	6.12	**5.1**	**4.6**	**4.3**
Sodium	mg/L	29.55	**33.8**	**30.6**	**34.6**
General					
Hardness	mg/L	296.9	**161**	**246**	**221**
		-			
		-			

Explanations of abbreviations are included on the final page of this table.

2017

Mine Permit Groundwater Quality Monitoring Data

HW-8U (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	2.87	2.05	1.59
ORP	mV	-	-86.4	-82.7	-96.6
pH	SU	6.4-7.4	6.84	6.8	6.6
Specific Conductance	uS/cm	-	454.6	430.1	474.8
Temperature	C	-	6.1	8.95	9.54
Turbidity	NTU	-	7.35	2.97	2.36
Water Elevation	ft MSL	-	1533.04	1534.72	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4	-	-	<0.80
Arsenic	ug/L	8.8	**8.5**	**8.3**	**9.9**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**29.7**
Cadmium	ug/L	3	-	-	<0.10
Chromium	ug/L	40	-	-	**0.59**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	22048.83	**8810**	**9490**	**9740**
Lead	ug/L	9	< 3.0	< 3.0	<0.10
Lithium	ug/L	14.39	-	-	<4.6
Manganese	ug/L	6267.76	**5820**	**6220**	**6040**
Mercury	ng/L	4	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	<0.10
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.8	-	-	<0.10
Thallium	ug/L	2	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	26.73	< 10	< 10.0	**3.4**
Major Anions					
Alkalinity, Bicarbonate	mg/L	214.17	**154**	**154**	**160**
Alkalinity, Carbonate	mg/L	8	< 2.0	< 2.0	<2.0
Chloride	mg/L	18.35	**18.9**	**18.6**	**20.3**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.091**
Nitrogen, Ammonia	mg/L	0.041	< 0.025	< 0.025	**0.0417**
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<0.0037
Sulfate	mg/L	12.26	**13.2**	**13**	**13.7**
Sulfide	mg/L	0.8	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	45.93	**40.2**	**43**	**45.1**
Magnesium	mg/L	18.68	**12.5**	**13.2**	**13.4**
Potassium	mg/L	3.64	**3.1**	**3.5**	**3.4**
Sodium	mg/L	4.26	**4.2**	**4.5**	**4.5**
General					
Hardness	mg/L	203.47	**157**	**188**	**168**
		-			
		-			

2017

Mine Permit Groundwater Quality Monitoring Data

HYG-1 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.66	0.51	1.29
ORP	mV	-	33.4	19.5	-30.6
pH	SU	6.29-7.29	6.81	6.76	6.79
Specific Conductance	uS/cm	-	761.3	714.1	567.4
Temperature	C	-	7.6	7.61	9.26
Turbidity	NTU	-	1.11	1.39	1.59
Water Elevation	ft MSL	-	1532.87	1533.26	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	**8.9**
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.37**
Barium	ug/L	400	-	-	**68.2**
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**83.1**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.22**
Cobalt	ug/L	80	-	-	**0.98**
Copper	ug/L	9.22	**12.3**	< 4.0	**4.0**
Iron	ug/L	481.9	<200	< 200	<13.0
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	627.41	**671**	**653**	**587**
Mercury	ng/L	37.3	**7.99**	**22.1**	**36.0**
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.55**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	**0.044**
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	25.31	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	372.91	**259**	**253**	**177**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	21.5	**11**	**12.9**	**15.5**
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.56	**0.333**	**0.306**	**0.266**
Nitrogen, Nitrate	mg/L	0.08	< 0.1	< 0.10	**0.239**
Nitrogen, Nitrite	mg/L	0.40	< 0.1	< 0.10	**0.005**
Sulfate	mg/L	136.69	**122**	**78.3**	**87.6**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	65.21	**58.1**	**47.6**	**47.6**
Magnesium	mg/L	34.32	**28.1**	**23.8**	**22.8**
Potassium	mg/L	12.96	**11.1**	**10.6**	**9.8**
Sodium	mg/L	80.47	**49**	**54.6**	**28.5**
General					
Hardness	mg/L	321.93	**284**	**234**	**213**
		-			
		-			

2018 - Mine Permit Groundwater Quality Monitoring Data
KMW-5R (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018	Q3 2018 Filtered
Field						
D.O.	ppm	-	5.08	2.87	7.57	7.57
ORP	mV	-	14	84.7	131.6	131.6
pH	SU	6.67-7.67	7.15	6.98	6.99	6.99
Specific Conductance	uS/cm	-	868.5	906.3	848.1	848.1
Temperature	C	-	7.7	14.4	14.86	14.86
Turbidity	NTU	-	2076.5	761.66	89.6	89.6
Water Elevation	ft MSL	-	1554.17	1557.56	-	-
Metals						
Aluminum	ug/L	200	-	-	**623**	<31.0
Antimony	ug/L	4	-	-	<0.80	<0.80
Arsenic	ug/L	7.5	**18.4**	**15.6**	<0.10	<0.10
Barium	ug/L	400	-	-	<0.10	<0.10
Beryllium	ug/L	2.5	-	-	<1.0	<0.10
Boron	ug/L	1200	-	-	**95.7**	**99.5**
Cadmium	ug/L	3	-	-	<0.10	<0.10
Chromium	ug/L	40	-	-	**0.86**	**0.13**
Cobalt	ug/L	80	-	-	<0.40	**0.42**
Copper	ug/L	28.32	**51.8**	**43.6**	<4.0	**0.42**
Iron	ug/L	52956	**91200**	**129000**	**3940**	<13.0
Lead	ug/L	9	**6.4**	**6.1**	**0.31**	<0.10
Lithium	ug/L	31.39	-	-	**10.9**	**14.2**
Manganese	ug/L	2789	**2330**	**2070**	**1200**	**1190**
Mercury	ng/L	14.89	**24.1**	**17.8**	<1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20	<0.20
Nickel	ug/L	80	**47.4**	**48.8**	<20.0	<0.10
Selenium	ug/L	20	-	-	<1.0	<1.0
Silver	ug/L	0.8	-	-	<0.10	<0.10
Thallium	ug/L	2	-	-	<2.0	<0.040
Vanadium	ug/L	-	-	-	<4.0	<1.4
Zinc	ug/L	23.65	**33.9**	**22.8**	**1.9**	**1.8**
Major Anions						
Alkalinity, Bicarbonate	mg/L	480.97	**372**	**384**	**386**	-
Alkalinity, Carbonate	mg/L	8	< 2.0	< 2.0	<2.0	-
Chloride	mg/L	191.74	< 10	< 10.0	<0.72	-
Fluoride	mg/L	2.5	<1.0	< 1.0	**0.053**	-
Nitrogen, Ammonia	mg/L	0.063	<0.025	<0.025	<0.004	-
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	**0.026**	-
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**0.005**	-
Sulfate	mg/L	138.86	**86.9**	**91.4**	**84.5**	-
Sulfide	mg/L	0.8	<0.62	< 1.0	<0.011	-
Major Cations						
Calcium	mg/L	166.39	**123**	**115**	**119**	-
Magnesium	mg/L	65.48	**55.4**	**63.3**	**44.0**	-
Potassium	mg/L	8.30	**7.8**	**8.2**	**7.1**	-
Sodium	mg/L	7.71	**8.5**	**8.2**	**8.9**	-
General						
Hardness	mg/L	757.06	**490**	**512**	**479**	-
		-				
		-				

2017

Mine Permit Groundwater Quality Monitoring Data

MW-9R (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	1.81	1.63	3.08
ORP	mV	-	215.7	161.4	170.6
pH	SU	5.4-6.4	5.89	6.11	5.87
Specific Conductance	uS/cm	-	364.3	238.9	435.2
Temperature	C	-	5.8	11.01	13.45
Turbidity	NTU	-	2.57	4.02	2.14
Water Elevation	ft MSL	-	1595.96	1597.1	
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	<0.10
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**76.4**
Cadmium	ug/L	3.0	-	-	**0.1**
Chromium	ug/L	40	-	-	<0.10
Cobalt	ug/L	80	-	-	**0.73**
Copper	ug/L	38.92	**5.4**	< 4.0	<0.20
Iron	ug/L	4098.78	< 200	< 200	**15.5**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	1376.02	**124**	< 50.0	**16.4**
Mercury	ng/L	10.07	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	185.91	**116**	**76.1**	**66.0**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	38.14	**37.1**	**30.5**	**18.1**
Major Anions					
Alkalinity, Bicarbonate	mg/L	85.44	**28.8**	**28.3**	**78.6**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	184.87	**20**	**12.4**	**13.0**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.098**
Nitrogen, Ammonia	mg/L	0.22	< 0.025	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	3.8	**0.949**	**0.355**	**0.279**
Nitrogen, Nitrite	mg/L	0.4	<0.1	< 0.10	<0.004
Sulfate	mg/L	334.5	**135**	**46.6**	**97.9**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	116.03	**35.9**	**18**	**47.1**
Magnesium	mg/L	41.43	**12.5**	**6.8**	**16.4**
Potassium	mg/L	5.21	**2.6**	**1.6**	**3.0**
Sodium	mg/L	47.56	**6.7**	**6.5**	**10.6**
General					
Hardness	mg/L	479.44	**161**	**76**	**185**
		-			
		-			

2017
Mine Permit Groundwater Quality Monitoring Data
MW-701 QAL (Monitoring)
Humboldt Mill

		701 -QAL							704-QAL			
Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018	Parameter	Unit	Recommended Benchmark 2014	Recommended Benchmark 2018	Q4 2017	Q1 2018	Q2 2018	Q3 2018
Field						Field							
D.O.	ppm	-	4.15	6.29	6.02	D.O.	ppm	-	-	0.45	0.76	1.72	1.21
ORP	mV	-	179.8	271.5	207.6	ORP	mV	-	-	65.7	147.6	137.7	153.5
pH	SU	5.46-6.46	6.11	5.92	5.58	pH	SU	5.5-6.5	5.43-6.43	6.25	5.85	5.83	5.75
Specific Conductance	uS/cm	-	222.4	131.4	883.5	Specific Conduct	uS/cm	-	-	809.7	371.8	384.4	389.4
Temperature	C	-	4.24	8.61	10.68	Temperature	C	-	-	9.19	5.2	10.52	11.21
Turbidity	NTU	-	2.57	1.49	1.79	Turbidity	NTU	-	-	1.79	17.89	5.22	8.46
Water Elevation	ft MSL	-	1531.67	1533.00	-	Water Elevation	ft MSL	-	-	1534.17	1533.29	1534.52	
Metals						Metals							
Aluminum	ug/L	200	-	-	<31.0	Aluminum	ug/L	200 (p)	200	-	-	-	<31.0
Antimony	ug/L	4	-	-	<0.80	Antimony	ug/L	8.0 (p)	4.0	-	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.32**	Arsenic	ug/L	24	7.5	**17.2**	< 5.0	< 5.0	**0.27**
Barium	ug/L	400	-	-	<0.10	Barium	ug/L	400 (p)	400	-	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10	Beryllium	ug/L	4.0 (p)	2.5	-	-	-	<0.10
Boron	ug/L	1200	-	-	**17.3**	Boron	ug/L	1200 (p)	1200	-	-	-	**25.7**
Cadmium	ug/L	3	-	-	**0.15**	Cadmium	ug/L	4.0 (p)	3.0	-	-	-	<0.10
Chromium	ug/L	40	-	-	**0.80**	Chromium	ug/L	40 (p)	40	-	-	-	<0.10
Cobalt	ug/L	80	-	-	<0.40	Cobalt	ug/L	80 (p)	80	-	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	**0.53**	Copper	ug/L	16 (p)	16	< 4.0	< 4.0	< 4.0	**0.94**
Iron	ug/L	497.99	< 200	< 200	<13.0	Iron	ug/L	37038	84519.23	**103000**	< 200	**3590**	<13.0
Lead	ug/L	9	< 3.0	< 3.0	<3.0	Lead	ug/L	12 (p)	9.0	< 3.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6	Lithium	ug/L	40 (p)	40	-	-	-	<4.6
Manganese	ug/L	5262.51	**50.4**	< 50.0	<1.1	Manganese	ug/L	7914	8782.76	**5600**	**689**	**1900**	**594**
Mercury	ng/L	8.44	**1.34**	< 1.0	<1.0	Mercury	ng/L	5.95	34.7	**47**	< 1.0	**2.85**	**1.20**
Molybdenum	ug/L	200	-	-	<0.20	Molybdenum	ug/L	200 (p)	200	-	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	<0.10	Nickel	ug/L	80 (p)	80	< 20	< 20	< 20.0	<0.10
Selenium	ug/L	20	-	-	<1.0	Selenium	ug/L	20 (p)	20	-	-	-	<1.0
Silver	ug/L	0.8	-	-	<0.10	Silver	ug/L	0.8 (p)	0.80	-	-	-	<0.10
Thallium	ug/L	2	-	-	**0.048**	Thallium	ug/L	8.0 (p)	2.0	-	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4	Vanadium	ug/L	16 (p)	-	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<10.0	Zinc	ug/L	44 (p)	37.8	< 10	< 10	< 10.0	<1.7
Major Anions						Major Anions							
Alkalinity, Bicarbonate	mg/L	117.82	**58.6**	**36.1**	**34.5**	Alkalinity, Bicarb	mg/L	241	264.36	**283**	**78.8**	**94.1**	**61.7**
Alkalinity, Carbonate	mg/L	8	< 2.0	< 2.0	<2.0	Alkalinity, Carbo	mg/L	8.0 (p)	8.0	< 2.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	22.96	**13.2**	< 10.0	**243**	Chloride	mg/L	18	23.77	< 10	**16.9**	**14.3**	**19.6**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.071**	Fluoride	mg/L	4.0 (p)	2.5	< 1.0	< 1.0	< 1.0	**0.038**
Nitrogen, Ammonia	mg/L	0.402	< 0.025	< 0.025	<0.004	Nitrogen, Ammo	mg/L	0.04	0.19	**1.66**	< 0.025	**0.29**	<0.004
Nitrogen, Nitrate	mg/L	1.87	**0.777**	**0.65**	**0.779**	Nitrogen, Nitrat	mg/L	0.17	1.47	**0.127**	**1.15**	**0.721**	0.882
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.10	0.004	Nitrogen, Nitrite	mg/L	0.40 (p)	0.4	< 0.1	< 0.1	< 0.1	<0.0037
Sulfate	mg/L	85.65	**20.2**	**14.8**	**11.0**	Sulfate	mg/L	23	44.8	**15.6**	**54.7**	**51.8**	**83.9**
Sulfide	mg/L	0.8	< 0.20	< 0.20	<0.20	Sulfide	mg/L	0.80 (p)	0.80	< 0.20	< 0.20	< 0.20	<0.011
Major Cations													
Calcium	mg/L	43.04	**18.9**	**8.9**	**69.4**	Calcium	mg/L	51	47.35	**37**	**32.9**	**33.6**	**35.1**
Magnesium	mg/L	18.63	**7.3**	**4**	**28.7**	Magnesium	mg/L	9	14.76	**14.7**	**12.2**	**11.9**	**12.4**
Potassium	mg/L	8.95	**3.0**	**2.1**	**6.2**	Potassium	mg/L	3.11	6.10	**9.0**	**2.3**	**3.2**	**2.5**
Sodium	mg/L	11.68	**7.2**	**6.3**	**46.8**	Sodium	mg/L	27	32.26	**25.7**	**10.7**	**14.2**	**13.0**
General						General							
Hardness	mg/L	199.04	**106**	**40**	**292**	Hardness	mg/L	185	191.15	**150**	**167**	**130**	**139**
		-											
		-											

2017
Mine Permit Groundwater Quality Monitoring Data
MW-701 UFB (Monitoring)
Humboldt Mill

			701 UFB							704 UFB		
Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018	Parameter	Unit	Recommended Benchmark 2014	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field						Field						
D.O.	ppm	-	0.50	0.81	1.33	D.O.	ppm	-	-	0.97	0.81	1.39
ORP	mV	-	-207.2	-212.1	-219.7	ORP	mV	-	-	-108.1	-142.6	-138.1
pH	SU	6.71-7.71	7.48	7.41	7.41	pH	SU	6.4-7.4	6.4-7.4	6.81	7.00	6.82
Specific Conductance	uS/cm	-	387.5	413.7	402.3	Specific Conduct	S/cm	-	-	599.1	646.7	575.6
Temperature	C	-	6.7	8.78	8.45	Temperature	C	-	-	7.4	7.61	9.34
Turbidity	NTU	-	76.07	16.54	35.51	Turbidity	NTU	-	-	39.98	6.45	3.33
Water Elevation	ft MSL	-	1532.06	1533.38	-	Water Elevation	t MS	-	-	1533.89	1535.11	
Metals						Metals						
Aluminum	ug/L	200	-	-	<31.0	Aluminum	ug/L	200 (p)	5824.36	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80	Antimony	ug/L	8.0 (p)	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.14**	Arsenic	ug/L	20 (p)	7.5	< 5.0	< 5.0	**0.18**
Barium	ug/L	157.47	-	-	**141**	Barium	ug/L	400 (p)	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10	Beryllium	ug/L	4.0 (p)	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**53.5**	Boron	ug/L	1200 (p)	1200	-	-	**27.7**
Cadmium	ug/L	3.0	-	-	<0.10	Cadmium	ug/L	4.0 (p)	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.14**	Chromium	ug/L	40 (p)	40	-	-	<0.10
Cobalt	ug/L	80	-	-	<0.40	Cobalt	ug/L	80 (p)	80	-	-	**0.59**
Copper	ug/L	45.38	< 4.0	< 4.0	<0.20	Copper	ug/L	5	16	< 4.0	< 4.0	<0.20
Iron	ug/L	24957.73	**15000**	**14800**	**14300**	Iron	ug/L	23040	44051.82	**42900**	**47800**	**42300**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10	Lead	ug/L	4	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	12.91	-	-	**7.9**	Lithium	ug/L	40 (p)	30.14	-	-	<4.6
Manganese	ug/L	4677.42	**2260**	**2170**	**2030**	Manganese	ug/L	618	1384.15	**906**	**990**	**14.9**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0	Mercury	ng/L	2	1.4	< 1.0	< 1.0	**1.03**
Molybdenum	ug/L	200	-	-	<0.20	Molybdenum	ug/L	200 (p)	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	<0.10	Nickel	ug/L	80 (p)	80	< 20	< 20.0	**0.7**
Selenium	ug/L	20	-	-	<1.0	Selenium	ug/L	20 (p)	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10	Silver	ug/L	0.8 (p)	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040	Thallium	ug/L	8.0 (p)	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4	Vanadium	ug/L	16 (p)	-	-	-	<1.4
Zinc	ug/L	13.83	< 10	< 10.0	<1.7	Zinc	ug/L	15	40	< 10	< 10.0	<1.7
Major Anions						Major Anions						
Alkalinity, Bicarbonate	mg/L	161.71	**145**	**147**	**157**	Alkalinity, Bicart	mg/L	181	198.18	**158**	**154**	131
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0	Alkalinity, Carbo	mg/L	8.0 (p)	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	48.85	< 10	**11.1**	**11.2**	Chloride	mg/L	18	24.46	**21.6**	**24**	**26**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.087**	Fluoride	mg/L	4.0 (p)	2.5	< 1.0	< 1.0	**0.04**
Nitrogen, Ammonia	mg/L	1.75	< 0.025	< 0.025	**0.0063**	Nitrogen, Ammo	mg/L	0.27	0.78	< 0.025	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089	Nitrogen, Nitrat	mg/L	0.40 (p)	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**0.004**	Nitrogen, Nitrite	mg/L	0.14	0.18	< 0.1	< 0.1	**0.009**
Sulfate	mg/L	52.19	**19.6**	**13.9**	**11.3**	Sulfate	mg/L	38	45.37	**44.1**	**47.4**	**71.2**
Sulfide	mg/L	1.86	< 0.20	< 0.20	<0.011	Sulfide	mg/L	0.80 (p)	0.49	< 0.20	< 0.20	<0.011
Major Cations						Major Cations						
Calcium	mg/L	38.59	**34.6**	**36.1**	**38.7**	Calcium	mg/L	38	66.63	**52.7**	**56.2**	**50.9**
Magnesium	mg/L	16.16	**14.8**	**14.8**	**15.0**	Magnesium	mg/L	7	14.04	**13.1**	**14**	**14.9**
Potassium	mg/L	8.53	**2.7**	**3.4**	**3.3**	Potassium	mg/L	4	5.28	**2.7**	**2.8**	**2.8**
Sodium	mg/L	33.46	**4.5**	**5.1**	**5.1**	Sodium	mg/L	65	43.16	**10.7**	**12.5**	**14.1**
General						General						
Hardness	mg/L	163.25 - -	**176**	**154**	**158**	Hardness	mg/L	106	226.12	**216**	**184**	**188**

2017
Mine Permit Groundwater Quality Monitoring Data
MW-702 QAL (Monitoring)
Humboldt Mill

		702-QAL					703-QAL				
Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018	Parameter	Unit	Recommended Benchmark 2014	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field						Field						
D.O.	ppm	-	1.3	1.89	1.75	D.O.	ppm	-	-	6.00	5.83	6.18
ORP	mV	-	-47.1	112.1	-55.1	ORP	mV	-	-	229.1	260.1	110.6
pH	SU	8.81-9.91	9.96	9.82	8.15	pH	SU	7.2-8.2	6.3-7.3	6.19	6.29	6.1
Specific Conductance	uS/cm	-	421.6	426.1	365.5	Specific Conduct	S/cm	-	-	199.1	203.1	206.3
Temperature	C	-	6.8	7.41	7.81	Temperature	C	-	-	5.90	7.04	7.48
Turbidity	NTU	-	1.78	4.15	34.37	Turbidity	NTU	-	-	1.49	1.47	1.57
Water Elevation	ft MSL	-	1530.82	1531.72	-	Water Elevation	t MS	-	-	1533.96	1533.42	-
Metals						Metals						
Aluminum	ug/L	122.72	-	-	<31.0	Aluminum	ug/L	200 (p)	200	-	-	<50.0
Antimony	ug/L	4.0	-	-	<0.80	Antimony	ug/L	8.0 (p)	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	**5.3**	<0.10	Arsenic	ug/L	20 (p)	7.5	< 5.0	< 5.0	<5.0
Barium	ug/L	195.71	-	-	<0.10	Barium	ug/L	400 (p)	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10	Beryllium	ug/L	4.0 (p)	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**22.6**	Boron	ug/L	1200 (p)	1200	-	-	<300
Cadmium	ug/L	3.0	-	-	<0.10	Cadmium	ug/L	4.0 (p)	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.65**	Chromium	ug/L	40 (p)	40	-	-	<0.10
Cobalt	ug/L	80	-	-	<0.40	Cobalt	ug/L	80 (p)	80	-	-	<20.0
Copper	ug/L	16	< 4.0	< 4.0	<0.20	Copper	ug/L	16 (p)	16	< 4.0	< 4.0	**0.37**
Iron	ug/L	800	< 200	< 200	<13.0	Iron	ug/L	255.36	286.57	< 200	< 200	<200
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10	Lead	ug/L	12 (p)	9.0	< 3.0	< 3.0	<3.0
Lithium	ug/L	40	-	-	<4.6	Lithium	ug/L	40 (p)	40	-	-	<4.6
Manganese	ug/L	545.68	< 50	< 50.0	<1.1	Manganese	ug/L	105.05	106.54	< 50	< 50.0	<50.0
Mercury	ng/L	3.55	**1.49**	**1.92**	**2.05**	Mercury	ng/L	4.0 (p)	4.0	< 1.0	< 1.0	**1.41**
Molybdenum	ug/L	200	-	-	<0.20	Molybdenum	ug/L	200 (p)	200	-	-	**0.23**
Nickel	ug/L	80	< 20	< 20.0	**0.88**	Nickel	ug/L	80 (p)	80	< 20	< 20.0	<0.10
Selenium	ug/L	20	-	-	<1.0	Selenium	ug/L	20 (p)	20	-	-	**1.1**
Silver	ug/L	0.80	-	-	<0.10	Silver	ug/L	0.8 (p)	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040	Thallium	ug/L	8.0 (p)	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	**3.2**	Vanadium	ug/L	16 (p)	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<1.7	Zinc	ug/L	40 (p)	40	< 10	< 10.0	<1.7
Major Anions						Major Anions						
Alkalinity, Bicarbonate	mg/L	160.17	**75.8**	**35.5**	**111**	Alkalinity, Bicart	mg/L	99.57	92.34	**54.5**	**54.7**	**54.0**
Alkalinity, Carbonate	mg/L	40.7	**8.1**	**39.4**	<2.0	Alkalinity, Carbo	mg/L	8.0 (p)	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	17.58	< 10	< 10.0	<10.0	Chloride	mg/L	40 (p)	40	< 10	< 10.0	<0.72
Fluoride	mg/L	2.5	< 1.0	< 1.0	<1.0	Fluoride	mg/L	131.24	2.5	< 1.0	< 1.0	**0.059**
Nitrogen, Ammonia	mg/L	0.042	<0.025	< 0.025	-	Nitrogen, Ammo	mg/L	0.12 (p)	0.082	< 0.025	< 0.025	-
Nitrogen, Nitrate	mg/L	1.24	**1.06**	**0.837**	**352**	Nitrogen, Nitrat	mg/L	0.22	1.81	**1.82**	**1.31**	**2.02**
Nitrogen, Nitrite	mg/L	0.18	**0.127**	**0.103**	<100	Nitrogen, Nitrite	mg/L	0.40 (p)	0.4	< 0.1	< 0.1	<3.7
Sulfate	mg/L	133.19	**59.8**	**57.5**	**54.3**	Sulfate	mg/L	49.72	40.56	**29**	**28.7**	**27.6**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.20	Sulfide	mg/L	0.3	0.80	< 0.20	< 0.20	<0.011
Major Cations						Major Cations						
Calcium	mg/L	78.82	**28.9**	**23.4**	**24.1**	Calcium	mg/L	39.66	31.29	**18.5**	**18.9**	**19.5**
Magnesium	mg/L	14.06	**6.2**	**3.9**	**6.5**	Magnesium	mg/L	10.72	9.83	**7.9**	**7.9**	**8.4**
Potassium	mg/L	22.00	**13.9**	**14.9**	**10.2**	Potassium	mg/L	3.13	2.57	**1.6**	**1.5**	**1.5**
Sodium	mg/L	60.14	**40.4**	**57.5**	**34.7**	Sodium	mg/L	10.48	7.74	**2**	**1.9**	**2.0**
General						General						
Hardness	mg/L	251.25	**114**	**80**	**87.1**	Hardness	mg/L	135.72	115.53	**106**	**84**	**83.2**
		-										
		-										

2017
Mine Permit Groundwater Quality Monitoring Data
MW-702 UFB (Monitoring)
Humboldt Mill

		702 UFB					703 UFB					
Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018	Parameter	Unit	Recommended Benchmark 2014	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field						Field						
D.O.	ppm	-	1.29	2.39	2.26	D.O.	ppm	-	-	2.61	0.87	1.6
ORP	mV	-	-194.1	-176.1	185.6	ORP	mV	-	-	-231.5	-234.1	-234.7
pH	SU	7.11-8.11	8.06	8.06	7.69	pH	SU	8.3-9.3	7.44-8.44	8.19	8.16	8.04
Specific Conductance	uS/cm	-	260.3	269.1	180.8	Specific Conduct	S/cm	-	-	293.3	291.6	288.0
Temperature	C	-	7.00	13.68	8.92	Temperature	C	-	-	5.1	11.11	8.72
Turbidity	NTU	-	5.01	11.84	11.72	Turbidity	NTU	-	-	2.32	2.58	2.03
Water Elevation	ft MSL	-	1518.19	1522.42	-	Water Elevation	t MS	-	-	1532.09	1528.14	-
Metals						Metals						
Aluminum	ug/L	200	-	-	<31.0	Aluminum	ug/l	200 (p)	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80	Antimony	ug/l	8.0 (p)	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.15**	Arsenic	ug/l	20 (p)	7.5	< 5.0	< 5.0	**0.29**
Barium	ug/L	400	-	-	<0.10	Barium	ug/l	400 (p)	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10	Beryllium	ug/l	4.0 (p)	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**97.9**	Boron	ug/l	1200 (p)	1200	-	-	**41.9**
Cadmium	ug/L	3.0	-	-	<0.10	Cadmium	ug/l	4.0 (p)	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	<0.10	Chromium	ug/l	40 (p)	40	-	-	**0.15**
Cobalt	ug/L	80	-	-	<0.40	Cobalt	ug/l	80 (p)	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20	Copper	ug/l	16 (p)	16	< 4.0	< 4.0	<0.20
Iron	ug/L	1328.38	**623**	**954**	**1240**	Iron	ug/l	2440.99	1902.7	**1630**	**1640**	**1420**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10	Lead	ug/l	12 (p)	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	12.91	-	-	**4.9**	Lithium	ug/l	40 (p)	40	-	-	<4.6
Manganese	ug/L	118.08	**89.1**	**90**	**98.0**	Manganese	ug/l	193.95	199.79	**189**	**157**	**116**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0	Mercury	ng/l	4.0 (p)	4.0	< 1.0	< 1.0	**2.28**
Molybdenum	ug/L	200	-	-	<0.20	Molybdenum	ug/l	200 (p)	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.11**	Nickel	ug/l	80 (p)	80	< 20	< 20.0	**0.16**
Selenium	ug/L	20	-	-	<1.0	Selenium	ug/l	20 (p)	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10	Silver	ug/l	0.8 (p)	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040	Thallium	ug/l	8.0 (p)	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4	Vanadium	ug/l	16 (p)	-	-	-	<1.4
Zinc	ug/L	76.03	< 10	<10.0	<1.7	Zinc	ug/l	13.75	40	< 10	< 10.0	**2.8**
Major Anions						Major Anions						
Alkalinity, Bicarbonate	mg/L	111.84	**96.5**	**181**	**90.0**	Alkalinity, Bicart	mg/l	127.42	111.44	**83**	**82.2**	**80.0**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0	Alkalinity, Carbo	mg/l	28.25	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	40	< 10	< 10.0	<0.72	Chloride	mg/l	40 (p)	40	< 10	< 10.0	<0.72
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032	Fluoride	mg/l	4.0 (p)	2.5	< 1.0	< 1.0	**0.084**
Nitrogen, Ammonia	mg/L	0.087	< 0.025	< 0.025	-	Nitrogen, Ammo	mg/l	0.47	0.75	< 0.025	< 0.025	-
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<8.9	Nitrogen, Nitrat	mg/l	0.4 (p)	0.4	< 0.1	< 0.1	<8.9
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**7.0**	Nitrogen, Nitrite	mg/l	0.4 (p)	0.4	< 0.1	< 0.1	**4.0**
Sulfate	mg/L	36.1	**33.1**	**30.9**	**28.7**	Sulfate	mg/l	52.89	49.32	**46.1**	**45.5**	**42.3**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011	Sulfide	mg/l	0.80 (p)	0.80	< 0.20	< 0.20	<0.011
Major Cations						Major Cations						
Calcium	mg/L	38.98	**27.9**	**29.2**	**28.7**	Calcium	mg/l	53.06	42.87	**30.5**	**32**	**30.3**
Magnesium	mg/L	11.74	**8.8**	**9.2**	**9.2**	Magnesium	mg/l	16.52	13.90	**10**	**10.7**	**10.5**
Potassium	mg/L	11.24	**2.7**	**3**	**3.3**	Potassium	mg/l	5.87	4.23	**2.3**	**2.4**	**2.2**
Sodium	mg/L	5.20	**2.8**	**3**	**3.0**	Sodium	mg/l	35.15	17.31	**2.8**	**3.0**	**3.0**
General						General						
Hardness	mg/L	139.94	**139**	**116**	**110**	Hardness	mg/l	193.1	173.44	**147**	**130**	**119**
		-										
		-										

Explanations of abbreviations are included on the final page of this table.

2017

Mine Permit Groundwater Quality Monitoring Data

MW-703 QAL (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	6.00	5.83	6.18
ORP	mV	-	229.1	260.1	110.6
pH	SU	6.3-7.3	6.19	6.29	6.1
Specific Conductance	uS/cm	-	199.1	203.1	206.3
Temperature	C	-	5.90	7.04	7.48
Turbidity	NTU	-	1.49	1.47	1.57
Water Elevation	ft MSL	-	1533.96	1533.42	-
Metals					
Aluminum	ug/L	200	-	-	<50.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	<5.0
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	<300
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	<0.10
Cobalt	ug/L	80	-	-	<20.0
Copper	ug/L	16	< 4.0	< 4.0	**0.37**
Iron	ug/L	286.57	< 200	< 200	<200
Lead	ug/L	9.0	< 3.0	< 3.0	<3.0
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	106.54	< 50	< 50.0	<50.0
Mercury	ng/L	4.0	< 1.0	< 1.0	**1.41**
Molybdenum	ug/L	200	-	-	**0.23**
Nickel	ug/L	80	< 20	< 20.0	<0.10
Selenium	ug/L	20	-	-	**1.1**
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	92.34	**54.5**	**54.7**	**54.0**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	40	< 10	< 10.0	<0.72
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.059**
Nitrogen, Ammonia	mg/L	0.082	< 0.025	< 0.025	-
Nitrogen, Nitrate	mg/L	1.81	**1.82**	**1.31**	**2.02**
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<3.7
Sulfate	mg/L	40.56	**29**	**28.7**	**27.6**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	31.29	**18.5**	**18.9**	**19.5**
Magnesium	mg/L	9.83	**7.9**	**7.9**	**8.4**
Potassium	mg/L	2.57	**1.6**	**1.5**	**1.5**
Sodium	mg/L	7.74	**2**	**1.9**	**2.0**
General					
Hardness	mg/L	115.53	**106**	**84**	**83.2**
		-			
		-			

Explanations of abbreviations are included on the final page of this table.

2017

Mine Permit Groundwater Quality Monitoring Data

MW-703 UFB (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	2.61	0.87	1.6
ORP	mV	-	-231.5	-234.1	-234.7
pH	SU	7.44-8.44	8.19	8.16	8.04
Specific Conductance	uS/cm	-	293.3	291.6	288.0
Temperature	C	-	5.1	11.11	8.72
Turbidity	NTU	-	2.32	2.58	2.03
Water Elevation	ft MSL	-	1532.09	1528.14	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.29**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**41.9**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.15**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	1902.7	**1630**	**1640**	**1420**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	199.79	**189**	**157**	**116**
Mercury	ng/L	4.0	< 1.0	< 1.0	**2.28**
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.16**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	**2.8**
Major Anions					
Alkalinity, Bicarbonate	mg/L	111.44	**83**	**82.2**	**80.0**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	40	< 10	< 10.0	<0.72
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.084**
Nitrogen, Ammonia	mg/L	0.75	< 0.025	< 0.025	-
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<8.9
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**4.0**
Sulfate	mg/L	49.32	**46.1**	**45.5**	**42.3**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	42.87	**30.5**	**32**	**30.3**
Magnesium	mg/L	13.90	**10**	**10.7**	**10.5**
Potassium	mg/L	4.23	**2.3**	**2.4**	**2.2**
Sodium	mg/L	17.31	**2.8**	**3.0**	**3.0**
General					
Hardness	mg/L	173.44	**147**	**130**	**119**
		-			
		-			

2017

Mine Permit Groundwater Quality Monitoring Data

MW-703 LLA (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.42	0.52	1.18
ORP	mV	-	-289.1	-298.1	-259.4
pH	SU	8.08-9.08	8.43	8.31	8.13
Specific Conductance	uS/cm	-	279.6	281.2	276.8
Temperature	C	-	6.3	8.75	9.2
Turbidity	NTU	-	2.94	17.63	3.68
Water Elevation	ft MSL	-	1530.84	*	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.16**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	<8.4
Cadmium	ug/L	3	-	-	<0.10
Chromium	ug/L	40	-	-	**0.19**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	2081.98	**817**	**699**	**715**
Lead	ug/L	9	< 3.0	< 3.0	<0.10
Lithium	ug/L	28.08	-	-	**7.4**
Manganese	ug/L	94.53	**81.2**	**92.4**	**81.1**
Mercury	ng/L	4	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20.0	< 20.0	**0.14**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.8	-	-	<0.10
Thallium	ug/L	2	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10.0	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	92.11	**81**	**79.2**	**80.5**
Alkalinity, Carbonate	mg/L	10.41	< 2.0	< 2.0	<2.0
Chloride	mg/L	96.57	**10.8**	**10.2**	**11.6**
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.076	< 0.025	< 0.025	-
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<8.9
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<3.7
Sulfate	mg/L	43.42	**33**	**32.4**	**32.9**
Sulfide	mg/L	0.8	< 0.20	< 0.20	**0.025**
Major Cations					
Calcium	mg/L	33.74	**25.3**	**27.4**	**26.8**
Magnesium	mg/L	12.29	**10**	**10.3**	**10.4**
Potassium	mg/L	7.73	**3**	**2.9**	**2.7**
Sodium	mg/L	51.07	**6.3**	**5.9**	**6.4**
General					
Hardness	mg/L	134.66	**131**	**118**	**110**

*- Diver failed on 3/22/18, replaced 5/16/18

2017

Mine Permit Groundwater Quality Monitoring Data

MW-703 DBA (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.89	0.9	1.46
ORP	mV	-	-255.7	-239.6	-270
pH	SU	8.89-9.89	8.98	8.38	8.81
Specific Conductance	uS/cm	-	300.4	308.4	293.8
Temperature	C	-	5.7	9.98	8.5
Turbidity	NTU	-	1.08	2.98	2.1
Water Elevation	ft MSL	-	1531.35	1532.32	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.31**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	<8.4
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.27**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	861.32	< 200	< 200	**257**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	19.81	-	-	**10.2**
Manganese	ug/L	200	< 50	< 50.0	<1.1
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20.0	< 20.0	**0.18**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	26.21	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	87.85	**82**	**81.8**	**69.0**
Alkalinity, Carbonate	mg/L	38.7	< 2.0	< 2.0	**8.0**
Chloride	mg/L	20	**15.3**	**15.5**	**15.8**
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.12	< 0.025	**0.0352**	-
Nitrogen, Nitrate	mg/L	0.86	< 0.1	< 0.1	<100
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<100
Sulfate	mg/L	72.78	**99.8**	**34.3**	**31.0**
Sulfide	mg/L	1.27	< 0.20	**0.33**	<0.20
Major Cations					
Calcium	mg/L	27.00	**25**	**15**	**26.3**
Magnesium	mg/L	17.28	**11.1**	**6.2**	**10.3**
Potassium	mg/L	29.63	**7.6**	**24.9**	**8.1**
Sodium	mg/L	16.16	**7.5**	**13**	**7.9**
General					
Hardness	mg/L	139.55	**137**	**80**	**108**
		-			
		-			

2017

Mine Permit Groundwater Quality Monitoring Data

MW-704 QAL (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.76	1.72	1.21
ORP	mV	-	147.6	137.7	153.5
pH	SU	5.43-6.43	5.85	5.83	5.75
Specific Conductance	uS/cm	-	371.8	384.4	389.4
Temperature	C	-	5.2	10.52	11.21
Turbidity	NTU	-	17.89	5.22	8.46
Water Elevation	ft MSL	-	1533.29	1534.52	
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.27**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**25.7**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	<0.10
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	**0.94**
Iron	ug/L	84519.23	< 200	**3590**	<13.0
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	8782.76	**689**	**1900**	**594**
Mercury	ng/L	34.7	< 1.0	**2.85**	**1.20**
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	<0.10
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	37.8	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	264.36	**78.8**	**94.1**	**61.7**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	23.77	**16.9**	**14.3**	**19.6**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.038**
Nitrogen, Ammonia	mg/L	0.19	< 0.025	**0.29**	<0.004
Nitrogen, Nitrate	mg/L	1.47	**1.15**	**0.721**	0.882
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<0.0037
Sulfate	mg/L	44.8	**54.7**	**51.8**	**83.9**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Calcium	mg/L	47.35	**32.9**	**33.6**	**35.1**
Magnesium	mg/L	14.76	**12.2**	**11.9**	**12.4**
Potassium	mg/L	6.10	**2.3**	**3.2**	**2.5**
Sodium	mg/L	32.26	**10.7**	**14.2**	**13.0**
General					
Hardness	mg/L	191.15	**167**	**130**	**139**
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2017

Mine Permit Groundwater Quality Monitoring Data

MW-704 UFB (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.97	0.81	1.39
ORP	mV	-	-108.1	-142.6	-138.1
pH	SU	6.4-7.4	6.81	7.00	6.82
Specific Conductance	uS/cm	-	599.1	646.7	575.6
Temperature	C	-	7.4	7.61	9.34
Turbidity	NTU	-	39.98	6.45	3.33
Water Elevation	ft MSL	-	1533.89	1535.11	
Metals					
Aluminum	ug/L	5824.36	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.18**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**27.7**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	<0.10
Cobalt	ug/L	80	-	-	**0.59**
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	44051.82	**42900**	**47800**	**42300**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	30.14	-	-	<4.6
Manganese	ug/L	1384.15	**906**	**990**	**14.9**
Mercury	ng/L	1.4	< 1.0	< 1.0	**1.03**
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.7**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	-	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	198.18	**158**	**154**	131
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	24.46	**21.6**	**24**	**26**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.04**
Nitrogen, Ammonia	mg/L	0.78	< 0.025	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.18	< 0.1	< 0.1	**0.009**
Sulfate	mg/L	45.37	**44.1**	**47.4**	**71.2**
Sulfide	mg/L	0.49	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	66.63	**52.7**	**56.2**	**50.9**
Magnesium	mg/L	14.04	**13.1**	**14**	**14.9**
Potassium	mg/L	5.28	**2.7**	**2.8**	**2.8**
Sodium	mg/L	43.16	**10.7**	**12.5**	**14.1**
General					
Hardness	mg/L	226.12	**216**	**184**	**188**
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Explanations of abbreviations are included on the final page of this table.

2017

Mine Permit Groundwater Quality Monitoring Data

MW-704 LLA (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.54	0.44	1.24
ORP	mV	-	-260.4	-318.4	-257.1
pH	SU	8.2-9.2	8.34	8.58	8.24
Specific Conductance	uS/cm	-	328.2	267.6	354.4
Temperature	C	-	4.1	10.13	9.72
Turbidity	NTU	-	3.58	22.86	37.12
Water Elevation	ft MSL	-	1533.36	1534.97	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.76**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**47.8**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	<0.10
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	3308.59	**1130**	**2070**	**925**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	28.25	-	-	**13.7**
Manganese	ug/L	95.14	**83.4**	< 50.0	**101**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.11**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	16	-	-	<1.4
Zinc	ug/L	40	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	152.81	**135**	**111**	**157**
Alkalinity, Carbonate	mg/L	13.4	< 2.0	< 2.0	<2.0
Chloride	mg/L	40	< 10	< 10.0	**11.0**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.083**
Nitrogen, Ammonia	mg/L	0.1	< 0.025	< 0.025	**0.0295**
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**0.007**
Sulfate	mg/L	20.79	**10.3**	**8.3**	**9.9**
Sulfide	mg/L	0.80	< 0.20	< 0.20	**0.021**
Major Cations					
Calcium	mg/L	33.39	**30.3**	**20.6**	**37.2**
Magnesium	mg/L	15.62	**13.7**	**13.9**	**15.6**
Potassium	mg/L	12.01	**5.9**	**6.8**	**5.4**
Sodium	mg/L	15.49	**4.5**	**4.8**	**4.7**
General					
Hardness	mg/L	156.51	**161**	**252**	**157**
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		-			

2017

Mine Permit Groundwater Quality Monitoring Data

MW-704 DBA (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.99	0.67	1.19
ORP	mV	-	-258.6	-251.1	-303.8
pH	SU	8.13-9.13	8.46	8.4	8.46
Specific Conductance	uS/cm	-	263.2	262.4	266.1
Temperature	C	-	6.5	9.06	9.71
Turbidity	NTU	-	1.95	122.6	49.88
Water Elevation	ft MSL	-	*	1529.82	-
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	8.0	-	-	<0.80
Arsenic	ug/L	20.0	< 5.0	< 5.0	**0.34**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	4.0	-	-	<0.10
Boron	ug/L	1480	-	-	<8.4
Cadmium	ug/L	4.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.15**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	9645	**830**	**684**	**865**
Lead	ug/L	12.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	**11.7**
Manganese	ug/L	58	< 50	< 50.0	<1.1
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	<0.20
Nickel	ug/L	80	< 20	< 20.0	**0.14**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	8.0	-	-	<0.040
Vanadium	ug/L	16	-	-	<1.4
Zinc	ug/L	11	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	129	**132**	**132**	**127**
Alkalinity, Carbonate	mg/L	32.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	40	< 10	< 10.0	<0.72
Fluoride	mg/L	4.0	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.04	< 0.025	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**0.005**
Sulfate	mg/L	6	< 1.0	< 1.0	<0.86
Sulfide	mg/L	0.80	<0.20	< 0.20	**0.017**
Major Cations					
Calcium	mg/L	27.00	**21.8**	**21.3**	**22.4**
Magnesium	mg/L	14.00	**10.6**	**10.7**	**11.1**
Potassium	mg/L	4.00	**2.4**	**2.6**	**2.5**
Sodium	mg/L	14.00	**9.9**	**10**	**10**
General					
Hardness	mg/L	111.00	**125**	**110**	**102**

* - Diver failed 9/6/17, replaced 3/15/18

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Mine Permit Groundwater Quality Monitoring Data

MW-705 QAL (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.63	0.63	1.77
ORP	mV	-	-92.4	-10.3	-12.1
pH	SU	5.67-6.67	6.66	6.14	5.87
Specific Conductance	uS/cm	-	231.1	198.6	378.6
Temperature	C	-	5.1	5.61	11.88
Turbidity	NTU	-	7.48	2.46	2.18
Water Elevation	ft MSL	-	1533.76	1536.47	
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	<0.10
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**32.0**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.35**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	**0.44**
Iron	ug/L	12956.53	**7440**	**4870**	**10300**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	1535.09	**651**	**523**	<55.0
Mercury	ng/L	1.8	<0.10	**1.04**	<0.10
Molybdenum	ug/L	200	-	-	**0.24**
Nickel	ug/L	80	< 20	< 20.0	<0.10
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	16	-	-	<1.4
Zinc	ug/L	283.42	<10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	85.4	**110**	**46.0**	**40.0**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	< 2.0
Chloride	mg/L	51.62	**24.6**	**20.6**	**65.0**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.063**
Nitrogen, Ammonia	mg/L	0.132	**0.095**	**0.0735**	**0.148**
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	**0.006**
Sulfate	mg/L	21.2	**2.4**	**7.6**	**2.9**
Sulfide	mg/L	0.80	< 0.20	< 0.20	**0.023**
Major Cations					
Calcium	mg/L	23.88	**12.1**	**11.9**	**19.5**
Magnesium	mg/L	10.91	**5.6**	**5.4**	**8.5**
Potassium	mg/L	3.03	**2.1**	**1.9**	**2.8**
Sodium	mg/L	16.56	**12.3**	**12.2**	**17.6**
General					
Hardness	mg/L	109.66	**74**	**54**	**83.5**
		-			
		-			

2017

Mine Permit Groundwater Quality Monitoring Data

MW-705 UFB (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.91	0.62	1.32
ORP	mV	-	-117.1	-145.5	-127.6
pH	SU	6.59-7.59	6.96	7.01	6.88
Specific Conductance	uS/cm	-	387.6	337.8	344.8
Temperature	C	-	6.2	10.21	10.92
Turbidity	NTU	-	172.1	6.42	2.85
Water Elevation	ft MSL	-	1533.53	1536.76	
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	**0.39**
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	**30.5**
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.62**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	**0.74**
Iron	ug/L	13309.31	**3960**	**9340**	**12100**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	13.19	-	-	<4.6
Manganese	ug/L	972.64	**1440**	**955**	**936**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	**0.45**
Nickel	ug/L	80	< 20	< 20.0	**0.76**
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	16	-	-	<1.4
Zinc	ug/L	34.43	< 10	< 10.0	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	117.78	**101**	**84.2**	**79.6**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	35.98	**30.9**	**32.3**	**36.1**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.079**
Nitrogen, Ammonia	mg/L	0.1	**0.03**	< 0.025	<0.004
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<0.0037
Sulfate	mg/L	14.23	**4.7**	**3.9**	**2.5**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	26.00	**28.6**	**24.7**	**27.4**
Magnesium	mg/L	13.29	**15.5**	**12.6**	**13.7**
Potassium	mg/L	4.01	**3.4**	**3.1**	**3.5**
Sodium	mg/L	3.37	**3.0**	**2.7**	**2.9**
General					
Hardness	mg/L	127.17	**172**	**120**	**125**
		-			
		-			

2017
Mine Permit Groundwater Quality Monitoring Data
MW-706 QAL (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.94	1.81	2.61
ORP	mV	-	63.6	75.5	66.3
pH	SU	5.74-6.74	6.02	5.93	5.75
Specific Conductance	uS/cm	-	991.4	1002.1	863.4
Temperature	C	-	7.8	9.21	9.47
Turbidity	NTU	-	2.91	2.52	3.5
Water Elevation	ft MSL	-	1559.45	-	
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	<0.10
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	<8.4
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.26**
Cobalt	ug/L	31.38	-	-	**22.6**
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	8029.11	**3490**	**3410**	**2970**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	17.21	-	-	<4.6
Manganese	ug/L	23484.14	**15000**	**13600**	**14100**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	**0.57**
Nickel	ug/L	27.04	**23.2**	< 20.0	<0.10
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	4.77	-	-	<1.4
Zinc	ug/L	77.08	< 10	< 10.0	**5.6**
Major Anions					
Alkalinity, Bicarbonate	mg/L	131.77	**145**	**75.8**	**70.6**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	165.11	**126**	**117**	**105**
Fluoride	mg/L	2.5	< 1.0	< 1.0	**0.041**
Nitrogen, Ammonia	mg/L	0.88	**0.416**	**0.412**	**0.426**
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	<0.0089
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<0.0037
Sulfate	mg/L	433.53	**186**	**192**	**179**
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	132.61	**79.9**	**75.8**	**69.3**
Magnesium	mg/L	43.54	**29.4**	**28.9**	**27.3**
Potassium	mg/L	5.64	**4.3**	**4.5**	**4.3**
Sodium	mg/L	139.93	**45.0**	**44.4**	**42**
General					
Hardness	mg/L	619.10	**29**	**168**	**285**
		-			
		-			

2017

Mine Permit Groundwater Quality Monitoring Data

MW-707 QAL (Monitoring)

Parameter	Unit	Recommended Benchmark 2018	Q1 2018	Q2 2018	Q3 2018
Field					
D.O.	ppm	-	0.61	4.21	1.68
ORP	mV	-	-131.5	-123.1	-122.6
pH	SU	6.43-7.43	7.26	7.16	6.93
Specific Conductance	uS/cm	-	342.9	349.6	332.4
Temperature	C	-	4.18	10.11	9.62
Turbidity	NTU	-	1.23	1.76	1.84
Water Elevation	ft MSL	-	1582.09	1536.76	
Metals					
Aluminum	ug/L	200	-	-	<31.0
Antimony	ug/L	4.0	-	-	<0.80
Arsenic	ug/L	7.5	< 5.0	< 5.0	<0.10
Barium	ug/L	400	-	-	<0.10
Beryllium	ug/L	2.5	-	-	<0.10
Boron	ug/L	1200	-	-	20.2
Cadmium	ug/L	3.0	-	-	<0.10
Chromium	ug/L	40	-	-	**0.19**
Cobalt	ug/L	80	-	-	<0.40
Copper	ug/L	16	< 4.0	< 4.0	<0.20
Iron	ug/L	7115.36	**4800**	**3410**	**4440**
Lead	ug/L	9.0	< 3.0	< 3.0	<0.10
Lithium	ug/L	40	-	-	<4.6
Manganese	ug/L	1127.81	**976**	**716**	**841**
Mercury	ng/L	4.0	< 1.0	< 1.0	<1.0
Molybdenum	ug/L	200	-	-	**0.89**
Nickel	ug/L	80	< 20	< 20	<0.10
Selenium	ug/L	20	-	-	<1.0
Silver	ug/L	0.80	-	-	<0.10
Thallium	ug/L	2.0	-	-	<0.040
Vanadium	ug/L	16	-	-	<1.4
Zinc	ug/L	29.27	< 10	< 10	<1.7
Major Anions					
Alkalinity, Bicarbonate	mg/L	168.29	**166**	**163**	**165**
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0
Chloride	mg/L	40	< 10	< 10	<0.72
Fluoride	mg/L	2.5	< 1.0	< 1.0	<0.032
Nitrogen, Ammonia	mg/L	0.32	**0.259**	**0.174**	**0.028**
Nitrogen, Nitrate	mg/L	0.4	< 0.1	< 0.1	**0.017**
Nitrogen, Nitrite	mg/L	0.4	< 0.1	< 0.1	<0.0037
Sulfate	mg/L	9.35	**3.2**	**2.7**	<0.86
Sulfide	mg/L	0.80	< 0.20	< 0.20	<0.011
Major Cations					
Calcium	mg/L	45.91	**43.4**	**41.6**	**44.9**
Magnesium	mg/L	13.49	**11.3**	**11.5**	**11.7**
Potassium	mg/L	2.93	**2.1**	**2.2**	**2.3**
Sodium	mg/L	3.62	**3.0**	**2.8**	**2.9**
General					
Hardness	mg/L	162.23	**176**	**156**	**160**
		-			
		-			

2017
Mine Permit Groundwater Quality Monitoring Data
MER-001 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018 Q3	Q1 2018	Q2 2018	Q3 2018		
Field							
D.O.	ppm	-	11.75	8.52	7.62		
ORP	mV	-	67.8	230.6	143.7		
pH	SU	6.1-7.1	6.91	6.66	6.78		
Specific Conductance	uS/cm	-	99.6	71.9	114.3		
Temperature	C	-	0.29	14.39	17.3		
Turbidity	NTU	-	2.9	1.2	5.26		
Flow	cfs	-	-	-	-		
Metals							
Aluminum	ug/L	200	-	-	60.5	50	ug/l
Antimony	ug/L	3.5	-	-	<0.80	1.0	ug/l
Arsenic	ug/L	2.78	**1.1**	< 1.0	**1.5**	1.0	ug/l
Barium	ug/L	11.22	-	-	**9.1**	1.0	ug/l
Beryllium	ug/L	2.5	-	-	<0.10	1.0	ug/l
Boron	ug/L	40	-	-	**7.0**	1.0	ug/l
Cadmium	ug/L	0.08	-	-	<0.012	0.02	ug/l
Chromium	ug/L	1.1	-	-	**0.30**	1.0	ug/l
Cobalt	ug/L	0.38	-	-	**0.193**	0.10	ug/l
Copper	ug/L	0.68	**0.39**	**0.73**	**0.646**	0.05	ug/l
Iron	ug/L	3531.79	**1610**	**1070**	**1640**	10.0	ug/l
Lead	ug/L	0.35	**0.145**	**0.136**	**0.239**	0.05	ug/l
Lithium	ug/L	32	-	-	<4.6	8.0	ug/l
Manganese	ug/L	241.96	**123**	**1900**	**90.2**	1.0	ug/l
Mercury	ng/L	8.05	**2.29**	**3.62**	**3.30**	0.5	ng/l
Molybdenum	ug/L	4.0	-	-	**0.23**	1.0	ug/l
Nickel	ug/L	1.48	**0.52**	**0.7**	**0.694**	0.2	ug/l
Selenium	ug/L	0.13	-	-	**0.089**	0.07	ug/l
Silver	ug/L	0.8	-	-	<0.10	0.2	ug/l
Thallium	ug/L	1.5	-	-	<0.040	1.0	ug/l
Vanadium	ug/L	4.0	-	-	<1.4	1.0	ug/l
Zinc	ug/L	5.47	**1.88**	**2.4**	**0.93**	0.5	ug/l
Major Anions							
Alkalinity, Bicarbonate	mg/L	48.06	**28.1**	**20.2**	**23.5**	2.0	mg/l
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0	2.0	mg/l
Chloride	mg/L	16.08	**6.7**	**4.9**	**7.2**	1.0	mg/l
Fluoride	mg/L	0.4	< 0.10	< 0.10	**0.085**	0.1	mg/l
Nitrogen, Ammonia	mg/L	2.0	**0.066**	<0.025	<0.004	0.50	mg/l
Nitrogen, Nitrate	mg/L	2.0	**0.112**	< 0.1	**0.044**	0.5	mg/l
Nitrogen, Nitrite	mg/L	2.0	< 0.1	< 0.1	<0.0037	0.5	mg/l
Sulfate	mg/L	4.0	**1.6**	< 1.0	<1.7	1.0	mg/l
Sulfide	mg/L	20	< 0.20	< 0.20	0.017	0.5	mg/l
Major Cations							
Calcium	mg/L	14.51	**8.9**	**6.1**	**8.3**	0.5	mg/l
Magnesium	mg/L	4.08	**2.5**	**1.9**	**2.2**	0.5	mg/l
Potassium	mg/L	1.08	**0.68**	**0.68**	**0.74**	0.5	mg/l
Sodium	mg/L	8.51	**3.6**	**3.0**	**4.1**	0.5	mg/l
General							
Hardness	mg/L	58.94	**48**	**26**	**29.9**	2.0	mg/l
Total Dissolved Solids	mg/L	200	<50	**116**	**110**	50.0	mg/l
Total Suspended Solids	mg/L	13.2	< 3.3	< 3.3	**3.6**	3.3	mg/l

2017
Mine Permit Groundwater Quality Monitoring Data
MER-002 (Monitoring)
Humboldt Mill

Parameter	Unit	Recommended Benchmark 2018 Q3	Q1 2018	Q2 2018	Q3 2018			
Field								
D.O.	ppm	-	11.62	8.4	7.65			
ORP	mV	-	42.5	147.1	172.1			
pH	SU	5.9-6.9	7.06	6.67	7.11			
Specific Conductance	uS/cm	-	115.6	90.7	132.7			
Temperature	C	-	0.3	14.29	16.3			
Turbidity	NTU	-	3.47	1.83	5.39			
Flow	cfs	-	-	-				
Metals								
Aluminum	ug/L	460.75	-	-	**62.8**	50	ug/l	
Antimony	ug/L	3.5	-	-	<0.80	1.0	ug/l	
Arsenic	ug/L	5.28	**1.4**	**1.3**	**1.8**	1.0	ug/l	
Barium	ug/L	21.04	-	-	**9.9**	1.0	ug/l	
Beryllium	ug/L	2.5	-	-	<0.10	1.0	ug/l	
Boron	ug/L	40	-	-	**23.4**	1.0	ug/l	
Cadmium	ug/L	0.08	-	-	<0.012	0.02	ug/l	
Chromium	ug/L	4.0	-	-	**0.45**	1.0	ug/l	652
Cobalt	ug/L	0.4	-	-	**0.278**	0.10	ug/l	
Copper	ug/L	1.43	**0.40**	**0.66**	**0.576**	0.05	ug/l	
Iron	ug/L	6900.91	**2010**	**1300**	**2030**	10.0	ug/l	
Lead	ug/L	0.34	**0.131**	**0.133**	**0.211**	0.05	ug/l	
Lithium	ug/L	1.37	-	-	<4.6	8.0	ug/l	
Manganese	ug/L	628.47	**169**	**125**	**138**	1.0	ug/l	
Mercury	ng/L	7.46	**1.95**	**3.33**	**2.39**	0.5	ng/l	
Molybdenum	ug/L	4.0	-	-	**0.29**	1.0	ug/l	
Nickel	ug/L	2.05	**0.58**	**0.7**	**0.773**	0.2	ug/l	
Selenium	ug/L	0.8	-	-	**0.117**	0.07	ug/l	
Silver	ug/L	0.8	-	-	<0.10	0.2	ug/l	
Thallium	ug/L	4.0	-	-	<0.040	1.0	ug/l	
Vanadium	ug/L	4.73	-	-	<1.4	1.0	ug/l	
Zinc	ug/L	2.0	**8.25**	**1.96**	**0.91**	0.5	ug/l	
Major Anions								
Alkalinity, Bicarbonate	mg/L	54.22	**31.8**	**22.9**	**25.0**	2.0	mg/l	
Alkalinity, Carbonate	mg/L	8.0	< 2.0	<2.0	<2.0	2.0	mg/l	
Chloride	mg/L	16.88	**7.8**	**6.5**	**6.6**	1.0	mg/l	
Fluoride	mg/L	0.4	< 0.10	< 0.10	**0.11**	0.1	mg/l	
Nitrogen, Ammonia	mg/L	2.0	**0.077**	< 0.025	<0.004	0.50	mg/l	
Nitrogen, Nitrate	mg/L	2.0	**0.107**	< 0.10	**0.034**	0.5	mg/l	
Nitrogen, Nitrite	mg/L	2.0	< 0.10	< 0.10	**0.004**	0.5	mg/l	
Sulfate	mg/L	16.28	**5.1**	**3.3**	**6.0**	1.0	mg/l	
Sulfide	mg/L	20	< 0.20	< 0.20	**0.016**	0.5	mg/l	
Major Cations								
Calcium	mg/L	18.1	**10.3**	**7.3**	**8.5**	0.5	mg/l	
Magnesium	mg/L	5.19	**2.9**	**2.3**	**2.4**	0.5	mg/l	
Potassium	mg/L	1.42	**0.75**	**0.77**	**0.83**	0.5	mg/l	
Sodium	mg/L	9.88	**4.7**	**4.2**	**5.8**	0.5	mg/l	
General								
Hardness	mg/L	70.06	**42**	**26**	**31**	2.0	mg/l	
Total Dissolved Solids	mg/L	200	**120**	**120**	**113**	50.0	mg/l	
Total Suspended Solids	mg/L	21.34	< 3.3	< 3.3	**3.4**	3.3	mg/l	

2017
Mine Permit Groundwater Quality Monitoring Data
MER-003 (Monitoring)
Humboldt Mill

Parameter	Unit	Recommended Benchmark 2018 Q3	Q1 2018	Q2 2018	Q3 2018	
Field						
D.O.	ppm	-	11.36	8.36	7.6	
ORP	mV	-	11.6	114.8	134.6	
pH	SU	5.7-6.7	7.42	6.78	7.22	
Specific Conductance	uS/cm	-	124.7	121.3	152.1	
Temperature	C	-	0.09	13.15	16.4	
Turbidity	NTU	-	3.43	2.55	5.24	
Flow	cfs	-	-	-		
Metals						
Aluminum	ug/L	200	-	-	**68.5**	50 ug/l
Antimony	ug/L	3.5	-	-	<0.80	1.0 ug/l
Arsenic	ug/L	2.64	**1.5**	**1.3**	**1.7**	1.0 ug/l
Barium	ug/L	14.68	-	-	**9.8**	1.0 ug/l
Beryllium	ug/L	2.5	-	-	<0.10	1.0 ug/l
Boron	ug/L	17.85	-	-	**26.1**	1.0 ug/l
Cadmium	ug/L	0.08	-	-	<0.012	0.02 ug/l
Chromium	ug/L	4.0	-	-	**0.31**	1.0 ug/l
Cobalt	ug/L	0.4	-	-	**0.262**	0.10 ug/l
Copper	ug/L	0.65	**0.37**	**0.66**	**0.649**	0.05 ug/l
Iron	ug/L	3749.14	**2040**	**1450**	**2020**	10.0 ug/l
Lead	ug/L	0.18	**0.127**	**0.151**	**0.208**	0.05 ug/l
Lithium	ug/L	32	-	-	<4.6	8.0 ug/l
Manganese	ug/L	273.16	**178**	**137**	**138**	1.0 ug/l
Mercury	ng/L	7.24	**2.14**	**3.79**	**3.23**	0.5 ng/l
Molybdenum	ug/L	4.0	-	-	**0.29**	1.0 ug/l
Nickel	ug/L	1.76	**0.78**	**1.18**	**1.92**	0.2 ug/l
Selenium	ug/L	0.28	-	-	**0.109**	0.07 ug/l
Silver	ug/L	0.8	-	-	<0.10	0.2 ug/l
Thallium	ug/L	1.5	-	-	<0.040	1.0 ug/l
Vanadium	ug/L	4.0	-	-	<1.4	1.0 ug/l
Zinc	ug/L	2.74	**1.99**	**2.2**	**0.69**	0.5 ug/l
Major Anions						
Alkalinity, Bicarbonate	mg/L	58.08	**32.2**	**24.9**	**105**	2.0 mg/l
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	< 2.0	2.0 mg/l
Chloride	mg/L	22.56	**8.7**	**8.7**	**8.6**	1.0 mg/l
Fluoride	mg/L	0.4	< 0.10	< 0.10	**0.11**	0.1 mg/l
Nitrogen, Ammonia	mg/L	2.0	**0.087**	< 0.025	<0.004	0.50 mg/l
Nitrogen, Nitrate	mg/L	2.0	**0.107**	< 0.10	**0.032**	0.5 mg/l
Nitrogen, Nitrite	mg/L	2.0	< 0.10	< 0.10	**0.004**	0.5 mg/l
Sulfate	mg/L	20.5	**9.9**	**7.9**	**8.0**	1.0 mg/l
Sulfide	mg/L	20	< 0.20	< 0.20	**0.019**	0.5 mg/l
Major Cations						
Calcium	mg/L	17.7	**10.8**	**7.5**	**8.5**	0.5 mg/l
Magnesium	mg/L	5.76	**3.1**	**2.5**	**2.5**	0.5 mg/l
Potassium	mg/L	1.72	**0.85**	**0.88**	**0.9**	0.5 mg/l
Sodium	mg/L	12.18	**5.7**	**7.0**	**7.3**	0.5 mg/l
General						
Hardness	mg/L	78.01	**42**	**22**	**31.3**	
Total Dissolved Solids	mg/L	200	**62**	**86**	<83.3	50.0 mg/l
Total Suspended Solids	mg/L	13.2	< 3.3	< 3.3	**3.7**	3.3 mg/l

Explanations of abbreviations are included on the final page of this table.

2017
Mine Permit Groundwater Quality Monitoring Data
WBR-001 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018 Q3	Q1 2018	Q2 2018	Q3 2018		
Field							
D.O.	ppm	-	10.62	6.96	6.4		
ORP	mV	-	138.6	230.9	205.1		
pH	SU	5.7-6.7	6.55	5.49	6.42		
Specific Conductance	uS/cm	-	96.9	103.2	91.7		
Temperature	C	-	0.11	18.91	17.1		
Turbidity	NTU	-	43.96	0.38	1.67		
Flow	cfs	-	-	-			
Metals							
Aluminum	ug/L	200	-	-	**239**	50	ug/l
Antimony	ug/L	3.5	-	-	<0.80	1.0	ug/l
Arsenic	ug/L	3.19	**1.8**	**1.4**	**1.6**	1.0	ug/l
Barium	ug/L	17.17	-	-	**10.0**	1.0	ug/l
Beryllium	ug/L	2.5	-	-	<0.10	1.0	ug/l
Boron	ug/L	40	-	-	**6.0**	1.0	ug/l
Cadmium	ug/L	0.08	-	-	**0.026**	0.02	ug/l
Chromium	ug/L	1.58	-	-	**0.67**	1.0	ug/l
Cobalt	ug/L	0.4	-	-	**0.282**	0.10	ug/l
Copper	ug/L	1.38	**0.97**	**0.77**	**0.589**	0.05	ug/l
Iron	ug/L	4873.2	**3460**	**1320**	**2010**	10.0	ug/l
Lead	ug/L	2.29	**2.16**	**0.8**	**0.822**	0.05	ug/l
Lithium	ug/L	32	-	-	<4.6	8.0	ug/l
Manganese	ug/L	770.15	**277**	**135**	**94.7**	1.0	ug/l
Mercury	ng/L	15.76	**8.75**	**7.11**	**4.76**	0.5	ng/l
Molybdenum	ug/L	4.0	-	-	<0.20	1.0	ug/l
Nickel	ug/L	2.97	**0.94**	**0.93**	**0.935**	0.2	ug/l
Selenium	ug/L	0.28	-	-	**0.156**	0.07	ug/l
Silver	ug/L	0.8	-	-	<0.10	0.2	ug/l
Thallium	ug/L	1.5	-	-	<0.040	1.0	ug/l
Vanadium	ug/L	1.73	-	-	<1.4	1.0	ug/l
Zinc	ug/L	12.98	**7.78**	**5.93**	**3.98**	0.5	ug/l
Major Anions							
Alkalinity, Bicarbonate	mg/L	15.71	**10**	**5.5**	**7.0**	2.0	mg/l
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0	2.0	mg/l
Chloride	mg/L	27.96	**19.4**	**21.5**	**9.2**	1.0	mg/l
Fluoride	mg/L	0.4	< 0.10	< 0.10	**0.082**	0.1	mg/l
Nitrogen, Ammonia	mg/L	2.0	**0.259**	< 0.025	<0.004	0.50	mg/l
Nitrogen, Nitrate	mg/L	2.0	<0.1	< 0.10	**0.016**	0.5	mg/l
Nitrogen, Nitrite	mg/L	2.0	< 0.1	< 0.10	**0.006**	0.5	mg/l
Sulfate	mg/L	4.0	< 10 *	< 2.0	<4.3	1.0	mg/l
Sulfide	mg/L	20	< 0.20	< 0.2	<0.011	0.5	mg/l
Major Cations							
Calcium	mg/L	7.94	**4.9**	**3.7**	**4.4**	0.5	mg/l
Magnesium	mg/L	3.12	**2.0**	**1.6**	**1.7**	0.5	mg/l
Potassium	mg/L	1.64	**0.87**	**0.86**	**0.62**	0.5	mg/l
Sodium	mg/L	12.52	**8.4**	**9.7**	**4.5**	0.5	mg/l
General							
Hardness	mg/L	39.39	**60**	**12**	**17.9**		
Total Dissolved Solids	mg/L	200	**52**	**86**	**103**	50.0	mg/l
Total Suspended Solids	mg/L	13.2	**6.9**	**20.4**	**3.2**	3.3	mg/l

* - Lowest achievable Reporting Limit by laboratory due to matrix interference

2017
Mine Permit Groundwater Quality Monitoring Data
WBR-002 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018 Q3	Q1 2018	Q2 2018	Q3 2018		
Field							
D.O.	ppm	-	1.45	8.53	7.14		
ORP	mV	-	5.34	236.4	225.5		
pH	SU	6.2-7.2	6.23	6.44	6.35		
Specific Conductance	uS/cm	-	252.9	146.1	202.9		
Temperature	C	-	0.74	20.34	19.2		
Turbidity	NTU	-	42.11	56.1	29.1		
Flow	cfs	-	-	-			
Metals							
Aluminum	ug/L	200	-	-	<31.0	50	ug/l
Antimony	ug/L	3.5	-	-	<0.80	1.0	ug/l
Arsenic	ug/L	7.24	**5.1**	**3.2**	**2.7**	1.0	ug/l
Barium	ug/L	16.12	-	-	**8.5**	1.0	ug/l
Beryllium	ug/L	2.5	-	-	<0.10	1.0	ug/l
Boron	ug/L	18.24	-	-	**13.4**	1.0	ug/l
Cadmium	ug/L	0.08	-	-	<0.012	0.02	ug/l
Chromium	ug/L	4.0	-	-	**0.26**	1.0	ug/l
Cobalt	ug/L	0.69	-	-	**0.245**	0.10	ug/l
Copper	ug/L	1.86	**0.84**	**3.07**	**0.482**	0.05	ug/l
Iron	ug/L	12928.4	**12600**	**6380**	**6930**	10.0	ug/l
Lead	ug/L	0.49	**0.468**	**1.1**	**0.241**	0.05	ug/l
Lithium	ug/L	32	-	-	<4.6	8.0	ug/l
Manganese	ug/L	708.9	**875**	**271**	**188**	1.0	ug/l
Mercury	ng/L	2.99	**3.97**	**5.72**	**0.99**	0.5	ng/l
Molybdenum	ug/L	4.0	-	-	**0.35**	1.0	ug/l
Nickel	ug/L	2.55	**1.7**	**3.21**	**1.43**	0.2	ug/l
Selenium	ug/L	0.28	-	-	**0.119**	0.07	ug/l
Silver	ug/L	0.8	-	-	<0.10	0.2	ug/l
Thallium	ug/L	1.5	-	-	<0.040	1.0	ug/l
Vanadium	ug/L	4.0	-	-	<1.4	1.0	ug/l
Zinc	ug/L	2.48	**4.03**	**9.7**	**0.45**	0.5	ug/l
Major Anions							
Alkalinity, Bicarbonate	mg/L	37.7	**35.2**	**16.4**	**28.0**	2.0	mg/l
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	<2.0	2.0	mg/l
Chloride	mg/L	48.06	**46.5**	**28.1**	**35.5**	1.0	mg/l
Fluoride	mg/L	0.4	< 0.10	< 0.10	**0.096**	0.1	mg/l
Nitrogen, Ammonia	mg/L	2.0	**0.437**	**0.0353**	**0.0046**	0.50	mg/l
Nitrogen, Nitrate	mg/L	2.0	< 0.1	< 0.10	<0.0089	0.5	mg/l
Nitrogen, Nitrite	mg/L	2.0	< 0.1	< 0.10	**0.007**	0.5	mg/l
Sulfate	mg/L	4.0	< 10	< 1.0	<0.86	1.0	mg/l
Sulfide	mg/L	20	< 0.20	< 0.20	**0.018**	0.5	mg/l
Major Cations							
Calcium	mg/L	9.7	**10.8**	**5.4**	**8.3**	0.5	mg/l
Magnesium	mg/L	4.5	**5.2**	**2.9**	**4.0**	0.5	mg/l
Potassium	mg/L	1.43	**1.8**	**2.1**	**1.2**	0.5	mg/l
Sodium	mg/L	24.88	**22.5**	**14.6**	**17.9**	0.5	mg/l
General							
Hardness	mg/L	45.64	**44**	**26**	**37.3**		
Total Dissolved Solids	mg/L	200	**142**	**106**	**127**	50.0	mg/l
Total Suspended Solids	mg/L	32.04	**14.4**	**12.2**	**4.4**	3.3	mg/l

* - Lowest achievable Reporting Limit by laboratory due to matrix interference

2017
Mine Permit Groundwater Quality Monitoring Data
WBR-003 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018 Q3	Q1 2018	Q2 2018	Q3 2018		
Field							
D.O.	ppm	-	3.52	4.39	3.46		
ORP	mV	-	32.9	188.2	56.1		
pH	SU	6.2-7.2	6.35	6.26	6.6		
Specific Conductance	uS/m	-	249.6	126.0	199.0		
Temperature	C	-	0.03	16.75	17.1		
Turbidity	NTU	-	27.83	10.44	53.7		
Flow	cfs	-	-	-			
Metals							
Aluminum	ug/L	200	-	-	**34.0**	50	ug/l
Antimony	ug/L	3.5	-	-	<0.80	1.0	ug/l
Arsenic	ug/L	6.28	**3.5**	**2.0**	**4.8**	1.0	ug/l
Barium	ug/L	26.55	-	-	**19.2**	1.0	ug/l
Beryllium	ug/L	2.5	-	-	<0.10	1.0	ug/l
Boron	ug/L	13.09	-	-	13.9	1.0	ug/l
Cadmium	ug/L	0.08	-	-	<0.012	0.02	ug/l
Chromium	ug/L	4.0	-	-	**0.27**	1.0	ug/l
Cobalt	ug/L	2.61	-	-	**1.05**	0.10	ug/l
Copper	ug/L	0.2	**0.53**	**0.63**	**0.231**	0.05	ug/l
Iron	ug/L	19898.23	**10700**	**4430**	**13400**	10.0	ug/l
Lead	ug/L	0.29	**0.258**	**0.173**	**0.105**	0.05	ug/l
Lithium	ug/L	32	-	-	<4.6	8.0	ug/l
Manganese	ug/L	2793.99	**1000**	**324**	**1030**	1.0	ug/l
Mercury	ng/L	5.71	**2.63**	**3.38**	**1.80**	0.5	ng/l
Molybdenum	ug/L	4.0	-	-	**0.22**	1.0	ug/l
Nickel	ug/L	2.42	**1.47**	**1.49**	**1.12**	0.2	ug/l
Selenium	ug/L	0.28	-	-	**0.106**	0.07	ug/l
Silver	ug/L	0.8	-	-	<0.10	0.2	ug/l
Thallium	ug/L	1.5	-	-	<0.040	1.0	ug/l
Vanadium	ug/L	4.0	-	-	<1.4	1.0	ug/l
Zinc	ug/L	4.48	**3.48**	**2.65**	**2.39**	0.5	ug/l
Major Anions							
Alkalinity, Bicarbonate	mg/L	88.2	**46**	**27.9**	**44.7**	2.0	mg/l
Alkalinity, Carbonate	mg/L	8.0	< 2.0	< 2.0	< 2.0	2.0	mg/l
Chloride	mg/L	42.42	**37.5**	**16.2**	**21.8**	1.0	mg/l
Fluoride	mg/L	0.19	< 0.10	**0.13**	**0.095**	0.1	mg/l
Nitrogen, Ammonia	mg/L	2.0	**0.442**	**0.0585**	**0.0332**	0.50	mg/l
Nitrogen, Nitrate	mg/L	2.0	< 0.1	< 0.10	<0.0089	0.5	mg/l
Nitrogen, Nitrite	mg/L	2.0	< 0.1	< 0.10	**0.006**	0.5	mg/l
Sulfate	mg/L	4.0	< 10 *	< 1.0	<4.3	1.0	mg/l
Sulfide	mg/L	20	< 0.20	< 0.20	**0.021**	0.5	mg/l
Major Cations							
Calcium	mg/L	23.56	**12.5**	**7.2**	**11.4**	0.5	mg/l
Magnesium	mg/L	9.59	**5.6**	**3.3**	**4.5**	0.5	mg/l
Potassium	mg/L	2.27	**1.6**	**1.3**	**1.4**	0.5	mg/l
Sodium	mg/L	21.5	**17.1**	**8**	**11.3**	0.5	mg/l
General							
Hardness	mg/L	109.46	**48**	**24**	**47.1**		
Total Dissolved Solids	mg/L	200	**175**	**130**	**153**	50.0	mg/l
Total Suspended Solids	mg/L	27.28	**11.8**	**8.3**	**26.8**	3.3	mg/l

* - Lowest achievable Reporting Limit by laboratory due to matrix interference

2017

Mine Permit Groundwater Quality Monitoring Data

WBR-003 (Monitoring)

Parameter	Unit	Q1 2018	Q2 2018	Q3 2018	
Field					
D.O.	ppm	NM	NM	NM	
ORP	mV	NM	NM	NM	
pH	SU	NM	NM	NM	
Specific Conductance	uS/m	NM	NM	NM	
Temperature	C	NM	NM	NM	
Turbidity	NTU	NM	NM	NM	
Flow	cfs	NM	NM	NM	
Metals					
Aluminum	ug/L	NM	NM	NM	50
Antimony	ug/L	NM	NM	NM	1.0
Arsenic	ug/L	NM	NM	NM	1.0
Barium	ug/L	NM	NM	NM	1.0
Beryllium	ug/L	NM	NM	NM	1.0
Boron	ug/L	NM	NM	NM	1.0
Cadmium	ug/L	NM	NM	NM	0.02
Chromium	ug/L	NM	NM	NM	1.0
Cobalt	ug/L	NM	NM	NM	0.10
Copper	ug/L	NM	NM	NM	0.05
Iron	ug/L	NM	NM	NM	10.0
Lead	ug/L	NM	NM	NM	0.05
Lithium	ug/L	NM	NM	NM	8.0
Manganese	ug/L	NM	NM	NM	1.0
Mercury	ng/L	NM	NM	NM	0.5
Molybdenum	ug/L	NM	NM	NM	1.0
Nickel	ug/L	NM	NM	NM	0.2
Selenium	ug/L	NM	NM	NM	0.07
Silver	ug/L	NM	NM	NM	0.2
Thallium	ug/L	NM	NM	NM	1.0
Vanadium	ug/L	NM	NM	NM	1.0
Zinc	ug/L	NM	NM	NM	0.5
Major Anions					
Alkalinity, Bicarbonate	mg/L	NM	NM	NM	2.0
Alkalinity, Carbonate	mg/L	NM	NM	NM	2.0
Chloride	mg/L	NM	NM	NM	1.0
Fluoride	mg/L	NM	NM	NM	0.1
Nitrogen, Ammonia	mg/L	NM	NM	NM	0.50
Nitrogen, Nitrate	mg/L	NM	NM	NM	0.5
Nitrogen, Nitrite	mg/L	NM	NM	NM	0.5
Sulfate	mg/L	NM	NM	NM	1.0
Sulfide	mg/L	NM	NM	NM	0.5
Major Cations					
Calcium	mg/L	NM	NM	NM	0.5
Magnesium	mg/L	NM	NM	NM	0.5
Potassium	mg/L	NM	NM	NM	0.5
Sodium	mg/L	NM	NM	NM	0.5
General					
Hardness	mg/L	NM	NM	NM	2.0
Total Dissolved Solids	mg/L	NM	NM	NM	50.0
Total Suspended Solids	mg/L	NM	NM	NM	3.3

2017
Mine Permit Groundwater Quality Monitoring Data
WBR-003 (Monitoring)

Parameter	Unit	Recommended Benchmark 2018 *	Q1 2018	Q2 2018	Q3 2018		
Field							
D.O.	ppm	-	NM	6.79	7.26		
ORP	mV	-	NM	279.1	123.7		
pH	SU	6.6-7.6	NM	6.60	7.02		
Specific Conductance	uS/m	-	NM	704.8	203.0		
Temperature	C	-	NM	11.98	18.8		
Turbidity	NTU	-	NM	1.76	3.92		
Flow	cfs	-	NM	NM	NM		
Metals							
Aluminum	ug/L	-	NM	-	**39.0**	50	ug/l
Antimony	ug/L	-	NM	-	<0.80	1	ug/l
Arsenic	ug/L	6.0	NM	< 1.0	**1.2**	1	ug/l
Barium	ug/L	-	NM	-	**5.8**	1	ug/l
Beryllium	ug/L	-	NM	-	<0.10	1	ug/l
Boron	ug/L	-	NM	-	**122**	1	ug/l
Cadmium	ug/L	-	NM	-	<0.012	0.02	ug/l
Chromium	ug/L	-	NM	-	**0.32**	1	ug/l
Cobalt	ug/L	-	NM	-	**0.162**	0.1	ug/l
Copper	ug/L	1300	NM	**7.61**	**1.83**	0.05	ug/l
Iron	ug/L	1758.94	NM	**613.0**	**1230**	10	ug/l
Lead	ug/L	6.36	NM	**0.213**	**0.154**	0.05	ug/l
Lithium	ug/L	-	NM	-	<4.6	8	ug/l
Manganese	ug/L	855.5	NM	**81.7**	**33.5**	1	ug/l
Mercury	ng/L	1.24	NM	**3.14**	**5.07**	0.5	ng/l
Molybdenum	ug/L	-	NM	-	**1.7**	1	ug/l
Nickel	ug/L	172.08	NM	**1.5**	**2.95**	0.2	ug/l
Selenium	ug/L	-	NM	-	**0.126**	0.07	ug/l
Silver	ug/L	-	NM	-	<0.10	0.2	ug/l
Thallium	ug/L	-	NM	-	<0.040	1	ug/l
Vanadium	ug/L	-	NM	-	<1.4	1	ug/l
Zinc	ug/L	64.27	NM	**7.54**	**0.49**	0.5	ug/l
Major Anions							
Alkalinity, Bicarbonate	mg/L	100.8	NM	**50.4**	**31.0**	2	mg/l
Alkalinity, Carbonate	mg/L	8.0	NM	< 2.0	<2.0	2	mg/l
Chloride	mg/L	37.3	NM	**22.3**	**10.9**	1	mg/l
Fluoride	mg/L	2.73	NM	<0.10	**0.062**	0.1	mg/l
Nitrogen, Ammonia	mg/L	2.0	NM	<0.025	<0.004	0.5	mg/l
Nitrogen, Nitrate	mg/L	0.16	NM	< 0.10	**0.027**	0.5	mg/l
Nitrogen, Nitrite	mg/L	2.0	NM	< 0.10	<0.0037	0.5	mg/l
Sulfate	mg/L	207.45	NM	**205**	**30.7**	1	mg/l
Sulfide	mg/L	20	NM	< 0.20	**0.016**	0.5	mg/l
Major Cations							
Calcium	mg/L	77.48	NM	**27.2**	**9.1**	0.5	mg/l
Magnesium	mg/L	66.48	NM	**14.1**	**3.0**	0.5	mg/l
Potassium	mg/L	86.72	NM	**7.8**	**1.5**	0.5	mg/l
Sodium	mg/L	37.45	NM	**79.7**	**19.6**	0.5	mg/l
General							
Hardness	mg/L	342.27	NM	**134**	**349**		
Total Dissolved Solids	mg/L	529.47	NM	**462**	**156**	50	mg/l
Total Suspended Solids	mg/L	13.20	NM	**64.4**	2.8	3.3	mg/l

* - Recommended Benchmarks are for Q2 - Insufficient Q3 Data to Develop Benchmarks